Volume 1 - Part 3 - Report of Findings

TNT Areas A and C Remedial Investigation
Former Plum Brook Ordnance Works
Sandusky, Ohio

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List of Acronyms

ARAR	applicable or relevant and appropriate requirement
bgs	below ground surface
BNA	base/neutral acids
D&M	Dames and Moore, Inc.
DNT	dinitrotoluene
ft/ft	foot per foot
HTRW	hazardous toxic and radiologic waste
IMS	Ion Mobility Spectrometer
IT	IT Corporation
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
mg/kg	milligrams per kilogram
MK	Morrison-Knudsen Ferguson Corporation
NASA	National Aeronautics and Space Administration
NT	nitrotoluene
NTU	nephelometric turbidity unit
ODNR	Ohio Department of Natural Resources
PA	preliminary assessment
PAH	polynuclear aromatic hydrocarbons
PBOW	Plum Brook Ordnance Works
PID	photoionization detector
PBS	Plum Brook Station
PCB	polychlorinated biphenyl
PRG	Preliminary Remediation Goals
QA/QC	quality assurance/quality control
RI	remedial investigation
SU	standard unit
SVOC	semivolatile organic compounds
TAL	target analyte list
TNB	trinitrobenzene

List of Acronyms *(continued)*

TNT	trinitrotoluene
TNTA	TNT Area A
TNTB	TNT Area B
TNTC	TNT Area C
VOC	volatile organic compound

1.0 Introduction

1.1 TNT Area C Physical Setting

The former TNT Area C (TNTC) occupies approximately 119 acres of land in the southwestern portion of Plum Brook Ordnance Works (PBOW) (Figure 1-1). Campbell Street borders TNTC on the western side, as shown in Figure 1-2. National Aeronautics and Space Administration (NASA) currently uses some of the existing structures in the area for storage purposes. TNTC was used during World War II as a manufacturing facility for trinitrotoluene (TNT) and dinitrotoluene (DNT). During PBOW operations, TNTC contained five TNT lines consisting of five buildings each. Wastewater from TNTC was routed to the Pentolite Road Red Water Ponds through underground flumes and sewer lines. Presently, the area is largely overgrown with trees and brush; however, some of the roads, building foundations, and remnants of utilities from former TNT operations are still recognizable.

1.1.1 TNT Area C Topography and Drainage

TNTC is relatively flat, with a few low hummocks. Elevation at the site ranges from a low of 644 feet along the northern boundary of the site to 681.5 feet on the southern side of TNTC (Figure 1-3). To permit a gravity flow of solutions from one location to another, many of the buildings at the TNTC area were placed either on topographic highs or on fill material, to raise the ground elevation. Surface water drains off the site to the north into a tributary to Pipe Creek. On the eastern side of the site, north of Buildings 692, 693, 683, and 692, a stone-lined drainage ditch was found that allowed surface water to drain to the east or west of those specified buildings.

1.1.2 TNT Area C Geology and Soils

The native overburden and the soil found at most of the boring locations at TNTC consists predominantly of glacially derived silt overlying silty clay. The upper few feet of the silts and clays in the vicinity of TNTC have been grouped into the Castalia-Millsdale-Milton-Ritchey Association. The Castalia-Millsdale-Milton-Ritchey soils are described as shallow to moderately deep, nearly level to moderately steep, well drained and very poorly drained soils formed in glacial till, lacustrine sediments, and limestone residuum (Ohio Department of Natural Resources [ODNR], 1994; IT, 1999). Other soil encountered in the top few feet of sampling and direct push activities was a sand fill or silty, clayey sand mixture. The source of the sand is unknown but is suspected to be onsite, either from a sand dune or from the razed former blast barricades. The

sand may be the result of the demolition of sand/soil-filled blast barricades at some of the building locations (e.g., Bi-Tri Houses, Fortifier Houses, and Wash Houses). This sand is believed to have been placed after building demolition or generated during razing activities and was used to cover the building foundations, which would have reduced demolition costs.

Underneath the overburden soil is a layer of Devonian Age shale. As shown on Figure 1-4, the Plum Brook shale (member of the Olentangy shale) is located throughout the site (IT, 1999). Cross-sections were drawn along lines shown on Figure 1-4. As shown on cross-sections A-A' (Figure 1-5) and B-B' (Figure 1-6), the depth of the overburden ranges from approximately 10 feet in the central portion of TNTC to greater than 18 feet along the western edge of the site. The base of the overburden consists of weathered shale. This weathered shale horizon is estimated to be around 2 feet thick, but the thickness of the weathered zone is probably lithologically controlled.

1.1.3 TNTC Hydrogeology

1.1.3.1 Overburden

Six overburden monitoring wells are present in TNTC: (MK-MW12, PB-TNTC-MW3, PB-TNTA-MW4, PB-TNTA-MW5, PB-TNTA-MW6, and IT-MW9). Groundwater flow follows the topography and flows to the north. Static groundwater depths have ranged from 3.02 feet below ground surface (bgs) (monitoring well PB-TNTC-MW5 in February 1998) to 9.27 feet bgs (well PB-TNTC-MW3 in November 1997) (IT, 1999).

Groundwater in the overburden water-bearing zone at TNTC during the direct-push soil sampling was found near the soil/bedrock (shale) interface, as shown on cross-sections A-A' and B-B' (Figures 1-5 and 1-6). The water usually exhibited both low porosity and low permeability. The average hydraulic gradient calculated between overburden wells in the west central portion of PBOW ranged from 0.009 foot per foot (ft/ft) to 0.011 ft/ft. Flow direction was to the north/northwest. No hydraulic conductivity tests (slug tests or pump tests) have been performed in the vicinity of TNTC (IT, 1999).

1.1.3.2 Bedrock

Well PB-BED-MW13 was drilled into the Olentangy Shale downgradient (northeast) of the site. The piezometric surface of the groundwater in the shale bedrock across TNTC was less than 10 feet bgs. Groundwater in the bedrock flows to the north-northeast with an average hydraulic

gradient of approximately 0.016 ft/ft. No hydraulic conductivity tests (slug tests or pump tests) have been performed in the vicinity of TNTC (IT, 1999).

1.2 Summary of Previous Environmental Studies

1.2.1 Surface Water, Sediment, and Soil Investigations

Previous environmental investigations in TNTC included a 1991 preliminary assessment (PA) conducted by Science Applications International Corporation, a 1993 site inspection by Morrison-Knudsen Ferguson Corporation (MK) (MK, 1994), and a 1994 TNT areas site investigation by Dames & Moore (D&M, 1997a). The PA conducted by Sience Applications International Corporation identified fourteen operable units that may have experienced environmental contamination during the operation of TNT manufacturing. TNTC was listed as a possible location.

In 1993, MK performed a site inspection of TNT manufacturing area C. Surface water, sediment, soil, and groundwater samples were collected. Most of the environmental samples collected from TNTC were analyzed for volatile organic compounds (VOC), semivolatile organic compounds (SVOC), nitroaromatics, total metals, dissolved metals, pesticides, and poly-chlorinated hydrocarbons (PCB). One collocated surface water and sediment sample was collected at a location identified as SW04/SD04 (Figure 1-3). SW/SD04 was collected downstream of the confluence of two tributaries from TNT Area C, flowing to Pipe Creek. No organic compounds were detected in the surface water or sediment samples. As shown by Table 1-1, low levels of a VOC (methylene chloride) were detected in only the sediment sample. Sediment sample SD04 showed concentrations of four SVOCs (di-n-butyl phthalate, flouranthene, phenanthrene, and pyrene). Several metals were detected in both the surface water and the sediment. No explosives residues were detected in the surface water or sediment sample.

Three surface soil samples (MK01SS10, MK01SS11, and MK01SS12) were collected in the upper 2 feet of soil west of the Pump House at Building 657, in the open field west of Building 689, and in the field west of Building 626 (Figure 1-3). Table 1-2 compares Region 9 Preliminary Remediation Goals (PRG) and established PBOW background concentrations to analytical results. Results of the surface soil samples show the detection of arsenic (8.2 mg/kg) in boring MK10SS10 above the PRG but below the background level. No explosives residues were detected. Lead was detected in two samples. Sample MK01SS10 showed lead above the

background at a concentration of 104 milligrams per kilogram (mg/kg), and sample MK01SS11 revealed lead at a concentration of 800 mg/kg. Magnesium was detected in all three samples.

Monitoring well MK-MW12 was installed along the western edge of PBOW near Pipe Creek, side-gradient of TNTC. The purpose of the well (at the time) was to be in an area far removed from any past or present PBOW activities. This well encountered bedrock at a depth of 13 feet bgs and water at approximately 12.5 feet bgs. A soil sample was collected from the first two feet of the boring. No explosives compounds were detected in the soil (Table 1-2). Arsenic and magnesium were the only two metals that exceeded PRGs. Groundwater from the well detected only metal parameters above PRGs (Table 1-3). Arsenic (4.00 micrograms per liter [µg/L]), iron (28,000 µg/L), lead (13 µg/L), magnesium (29,200 µg/L), and manganese (1,790 µg/L) were detected (MK, 1994). According to a records review report generated by Dames and Moore (D&M, 1997b), TNTC was decontaminated along with two other TNT areas in 1955 and again in 1966. However, the decontamination at TNTC was reportedly not as thorough as that in TNTA, and significant subsurface contamination associated with underground flumes and sewer lines is probably still present.

In 1994, D&M conducted a site investigation of TNTC. Activities included monitoring well installation (TNTC-MW3, TNTC-MW4, TNTC-MW5, TNTC-MW6, and BED-MW13), and groundwater and soil sampling. A total of 30 soil samples were collected from 26 borings within TNTC, and each sample was analyzed for nitroaromatics and metals (Table 1-2, Figure 1-3). Boring locations were associated with the TNT production buildings but were placed more heavily around the ditches. Nitroaromatic compounds were detected, but concentrations were fairly low when compared to the other manufacturing areas. The lower nitroaromatic detections were justified as representing less manufacturing activity in the TNTC area and/or sample locations being incorrectly positioned due to heavy vegetation overgrowth. Concentrations of TNT ranged from 2.7 mg/kg (soil boring near TNTC-S22) to 0.5 mg/kg (soil boring TNTC-S26). The highest nitroaromatic detection was 8.7 mg/kg 2,4-DNT in soil boring TNTC-S22, which exceeds the PRG for DNT of 0.72 mg/kg. Maximum metals concentrations above established PBOW background values include lead and mercury at 173 and 0.98 mg/kg, respectively (Wastewater Disposal Settling Tanks, Building 657) (Table 1-2) (D&M, 1997a).

1.2.2 Groundwater Investigations

1.2.2.1 Overburden Water-Bearing Zone

MK did not investigate the groundwater during the July 1993 field investigation.

In December 1994, D&M drilled and installed four overburden wells (PB-TNTC-MW3, PB-TNTC-MW4, PB-TNTC-MW5, and PB-TNTC-MW6). Overburden monitoring well PB-TNTA-MW3 is located immediately west of the Wastewater Settling Basins (Building 657); PB-TNTC-MW4 is located downgradient of Wash House, Building 626; PB-TNTA-MW5 is located downgradient of Wash House, Building 606; and PB-TNTA-MW6 is located downgradient of Wash House, Building 686 (Figure 1-3). Groundwater samples were collected from two of the four monitoring wells (TNTC-MW5 and TNTC-MW6) and analyzed for nitroaromatics, nitrates, and total and dissolved concentrations of 14 metals (the 13 priority pollutant metals plus manganese) (D&M, 1997a). No nitroaromatics were detected above PRG limits in the overburden monitoring wells (Table 1-3). Two metals (lead and manganese) were detected in the TNTC groundwater above PRG levels. Lead was detected in both monitoring wells TNTC-MW5 and TNTC-MW6 while manganese was detected only in TNTC-MW6 (D&M, 1997a).

As part of a groundwater investigation conducted by IT in 1996 to acquire additional information regarding the groundwater level, groundwater flow, and groundwater contamination in TNTC, monitoring well IT-MW9 was installed. IT-MW9 is located at the northwest side of TNTC, east of Campbell Street, and approximately 210 feet from Nailing House, Building 628.

IT conducted a site-wide groundwater investigation at PBOW in November 1997 (IT, 1998) and in May 1998 (IT, 1999). Both field events included collection of groundwater samples from overburden wells in TNTC (IT-MW9, PB-TNTC-MW3, 4, 5, and 6). All wells were analyzed for VOCs, SVOCs, nitroaromatics, PCBs, total and dissolved metals, cyanide, and water quality parameters. During the 1997 sampling event, no nitroaromatics or organic compounds were detected in the overburden monitoring wells. A total of 4 metals, (arsenic, iron, lead, and manganese) were detected above PRG limits, with manganese detected in all of the wells (Table 1-3) (IT, 1999).

1.2.2.2 Bedrock Water-Bearing Zone

As part of the site investigation by D&M in 1994, one bedrock well (PB-BED-MW13) was installed in the TNTC area. This well is located downgradient of manufacturing buildings on the

eastern side of TNTC (Figure 1-3). A groundwater sample was collected from the monitoring well and analyzed for nitroaromatics, VOCs, base/neutral acids (BNA), nitrates, and total and dissolved concentrations of 14 metals (the 13 priority pollutant metals plus manganese) (D&M, 1997a).

Nitroaromatic 4A-2,6-DNT was detected at a concentration of 3.7 μg/L, above the PRG of 2.2 μg/L, in bedrock monitoring well PB-BED-MW13. Benzene, 2-methylnaphthalene, and naphthalene were the only compounds detected in the bedrock well above PRGs. Benzene was found at a concentration of 50 μg/L (PRG limit 0.41 μg/L), 2-methylnaphthalene was detected at 24 μg/L (PRG not established), and naphthalene was at 28 μg/L (above PRG limit of 6.2 μg/L). No metals were detected in the bedrock groundwater (D&M, 1997a).

IT sampled the bedrock monitoring well for the site-wide groundwater investigations of 1997 and 1998 (IT, 1997; 1998) (Table 1-3). No nitroaromatics or metals were detected in the bedrock monitoring well above PRG limits during either sampling event. In both sampling events, benzene, 2-methylnaphthalene, and naphthalene were again detected and were the only organics in the bedrock well above PRG limits (IT, 1999).

2.0 Investigation Results

This section presents the analytical results from fixed-base laboratories for TNTC. Analytical data are presented sequentially by building number for the DNT process buildings, the wastewater settling tanks, for each TNT process line, for surface water and sediment samples from on-site tributaries to Pipe Creek, and for off-site Plum Brook surface water and sediment samples. All screening and soil confirmation sample location data are presented in Table 2-1, while surface and subsurface sample locations are shown in Figure 2-1. A complete summary of detected analytes in confirmation soil samples is shown in Table 2-2. Table 2-3 presents a complete summary of groundwater analytical detections and Figure 2-2 shows groundwater sampling locations. Nitroaromatic screening results are presented in Tables 2-4 through Table 2-32. On-site and off-site surface water and sediment data are presented in Tables 2-33 and 2-34; while locations are shown in Figure 2-32.

Photodocumentation of foundation excavation and/or soil sampling activities at selected former building locations is presented in Appendix A. It was noted during field activities that the catch box basins associated with wash house buildings were overgrown with small trees rather than the typical low grass between older vegetation. Miscellaneous TNT manufacturing equipment, debris, and waste uncovered during foundation excavation is also shown in several photographs. Appendix B presents hazardous and toxic radiological waste (HTRW) boring logs prepared during the direct-push collection of subsurface soil samples. In addition, construction diagrams for temporary piezometerare also included in appendix B.. On most of the borings, HTRW drill logs were completed during the screening sample collection. Confirmation samples were collected within 12 inches of the screening sample location, so only one HTRW boring log was generated. Not all piezometer borehole depths on the well construction diagrams match associated HTRW borelog total depths due to advancement of geoprobe drilling past soil sample collection depths. Since groundwater is typically found immediately above the soil/bedrock interface, the geoprobe drilling was usually advanced until probe refusal (bedrock). Land survey data of the TNTC confirmation soil boring location, surface water, sediment, groundwater, and former building foundations is presented in
Appendix C.

2.1 Wastewater Settling Basin

2.1.1 Building 657, Settling Tank

Eleven surface soil samples (AB0216 through AB0226) were collected from areas within and around the settling tank (Table 2-4 and Figure 2-3). The concrete foundation walls for the structure that housed the three former tanks are still present at the site and have not been covered with fill; therefore all initial soil samples were collected from 0 to 1 ft bgs. Subsurface soil samples were later collected at two depths (3 to 5 and 5 to 6 feet bgs) within one boring located in the center of the concrete structure (AB0222). The initial surface soil sampling results did not detect significant nitroaromatic contamination. However, historical documentation indicates that large quantities of waste TNT were removed from these settling tanks during site decontamination. Based on this historical information, a subsurface confirmation sample was collected beside this boring from 3 to 5 feet bgs. No groundwater sample was collected because a residuum well exists near this basin.

2.1.1.1 Screening Results

The only nitroaromatic compound detected in surface soils was TNT in three of the 11 samples: AB0218 (0.25 mg/kg), AB0224 (1.13 mg/kg), and AB0225 (0.56 mg/kg) (Table 2-4). Low levels of nitroaromatic compounds were detected in both subsurface soil samples, but only 2,4-DNT was detected at a concentration (0.95 mg/kg) above the PRG (0.72 mg/kg). This detection of 2,4-DNT was in the upper (3 to 5 ft) sample (AB0365).

2.1.1.2 Confirmation Results

One subsurface soil confirmation sample (AB0468) was submitted for analysis of nitroaromatics, VOCs, SVOCs, PCBs, and inorganics (Table 2-2).

Subsurface Soil

Nitroaromatics. Six nitroaromatic compounds were detected at concentrations below PRGs. The highest concentration detected was 1.99 mg/kg of 4-nitrotoluene.

VOCs. Acetone, carbon disulfide, methylene chloride and toluene were detected at low concentrations. Of these compounds, the only VOC detected in the confirmation sample that is potentially site-related was toluene at 1.94 μg/kg.

SVOCs. A total of 15 SVOCs, primarily polynuclear aromatic hydrocarbons (PAH), were detected in the soil confirmation sample. Benzo(a)pyrene (0.356 mg/kg) and dibenz(ah)anthracene (0.123 mg/kg) were detected at concentrations above their PRGs.

PCBs. One PCB, Aroclor-1260, was detected at 0.0613 mg/kg.

Inorganics. Lead, detected at 68.9 mg/kg, was the only inorganic to exceed its established PBOW background concentration (48.6 mg/kg), but arsenic, at a concentration of 9.27 mg/kg, exceeded its PRG.

2.2 Process Line 8

2.2.1 Building 681, Mono House

No fill was observed at this site. Six surface soil samples (AB0007 through AB0012) were collected from 0 to 1 ft bgs around the Mono House foundation (Table 2-5 and Figure 2-4). Two subsurface soil samples (AB0397 and AB0398) were later collected at two depths (4 to 6 and 8 to 10 feet bgs) within one boring located at the former drowning tank in between AB0008, AB0011, and AB0012. Based on the analytical results, a subsurface confirmation sample was later collected beside this boring from 4 to 6 feet bgs. A temporary piezometer (GW09) was installed beside this location and a groundwater sample was collected.

2.2.1.1 Screening Results

The only analyte detected in the surface soil samples was total DNT at a concentration of 0.15 mg/kg in sample AB0007. In the subsurface soil samples (AB0397 and AB0398), total DNT and both amino-DNT isomers were detected at both depths. Total DNT was detected at 1.09 mg/kg in the upper sample, which is above the PRG of 0.72 mg/kg, and at 0.14 mg/kg in the lower sample. The concentrations of both amino-DNT isomers were well below their respective PRGs. A low concentration of TNT (0.107 mg/kg) was also detected in the upper subsurface sample.

2.2.1.2 Confirmation Results

2.2.1.2.1 Subsurface Soil

A subsurface soil sample (AB0471) collected at 4 to 6 feet in boring AB0397/398 was submitted for confirmation analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2). This sample was collected at the same location as sample AB0397.

Nitroaromatics. The nitroaromatic compounds detected in the screening results for the upper subsurface soil sample (total DNT, 2A-4,6-DNT, 4A-2,6-DNT, and TNT) were confirmed at similar concentrations. The nitrotoluene isomers were also detected at low (i.e., less than 1.2 mg/kg) concentrations. As in the screening sample, the only nitroaromatic exceeding PRGs was total DNT (2.03 mg/kg).

VOCs. Acetone, 2-butanone, carbon disulfide, methylene chloride and toluene were detected in the confirmation sample. The only site-related VOC detected in the confirmation sample was toluene at a very low concentration (0.002 mg/kg). All VOCs detected were at least two orders of magnitude below their respective PRGs.

SVOCs. Benzo(a)anthracene, benzo(a)pyrene and 2,6-DNT were detected in the confirmation sample at concentrations below PRGs. In addition, 2,4-DNT was detected at a concentration (0.74 mg/kg) only slightly exceeding the PRG.

PCBs. Aroclor-1260 was the only PCB detected in the confirmation sample, at a concentration below the PRG.

Inorganics. Arsenic and iron were detected at concentrations exceeding their PRGs, but well below their established PBOW background concentrations. However, lead (129 mg/kg) was detected above both the PRG and PBOW background concentration.

2.2.1.2.2 Groundwater

A boring was advanced to a total depth of 17 feet (refusal) at the location of AB0397 and AB0398. A temporary piezometer (GW09) was installed to 16.8 feet bgs. The groundwater sample collected (AB3009) was analyzed for nitroaromatics, VOCs, SVOCs, PCBs, and total

inorganics (Table 2-3). The sample was not filtered, but the turbidity was only 44 nephelometric turbidity units (NTU), and the pH was 6.90.

Nitroaromatics. Nine nitroaromatic compounds were detected, all of which exceeded their PRGs. The nitroaromatics with the highest concentrations were the 2-nitrotoluene (NT), 4-NT and total DNT.

VOCs. Two petroleum-related VOCs (benzene and toluene) were detected in the confirmation sample, both below their respective PRGs. Benzene was detected at 0.59 μg/L and toluene at 7.88 μg/L. Methylene chloride was also detected at 0.96 μg/L.

SVOCs. SVOCs were not detected in the groundwater confirmation sample.

PCBs. No PCBs were detected in the groundwater confirmation sample.

Inorganics. Ten inorganics were detected above their PRGs: aluminum, arsenic, barium, chromium, iron, lead, manganese, nickel, selenium, and vanadium. Of note are the concentrations of arsenic (432 μg/L), chromium (450 μg/L), lead (1,460 μg/L), selenium (202 μg/L), and vanadium (647 μg/L).

2.2.2 Building 682, Bi-Tri House

Ten surface soil samples (AB0157 through AB0166) were collected from depths of up to 2.5 feet (Table 2-6 and Figure 2-5). In addition, three samples (AB0280, AB0281 and AB0282) were collected from ditches and low areas that receive runoff from this site. To confirm historical sampling results and further define the horizontal extent of contamination, eight delineation samples (AB0308 through 315) were collected, as well as three confirmation samples (AB0442, AB0454 and AB0455). Two subsurface screening samples were collected at two depths from each of two borings (AB0367, AB0368, AB0369, and AB0370) located beside AB0165 and AB0311. To investigate groundwater quality, one temporary piezometer (GW02) was installed to a total depth of 14.6 feet bgs and a groundwater sample (AB3002) was collected at the AB0367 and AB0368 location.

2.2.2.1 Screening Results

Eleven samples had detected concentrations of nitroaromatics; however, PRGs were exceeded in only five samples. TNT was detected at concentrations above PRGs in AB0165 (729 mg/kg), AB0280 (62.9 mg/kg), and AB0281 (47.5 mg/kg). Total DNT exceeded PRGs in samples AB0157 (1.38 mg/kg) and AB0281 (0.87 mg/kg). In samples AB0280 and AB0281, 2A-4,6-DNT was detected at concentrations of 3.57 mg/kg and 2.30 mg/kg, respectively. In addition, 4A-2,6-DNT was detected in sample AB0280 at a concentration of 3.54 mg/kg (Table 2-6 and Figure 2-5). Only low concentrations of nitroaromatics (i.e., less than 0.30 mg/kg and below PRGs) were detected in the subsurface soil samples.

2.2.2.2 Confirmation Results

2.2.2.2.1 Surface Soil

Three surface soil samples (AB0442, AB0454, and AB0455) were submitted to the laboratory for analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2). Sample AB0442 was collected near location AB0165, sample AB0454 near AB0280, and sample AB0455 near AB0312.

Nitroaromatics. In all three samples, TNT was reported as the nitroaromatic compound of highest concentration.. Eight nitroaromatic compounds were detected in sample AB0442, four of which (2A-4,6-DNT, 4A-2,6-DNT, total DNT, and TNT) exceeded their respective PRGs. In sample AB0454, five nitroaromatic compounds were detected, and the concentrations of total DNT (22.1 mg/kg) and TNT (54,969 mg/kg) exceeded their PRGs. In sample AB0455, the same four nitroaromatic compounds (2A-4,6-DNT, 4A-2,6-DNT, total DNT, and TNT) detected in the screening results were detected but at higher concentrations; however, only the total DNT concentration (0.781 mg/kg) exceeded the PRG.

VOCs. Acetone, carbon disulfide and methylene chloride were detected in at least one of the confirmation samples at concentrations below PRGs.

SVOCs. Two nitroaromatics, 2,4-DNT and 2,6-DNT, were the only SVOCs detected in the three surface soil confirmation samples. The concentration of 2,4-DNT exceeded the PRG in all the samples. In addition, 2,6-DNT exceeded the PRG in two samples (AB0442 and AB0454).

PCBs. Only one PCB compound, Aroclor-1260, was detected in all three confirmation samples. This PCB compound was detected above the PRG in sample AB0442 (0.509) and AB0454 (0.883 mg/kg).

Inorganics. Lead, detected at 97 mg/kg in AB0454 and at 721 mg/kg in AB0455, was the only inorganic to exceed its established PBOW background concentration. The arsenic concentrations (ranging from 2.26 to 5.59 mg/kg) in all three confirmation samples exceeded the PRG but all were below PBOW background.

2.2.2.2.2 Groundwater

A boring was advanced until refusal (total depth of 15 feet) bgs at the location of AB0367 and AB0368 and a temporary piezometer (GW02) was installed at 14.6 feet. Groundwater sample AB3002 was collected from the piezometer and submitted for analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and total inorganics (Table 2-3). The sample was not filtered but the turbidity measurement was recorded at 0 NTUs and the pH at 7.20 standard units (SU).

Nitroaromatics. Seven nitroaromatics were detected in the groundwater sample. Five nitroaromatics including 4A-2,6-DNT (436 µg/L), DNT (1,260 µg/L), 2-NT (258 µg/L), 4-NT (94.7 µg/L), and TNT (1,880 µg/L) exceeded PRG levels.

VOCs. Four VOCs, acetone (6.92 µg/L), carbon disulfide (0.76 µg/L), methylene chloride (1.18 µg/L), and toluene (1 µg/L) were detected in the groundwater sample but none exceeded PRG values.

SVOCs. Both 2,4-DNT (4,610 µg/L) and 2,6-DNT (1,330 µg/L) were reported in the SVOC analysis in groundwater sample AB3002. Both analytes were above the PRG value of 0.099 µg/L.

PCBs. PCBs were not detected in the groundwater confirmation sample.

Inorganics. Eighteen inorganics were detected in the unfiltered groundwater sample. Arsenic (9.86 µg/L), iron (32,200 µg/L), lead (46.1 µg/L), and manganese (1,170 µg/L) were the metals to exceed their PRG value.

2.2.3 Building 683, Fortifier House

Up to 1.5 feet of fill was observed during the investigation of this building. Five surface soil samples (AB0167 through AB0171) were collected from depths of up to 2.5 feet bgs (Table 2-7 and Figure 2-6). One delineation sample (AB0245) was later collected at the location of a former storage tank on the south side of the building. Subsurface soil samples AB0399 and AB0400 were collected at two depths (4 to 6 and 8 to 10 feet bgs) within one boring located beside AB0171 at the drowning tank. Based on the analytical results, two subsurface confirmation samples (AB0466 and AB0467) were later collected at this boring from the same depths. A temporary piezometer (GW08) was installed at this location, and a groundwater sample (AB3008) was collected.

2.2.3.1 Screening Results

Nitroaromatics were not detected in any of the surface soil samples collected (Table 2-7 and Figure 2-6). However, four nitroaromatic compounds were detected in each subsurface sample. The amino DNT isomers and TNT were detected in both samples, but only the TNT concentrations exceeded the PRG (18.2 mg/kg and 16.4 mg/kg).

2.2.3.2 Confirmation Results

2.2.3.2.1 Subsurface Soil

To confirm screening results, two subsurface soil confirmation samples (AB0466 and AB0467) were collected at AB0399 and AB0400. Samples were submitted to the laboratory for analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2).

Nitroaromatics. TNT, total DNT, and 4A-2,6-DNT were detected at concentrations that exceeded their PRGs. Nitrobenzene, nitrotoluene isomers and 1,3,5-trinitrobenzene (TNB) were also detected but at concentrations below PRGs.

VOCs. Carbon disulfide and methylene chloride were detected in the confirmation samples at concentrations at least three orders of magnitude below their PRGs.

SVOCs. 2,4-DNT (up to 275 mg/kg) and 2,6-DNT (up to 23.8 mg/kg) were the only SVOCs detected in the two subsurface soil confirmation samples. The concentrations of both of these compounds exceeded the PRGs in both of the samples.

PCBs. Only one PCB compound, Aroclor-1260, was detected at concentrations below its PRG in both confirmation samples.

Inorganics. Arsenic, detected at 1.77 mg/kg and 1.79 mg/kg in the two subsurface confirmation samples, was the only inorganic to exceed its PRG (0.39 mg/kg), but these concentrations are well below the established PBOW background concentration of 36.5 mg/kg.

2.2.3.2.2 Groundwater

Groundwater was encountered at approximately 9 feet bgs during drilling of the subsurface boring located at AB0399 and AB0400. The temporary piezometer was installed to an approximate depth of 14 feet bgs. Groundwater sample AB3008 was collected and analyzed for nitroaromatics, VOCs, SVOCs, PCBs, and inorganics (Table 2-3). The sample was not filtered, but the turbidity was 0 NTUs and the pH was 7.02.

Nitroaromatics. The same nitroaromatic compounds found in the subsurface soil were also detected in the groundwater, all of which exceeded their PRGs, if available. The nitroaromatics with the highest concentrations were TNT (20,100 µg/L), total DNT (21,100 µg/L), 4A-2,6-DNT (419 µg/L), 2-NT (236 µg/L), and 4-NT (189 µg/L).

VOCs. The only VOC detected in the confirmation sample was methylene chloride, at a concentration below its respective PRG.

SVOCs. 2,4-DNT (37,600 µg/L) and 2,6-DNT (1,060 µg/L) were the only SVOCs detected in the groundwater confirmation sample. Both of these nitroaromatics exceeded PRGs.

PCBs. No PCBs were detected in the groundwater confirmation sample.

Inorganics. Arsenic was detected at a concentration (5.15 µg/L) above the PRG, and the lead concentration (20.8 µg/L) exceeded the federal action level of 15 µg/L.

2.2.4 Building 686, Wash House

Fill material, when present, varied in thickness up to a maximum of 2 feet (Table 2-8 and Figure 2-7). Twenty-two surface soil samples (AB0142 through AB0156 and AB0301 through

AB0307) were collected from depths up to 3 feet bgs around the former building, catch box, and storage tank at this site. An additional six samples (AB0324, AB0325, AB0329, AB0330, AB0335, and -336) were collected in two phases to delineate the surface soil contamination. Based on the analytical results, four confirmation samples (AB0437 through AB0439 and AB0478) were collected. Two subsurface soil screening samples were also collected from two depths (AB0371, 4 to 6 feet bgs; AB0372, 8 to 10 feet bgs) within one boring located beside AB0302 (Table 2-8 and Figure 2-7). No groundwater sample was collected at this site.

2.2.4.1 Screening Results

Nitroaromatics, primarily TNT and the amino DNT isomers, were detected in all but five of the 28 surface soil samples. TNT concentrations exceeded the PRG in nine of the samples collected, ranging from 20.1 to 902 mg/kg. One or both of the amino-DNT isomers were detected at concentrations exceeding the PRG in seven of these nine samples. Concentrations ranged from 3.48 to 13.4 mg/kg for 2A-4,6-DNT, and from 3.73 to 12.3 mg/kg for 4A-2,6-DNT. Subsurface soil sample results indicate the presence of the same suite of nitroaromatics plus 2-nitrotoluene and 4-nitrotoluene but at concentrations below PRGs.

2.2.4.2 Confirmation Results

Surface Soil

Four surface soil samples (AB0437, AB0438, AB0439, and AB0478) were submitted to the laboratory for analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2). Sample AB0437 was collected beside location AB0150, samples AB0438 and AB0439 were collected at the same location as AB0151, and sample AB0478 was collected at the same location as AB0325.

Nitroaromatics. The nitroaromatic compounds detected in the screening results were exceeded in the confirmation samples. TNT (up to 5,067 mg/kg), DNT (1.59 mg/kg), 2A-4,6-DNT (up to 11.4 mg/kg), and 4A-2,6-DNT (up to 10.8 mg/kg) were detected at concentrations that exceeded their PRGs.

VOCs. Petroleum compounds, toluene, xylenes, and benzene were detected in the confirmation samples at very low concentrations, as well as acetone and methylene chloride. All detected analytes were below PRGs.

SVOCs. Numerous PAHs were detected in samples AB0437 and AB0438, five of which exceeded their PRGs. One nitroaromatic, 2,4-DNT, was also detected in AB0438 and AB0478, and exceeded its PRG in sample AB0438. Diethyl phthalate (0.672 mg/kg) was also detected in AB0478. SVOCs were not detected in sample AB0439.

PCBs. Only one PCB compound, Aroclor-1260, was detected in all four confirmation samples, and at concentrations that exceed the PRG in AB0437 (1.37 mg/kg), AB0438 (2.11 mg/kg), and AB0439 (1.02 mg/kg).

Inorganics. Arsenic was detected at concentrations above the PRG in all four confirmation samples, but these concentrations were below the established PBOW background concentration of 36.5 mg/kg. The lead concentration in three samples (AB0437, AB0438, and AB0439) exceeded the established PBOW background concentration of 48.6 mg/kg.

2.2.5 Building 689, Acid and Fume Recovery

Two manholes (one filled with soil and one open) were found during the initial soil sampling adjacent to the building foundation (Table 2-9 and Figure 2-8). This building foundation, consisting of short cinder block walls, still exists at the site. The filled manhole was located beside the southwest corner of the building foundation, and the open manhole was located at the southeast corner. Both manholes were approximately 3 feet in diameter, and the open manhole was approximately 2 feet in depth. IT Corporation (IT) personnel covered the open manhole with a large piece of steel sheet metal to prevent physical hazards. Two storm drains were also found, one on either side of the entrance road, south of the former building. Both drains were covered by a large steel grate and were approximately 3 feet in diameter and approximately 3.5 feet in depth.

Six samples (AB0001 through AB0006) were collected around the existing foundation walls of the former building and on both sides of the two former storage tanks, from depths up to 2 feet bgs. Only one sample (AB0001) had concentrations of nitroaromatics exceeding PRGs, so three additional samples (AB0247 through AB0249) were collected around this location to delineate the contamination. In addition, two samples (AB0246 and AB0250) were collected from sumps found in the south corners of this building, and two samples (AB0275 and AB0276) were collected from surface water drains located on both sides of the driveway. Subsurface soil

samples were also collected from two depths (AB0401, 4 to 6 feet bgs; AB0402, 6 to 7 feet bgs) within one boring located beside AB0001. Based on the analytical results, two confirmation samples, one surface soil sample (AB0426) and one subsurface soil sample (AB0460), were collected. Groundwater was encountered at 8 feet bgs (depth of refusal), but a temporary piezometer could not be installed due to insufficient yield.

2.2.5.1 Screening Results

Nitroaromatics, mainly total DNT and the amino-DNT isomers, were detected in samples AB0001, AB0002, AB0005, AB0247, and AB0249, but at concentrations above PRGs only in sample AB0001 (Table 2-9 and Figure 2-7). Total DNT (4.17 mg/kg) and 4A-2,6-DNT (6.08 mg/kg) were the nitroaromatic compounds that exceeded their PRGs in sample AB0001. The same nitroaromatic compounds plus the nitrotoluene isomers were detected in the upper subsurface soil sample at lower or similar concentrations, with the exception of total DNT, which increased (14.3 mg/kg). Both 2A-4,6-DNT and 4A-2,6-DNT exceeded the PRG. Only three nitroaromatics (including total DNT) were detected in the lower sample, and at lower concentrations, indicating that the contamination decreases with depth. The deep sample could not be collected any deeper than 7 feet due to refusal on three attempts.

2.2.5.2 Confirmation Results

Surface Soil

To confirm screening conclusions, one surface soil sample (AB0426) and one subsurface soil sample (AB0460) were submitted to the laboratory for analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2). Both samples were located beside AB0001.

Nitroaromatics. Total DNT 2A-4,6-DNT and 4A-2,6-DNT were detected at concentrations that exceeded their PRGs in the surface soil sample AB0426. However, only total DNT exceeded the PRGs in the subsurface confirmation sample.

VOCs. The petroleum compounds, ethyl benzene, toluene, and xylenes, were detected in the surface soil confirmation sample at concentrations below PRGs. In addition, acetone, carbon disulfide, methylene chloride, and styrene were also detected in one or both of the samples at concentrations below PRGs.

SVOCs. Numerous PAHs were detected in both samples, though more were detected in the surface soil sample. The benzo(a)pyrene concentration in the surface soil sample (0.0787 mg/kg) slightly exceeded the PRG. 2,4-DNT and 2,6-DNT were detected in both samples, but only the 2,4-DNT concentration (1.01 mg/kg) in the surface soil sample exceeded its PRG.

PCBs. One PCB compound, Aroclor-1260, was detected in both confirmation samples but exceeded the PRG only in the surface soil sample (1.42 mg/kg).

Inorganics. Arsenic was detected at concentrations above its PRG in both confirmation samples, but these concentrations are well below the established PBOW background concentration of 36.5 mg/kg. The lead concentration in these samples (355 mg/kg in surface soil and 76.4 mg/kg in the subsurface soil) exceeded the established PBOW background concentration of 48.6 mg/kg.

2.3 Process Line 9

2.3.1 Building 691, Mono House

Less than 0.5 ft of fill was observed during sampling (Table 2-10 and Figure 2-9). Six surface soil samples (AB0019 through AB0024) were collected from 0.5 to 1.5 feet bgs around the former building and tank (Table 2-10, Figure 2-8). Due to the low concentrations of nitroaromatics detected in only two of these six samples, no subsurface soil or confirmation samples were collected. The groundwater also was not sampled.

2.3.1.1 Screening Results

In sample AB0019, total DNT (0.31 mg/kg), 2A-4,6-DNT (0.16 mg/kg), and 4A-2,6-DNT (0.27 mg/kg) were detected at concentrations below PRGs. The only other nitroaromatic detected was 4A-2,6-DNT (1.72 mg/kg) in sample (AB0021).

2.3.1.2 Confirmation Results

No confirmation samples were collected at this site.

2.3.2 Building 692, Bi-Tri House

Ten screening surface soil samples (AB0228 through CSO233 and AB0241 through AB0244) were collected from depths of up to 1.5 feet bgs around the former building, storage tanks, and

drowning tank (Table 2-11 and Figure 2-10). One sample (AB0241) had concentrations of nitroaromatics exceeding PRGs, so four additional samples (AB0283 through AB0286) were collected around this location to delineate the contamination. In addition, one sample (AB0279) was collected at a sump found in the northeast corner of the building, and two samples (AB0320 and AB0332) were collected along a discharge line located on the east side of the building. Subsurface soil screening samples were also collected from two depths (AB0405, 4 to 6 feet bgs; AB0406, 8 to 10 feet bgs) within one boring located beside sample AB0241. Based on the analytical results, three confirmation samples, two surface soil (AB0448 and AB0479) and one subsurface soil (AB0469), were collected (Table 2-11, Figure 2-9). Groundwater was encountered at 8 feet bgs during drilling of the subsurface boring located at AB0405 and AB0406. A temporary piezometer (GW06) was installed to approximately 15 feet bgs at AB0241 location, and groundwater sample AB3006 was collected.

2.3.2.1 Screening Results

The main nitroaromatics detected in the screening samples were TNT, total DNT, 2A-4,6-DNT and 4A-2,6-DNT, but the concentrations only exceeded the PRGs in four samples (AB0241, AB0284, AB0286, and AB0320). In sample AB0241, TNT (1,319 mg/kg) and total DNT (640 mg/kg) exceeded their PRGs. In delineation samples AB0284 and AB0286, TNT (489 and 41.1 mg/kg, respectively), total DNT (986 and 4.45 mg/kg, respectively), and 4A-2,6-DNT (4.78 and 4.01 mg/kg, respectively) exceeded their PRGs. In one of the samples collected along the discharge line (AB0320), TNT, total DNT, 2A-4,6-DNT, and 4A-2,6-DNT were detected at concentrations exceeding their PRGs. Eight nitroaromatic compounds were detected in the upper subsurface soil sample, with the concentrations of total DNT (0.98 mg/kg), 2A-4,6-DNT (5.35 mg/kg), and 4A-2,6-DNT (5.01 mg/kg) exceeding their PRGs. Nitroaromatic compounds were not detected in the lower subsurface soil sample.

2.3.2.2 Confirmation Results

2.3.2.2.1 Surface Soils

To confirm the screening results, two surface soil samples (AB0448 and AB0477) were submitted to the laboratory for analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2). Samples AB0448 and AB0469 were located beside AB0241, and sample AB0477 was collected at AB0320.

Nitroaromatics. TNT (900 mg/kg) was detected at a concentration similar to screening sample AB0241. In addition, both 2A-4,6-DNT and 4A-2,6-DNT were detected in the confirmation sample at concentrations above the PRG (neither detected in the screening sample); total DNT was much lower than the screening sample but exceeded the PRG.

VOCs. Acetone and methylene chloride were detected at concentrations below PRGs in the two confirmation samples.

SVOCs. One or both of the DNT isomers, 2,4-DNT and 2,6-DNT, were the only SVOCs detected in the two confirmation samples (AB0448 and AB0469) collected at AB0241. The concentrations of both these compounds exceeded the PRG in the surface soil sample (5.68 mg/kg and 10.7 mg/kg, respectively).

PCBs. Only one PCB compound, Aroclor-1260, was detected in both confirmation samples, but the concentrations only exceeded the PRG in surface soil sample AB0448 (0.52 mg/kg).

Inorganics. Arsenic was detected at concentrations above the PRG in both confirmation samples, but these concentrations are well below the established PBOW background concentration of 36.5 mg/kg. The same is true for the iron concentrations in the two surface soil samples. The lead concentration in sample AB0448 (51.4 mg/kg) exceeded the established PBOW background concentration of 48.6 mg/kg.

2.3.2.2.2 Subsurface Soils

Nitroaromatics. Except for the nondetection of total DNT, confirmation sample AB0477 matched the compounds detected in screening sample AB0320, but at lower concentrations, especially TNT (38.7 vs. 399 mg/kg). The concentrations of both TNT and 2A-4,6-DNT (6.23 mg/kg) were above their PRGs.

VOCs. Two petroleum compounds (toluene and m,p-xylenes) were the only VOCs detected in one of the confirmation samples (AB0477), at concentrations below PRGs.

SVOCs. Besides the DNT isomers, low concentrations of two phthalates were also detected in sample AB0477, all below their PRGs

PCBs. Only one PCB compound, Aroclor-1260, was detected in the subsurface sample but the concentration did not exceed the PRG

Inorganics. Arsenic was detected at concentrations above the PRG in the confirmation sample, but this concentration was well below the established PBOW background concentration of 36.5 mg/kg.

2.3.2.2.3 Groundwater

Groundwater was encountered at approximately 8 feet bgs at the AB0405 and AB0406 location (Table 2-3 and Figure 2-2). The temporary piezometer (GW06) was installed to a depth of 14.9 feet bgs. The groundwater sample (AB3006) collected was analyzed for nitroaromatics, VOCs, SVOCs, PCBs, and total and dissolved inorganics. The turbidity of the unfiltered sample was 57 NTUs and the pH was 7.05 SUs.

Nitroaromatics. Four nitroaromatic compounds detected in the soil (TNT, total DNT, and amino-DNT isomers) were also detected in the groundwater, 4A-2,6-DNT (2.27 μg/L), 2A-4,6-DNT (2.88 μg/L), and DNT (0.75 μg/L) slightly exceeded their PRGs (Table 2-3).

VOCs. The only VOC detected was methylene chloride at 0.91 μg/L, which did not exceed the PRG.

SVOCs. No SVOCs were detected in the groundwater confirmation sample.

PCBs. No PCBs were detected in the groundwater confirmation sample.

Inorganics. Arsenic, iron, lead, and manganese were detected at concentrations above their PRG (or federal action level for lead) in the unfiltered sample only.

2.3.3 Building 693, Fortifier House

Six screening surface soil samples (AB0172 through AB0177) were collected from depths of up to 2.5 feet around the former building and drowning tank (Table 2-12 and Figure 2-11). Fill at the site ranged from 1 to 1.5 feet in thickness. Subsurface soil samples were also collected from two depths (AB0407, 4 to 6 feet bgs; AB0408, 8 to 10 feet bgs). These samples were collected

at the drowning tank between AB0173, AB0175, and AB0176. Based on the analytical results, two confirmation samples, one surface soil (AB0443) and one subsurface soil (AB0472), were collected at the same location as AB0407 and AB0408 (Table 2-10, Figure 2-10). A temporary piezometer (GW07) was also installed at this location and groundwater sample AB3007 was collected.

2.3.3.1 Screening Results

Nitroaromatics were only detected in two of three surface soil samples collected near the drowning tank (AB0173 and AB0175), but at concentrations below their PRGs. In the subsurface samples, only total DNT was detected in the upper sample, but total DNT, TNT 2A-4,6-DNT and 4A-2,6-DNT were detected in the lower sample. Only the total DNT concentration in the lower sample (0.73 mg/kg) exceeded the PRG.

2.3.3.2 Confirmation Results

2.3.3.2.1 Surface Soil

To confirm screening conclusions, one surface soil sample (AB0443) was submitted to the laboratory for analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2). Sample AB0443 was located beside AB0173 and sample AB0472 was located beside AB0407/408.

Nitroaromatics. The nitroaromatic compounds detected in the screening results (i.e., 2A-4,6-DNT, 4A-2,6-DNT, DNT, ant TNT) were also detected in the confirmation samples. Like the screening results, PRGs were not exceeded.

VOCs. Acetone and methylene chloride were detected in the samples at concentrations below the PRGs.

SVOCs. The only SVOCs detected in the confirmation samples were 2,4-DNT and bis(2-ethylhexyl)phthalate in the surface soil sample AB0443. However, the detected concentrations were below their PRGs.

PCBs. Only one PCB compound, Aroclor-1260, was detected in the confirmation samples but the concentration was below the PRG.

Inorganics. Arsenic was detected at concentrations above the PRG in the confirmation sample, but the concentration was below the established PBOW background concentration of 36.5 mg/kg.

2.3.3.2.2 Subsurface Soil

To confirm screening conclusions, one subsurface soil sample (AB0472) was submitted to the laboratory for analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2). Sample AB0443 was located beside AB0173 and sample AB0472 was located beside AB0407/408.

Nitroaromatics. The nitroaromatic compounds detected in the screening results (i.e., 2A-4,6-DNT, 4A-2,6-DNT, DNT, and TNT) were also detected in the confirmation samples. Like the screening results, only the total DNT concentration detected in the lower subsurface soil sample (0.82 mg/kg) exceeded its PRG.

VOCs. Methylene chloride was detected in one or both of the samples at concentrations below its PRG.

SVOCs. SVOCs were not detected in the surface soil confirmation sample.

PCBs. Only one PCB compound, Aroclor-1260, was detected in the confirmation samples, but the concentrations were below the PRG.

Inorganics. Arsenic was detected at concentrations above the PRG in the confirmation sample, but the concentration was below the established PBOW background concentration of 36.5 mg/kg.

2.3.3.2.3 Groundwater

Groundwater was encountered in the subsurface soil screening boring completed at the location of AB0407 and AB0408 at a depth of 7 feet bgs. The boring was advanced until refusal (total depth of 13.5 feet) and a temporary piezometer (GW07) was installed at 13.2 feet. Groundwater sample AB3007 was collected from the boring and submitted for analysis of nitroaromatic compounds. VOCs, SVOCs, PCBs, and total inorganics (Table 2-3). The sample was not filtered but the turbidity measurement was recorded at 406 NTUs and the pH at 6.95 SUs.

Nitroaromatics. Five nitroaromatics were detected in the groundwater sample. Three nitroaromatics including 4A-2,6-DNT (2.74 μg/L), 2A-4,6-DNT (3.2 μg/L), and DNT (1.8 μg/L) exceeded PRG levels.

VOCs. One VOC, methylene chloride (1.35 μg/L) was detected in the groundwater sample but did not exceed the PRG value.

SVOCs. 2,4-DNT, at a concentration of 6.91 μg/L, was reported in the SVOC analysis in groundwater sample AB3007. This analyte was above the PRG value of 0.099 μg/L.

PCBs. PCBs were not detected in the groundwater confirmation sample.

Inorganics. Nine inorganics were detected in the unfiltered groundwater sample. Arsenic (39.1 μg/L) and iron (68,500 μg/L) were the metals to exceed their PRG value.

2.3.4 Building 696, Wash House

Fifteen surface soil screening samples (AB0178 through AB0192) were collected from depths of up to 3 feet bgs around the former building, catch box, and storage tanks (Table 2-11 and Figure 2-11). To further define the extent of contamination, 14 additional surface soil screening samples (AB0287 through AB0295, AB0326 through AB0328, AB0333, and AB0334) were collected in three phases. Subsurface soil screening samples were also collected from two depths (AB0373, 4 to 6 feet bgs; AB0374, 8 to 10 feet bgs) within one boring located. Based on the analytical results, four surface soil confirmation samples (AB0444 through AB0446, and AB0479) were collected.

2.3.4.1 Screening Results

Nitroaromatics were reported in all screening and delineation samples except AB0181, AB0182, AB0183, AB0287, and AB0334. TNT, 2A-4,6-DNT and 4A-2,6-DNT were detected most frequently. TNT exceeded the PRG of 16 mg/kg in samples AB0192 (20.3 mg/kg), AB0293 (24.7 mg/kg), AB0291 (33.1 mg/kg), and AB0326 (46.2 mg/kg). In addition, 2A-4,6-DNT and 4A-2,6-DNT were detected above the PRGs in sample AB0190 at concentrations of 7.21 mg/kg and 4.26 mg/kg, respectively. Only 4A-2,6-DNT was detected above the PRG in sample AB0326 (4.04 mg/kg).

2.3.4.2 Confirmation Results

Surface Soil

To confirm screening analytical results, four surface soil confirmation samples were submitted to the laboratory for analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2 and Figure 2-12). Sample AB0444 was located beside AB0190, sample AB0445 was beside AB0192/AB0293, sample AB0446 was beside AB0291, and sample AB0479 was beside AB0327.

Nitroaromatics. TNT concentrations in two confirmation samples (AB0445 and AB0446) were much higher than the original screening samples. One or more of the amino DNT isomers were detected above the PRG in these two samples as well.

VOCs. One or more of the petroleum compounds benzene, toluene, and xylenes, were detected in all four surface soil confirmation samples at very low concentrations. In addition, acetone, carbon disulfide and methylene chloride were also detected at concentrations below PRGs.

SVOCs. Numerous PAHs were detected in three of the four surface soil samples (AB0444 through AB0446), and at concentrations exceeding their PRGs in two samples (AB0445 and AB0446). 2,4-DNT was also detected above its PRG in these same two samples (2.41 mg/kg and 1.64 mg/kg, respectively).

PCBs. Aroclor-1260 was detected in three of four surface soil samples with a maximum concentration of 0.37 mg/kg (AB0445), slightly exceeding the PRG in two samples (AB0445 and AB0446.

Inorganics. Arsenic exceeded the PRG in all four samples at concentrations ranging from 2.58 to 7.12 mg/kg, but these concentrations are below the established PBOW background concentration of 36.5 mg/kg. Lead concentrations in two samples (AB0445 and AB0446) exceeded the background concentration of 48.6 mg/kg (934 mg/kg and 228 mg/kg, respectively).

2.3.5 Building 698, Nail House

Up to 1.5 feet of fill was observed during excavation of the Nail House foundation. Five surface soil screening samples (AB0137 through AB0141) were collected from depths of up to 2.5 feet

bgs (Table 2-14 and Figure 2-13). Based on the low concentrations of nitroaromatic contamination detected, no subsurface or confirmation samples were collected. A groundwater sample was not collected at this site.

2.3.5.1 Screening Results

TNT was detected at very low concentrations in three of the five samples, and the amino-DNT isomers were detected at low concentrations in one of those three samples. All detections, however, were below their respective PRGs.

2.3.5.2 Confirmation Results

No confirmation samples were collected at this site.

2.3.6 Building 699, Acid and Fume Recovery

One open manhole was located adjacent to the southeast corner of the former building. The manhole was approximately 3 feet in diameter by approximately 3.5 feet in depth and constructed of brick. Six samples (AB0013 through CO-018) were collected from depths of up to 3 feet bgs around the former building and storage tanks (Table 2-15 and Figure 2-14). In addition, one sample (AB0277) was collected from within the manhole found on the site. A subsurface soil sample was also collected from two depths (AB0409, 4 to 6 feet bgs; AB0410, 8 to 10 feet bgs) within one boring located beside AB0017. Based on the analytical results, no confirmation samples were collected. A groundwater sample was not collected at this site.

2.3.6.1 Screening Results

No reportable concentrations of nitroaromatics were detected in surface soil samples. One or more of the nitroaromatic compounds TNT, total DNT, 2A-4,6-DNT and 4A-2,6-DNT were detected in four of the surface soil screening samples (AB0015, AB0016, AB0017, and AB0277) at concentrations below PRGs. Only a low concentration of total DNT was detected in the upper subsurface soil sample.

2.3.6.2 Confirmation Results

No confirmation samples were collected at this site.

2.4 Process Line 10

2.4.1 Building 601, Mono House

Fill was not observed during excavation of the building foundation (Table 2-16 and Figure 2-15). Six surface soil screening samples (AB0031 through AB0036) were collected around the foundation and the drowning tank from 0 to 1.5 feet bgs during the initial soil investigation. Two subsurface soil samples (AB0375 and AB0376) were later collected at the approximate location of the drowning tank. Based on the screening results, no confirmation or groundwater samples were collected.

2.4.1.1 Screening Results

Nitroaromatics were detected in two of the six surface soil samples collected. In both samples (AB0032 and AB0036), the concentrations of detected nitroaromatics were below the PRGs. Nitroaromatics were not detected in the two subsurface soil samples (AB0375 and AB0376).

2.4.1.2 Confirmation Results

No confirmation samples were collected because only low levels of nitroaromatics were detected in screening samples collected at this site.

2.4.2 Building 602, Bi-Tri House

Up to 2.6 feet of fill was observed during sampling at this building (Table 2-17 and Figure 2-16). Ten surface soil samples (AB0127 through AB0136) were collected from depths ranging from 0 to 3.6 feet around the building foundation, former storage tanks, and the former drowning tank. Another sample (AB0331) was later collected at location AB0134 (near the former drowning tank) to vertically delineate the only detection of a nitroaromatic compound above its PRG. A subsurface soil sample was collected from two depths (AB0377, 5 to 7 feet bgs; AB0378, 8 to 10 feet bgs) within a boring located beside sample AB0134. Based on the screening results, two confirmation samples, a surface soil sample (AB0436) and a subsurface soil sample (AB0465), were collected at this same location. A temporary piezometer (GW03) was also installed to 8.4 feet bgs at this location and a groundwater sample (AB3003) was collected.

2.4.2.1 Screening Results

Nitroaromatics were detected in three of the ten surface soil samples (AB0134, AB0135, and AB0136). In sample AB0134, TNT, total DNT, 2A-4,6-DNT and 4A-2,6-DNT were detected; however, only total DNT (1.29 mg/kg) exceeded the PRG. This compound was also detected

slightly above the PRG (0.73 mg/kg) in the 0 to 1-ft sample collected above the original AB0134 sample (2.5 to 3.5 feet bgs). The same suite of nitroaromatics were detected in sample AB0135, but all detected concentrations were below their PRGs. In sample AB0136, 2A-4,6-DNT and 4A-2,6-DNT were detected at concentrations below the PRG.

Nitroaromatics were only detected in the upper subsurface soil sample (AB0377). These compounds included the same four nitroaromatics (TNT, total DNT, 2A-4,6-DNT, and 4A-2,6-DNT) detected in the surface soil at AB0134, plus the nitrotoluene isomers. Consistent with the surface soil sample, only the total DNT concentration (3.39 mg/kg) exceeded the PRG.

2.4.2.2 Confirmation Results

2.4.2.2.1 Surface Soil

One surface soil sample (AB0436) was submitted to the laboratory for analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2). Both samples were located beside screening sample AB0134.

Nitroaromatics. The same suite of four nitroaromatic compounds detected in the screening sample (TNT, total DNT, and the amino-DNT isomers) was detected in the confirmation surface soil sample, though at lower concentrations that were below their respective PRGs.

VOCs. Acetone, 2-butanone, carbon disulfide, and methylene chloride were detected in the confirmation sample. All concentrations, however, were at least three orders of magnitude below their respective PRGs.

SVOCs. The SVOCs detected were 2,4-DNT at a concentration of 0.073 mg/kg in surface soil sample and bis(2-ethylhexy)phthalate at 0.0264 mg/kg. Both of these detections were below PRGs.

PCBs. One PCB, Aroclor-1254 at 0.46 mg/kg, was detected above the PRG in the confirmation sample,

Inorganics. Arsenic was detected at a concentration above the PRG in the confirmation sample (3.95 mg/kg), but this concentration was below the established PBOW background concentration of 36.5 mg/kg.

2.4.2.2.2 Subsurface Soils

One subsurface soil sample (AB0465) was submitted to the laboratory for analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2). Both samples were located beside screening sample AB0134.

Nitroaromatics. In the subsurface soil confirmation sample, only TNT was detected and at a concentration below its PRG.

VOCs. Acetone, 2-butanone, carbon disulfide and methylene chloride were detected in the confirmation sample. All concentrations, however, were at least three orders of magnitude below their respective PRGs.

SVOCs. The only SVOC detected, bis(2-ethylhexy)phthalate at 0.0264 mg/kg, was below the PRG of 35 mg/kg.

PCBs. Aroclor-1254 and Aroclor-1260 were detected at concentrations of 0.176 mg/kg and 0.135 mg/kg, respectively. Both of these concentrations are below PRGs.

Inorganics. Arsenic was detected at a concentration above the PRG in the confirmation sample (4.22 mg/kg), but this concentration is below the established PBOW background concentration of 36.5 mg/kg. Lead (157 mg/kg) was detected above the established PBOW background concentration in the subsurface soil sample.

2.4.2.2.3 Groundwater

Groundwater was encountered at approximately 6 feet bgs during he subsurface soil screening boring completed at the location of AB0377 and AB0378 (Figure 2-2). A 15-foot temporary piezometer (GW03) was installed to a depth of 8.4 feet bgs. The groundwater sample (AB3003) collected was analyzed for nitroaromatics, VOCs, SVOCs, PCBs, and inorganics (Table 2-3). The sample was not filtered for inorganics analysis, nor were water quality measurements performed because of insufficient yield.

Nitroaromatics. Three of the four nitroaromatic compounds detected in the soil (TNT, total DNT, 2A-4,6-DNT, and 4A-2,6-DNT) were also detected in the groundwater but at concentrations below their PRGs.

VOCs. The VOCs detected in the groundwater confirmation sample were acetone (13.4 μg/L), benzene (0.51 μg/L), methylene chloride (0.68 μg/L), and toluene (0.83 μg/L). Only benzene exceeded the PRG.

SVOCs. No SVOCs were detected in the groundwater confirmation sample.

PCBs. No PCBs were detected in the groundwater confirmation sample.

Inorganics. Arsenic, iron, lead, and manganese were detected at concentrations above their PRGs (or federal action level for lead) in this unfiltered sample.

2.4.3 Building 603, Fortifier House

Up to 2.5 feet of fill was observed during sampling at this building (Table 2-18 and Figure 2-17). Seven samples (AB0120 through AB0126) were collected from depths up to 3.5 feet bgs around the building foundation, former drowning tank, and at the blow case. Two subsurface soil samples (AB0379 and AB0380) were collected from a boring located beside AB0123, near the former drowning tank. Based on the analytical results from the screening samples, two subsurface soil confirmation samples (AB0463 and AB0464) were collected from another boring at this location. A temporary piezometer (GW04) was also installed to 9.8 feet bgs at this location and a groundwater sample (AB3004) was collected.

2.4.3.1 Screening Results

Nitroaromatics were only detected in three surface soil samples at concentrations below PRGs. In sample AB0120, TNT (1.38 mg/kg), total DNT (0.302 mg/kg), 2A-4,6-DNT (0.614 mg/kg), and 4A-2,6-DNT (0.402 mg/kg) were detected. TNT was the only nitroaromatic compound detected in samples AB0123 and AB0125 at concentrations of 2.73 mg/kg and 0.499 mg/kg, respectively.

Two subsurface soil samples (AB0379 and AB0380) were collected beside AB0123 from depths of 5 to 7 feet bgs and 8 to 10 feet bgs, respectively. Numerous nitroaromatic compounds were

detected at both sampling intervals, which increased in number and concentrations with depth. However, only total DNT exceeded the PRG in both samples (8.90 mg/kg in AB0379 and 56.1 mg/kg in AB0380).

2.4.3.2 Confirmation Results

2.4.3.2.1 Subsurface Soil

Two subsurface soil samples (AB0463 and AB0464) were collected to confirm the screening results at the AB0123 location. The samples were submitted to the laboratory for analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2).

Nitroaromatics. In the upper subsurface soil sample, seven nitroaromatic compounds were detected at similar concentrations to the screening sample; however, only 2A-4,6-DNT (3.61 mg/kg) and total DNT (3.50 mg/kg) exceeded PRGs. In the deeper sample, the same compounds were detected with the addition of 4-nitrotoluene. Again, only 2A-4,6-DNT (10.3 mg/kg) and total DNT (16.8 mg/kg) exceeded the PRGs.

VOCs. Acetone, carbon disulfde and methylene chloride were detected at concentrations below PRGs in one or both of the confirmation samples.

SVOCs. The only SVOCs detected were 2,4-DNT and 2,6-DNT in both subsurface samples. In sample AB0463, 2,4-DNT and 2,6-DNT were detected at 0.617 mg/kg and 7.21 mg/kg, respectively. In sample AB0464, 2,4-DNT and 2,6-DNT were detected at 8.19 mg/kg and 6.13 mg/kg, respectively.

PCBs. PCBs were not detected in either sample.

Inorganics. Arsenic was detected at a concentration above the PRG in both confirmation samples (2.99 and 2.90 mg/kg), but these concentrations are well below the established PBOW background concentration of 36.5 mg/kg.

2.4.3.2.2 Groundwater

Groundwater was encountered at approximately 8 feet bgs during the subsurface soil screening boring completed at the location of AB0379 and AB0380 (Figure 2-2). A 5-ft temporary

piezometer (GW04) was installed to a depth of 9.8 feet bgs. The groundwater sample (AB3004) collected was analyzed for nitroaromatics, VOCs, SVOCs, PCBs, and total and dissolved inorganics (Table 2-3). The turbidity of the unfiltered sample was high (275 NTUs) and had a pH of 6.79.

Nitroaromatics. Six nitroaromatic compounds were detected in the groundwater sample with TNT (620 µg/L), total DNT (338 µg/L), 2A-4,6-DNT (147 µg/L), and 4A-2,6-DNT (59.4 µg/L) exceeding their PRGs.

VOCs. Other than a common laboratory artifact (methylene chloride at 1.2 µg/L), no site-related VOCs were detected in the groundwater sample.

SVOCs. 2,4-DNT (215 µg/L) and 2,6-DNT (45.5 µg/L) were the only SVOCs detected in the groundwater confirmation sample, with both exceeding their PRGs.

PCBs. No PCBs were detected in the groundwater confirmation sample.

Inorganics. Arsenic, iron, lead, and manganese were detected at concentrations above their PRGs (or federal action level for lead) in the unfiltered sample only. PRGs or federal action levels were not exceeded in the filtered sample.

2.4.4 Building 606, Wash House

Up to 1 ft of fill was observed during sampling at this building (Table 2-19 and Figure 2-18). Fourteen samples (AB0193 through AB0206) were collected around the building foundation, the former catch box and storage tank, and along the discharge pipe. In addition, two subsurface soil samples (AB0381 and AB0382) were collected at AB0202, where the highest TNT concentration was detected, to determine if subsurface soil contamination was present. One surface soil confirmation sample (AB0447) was also collected at AB0206, at the elbow of the discharge pipe.

2.4.4.1 Screening Results

Low concentrations of nitroaromatic compounds were detected in 10 of the 14 surface soil samples With the exception of TNT at a concentration of 1.42 mg/kg in sample AB0202, all nitroaromatics detected in theses samples were below 1 mg/kg.

One subsurface boring was completed at the location of surface soil sample AB0202, which had the highest reported concentration of TNT. Samples were collected from 4 to 6 feet bgs (AB0381) and 8 to 10 feet bgs (AB0382). TNT was detected in both samples at low concentrations below the PRG.

2.4.4.2 Confirmation Results

Surface Soil

To confirm screening analytical results, one surface soil confirmation sample (AB0447) was collected near surface soil sample AB0206. This location was selected based on findings from other Wash Houses investigated. The sample was submitted to the laboratory for analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2).

Nitroaromatics. The main nitroaromatic compounds detected in the screening samples were detected at higher concentrations in the confirmation sample. TNT was detected at 3.45 mg/kg, below the PRG. 2A-4,6-DNT (6.9 mg/kg) and 4A-2,6-DNT (4.48 mg/kg) were detected at concentrations exceeding their PRG.

VOCs. Acetone, carbon disulfide, methylene chloride, and two petroleum-related compounds (benzene and toluene) were the only VOCs detected in the confirmation sample at very low concentrations.

SVOCs. Seven SVOCs (PAHs and phthalates) were detected at very low concentrations that are below their PRGs.

PCBs. Aroclor-1260 was detected at a concentration of 0.14 mg/kg, below the PRG.

Inorganics. The only inorganic detected above established PBOW background concentrations was lead (79.5 mg/kg). Arsenic (6.59 mg/kg) exceeded the PRG but did not exceed the background concentration.

2.4.5 Building 609, Acid and Fume Recovery

Up to 2 feet of fill was observed during sampling at this building (Table 2-20 and Figure 2-19). Six samples (AB0025 through AB0030) were collected from depths up to 3 feet bgs. Based on

the screening results, no subsurface or confirmation samples were collected. A groundwater sample was not collected at Building 609.

One open manhole was found during excavation of the building foundation, adjacent to the northeast corner of the former building. The manhole was approximately 3 feet in diameter by approximately 3.5 feet in depth and constructed of brick. Animal skeletal remains were noticed at the bottom of the manhole.

2.4.5.1 Screening Results

Nitroaromatic compounds were detected in two of the six surface soil samples. TNT, 2A-4,6-DNT, and 4A-2,6-DNT were detected in both AB0026 and AB0030 at low concentrations. Total DNT was also detected in AB0026 at a concentration below PRGs.

2.4.5.2 Confirmation Results

No confirmation samples were collected for this site.

2.5 Process Line 11

2.5.1 Building 611, Mono House

Fill depths at this building ranged from 1 to 1.5 feet (Table 2-21 and Figure 2-20). Six samples (AB0037 through AB0042) were collected around the building foundation and the former drowning tank from depths of up to 2.5 feet. A subsurface soil sample was collected at two depths (AB0383, 4 to 6 feet bgs; AB0384, 8 to 10 feet bgs) from a boring located at the approximate location of the drowning tank (between AB0038, AB0039, and AB0040). Groundwater was encountered at 4 feet bgs and a groundwater sample (AB3010) was collected. Based on the screening results, no confirmation samples were collected at this site.

2.5.1.1 Screening Results

Nitroaromatics were not detected in any of the surface soil samples. In the subsurface soil samples, nitroaromatic compounds were only detected in the upper sample. In sample AB0383, six nitroaromatic compounds were detected, but only total DNT (3.38 mg/kg) exceeded the PRGs.

2.5.1.2 Confirmation Results

2.5.1.2.1 Soil

Confirmation samples of soil were not collected at this site.

2.5.1.2.2 Groundwater

Groundwater was encountered at approximately 4 feet bgs during the drilling of subsurface soil screening boring completed at the location of AB0383 and AB0384 (Figure 2-2). The borehole was advanced to a total depth of 10 feet bgs and a piezometer (GW10) installed. A groundwater sample (AB3010) was collected and analyzed for nitroaromatics, VOCs, SVOCs, PCBs, and total and dissolved inorganics (Table 2-3).

Nitroaromatics. Seven nitroaromatic compounds were detected in the groundwater sample with TNT (9.7 μg/L), total DNT (7.9 μg/L), 2A4,6- DNT (15.1 μg/L), and 4A-2,6-DNT (21.1 μg/L) at concentrations exceeding their PRGs.

VOCs. Methylene chloride (0.71μg/L) was the only VOCs detected in the groundwater confirmation sample.

SVOCs. 2,4-DNT (4.05 μg/L) and 2,6-DNT (2.4 μg/L) were the only SVOCs detected in the groundwater confirmation sample, and at concentrations that exceeded their PRGs.

PCBs. No PCBs were detected in the groundwater confirmation sample.

Inorganics. None of the detected inorganics had concentrations above their PRGs (or federal action level for lead) in either the filtered or unfiltered samples.

2.5.2 Building 612, Bi-Tri House

Up to 2 feet of fill was observed during sampling at this site (Table 22 and Figure 2-21). Fourteen samples (AB0085 through AB0097 and AB0319) were collected around the former building, storage tanks, and drowning tank from depths of up to 3 feet bgs. One of the 13 samples (AB0097) was collected in the drainage ditch to the north of the former building. To investigate potential subsurface soil contamination at the drowning tank, two samples (AB0385

and AB0386) were collected from a single boring, at depths of 4 to 6 feet bgs and 8 to 10 feet, respectively. No confirmation soil or groundwater samples were collected at this site.

2.5.2.1 Screening Results

Only three samples (AB0085, AB0093, and AB0096) had detections of nitroaromatics. The highest concentration detected was TNT at 5.90 mg/kg in sample AB0085. Total DNT, 2A-4,6-DNT, and 4A-2,6-DNT were detected at concentrations below their PRGs.

2.5.2.2 Confirmation Results

No confirmation soil samples were collected at this location due to the low levels of contamination.

2.5.3 Building 613, Fortifier House

Up to 2 feet of fill was observed during sampling of this building (Table 2-23 and Figure 2-22). Six samples (AB0114 through AB0119) were collected from depths of up to 3 feet bgs. In addition, two subsurface soil samples (AB0387 and AB0388) were collected from a single boring located at the former drowning tank (between AB0117, AB0118, and AB0119), at depths of 4 to 6 feet bgs and 8 to 10 feet bgs, respectively. No confirmation soil or groundwater samples were collected at this site.

2.5.3.1 Screening Results

The only nitroaromatic compound detected in the samples collected at this site was total DNT (0.135 mg/kg) in sample AB0388, the lower subsurface soil sample.

2.5.3.2 Confirmation Results

No confirmation soil samples were collected at this location due to lack of contamination.

2.5.4 Building 616, Wash House

Soil fill depths at the site ranged from less than 0.5 to 3 feet, and samples were collected from depths of up to 4 feet in depth (Table 2-24 and Figure 2-23). A total of 43 samples were collected from around the building foundation, former catch box, and storage tank. Initially, sixteen samples (AB0098 through AB0113) were collected to determine if contamination was present above PRGs. Sixteen additional samples (AB0251 through AB0264, AB0316, and AB0317) were collected to delineate surface soil contamination, three of which were collocated with previous samples to delineate the contamination in the fill material. Two subsurface soil

samples (AB0361 and AB0362) were also collected from a single boring located at AB0252, at depths of 4 to 6 feet bgs and 8 to 10 feet bgs. Based on the results of the soil screening analysis, confirmation samples, four surface soil (AB0432, AB0433, AB0451, and AB0476) and two subsurface soil (AB0473 and AB0474), were also collected at the site. A temporary piezometer (GW05) was installed beside the boring (AB0252), and a groundwater sample (AB3005) was collected.

One open manhole was found during excavation of the building foundation. It was located approximately 500 feet from the northwest corner of the former building and was measured to be 5 feet in depth and estimated to be approximately 3 feet in diameter. The manhole was filled with water and was found to be overflowing out of the manhole after a rain event, indicating that it may be connected with historical storm sewer lines. A sediment sample (AB0300) was collected from the bottom of the manhole.

2.5.4.1 Screening Results

Seventeen surface samples had detectable concentrations of nitroaromatics; however, the concentrations only exceeded PRGs in four samples (AB0100, AB0107, AB0251, and AB0252). The concentration of TNT exceeded the PRG in samples AB0100 (47.2 mg/kg), AB0107 (39.9 mg/kg), AB0251 (68.6 mg/kg), and AB0252 (797 mg/kg). In sample AB0252, the concentration of 2A-4,6-DNT (5.45 mg/kg) also exceeded the PRG.

One boring was completed at the surface soil sampling location AB0252 based on the reported concentration of TNT. In the upper sample, only TNT was detected at a concentration of 4.81 mg/kg. In the deeper sample, TNT and four other nitroaromatic compounds were detected, but the concentrations were below PRGs.

2.5.4.2 Confirmation Results

2.5.4.2.1 Surface Soil

To confirm screening conclusions, four surface soil samples were submitted to the laboratory for analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2). Sample AB0432 was located beside AB0260, sample AB0433 beside AB0107, AB0451 beside AB0252, and AB0476 was beside AB0100.

Nitroaromatics. Nitroaromatics (mainly TNT, 2A-4,6-DNT and 4A-2,6-DNT) were detected in all of the surface soil samples. The concentration of TNT exceeded the PRG in samples AB0433 (47.3 mg/kg), AB0451 (681 mg/kg), and AB0476 (2226 mg/kg). In addition, the PRG for 2A-4,6-DNT was exceeded in AB0451 (3.77 mg/kg) and AB0476 (6.44 mg/kg). The only other nitroaromatic to exceed PRGs was 4A-2,6-DNT (4.78 mg/kg) in AB0451.

VOCs. Acetone, 2-butanone, carbon disulfide, and methylene chloride were detected at concentrations below PRGs.

SVOCs. Twelve SVOCs, primarily PAHs, were detected in surface soil sample AB0432. The concentration of two of these PAHs exceeded their PRGs: benzo(a)pyrene at 0.305 mg/kg and dibenz(a,h)anthracene at 0.0817 mg/kg. The only other SVOC detected in the surface soil samples was 2,4-DNT in sample AB0451 (0.899 mg/kg) and sample AB0476 (0.496 mg/kg), the former being above the PRG. Bis(2-ethylhexyl) phthalate and diethyl phthalate, common laboratory artifacts, were detected in one to three surface soil samples.

PCBs. One PCB, Aroclor-1260, was detected in all four surface soil samples and at concentrations exceeding the PRG in two samples: 0.41 mg/kg in AB0451 and 0.26 mg/kg in AB0476.

Inorganics. The arsenic concentrations exceeded the PRG in all four confirmation surface soil samples, but these concentrations are well below the established PBOW background concentration of 36.5 mg/kg. Lead was detected above the established PBOW background concentration in the three of the surface soil samples ranging in concentration from 111 to 361 mg/kg.

2.5.4.2.2 Subsurface Soil

To confirm screening conclusions, two subsurface soil samples were submitted to the laboratory for analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2). Samples AB0473 and AB0474 were located beside AB0252.

Nitroaromatics. Nitroaromatic compounds were only detected in the upper subsurface soil sample, but at low concentrations below the PRGs.

VOCs. Acetone, 2-butanone, carbon disulfide, and methylene chloride were detected at concentrations below PRGs.

SVOCs. Bis(2-ethylhexyl) phthalate and diethyl phthalate, common laboratory artifacts, were the only SVOC detected in the upper subsurface soil sample. No SVOCs were detected in the lower subsurface soil sample.

PCBs. PCBs were not detected in the subsurface soils.

Inorganics. The arsenic concentrations exceeded the PRG in both the subsurface confirmation samples, but these concentrations are well below the established PBOW background concentration of 36.5 mg/kg.

2.5.4.2.3 Groundwater

Groundwater was encountered at a depth of approximately 8 feet bgs in the subsurface soil screening boring completed at the location of AB0361 and AB0362 (Figure 2-2). A 10-foot temporary piezometer (GW05) was installed to a total depth of 16.5 feet, and a groundwater sample (AB3005) was collected and analyzed for nitroaromatics, VOCs, SVOCs, PCBs, and total and dissolved inorganics (Table 2-3).

Nitroaromatics. Six nitroaromatic compounds were detected in the groundwater sample, but only TNT (9,720 μg/L), total DNT (9.64 μg/L), 2-A4,6-DNT (34.9 μg/L), and 4A-2,6-DNT (48 μg/L) exceeded their PRGs.

VOCs. Methylene chloride, detected at 1.15 μg/L, was the only VOC detected in the groundwater confirmation sample.

SVOCs. 2,4-DNT (3.64 μg/L) was the only SVOC detected in the groundwater confirmation sample and at a concentration that exceeded the PRG.

PCBs. No PCBs were detected in the groundwater confirmation sample.

Inorganics. Arsenic, iron, lead and manganese exceed their PRGs (or federal action level for lead), but only in the unfiltered sample.

2.5.5 Building 618, Nail House

Approximately 2 feet of fill was present at this building (Table 2-25 and Figure 2-24). Five samples (AB0207 through AB0210 and AB0227) were collected around the building foundation, at depths ranging from 1 to 3 feet bgs. Based on the screening results, no confirmation or groundwater samples were collected.

2.5.5.1 Screening Results

The only nitroaromatic compound detected was TNT at 0.21 mg/kg in sample AB0210.

2.5.5.2 Confirmation Results

Confirmation samples were not collected from this site.

2.5.6 Building 619, Acid and Fume Recovery

Approximately 1.5 feet of fill was present at this building (Table 2-26 and Figure 2-25). Six samples (AB0043 through AB0048) were collected around the building foundation and on both sides of the former storage tanks, at depths ranging of 1.5 to 4 feet bgs. One sample (AB0298) also was collected from a wastewater manhole found at this location. One boring was completed at AB0045 with two samples (AB0411 and AB0412) collected at 4 to 6 feet bgs and 6 to 7 feet bgs, respectively. Based on the screening results, no confirmation or groundwater samples were collected.

An open manhole was found during excavation of the building foundation. It was located near the southwest corner of the former building and estimated to be approximately 3 feet in diameter by 3.5 feet in depth. Animal skeletal remains were observed at the bottom of the manhole.

2.5.6.1 Screening Results

Total DNT was detected in four of the six surface soil samples at concentrations from 0.122 to 0.301 mg/kg. TNT was detected in one sample (AB0048) at 0.33 mg/kg. Nitroaromatic compounds were not detected in the manhole sample or in either subsurface sample (AB0411 and AB0412).

2.5.6.2 Confirmation Results

Confirmation samples were not collected from this site.

2.6 Process Line 12

2.6.1 Building 621, Mono House

Six samples (AB0049 through AB0054) were collected from around the building foundation and the former drowning tank at depths ranging from 0.5 ft to 3.5 feet bgs (Table 2-27 and Figure 2-26). In addition, two subsurface samples (AB0389 and AB0390) were collected within a single boring advanced at the approximate location of the former drowning tank, between samples AB0052, AB0053, and AB0054. Based on the screening results, no confirmation or groundwater samples were collected.

2.6.1.1 Screening Results

Low concentrations of four nitroaromatic compounds were detected in two of the six surface soil samples (AB0051 and AB0054), all below PRGs. Only one of these nitroaromatic compounds, 4A-2,6-DNT at a concentration of 0.361 mg/kg, was detected in the upper subsurface sample (AB0389).

2.6.1.2 Confirmation Results

Confirmation samples were not collected from this building.

2.6.2 Building 622, Bi-Tri House

Up to 2.5 feet of fill was observed during sampling at this building (Table 2-28 and Figure 2-27). Nine samples (AB0055 through AB0059 and AB0061 through AB0064) were collected around what were calculated to be the locations of the former building, storage tanks, and drowning tank. When the sample coordinates were plotted, the locations were skewed slightly from their intended locations, so another three samples (AB0321 through AB0323) were collected around the building foundation. One boring was completed at the approximate location of the former drowning tank, between AB0062, AB0063, and AB0064. Only one sample (AB0391) could be collected, from 4 to 6 feet bgs, because of refusal at 7 feet bgs. Based on the screening results, no confirmation or groundwater samples were collected.

2.6.2.1 Screening Results

The only nitroaromatics detected in the surface soil samples were low concentrations of TNT in one sample (AB0321), and 2A-4,6-DNT and 4A-2,6-DNT in another sample (AB0323) collected around the building foundation. These concentrations were well below the PRGs. No nitroaromatics were detected in the subsurface soil sample.

2.6.2.2 Confirmation Results

No confirmation samples were collected.

2.6.3 Building 623, Fortifier House

Six samples (AB0234 through CSO239) were collected around the building foundation and the former drowning tank, at 1 to 2.5 feet in depth (Table 2-29 and Figure 2-28). One additional sample (AB0274) was collected from a drainage ditch at the site. A subsurface sample was collected at two depths (AB0393, 4 to 6 feet bgs; AB0394, 8 to 10 feet bgs) from a boring located beside AB0237, next to the former drowning tank. Based on the screening results, no confirmation or groundwater samples were collected.

2.6.3.1 Screening Results

TNT and/or DNT were detected in three of the six surface soil samples collected (AB0235, AB0236, and AB0238), all of which were below PRGs. In sample AB0274, collected from the drainage ditch, TNT (0.301 mg/kg) was the only nitroaromatic detected. One nitroaromatic compound, total DNT (0.127 mg/kg), was detected in the upper subsurface sample (AB0393), and none were detected in the lower sample.

2.6.3.2 Confirmation Results

Confirmation samples were not collected from this site.

2.6.4 Building 626, Wash House

Fourteen samples (AB0071 through AB0084) were collected from depths of up to 3.5 feet bgs around the building foundation, and the former catch box and storage tank locations (Table 2-30 and Figure 2-29). Fill thickness at this site ranged from 0 to 2.5 feet bgs. One additional sample (AB0240) was collected from a drainage ditch at the site. Two subsurface soil samples (AB0395, 4 to 6 feet bgs; AB0396, 8 to 10 feet bgs) were also collected from a boring located beside AB0075, where the highest concentration of TNT was detected. Since the initial surface soil sampling results did not detect significant nitroaromatic contamination, one surface soil confirmation sample (AB0431) was arbitrarily collected beside AB0074 to confirm the site was not contaminated. No groundwater sample was collected from this site.

2.6.4.1 Screening Results

Up to two nitroaromatic compounds (mostly TNT and DNT) were detected in five samples at concentrations below PRGs. TNT was the only compound detected at a concentration greater than 1 mg/kg (3.87 mg/kg in AB0075). In sample AB0240, collected from the drainage ditch, total DNT (0.151 mg/kg) was the only nitroaromatic compound detected. TNT was the only nitroaromatic compound detected in the upper subsurface sample (AB0393) and none were detected in the lower sample.

2.6.4.2 Confirmation Results

One surface soil sample (AB0431), collected from the same location as screening sample AB0074, was submitted for confirmation analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2).

Nitroaromatics. TNT (1.41 mg/kg), 2A-4,6-DNT (2.67 mg/kg) and 4A-2,6-DNT (0.784 mg/kg) were detected in the confirmation sample, but at concentrations below PRGs.

VOCs. Other than common laboratory artifacts, two petroleum compounds (benzene and toluene) were the only site-related VOCs detected in the confirmation sample at very low concentrations.

SVOCs. Many PAHs, diethyl phthalate, and 2,4-DNT were detected at concentrations below PRGs.

PCBs. Aroclor-1260 was detected but at a concentration (0.15 mg/kg) below the PRG.

Inorganics. Arsenic was detected at a concentration above the PRG (8.45 mg/kg), but this concentration is well below the established PBOW background concentration of 36.5 mg/kg. Lead (134 mg/kg) was detected above the established PBOW background concentration in the confirmation sample.

2.6.5 Building 628, Nail House

Five samples (AB0211 through AB0215) were collected around the building foundation from depths of up to 2 feet bgs (Table 2-31 and Figure 2-30). Fill depth at the site ranged from 0.5 to

1 ft. Based on the screening results, no subsurface soil, confirmation, or groundwater samples were collected.

2.6.5.1 Screening Results

The only nitroaromatic detected was total DNT at 0.13 mg/kg in one sample (AB0215).

2.6.5.2 Confirmation Results

No confirmation samples were collected from this site.

2.6.6 Building 629, Acid and Fume Recovery

Up to 2.5 feet of fill was observed during sampling activities at this building (Table 2-32 and Figure 2-31). A total of sixteen surface soil samples were collected at this site. Six initial screening samples (AB0065 through AB0070) were collected from around the former building foundation and two storage tanks. Following a review of the initial data, eight delineation samples (AB0265 through AB0272) were collected around the former north storage tank location. Two of these samples were collocated with previous samples to delineate the contamination vertically (AB0271 at AB0065 and AB0272 at AB0066). A sample (AB0297) was also collected from a drainage ditch. One boring was advanced at AB0066, and two subsurface soil samples (AB0363 and AB0364) were collected from different depths (5 to 7 feet bgs and 8 to 10 feet bgs, respectively). Five confirmation samples, three surface soil (AB0429, AB0430, and AB0475), and two subsurface soil (AB0461/462) were also collected from the site. An attempt was made to obtain a groundwater sample by installing a temporary piezometer (GW01), but no groundwater was found.

A manhole was found during excavation of the building foundation. The manhole was covered by a steel grate but wildlife (raccoons) were observed traversing through the pipelines associated with it. The manhole was located adjacent to the northwest corner of the former building. A soil sample (AB0278) was collected from the bottom of the manhole.

2.6.6.1 Screening Results

Nitroaromatics (mostly total DNT) concentrations were detected above their PRGs in five samples collected from different depths at two locations (AB0065 and AB0066). At AB0065, total DNT was detected at 1.06 mg/kg in the 2.5 to 3.5-ft sample. At AB0066, total DNT was detected above the PRG in the 0 to 1-ft sample (AB0272, 1.41 mg/kg), and in the 2.5 to 3.5-ft sample (40.5 mg/kg), along with 4A-2,6-DNT (5.04 mg/kg). At the same location, total DNT

concentration exceeded the PRG in the 5 to 7-ft sample (319 mg/kg) and in the 8 to 10-ft sample (456 mg/kg), along with TNT (84.2 mg/kg), 2-nitrotoluene (628 mg/kg), and 4-nitrotoluene (597 mg/kg). The concentrations appeared to increase with depth. Low concentrations of total DNT and TNT were detected in the manhole sample but no nitroaromatics were detected in the ditch sample.

2.6.6.2 Confirmation Results

2.6.6.2.1 Surface Soil

Based on screening results, one surface soil sample was collected from AB0065 (AB0475) and two from AB0066 (AB0429 and AB0430) and were submitted for analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2).

Nitroaromatics. In sample AB0430, TNT (38 mg/kg) and total DNT (165 mg/kg) both exceeded PRGs.

VOCs. Two petroleum-related compounds (benzene and toluene), along with acetone and methylene chloride, were the only VOCs detected in the confirmation samples. However, none of these compounds exceeded their PRGs.

SVOCs. The DNT isomers were detected in all samples collected, and the concentrations exceeded their PRGs in sample AB0430. Two PAHs and two phthalates were also detected in the surface soil AB0475 but at concentrations below PRGs.

PCBs. Aroclor-1260 was detected at concentrations above its PRG in all samples collected, with concentrations ranging from 1.58 to 5.07 mg/kg. Aroclor-1254 (0.97 mg/kg) was also detected above the PRG in surface soil sample AB0475.

Inorganics. Arsenic was detected at a concentration above the PRG in all samples collected, but the concentrations were well below the established PBOW background concentration. In addition, iron in three samples and manganese in two samples exceeded PRGs but were below PBOW background concentrations. However, lead was detected above the established PBOW background concentration in surface soil samples AB0429 (132 mg/kg) and AB0430 (761 mg/kg) from AB0066.

2.6.6.2.2 Subsurface Soil

Based on screening results, two subsurface soil samples (AB0461 and AB0462) were collected and submitted for analysis of nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics (Table 2-2).

Nitroaromatics. In the subsurface soil samples (AB0461 and AB0462), only total DNT in both samples (297 mg/kg and 36.3 mg/kg) exceeded its PRG.

VOCs. Other than common laboratory artifacts, three to five petroleum compounds (benzene, toluene, ethyl benzene, and the xylenes), which increased in number with depth, were the only site-related VOCs detected in three of the confirmation samples. However, none of these compounds exceeded their PRGs.

SVOCs. The DNT isomers were detected in all samples collected. In these samples, 2,4-DNT ranged from 13.2 to 170 mg/kg, and 2,6-DNT ranged from 6.83 to 65.5 mg/kg.

PCBs. Aroclor-1260 was detected in all samples collected, but did not exceed PRGs.

Inorganics. Arsenic and iron were detected at concentrations above their PRGs in all samples collected, but the concentrations were well below the established PBOW background concentrations. In addition, iron in sample AB0461 exceeded PBOW background concentrations.

2.6.6.2.3 Groundwater

Groundwater as not encountered during drilling for subsurface screening samples at the location of AB0363 and AB0364. The boring was advanced until refusal (total depth of 10 feet) and a temporary piezometer (GW01) was installed to a depth of 9.14 feet. After a 24-hour time period, groundwater had not migrated into the borehole and therefore, no groundwater sample was collected.

2.7 Surface Water and Sediment

Ten surface water (unfiltered) and fifteen sediment samples were collected from an on-site tributary to Pipe Creek during the TNTC remedial investigation (Tables 2-33 and 2-34). Due to

lack of precipitation, five surface water sample locations were dry and could not be collected. Figure 2-32 presents the locations of surface water and sediment samples. There are four branches to the tributary within TNTC that converge at the intersection of Campbell Street and Fox Road. Sample locations were selected to cover all four branches, especially at confluence points at first and second order branches. Each of the sediment samples in the TNTC area was collected from a depth of 1 ft below top of the sediment.

2.7.1 Surface Water Results

Ten surface water samples (AB2001 through AB2008, AB2010, and AB2011) were collected in the TNTC area (Table 2-33 and Figure 2-32). All samples were analyzed for nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics. During the surface water sampling, two field splits (AB2017 and AB2019) and four quality assurance/quality control (QA/QC) samples were collected.

Nitroaromatics. Nitroaromatic compounds were detected in three surface water samples (AB2004, AB2005, and AB2010). The highest concentrations were observed in sample AB2004 collected at the head of a branch beside a railroad spur. Total DNT and the nitrotoluene isomers were the compounds detected. Concentrations of total DNT and nitrotoluene ranged from 1.43 to 10.4 μg/L. The nitroaromatic concentrations in the other two samples were all below 1 μg/L (Table 2-30).

VOCs. Other than common laboratory artifacts, no site-related VOCs were detected in the surface water samples.

SVOCs. In agreement with the total DNT detection, the DNT isomers were detected as SVOCs in AB2004. Di-n-butyl phthalate (4.95 μg/L) was detected in one surface water sample (AB2008).

PCBs. PCBs were not detected in surface water samples.

Inorganics. None of the inorganic concentrations observed appear to be abnormally high, but until the risk assessment has determined the applicable or relevant and appropriate requirements (ARAR) for surface water at TNTC, no evaluations can be made concerning this data.

2.7.2 Sediment Results

Fifteen sediment samples (AB1001 through AB1015) were collected in the TNTC area (Table 2-34 and Figure 2-32). All samples were analyzed for nitroaromatic compounds, VOCs, SVOCs, PCBs, and inorganics. During sampling, two field splits (AB1017 and AB1019) and four QA/QC samples were collected.

Nitroaromatics. Nitroaromatics were detected in ten sediment samples. The concentrations were below 1 mg/kg for most compounds in these ten samples; however, this was not the case for the amino-DNT isomers in AB1009 and AB1015. In AB1009, collected near the head of a small first order branch, the concentration of 2A-4,6-DNT was 12.8 mg/kg and 4A-2,6-DNT was 11.2 mg/kg. In AB1015, also collected near the head of a small first order branch, the concentration of 2A-4,6-DNT was 3.25 mg/kg and 4A-2,6-DNT was 2.79 mg/kg.

VOCs. Other than common laboratory artifacts, the only site-related VOCs detected in the sediment samples were very low concentrations of benzene and toluene in one sample (AB1001).

SVOCs. Three to five PAHs were detected in two sediment samples (AB1002 and AB1009) at low concentrations. One or both of the DNT isomers were detected in AB1008, AB1009, and AB1015. The common laboratory artifacts bis(2ethylhexyl)phthalate and di-n-butyl phthalate were detected in isolation in three samples.

PCBs. One PCB (Aroclor-1260) was detected in eight sediment samples at concentrations ranging from 0.0224 to 0.769 mg/kg.

Inorganics. Only the arsenic concentrations stand out as potentially high, ranging from 1.14 to 25.3 mg/kg. However, until the risk assessment has determined the applicable or relevant and appropriate requirements for sediment in TNTC, no evaluations can be made concerning this data.

3.0 Conclusions and Recommendations

This chapter presents conclusions and recommendations for the TNTC remedial investigation (RI) at the former PBOW based on the analytical results presented in Chapter 2.0. The objectives of the RI were to determine the nature and extent of contamination in TNTC surface soil, subsurface soil, surface water, and sediment to support risk assessments and a potential future remedial action.

3.1 Conclusions of the Remedial Investigation

3.1.1 Wastewater Settling Tanks

Surface and subsurface soil sampling adequately covered the area around the outside and inside of the concrete foundation wall of Building 657. Analytical results indicate that site-related contamination is minor, with only one detection of a nitroaromatic compound in surface soil that exceeded (slightly) the PRG (2,4-DNT at 0.95 mg/kg). Numerous PAHs and lead were also detected in the samples collected. The PAHs and lead are likely the result of surface runoff from the nearby road and/or vehicular exhaust. Subsurface soil samples collected from within the former settling tanks indicate that the tanks did not leak in the past.

3.1.2 Process Line 8 Buildings

Building 681, Mono House. Nitroaromatic contamination was not found in the surface soil around the Mono House, but was detected in the subsurface soil and groundwater below the former drowning tank. The main nitroaromatic compound detected was total DNT but at low concentrations (2.03 mg/kg and less). Metals contamination was also detected in these two media at this location, especially in the groundwater. Lead was very high in both media.

Building 682, Bi-Tri House. Field screening results determined that nitroaromatic contamination is isolated to the surface soil at the former drowning tank and in the storm water drainage ditch. The main nitroaromatic compound detected was TNT, with the highest concentration being approximately 1,300 mg/kg at the drowning tank, and 55,000 mg/kg at the drainage ditch. The other nitroaromatic compounds that exceeded their PRG were total DNT and the amino-DNT isomers. Nitroaromatic contamination in the subsurface was minor.

Building 683, Fortifier House. Field screening results indicate that nitroaromatic contamination is limited to the subsurface at the drowning tank. No surface soil contamination was found around the Fortifier House. The most significant detections were TNT (448 mg/kg) and DNT as both total (236 mg/kg) and the separate isomers in the upper subsurface (4 to 6 feet bgs), and 4A-2,6-DNT (3.26 mg/kg) in the lower subsurface (8 to 10 feet bgs). The groundwater was also highly contaminated with these compounds, plus two nitrotoluene isomers and lead.

Building 686, Wash House. Both screening and confirmation samples indicate that the nitroaromatic contamination at the Wash House is mainly limited to the true surface soils, beneath the fill material, in the area around the northwest corner of the catch box. The main nitroaromatic compounds detected above their PRGs were TNT (5,067 mg/kg max.) and the amino-DNT isomers (38 mg/kg 2A-4,6-DNT max. and 14.6 mg/kg 4A-2,6-DNT max.). Other contaminants include PAHs, Aroclor-1260, and lead.

Building 689, Acid & Fume Recovery Building. Only one location in both the surface soil and upper subsurface soil showed elevated levels of contaminants. These samples were collected on the south side of the building, next to the driveway. The main nitroaromatic compounds detected above their PRGs were total DNT (14.3 mg/kg max.) and the amino-DNT isomers (6.93 mg/kg 4A-2,6-DNT max. and 3.96 mg/kg 2A-4,6-DNT max.). Other contaminants include PAHs, Aroclor-1260, and lead. No nitroaromatic contamination was found in the sumps or drainage ditch. Based on these limited detections, the impact at Building 689 appears to be minimal.

3.1.3 Process Line 9 Buildings

Building 691, Mono House. Nitroaromatics (mainly total DNT and the amino-DNT isomers) were only detected in two surface soil samples at very low concentrations at this site. Based on field screening results, minimal impact has occurred at this site related to former process activities.

Building 692, Bi-Tri House. Nitroaromatics were detected above their PRGs at two locations at this site: around the southeast corner of the building (highest concentrations) and along the discharge pipe off the northeast corner. However, the confirmation samples were generally lower in concentrations than the screening samples. The main nitroaromatic compounds detected

in the screening and confirmation samples were TNT (1,310 mg/kg max.), DNT as total (986 mg/kg max.) and as the separate isomers, and the amino-DNT isomers (17.3 mg/kg max. 2A-4,6-DNT and 11.5 mg/kg max. 4A-2,6-DNT), which were only detected down to the 4 to 6 feet bgs range. In addition, confirmation data also indicate minimal impacts by Aroclor-1260 and lead. The groundwater sample contained the same nitroaromatic compounds but the concentrations only slightly exceeded the PRGs.

Building 693, Fortifier House. Surface soil samples at this location showed only low levels of nitroaromatics (mainly TNT, total DNT, and the amino-DNT isomers) around and at the drowning tank, which was confirmed. Only the total DNT concentrations detected in the lower subsurface soil sample exceeded its PRG, though slightly. Based on these results, minimal impact has occurred at this site related to former process activities.

Building 696, Wash House. Nitroaromatic contamination was detected at low levels in the surface soil almost everywhere at this site except around the west and south sides of the catch box. However, the concentrations of TNT (878 mg/kg max.) and the amino-DNT isomers were confirmed to be above their PRGs in the samples collected around the northern half of the west side of the building. Other contaminants include PAHs, 2,4-DNT, Aroclor-1260, and lead. Limited subsurface soil contamination was detected in this area.

Building 698, Nail House. Only minor nitroaromatic contamination was detected around the Nail House at very low concentrations. Based on field screening results, minimal impact has occurred at this site related to former process activities.

Building 699, Acid & Fume Recovery Building. Nitroaromatics were only detected at low concentrations in the surface and subsurface soil at this site. Based on the limited detections, environmental impact at this site is minimal.

3.1.4 Process Line 10 Buildings

Building 601, Mono House. Only very low concentrations of nitroaromatic contamination were detected in two surface soil samples at this site. Based on field screening results, minimal impact has occurred at this site due to former process activities.

Building 602, Bi-Tri House. Only one nitroaromatic compound (total DNT) was detected at concentrations above the PRG in one location at this site, the drowning tank. The concentrations increased from the ground surface to the 4 to 6-feet range (3.39 mg/kg max.). These concentrations were only detected in the screening samples and were not confirmed in the confirmation samples. Other contaminants include Aroclor-1254 and lead. The groundwater appears to be only slightly impacted.

Building 603, Fortifier House. Surface soil screening data showed only low levels of nitroaromatic contamination, and mostly near the drowning tank. However, subsurface soil samples from the drowning tank location, both screening and confirmation, showed total DNT concentrations (and the separate isomers in the confirmation samples) to be above the PRG, which also increased with depth (16.8 mg/kg max.). The confirmation samples also showed 2A-4,6-DNT to exceed the PRG, which was not detected in the screening samples. No other contaminants were detected in the soil. The groundwater sample showed nitroaromatic contamination above the PRGs, which included TNT, DNT (both total and the separate isomers), and the amino-DNT isomers. Inorganic concentrations above the PRGs in the unfiltered groundwater were below these levels in the filtered sample. Based on these data, nitroaromatic contamination is limited to the drowning tank area at depth.

Building 606, Wash House. Low level nitroaromatic contamination (mostly TNT and the amino-DNT isomers) was detected in most of the surface soil screening samples, but at concentrations below their PRGs. Only minor contamination was detected at depth. However, a confirmation surface soil sample collected where no nitroaromatic contamination was detected in the screening sample showed concentrations of the amino-DNT isomers slightly above the PRG. Other soil contaminants include lead. Based on the limited detections, environmental impact at this site appears to be minimal.

Building 609, Acid & Fume Recovery Building. Nitroaromatics were only detected at low concentrations at this site. Based on the limited detections, environmental impact at this site is minimal.

3.1.5 Process Line 11 Buildings

Building 611, Mono House. Nitroaromatics were only detected in upper subsurface soil sample from this site. Only total DNT was detected at concentration (3.38 mg/kg) slightly above the PRG. TNT, DNT (both total and the separate isomers), and the amino-DNT isomers were found in the groundwater sample at concentrations above their PRGs. Based on field screening results, nitroaromatic contamination is limited to the drowning tank area at depth.

Building 612, Bi-Tri House. Nitroaromatics were only detected at low concentrations at this site. Based on the limited detections, environmental impact at this site is minimal.

Building 613, Fortifier House. Only one nitroaromatic compound was detected at a low concentration at this site. Based on the limited detections, environmental impact at this site is minimal.

Building 616, Wash House. Field screening data indicates that nitroaromatic contamination above the PRGs is limited to surface soil on the west side of the building, which was confirmed. The nitroaromatic compounds that exceeded their PRG were mainly TNT (2,226 mg/kg max.) and the amino-DNT isomers. Other contaminants include PAHs, 2,4-DNT, Aroclor-1260, and lead. TNT, DNT (both total and the separate isomers), and the amino-DNT isomers were found in the groundwater sample at concentrations above their PRGs.

Building 618, Nail House. Only one nitroaromatic compound was detected at a low concentration at this site. Based on the limited detections, environmental impact at this site is minimal.

Building 619, Acid & Fume Recovery Building. Nitroaromatics were only detected at low concentrations in the surface soil samples at this site. Based on the limited detections, environmental impact at this site is minimal.

3.1.6 Process Line 12 Buildings

Building 621, Mono House. Nitroaromatics were only detected at low concentrations at this site. Based on the limited detections, environmental impact at this site is minimal.

Building 622, Bi-Tri House. Nitroaromatics were only detected at low concentrations in the surface soil samples at this site. Based on the limited detections, environmental impact at this site is minimal.

Building 623, Fortifier House. Nitroaromatics were only detected at low concentrations at this site. Based on the limited detections, environmental impact at this site is minimal.

Building 626, Wash House. Nitroaromatics were only detected at low concentrations at this site. Lead was the only other contaminant detected at an elevated level in the surface soil. Based on the limited detections, environmental impact at this site is minimal.

Building 628, Nail House. Only one nitroaromatic compound was detected at a low concentration at this site. Based on the limited detections, environmental impact at this site is minimal.

Building 629, Acid & Fume Recovery Building. Nitroaromatic contamination at this site appears to be limited to the area around the former north storage tank location. Nitroaromatic contaminants appear to increase in concentrations and number of compounds with depth. The main compound that exceeds the PRG is total DNT (456 mg/kg max.), but TNT (84.2 mg/kg max.), 2-nitro-toluene (628 mg/kg), and 4-nitrotoluene (597 mg/kg) were also detected above their PRGs at depth. Other contaminants include Aroclor-1260, -1254, and lead. A groundwater sample was not able to be collected.

3.1.7 Tributary to Pipe Creek Surface Water and Sediment

Surface Water. Analytical results indicate only VOCs and metals are present in surface water. Only three VOCs were detected, all at concentrations below 1.2 μg/L. Two of these compounds, 2-butanone and carbon disulfide, were also detected in TNTB soils. The detection of 2-butanone could be laboratory contamination introduced during extraction and sample analysis. However, based on the low concentrations in the soils and surface water and that these compounds are not attributable to former site activities, it is unlikely that TNTB is a major source of these constituents. In addition, the lack of nitroaromatics in surface water and sediment also suggest that TNTB is not a current source of contamination to Ransom Brook.

Sediment. Analytical results for sediment indicate that VOCs, SVOCs, and metals are present in sediment. As with surface water, VOCs were detected at low concentrations. In addition, the detection of acetone and 2-butanone could be laboratory contaminants introduced during analysis. Six SVOCs were detected in sediment. As with TNTB soils, most of these are PAHs which result from incomplete combustion of fossil fuels. It is most likely that the source of PAHs in both TNTB soils and Ransom Brook sediments is atmospheric deposition and/or road runoff and not sediment transport from a source at TNTB. If TNTB were the source of the SVOCs, nitroaromatic compounds, detected at much higher concentrations in TNTB soils, would also be expected to be present in the sediment.

3.2 Recommendations

- Based on the analytical results from this investigation, no additional soils sampling is required to delineate surface soil contamination. Further evaluation of required sampling is dependent on results of the soil risk assessment for these areas.

- Additional subsurface sampling may be required to delineate contamination detected in this investigation. As with surface soil sampling, further evaluation of required sampling is dependent on results of the soil risk assessment for these areas.

4.0 References

Dames and Moore (D&M), 1997a, ***TNT Areas Site Investigation, Final Report, Plum Brook Ordnance Works, Sandusky, Ohio***, prepared for U.S. Army Corps of Engineers, Nashville District/Huntington District, April.

Dames and Moore, Inc. (D&M), 1997b, ***Records Review Report, Plum Brook Ordnance Works, Sandusky, Ohio***.

IT Corporation (IT), 1999, Final - *Summary Report*, ***Site-Wide Groundwater Monitoring (1997-1998), Former Plum Brook Ordnance Works, Sandusky, Ohio***, June.

IT Corporation (IT), 1998, ***Second Quarterly Groundwater Level Measurements and First Semi-Annual Groundwater Sampling Event, Former Plum Brook Ordnance Works, Sandusky, Ohio***, May.

IT Corporation (IT), 1997, ***Site-Wide Groundwater Investigation, Former Plum Brook Ordnance Works, Sandusky, Ohio***, September.

Morrison-Knudsen Ferguson Corporation (MK), 1994, ***Site Inspection Report, Plum Brook Station, Sandusky, Ohio***, Volume 1, January.

Ohio Department of Natural Resources, 1994, ***Erie County Soil Survey Progress Report, Erie Soil and Water Conservation District, Sandusky, Ohio***.

TABLES

Table 1-1

Historical Surface Water and Sediment Analytical Results (1994)[a]
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Sample ID	Date	Media	Unit	Parameter	Result	VQ
MK01SW04	7/93	SW	µg/L	Aluminum	2370	
				Barium	49.7	B
				Lead	4	N
				Magnesium	21600	
				Manganese	114	
				Zinc	33	
MK01SD04	7/93	SD	mg/kg	Methylene Chloride	0.17	B
				Di-n-butyl phthalate	0.14	J
				Flouranthene	0.18	J
				Phenanthrene	0.16	J
				Pyrene	0.12	J
				Aluminum	3650	
				Arsenic	8.4	N
				Barium	29	
				Cadmium	0.15	BN
				Chromium	6.4	*
				Cobalt	14.6	
				Copper	14.9	
				Lead	7.6	N*
				Manganese	550	N*
				Magnesium	4440	
				Nickel	33.6	*
				Vanadium	11.0	
				Zinc	83.5	*

[a] Morrison Knudsen, (1994a).

Surface water and sediment samples were not analyzed for pesticides/PCBs and surface water samples were not analyzed for dissolved metals.

VQ - Validation qualifier.

SW - Surface water.

SD - Sediment

EPA Region IX PRG's and PBOW background values are not established for surface water or sediment.

Only the detected analytical results are shown.

The nutritionally essential elements calcium, iron, potassium, and sodium are not included.

* Relative percent difference between two duplicates is outside stated control limits.

B - Compound found also in the associated blank.

J - Indicates an estimated value.

N - Spiked analysis recovery is outside stated control limits.

Table 1-2

Historical Soil Analytical Results Above PRGs and Background (1993 and 1994)
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

TNTC Location or Associated Bldg.	Sample ID	Date	Unit	PARAMETER	PRG	Background	RESULT	VQ
Soil samples collected by Morrison Knudsen in 1993 (MK, 1994a).								
Soil from MK-MW12 (collected 0-2' bgs)	MK01SB04	7/93	mg/kg	Magnesium	ne	ne	1540	
Soil near Wastewater Settling Basins - Bldg 657 (collected 0-2' bgs)	MK01SS10	7/93	mg/kg	Phenenthrene	ne	ne	0.160	J
		7/93	mg/kg	Lead	ne	48.6	104.00	N
		7/93	mg/kg	Magnesium	ne	ne	4510.00	*
Soil near Bldg 689 (collected 0-2' bgs)	MK01SS11	7/93	mg/kg	Lead	ne	ne	800	N
		7/93	mg/kg	Magnesium	ne	ne	785	*
Soil in clearing west of Bldg 626 (collected 0-2' bgs)	MK01SS12	7/93	mg/kg	Magnesium	ne	ne	4610	*
Soil Samples Collected by Dames & Moore in 1994 (D&M, 1997a)								
Wastewater Settling Basins - Bldg 657	TNTC-S3-0.0/1.5	10/13/94	mg/kg	Lead	ne	48.6	79	
	TNTC-S3-1.5/3.5	10/13/94	mg/kg	Lead	ne	48.6	85	
	TNTC-S4-0.0/1.5	10/13/94	mg/kg	Lead	ne	48.6	173	
	TNTC-S5-0.0/1.5	10/13/94	mg/kg	Lead	ne	48.6	51	
		10/13/94	mg/kg	Mercury	ne	<0.3	0.98	
Ditch between wash house 616 and 626	TNTC-S8-0.5/1.0	10/13/94	mg/kg	2,4-Dinitrotoluene	0.72	ne	7.6	
		10/13/94	mg/kg	2,6-Dinitrotoluene	0.72	ne	1.9	
		10/13/94	mg/kg	3,4-Dinitrotoluene	0.72	ne	1.2	
Bi-Tri House- Bldg 612	TNTC-S16-0.5/1.0	10/16/94	mg/kg	2,4-Dinitrotoluene	0.72	ne	1.0	
		10/16/94	mg/kg	2,6-Dinitrotoluene	0.72	ne	1.0	
	TNTC-S17-0.0/1.5	10/16/94	mg/kg	Antimony	ne	9.3	13.2	J
		10/16/94	mg/kg	Lead	ne	48.6	75	
	TNTC-S25-0.0/1.2	10/17/94	mg/kg	Lead	ne	48.6	125	
Ditch in front of Bldg 623	TNTC-S22-0.5/1.0	10/19/94	mg/kg	2,4-Dinitrotoluene	0.72	ne	8.7	
		10/19/94	mg/kg	2,6-Dinitrotoluene	0.72	ne	1.0	
		10/19/94	mg/kg	-Amino-4,6-dinitrotoluen	3.3	ne	4.7	
		10/20/94	mg/kg	2-Amino-4-nitrotoluene	ne	ne	0.4	

PRG - Nitoraromatic Preliminary Remediation Goals (PRG) developed specifically for TNTA & C RI, all others from November 2000, EPA Region IX.
Background concentrations for metals from the Investigation of Acid Areas report, (IT, 1998).
ne - PRG and/or background values not established.
The nutritionelly essential elements calcium, iron, potassium, and sodium are not included.
N - Spiked recovery is outside stated control limits.
* Relative percent difference between two duplicates is outside stated control limits.
J - Indicates an estimated value.

Table 1-3

Historical Groundwater Analytical Detections Above PRG's, Overburden and Bedrock Monitoring Wells (1994 through 1998) TNT Area C - RI Report Former Plum Brook Ordnance Works, Sandusky, Ohio

TNTC Well Name	Unit	Parameter	PRG	Result (Filtered/Unfiltered)
Samples collected by Morrison Knudsen in 1993 (MK, 1994a).				
Metals				
MK-MW12	µg/L	Arsenic	0.045	4.00B
	µg/L	Lead	ne	13.0
	µg/L	Magnesium	ne	29200
	µg/L	Manganese	880	1790*
Organics				
MK-MW12	µg/L	None		
Samples collected by Dames & Moore in 1994 (D&M, 1997a).				
Metals				
PB-TNTC-MW3	Not Sampled			
PB-TNTC-MW4	Not Sampled			
PB-TNTC-MW5	µg/L	Lead	ne	<PRG/13
PB-TNTC-MW6	µg/L	Lead	ne	<DL/5
	µg/L	Manganese	880	1300/1400
PB-BED-MW13	µg/L	None		
Organics				
PB-TNTC-MW3	Not Sampled			
PB-TNTC-MW4	Not Sampled			
PB-TNTC-MW5	µg/L	None		
PB-TNTC-MW6	µg/L	None		
PB-BED-MW13	µg/L	4-Amino-2,6-dinitrotoluene	2.2	3.7
	µg/L	Benzene	0.41	50
	µg/L	2-Methylnaphthalene	ne	24
	µg/L	Naphthalene	6.2	28
Samples collected by IT in November 1997 (IT, 1998).				
Metals				
IT-MW09	µg/L	Magnesium	ne	246000/253000
	µg/L	Lead	ne	ND/4.7B
PB-TNTC-MW3	µg/L	Magnesium	ne	204000/215000
	µg/L	Manganese	880	2900/2950
PB-TNTC-MW4	µg/L	Arsenic	0.045	ND/21.5
	µg/L	Lead	ne	11/14.5
	µg/L	Magnesium	880	181000/145000
	µg/L	Manganese	880	1120/<PRG
PB-TNTC-MW5	µg/L	Arsenic	0.045	ND/10.1
	µg/L	Lead	ne	4.2/13.8
	µg/L	Magnesium	880	54600/55900
PB-TNTC-MW6	µg/L	Manganese	880	4020/3700
PB-BED-MW13	µg/L	Magnesium	880	200000/180000
Organics				
IT-MW09	µg/L	None		
PB-TNTC-MW3	µg/L	None		
PB-TNTC-MW4	µg/L	None		
PB-TNTC-MW5	µg/L	None		
PB-TNTC-MW6	µg/L	Bis(2ethylhexyl)phthalate	4.8	7.3J
PB-BED-MW13	µg/L	Benzene	0.41	130D
	µg/L	2-Methylnaphthalene	ne	20
	µg/L	Naphthalene	6.2	15
	µg/L	Bis(2ethylhexyl)phthalate	4.8	39

Table 1-3

Historical Groundwater Analytical Detections Above PRG's,
Overburden and Bedrock Monitoring Wells (1994 through 1998)
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

TNTC Well Name	Unit	Parameter	PRG	Result (Filtered/Unfiltered)
Samples Collected by IT in May 1998 (IT, 1998).				
		Metals		
IT-MW09	µg/L	Lead	ne	4.1/ND
	µg/L	Magnesium	ne	133000/125000
PB-TNTC-MW3	µg/L	Arsenic	0.045	ND/18.6
	µg/L	Lead	ne	ND/13.8
	µg/L	Magnesium	ne	171000/137000
	µg/L	Manganese	880	<PRG/973
PB-TNTC-MW4	µg/L	Lead	ne	ND/3.2
	µg/L	Magnesium	ne	140000/136000
PB-TNTC-MW5	µg/L	Arsenic	ne	ND/21.3
	µg/L	Lead	ne	ND/20.1
	µg/L	Magnesium	ne	47700/46400
PB-TNTC-MW6	µg/L	Manganese	880	3970/3830
	µg/L	Magnesium	ne	14100/12700
PB-BED-MW13	µg/L	Magnesium	ne	14600J/9250
		Organics		
IT-MW09	µg/L	Bis(2ethylhexyl)phthalate	4.8	9.6B
PB-TNTC-MW3	µg/L	None		
PB-TNTC-MW4	µg/L	None		
PB-TNTC-MW5	µg/L	None		
PB-TNTC-MW6	µg/L	None		
PB-BED-MW13	µg/L	Bis(2ethylhexyl)phthalate	4.8	55J
	µg/L	Benzene	0.41	47
	µg/L	2-Methylnaphthalene	ne	14J
	µg/L	Methylene Chloride	4.8	51B
	µg/L	Naphthalene	6.2	10J

PRG - Preliminary Remediation Goals (PRG) from November 2000, EPA Region IX.
PBOW background values for groundwater not established.
Only the detected analytical results above PRG values are shown.
The nutritionally essential elements calcium, iron, potassium, and sodium are not included.
ND - Not detected.
ne - EPA Region IX PRG not established.
<DL - Below detection limit.
<DL/5 - Filtered/Unfiltered. Result is unfiltered unless otherwise indicated.
PRGs for 2-amino-4,6-dinitrotoluene and 4-amino-2,6-dinitrotoluene created by IT risk management.
J - Indicates an estimated value. Compound was detected above the method detection limit but below the quantitation limit.
B - Compound found also in the associated blank.
N - Spiked analyte recovery is outside stated control limits.
* Relative percent difference between two duplicates is outside stated control limits.

Table 2-1

TNT Area C Soil Sample Summary
Plum Brook Ordnance Works
Sandusky, Ohio

Surface/Subsurface/Sediment Screening and Confirmation Soil Samples

Sample ID	Sample Name	Building ID	Sample Date	Sample Depth (ft)	Comments
AB0031	PBOW-00-SS-TNTC-SO031-AB0031-(00-01)	601	25-Jul-00	0.0 - 1.0	**(Initial screening samples)** Subsurface samples CSO-375/376 At this approximate location.
AB0032	PBOW-00-SS-TNTC-SO032-AB0032-(00-01)	601	25-Jul-00	0.0 - 1.0	Subsurface samples CSO-375/376 At this approximate location.
AB0033	PBOW-00-SS-TNTC-SO033-AB0033-(00-01)	601	25-Jul-00	0.0 - 1.0	Subsurface samples CSO-375/376 At this approximate location.
AB0035	PBOW-00-SS-TNTC-SO035-AB0035-(00-01)	601	25-Jul-00	0.0 - 1.0	
AB0036	PBOW-00-SS-TNTC-SO036-AB0036-(00-01)	601	25-Jul-00	0.0 - 1.0	
AB0034	PBOW-00-SS-TNTC-SO034-AB0034-(00-01)	601	25-Jul-00	0.5 - 1.0	Subsurface samples CSO-377/378 At this approximate location.
AB0132	PBOW-00-SS-TNTC-SO132-AB0132-(00-01)	602	10-Aug-00	1.5 - 2.0	
AB0136	PBOW-00-SS-TNTC-SO136-AB0136-(00-01)	602	10-Aug-00	1.5 - 2.5	
AB0135	PBOW-00-SS-TNTC-SO135-AB0135-(00-01)	602	10-Aug-00	1.6 - 2.6	
AB0131	PBOW-00-SS-TNTC-SO131-AB0131-(00-01)	602	10-Aug-00	1.8 - 2.8	
AB0128	PBOW-00-SS-TNTC-SO128-AB0128-(00-01)	602	10-Aug-00	2.0 - 3.0	
AB0129	PBOW-00-SS-TNTC-SO129-AB0129-(00-01)	602	10-Aug-00	2.0 - 3.0	
AB0133	PBOW-00-SS-TNTC-SO133-AB0133-(00-01)	602	10-Aug-00	2.0 - 3.0	
AB0130	PBOW-00-SS-TNTC-SO130-AB0130-(00-01)	602	10-Aug-00	2.5 - 3.5	
AB0134	PBOW-00-SS-TNTC-SO134-AB0134-(00-01)	602	10-Aug-00	2.5 - 3.5	DNT
AB0127	PBOW-00-SS-TNTC-SO127-AB0127-(00-01)	602	10-Aug-00	2.6 - 3.6	
AB0126	PBOW-00-SS-TNTC-SO126-AB0126-(00-01)	603	10-Aug-00	0.0 - 1.0	
AB0121	PBOW-00-SS-TNTC-SO121-AB0121-(00-01)	603	10-Aug-00	1.0 - 2.0	
AB0123	PBOW-00-SS-TNTC-SO123-AB0123-(00-01)	603	10-Aug-00	1.0 - 2.0	Subsurface samples CSO-379/380 At this approximate location.
AB0124	PBOW-00-SS-TNTC-SO124-AB0124-(00-01)	603	10-Aug-00	1.0 - 2.0	
AB0125	PBOW-00-SS-TNTC-SO125-AB0125-(00-01)	603	10-Aug-00	1.0 - 2.0	
AB0120	PBOW-00-SS-TNTC-SO120-AB0120-(00-01)	603	10-Aug-00	1.5 - 2.5	
AB0122	PBOW-00-SS-TNTC-SO122-AB0122-(00-01)	603	10-Aug-00	2.5 - 3.5	
AB0201	PBOW-00-SS-TNTC-SO201-AB0201-(00-01)	606	11-Aug-00	0.3 - 1.3	
AB0200	PBOW-00-SS-TNTC-SO200-AB0200-(00-01)	606	11-Aug-00	0.5 - 1.5	

Table 2-1

TNT Area C Soil Sample Summary
Plum Brook Ordnance Works
Sandusky, Ohio

Surface/Subsurface/Sediment Screening and Confirmation Soil Samples

Sample ID	Sample Name	Building ID	Sample Date	Sample Depth (ft)	Comments
AB0203	PBOW-00-SS-TNTC-SO203-AB0203-(00-01)	606	11-Aug-00	0.5 - 1.5	
AB0204	PBOW-00-SS-TNTC-SO204-AB0204-(00-01)	606	11-Aug-00	0.5 - 1.5	
AB0193	PBOW-00-SS-TNTC-SO193-AB0193-(00-01)	606	11-Aug-00	1.0 - 2.0	
AB0194	PBOW-00-SS-TNTC-SO194-AB0194-(00-01)	606	11-Aug-00	1.0 - 2.0	
AB0195	PBOW-00-SS-TNTC-SO195-AB0195-(00-01)	606	11-Aug-00	1.0 - 2.0	
AB0196	PBOW-00-SS-TNTC-SO196-AB0196-(00-01)	606	11-Aug-00	1.0 - 2.0	
AB0197	PBOW-00-SS-TNTC-SO197-AB0197-(00-01)	606	11-Aug-00	1.0 - 2.0	
AB0198	PBOW-00-SS-TNTC-SO198-AB0198-(00-01)	606	11-Aug-00	1.0 - 2.0	
AB0199	PBOW-00-SS-TNTC-SO199-AB0199-(00-01)	606	11-Aug-00	1.0 - 2.0	
AB0202	PBOW-00-SS-TNTC-SO202-AB0202-(00-01)	606	11-Aug-00	1.0 - 2.0	Subsurface samples CSO-381/382 At this location.
AB0205	PBOW-00-SS-TNTC-SO205-AB0205-(00-01)	606	11-Aug-00	1.0 - 2.0	
AB0206	PBOW-00-SS-TNTC-SO206-AB0206-(00-01)	606	11-Aug-00	1.0 - 2.0	
AB0027	PBOW-00-SS-TNTC-SO027-AB0027-(00-01)	609	25-Jul-00	0.5 - 1.5	
AB0025	PBOW-00-SS-TNTC-SO025-AB0025-(00-01)	609	25-Jul-00	1.0 - 2.0	
AB0028	PBOW-00-SS-TNTC-SO028-AB0028-(00-01)	609	25-Jul-00	1.0 - 2.0	
AB0030	PBOW-00-SS-TNTC-SO030-AB0030-(00-01)	609	25-Jul-00	1.0 - 2.0	
AB0026	PBOW-00-SS-TNTC-SO026-AB0026-(00-01)	609	25-Jul-00	1.5 - 2.5	
AB0029	PBOW-00-SS-TNTC-SO029-AB0029-(00-01)	609	25-Jul-00	2.0 - 3.0	
AB0037	PBOW-00-SS-TNTC-SO037-AB0037-(00-01)	611	26-Jul-00	1.0 - 2.0	
AB0038	PBOW-00-SS-TNTC-SO038-AB0038-(00-01)	611	26-Jul-00	1.0 - 2.0	Subsurface samples CSO-383/384 At this approximate location.
AB0040	PBOW-00-SS-TNTC-SO040-AB0040-(00-01)	611	26-Jul-00	1.0 - 2.0	Subsurface samples CSO-383/384 At this approximate location.
AB0042	PBOW-00-SS-TNTC-SO042-AB0042-(00-01)	611	26-Jul-00	1.0 - 2.0	
AB0039	PBOW-00-SS-TNTC-SO039-AB0039-(00-01)	611	26-Jul-00	1.5 - 2.5	Subsurface samples CSO-383/384 At this approximate location.
AB0041	PBOW-00-SS-TNTC-SO041-AB0041-(00-01)	611	26-Jul-00	1.5 - 2.5	
AB0097	PBOW-00-SS-TNTC-SO097-AB0097-(00-01)	612	26-Jul-00	0.0 - 1.0	TNTC-S16, Ditch
AB0087	PBOW-00-SS-TNTC-SO087-AB0087-(00-01)	612	26-Jul-00	1.0 - 2.0	
AB0088	PBOW-00-SS-TNTC-SO088-AB0088-(00-01)	612	26-Jul-00	1.0 - 2.0	

Table 2-1

TNT Area C Soil Sample Summary
Plum Brook Ordnance Works
Sandusky, Ohio

Surface/Subsurface/Sediment Screening and Confirmation Soil Samples

Sample ID	Sample Name	Building ID	Sample Date	Sample Depth (ft)	Comments
AB0094	PBOW-00-SS-TNTC-SO094-AB0094-(00-01)	612	26-Jul-00	1.0 - 2.0	Subsurface samples CSO-385/386 At this approximate location.
AB0095	PBOW-00-SS-TNTC-SO095-AB0095-(00-01)	612	26-Jul-00	1.0 - 2.0	
AB0096	PBOW-00-SS-TNTC-SO096-AB0096-(00-01)	612	26-Jul-00	1.0 - 2.0	
AB0089	PBOW-00-SS-TNTC-SO089-AB0089-(00-01)	612	26-Jul-00	1.5 - 2.5	
AB0090	PBOW-00-SS-TNTC-SO090-AB0090-(00-01)	612	26-Jul-00	1.5 - 2.5	
AB0091	PBOW-00-SS-TNTC-SO091-AB0091-(00-01)	612	26-Jul-00	1.5 - 2.5	
AB0093	PBOW-00-SS-TNTC-SO093-AB0093-(00-01)	612	26-Jul-00	1.5 - 2.5	Subsurface samples CSO-385/386 At this approximate location.
AB0085	PBOW-00-SS-TNTC-SO085-AB0085-(00-01)	612	26-Jul-00	2.0 - 3.0	
AB0086	PBOW-00-SS-TNTC-SO086-AB0086-(00-01)	612	26-Jul-00	2.0 - 3.0	
AB0092	PBOW-00-SS-TNTC-SO092-AB0092-(00-01)	612	27-Jul-00	2.0 - 3.0	
AB0114	PBOW-00-SS-TNTC-SO114-AB0114-(00-01)	613	26-Jul-00	1.5 - 2.5	
AB0115	PBOW-00-SS-TNTC-SO115-AB0115-(00-01)	613	26-Jul-00	2.0 - 3.0	
AB0116	PBOW-00-SS-TNTC-SO116-AB0116-(00-01)	613	26-Jul-00	2.0 - 3.0	
AB0117	PBOW-00-SS-TNTC-SO117-AB0117-(00-01)	613	26-Jul-00	2.0 - 3.0	Subsurface samples CSO-387/388 At this approximate location.
AB0118	PBOW-00-SS-TNTC-SO118-AB0118-(00-01)	613	26-Jul-00	2.0 - 3.0	Subsurface sampels CSO-387/388 At this approximate location.
AB0119	PBOW-00-SS-TNTC-SO119-AB0119-(00-01)	613	26-Jul-00	2.0 - 3.0	Subsurface sampels CSO-387/388 At this approximate location.
AB0099	PBOW-00-SS-TNTC-SO099-AB0099-(00-01)	616	27-Jul-00	0.5 - 1.5	
AB0101	PBOW-00-SS-TNTC-SO101-AB0101-(00-01)	616	27-Jul-00	0.5 - 1.5	
AB0105	PBOW-00-SS-TNTC-SO105-AB0105-(00-01)	616	27-Jul-00	0.5 - 1.5	
AB0111	PBOW-00-SS-TNTC-SO111-AB0111-(00-01)	616	27-Jul-00	0.5 - 1.5	
AB0112	PBOW-00-SS-TNTC-SO112-AB0112-(00-01)	616	27-Jul-00	0.5 - 1.5	
AB0113	PBOW-00-SS-TNTC-SO113-AB0113-(00-01)	616	27-Jul-00	0.5 - 1.5	
AB0098	PBOW-00-SS-TNTC-SO098-AB0098-(00-01)	616	27-Jul-00	1.0 - 2.0	
AB0102	PBOW-00-SS-TNTC-SO102-AB0102-(00-01)	616	27-Jul-00	1.0 - 2.0	
AB0103	PBOW-00-SS-TNTC-SO103-AB0103-(00-01)	616	27-Jul-00	1.0 - 2.0	
AB0108	PBOW-00-SS-TNTC-SO108-AB0108-(00-01)	616	27-Jul-00	1.0 - 2.0	

Table 2-1

TNT Area C Soil Sample Summary
Plum Brook Ordnance Works
Sandusky, Ohio

Surface/Subsurface/Sediment Screening and Confirmation Soil Samples

Sample ID	Sample Name	Building ID	Sample Date	Sample Depth (ft)	Comments
AB0109	PBOW-00-SS-TNTC-SO109-AB0109-(00-01)	616	27-Jul-00	1.0 - 2.0	
AB0110	PBOW-00-SS-TNTC-SO110-AB0110-(00-01)	616	27-Jul-00	1.0 - 2.0	2A46DNT >PRGs, collocated 0-1' sample CSO-263.
AB0100	PBOW-00-SS-TNTC-SO100-AB0100-(00-01)	616	27-Jul-00	2.0 - 3.0	TNT, collocated 0-1' sample CSO-253.
AB0104	PBOW-00-SS-TNTC-SO104-AB0104-(00-01)	616	27-Jul-00	2.0 - 3.0	
AB0106	PBOW-00-SS-TNTC-SO106-AB0106-(00-01)	616	27-Jul-00	3.0 - 4.0	
AB0107	PBOW-00-SS-TNTC-SO107-AB0107-(00-01)	616	27-Jul-00	3.0 - 4.0	TNT, collocated 0-1' sample CSO-260.
AB0209	PBOW-00-SS-TNTC-SO209-AB0209-(00-01)	618	14-Aug-00	1.0 - 2.0	
AB0210	PBOW-00-SS-TNTC-SO210-AB0210-(00-01)	618	14-Aug-00	1.0 - 2.0	
AB0227	PBOW-00-SS-TNTC-SO227-AB0227-(00-01)	618	14-Aug-00	1.0 - 2.0	
AB0208	PBOW-00-SS-TNTC-SO208-AB0208-(00-01)	618	14-Aug-00	1.6 - 2.6	
AB0207	PBOW-00-SS-TNTC-SO207-AB0207-(00-01)	618	14-Aug-00	2.0 - 3.0	
AB0043	PBOW-00-SS-TNTC-SO043-AB0043-(00-01)	619	26-Jul-00	1.5 - 2.5	
AB0044	PBOW-00-SS-TNTC-SO044-AB0044-(00-01)	619	26-Jul-00	1.5 - 2.5	
AB0045	PBOW-00-SS-TNTC-SO045-AB0045-(00-01)	619	26-Jul-00	1.5 - 2.5	
AB0046	PBOW-00-SS-TNTC-SO046-AB0046-(00-01)	619	26-Jul-00	1.5 - 2.5	Subsurface samples CSO-411/412 At this location.
AB0047	PBOW-00-SS-TNTC-SO047-AB0047-(00-01)	619	25-Jul-00	1.5 - 2.5	
AB0048	PBOW-00-SS-TNTC-SO048-AB0048-(00-01)	619	25-Jul-00	1.5 - 2.5	
AB0050	PBOW-00-SS-TNTC-SO050-AB0050-(00-01)	621	26-Jul-00	0.5 - 1.5	
AB0052	PBOW-00-SS-TNTC-SO052-AB0052-(00-01)	621	26-Jul-00	0.5 - 1.5	Subsurface samples CSO-389/390 At this approximate location.
AB0053	PBOW-00-SS-TNTC-SO053-AB0053-(00-01)	621	26-Jul-00	0.5 - 1.5	Subsurface samples CSO-389/390 At this approximate location.
AB0054	PBOW-00-SS-TNTC-SO054-AB0054-(00-01)	621	26-Jul-00	0.5 - 1.5	Subsurface samples CSO-389/390 At this approximate location.
AB0049	PBOW-00-SS-TNTC-SO049-AB0049-(00-01)	621	26-Jul-00	1.5 - 2.5	
AB0051	PBOW-00-SS-TNTC-SO051-AB0051-(00-01)	621	26-Jul-00	2.0 - 3.0	
AB0055	PBOW-00-SS-TNTC-SO055-AB0055-(00-01)	622	26-Jul-00	2.5 - 3.5	
AB0056	PBOW-00-SS-TNTC-SO056-AB0056-(00-01)	622	26-Jul-00	2.5 - 3.5	
AB0057	PBOW-00-SS-TNTC-SO057-AB0057-(00-01)	622	26-Jul-00	2.5 - 3.5	

Table 2-1

TNT Area C Soil Sample Summary
Plum Brook Ordnance Works
Sandusky, Ohio

Surface/Subsurface/Sediment Screening and Confirmation Soil Samples

Sample ID	Sample Name	Building ID	Sample Date	Sample Depth (ft)	Comments
AB0062	PBOW-00-SS-TNTC-SO062-AB0062-(00-01)	622	26-Jul-00	2.5 - 3.5	
AB0063	PBOW-00-SS-TNTC-SO063-AB0063-(00-01)	622	26-Jul-00	2.5 - 3.5	
AB0064	PBOW-00-SS-TNTC-SO064-AB0064-(00-01)	622	26-Jul-00	2.5 - 3.5	
AB0058	PBOW-00-SS-TNTC-SO058-AB0058-(00-01)	622	14-Sep-00	4.0 - 5.0	
AB0059	PBOW-00-SS-TNTC-SO059-AB0059-(00-01)	622	14-Sep-00	4.0 - 5.0	
AB0061	PBOW-00-SS-TNTC-SO061-AB0061-(00-01)	622	14-Sep-00	4.0 - 5.0	
AB0234	PBOW-00-SS-TNTC-SO234-AB0234-(00-01)	623	10-Aug-00	1.0 - 2.0	
AB0235	PBOW-00-SS-TNTC-SO235-AB0235-(00-01)	623	10-Aug-00	1.0 - 2.0	
AB0236	PBOW-00-SS-TNTC-SO236-AB0236-(00-01)	623	10-Aug-00	1.0 - 2.0	
AB0237	PBOW-00-SS-TNTC-SO237-AB0237-(00-01)	623	10-Aug-00	1.0 - 2.0	Subsurface samples CSO-393/394 At this location.
AB0238	PBOW-00-SS-TNTC-SO238-AB0238-(00-01)	623	10-Aug-00	1.0 - 2.0	Subsurface samples CSO-393/394 At this location.
AB0239	PBOW-00-SS-TNTC-SO239-AB0239-(00-01)	623	10-Aug-00	1.5 - 2.5	
AB0082	PBOW-00-SS-TNTC-SO082-AB0082-(00-01)	626	27-Jul-00	0.0 - 1.0	
AB0083	PBOW-00-SS-TNTC-SO083-AB0083-(00-01)	626	27-Jul-00	0.0 - 1.0	
AB0084	PBOW-00-SS-TNTC-SO084-AB0084-(00-01)	626	27-Jul-00	0.0 - 1.0	
AB0240	PBOW-00-SS-TNTC-SO240-AB0240-(00-01)	626	10-Aug-00	0.0 - 1.0	TNTC-S22, Ditch
AB0075	PBOW-00-SS-TNTC-SO075-AB0075-(00-01)	626	27-Jul-00	1.0 - 2.0	Subsurface samples CSO-395/396 At this location.
AB0071	PBOW-00-SS-TNTC-SO071-AB0071-(00-01)	626	27-Jul-00	2.5 - 3.5	
AB0072	PBOW-00-SS-TNTC-SO072-AB0072-(00-01)	626	27-Jul-00	2.5 - 3.5	
AB0073	PBOW-00-SS-TNTC-SO073-AB0073-(00-01)	626	27-Jul-00	2.5 - 3.5	
AB0074	PBOW-00-SS-TNTC-SO074-AB0074-(00-01)	626	27-Jul-00	2.5 - 3.5	
AB0076	PBOW-00-SS-TNTC-SO076-AB0076-(00-01)	626	27-Jul-00	2.5 - 3.5	
AB0077	PBOW-00-SS-TNTC-SO077-AB0077-(00-01)	626	27-Jul-00	2.5 - 3.5	
AB0078	PBOW-00-SS-TNTC-SO078-AB0078-(00-01)	626	27-Jul-00	2.5 - 3.5	
AB0079	PBOW-00-SS-TNTC-SO079-AB0079-(00-01)	626	27-Jul-00	2.5 - 3.5	
AB0080	PBOW-00-SS-TNTC-SO080-AB0080-(00-01)	626	27-Jul-00	2.5 - 3.5	
AB0081	PBOW-00-SS-TNTC-SO081-AB0081-(00-01)	626	27-Jul-00	2.5 - 3.5	
AB0212	PBOW-00-SS-TNTC-SO212-AB0212-(00-01)	628	14-Aug-00	0.5 - 1.5	

Table 2-1

TNT Area C Soil Sample Summary
Plum Brook Ordnance Works
Sandusky, Ohio

Surface/Subsurface/Sediment Screening and Confirmation Soil Samples

Sample ID	Sample Name	Building ID	Sample Date	Sample Depth (ft)	Comments
AB0215	PBOW-00-SS-TNTC-SO215-AB0215-(00-01)	628	14-Aug-00	0.5 - 1.5	
AB0211	PBOW-00-SS-TNTC-SO211-AB0211-(00-01)	628	14-Aug-00	0.75 - 1.75	
AB0213	PBOW-00-SS-TNTC-SO213-AB0213-(00-01)	628	14-Aug-00	1.0 - 2.0	
AB0214	PBOW-00-SS-TNTC-SO214-AB0214-(00-01)	628	14-Aug-00	1.0 - 2.0	
AB0067	PBOW-00-SS-TNTC-SO067-AB0067-(00-01)	629	26-Jul-00	0.0 - 1.0	
AB0070	PBOW-00-SS-TNTC-SO070-AB0070-(00-01)	629	26-Jul-00	0.0 - 1.0	
AB0068	PBOW-00-SS-TNTC-SO068-AB0068-(00-01)	629	26-Jul-00	1.0 - 2.0	
AB0069	PBOW-00-SS-TNTC-SO069-AB0069-(00-01)	629	26-Jul-00	1.0 - 2.0	
AB0065	PBOW-00-SS-TNTC-SO065-AB0065-(00-01)	629	26-Jul-00	2.5 - 3.5	DNT, collocated 0-1' sample CSO-271.
AB0066	PBOW-00-SS-TNTC-SO066-AB0066-(00-01)	629	26-Jul-00	2.5 - 3.5	DNT, 4A26DNT, collocated 0-1' sample CSO 272.
AB0216	PBOW-00-SS-TNTC-SO216-AB0216-(00-01)	657	27-Jul-00	0.0 - 1.0	
AB0217	PBOW-00-SS-TNTC-SO217-AB0217-(00-01)	657	27-Jul-00	0.0 - 1.0	
AB0218	PBOW-00-SS-TNTC-SO218-AB0218-(00-01)	657	27-Jul-00	0.0 - 1.0	
AB0219	PBOW-00-SS-TNTC-SO219-AB0219-(00-01)	657	27-Jul-00	0.0 - 1.0	
AB0220	PBOW-00-SS-TNTC-SO220-AB0220-(00-01)	657	27-Jul-00	0.0 - 1.0	
AB0221	PBOW-00-SS-TNTC-SO221-AB0221-(00-01)	657	27-Jul-00	0.0 - 1.0	
AB0222	PBOW-00-SS-TNTC-SO222-AB0222-(00-01)	657	27-Jul-00	0.0 - 1.0	
AB0223	PBOW-00-SS-TNTC-SO223-AB0223-(00-01)	657	27-Jul-00	0.0 - 1.0	
AB0224	PBOW-00-SS-TNTC-SO224-AB0224-(00-01)	657	27-Jul-00	0.0 - 1.0	
AB0225	PBOW-00-SS-TNTC-SO225-AB0225-(00-01)	657	27-Jul-00	0.0 - 1.0	
AB0226	PBOW-00-SS-TNTC-SO226-AB0226-(00-01)	657	27-Jul-00	0.0 - 1.0	
AB0007	PBOW-00-SS-TNTC-SO007-AB0007-(00-01)	681	25-Jul-00	0.0 - 1.0	
AB0008	PBOW-00-SS-TNTC-SO008-AB0008-(00-01)	681	25-Jul-00	0.0 - 1.0	Subsurface samples CSO-397/398 At this approximate location.
AB0009	PBOW-00-SS-TNTC-SO009-AB0009-(00-01)	681	25-Jul-00	0.0 - 1.0	
AB0010	PBOW-00-SS-TNTC-SO010-AB0010-(00-01)	681	25-Jul-00	0.0 - 1.0	
AB0011	PBOW-00-SS-TNTC-SO011-AB0011-(00-01)	681	25-Jul-00	0.0 - 1.0	Subsurface samples CSO-397/398 At this approximate location.
AB0012	PBOW-00-SS-TNTC-SO012-AB0012-(00-01)	681	25-Jul-00	0.0 - 1.0	Subsurface samples CSO-397/398 At this approximate location.

Table 2-1

TNT Area C Soil Sample Summary
Plum Brook Ordnance Works
Sandusky, Ohio

Surface/Subsurface/Sediment Screening and Confirmation Soil Samples

Sample ID	Sample Name	Building ID	Sample Date	Sample Depth (ft)	Comments
AB0160	PBOW-00-SS-TNTC-SO160-AB0160-(00-01)	682	12-Aug-00	0.5 - 1.5	
AB0159	PBOW-00-SS-TNTC-SO159-AB0159-(00-01)	682	12-Aug-00	1.0 - 2.0	
AB0161	PBOW-00-SS-TNTC-SO161-AB0161-(00-01)	682	12-Aug-00	1.0 - 2.0	
AB0162	PBOW-00-SS-TNTC-SO162-AB0162-(00-01)	682	12-Aug-00	1.0 - 2.0	
AB0166	PBOW-00-SS-TNTC-SO166-AB0166-(00-01)	682	12-Aug-00	1.5 - 1.8	
AB0157	PBOW-00-SS-TNTC-SO157-AB0157-(00-01)	682	12-Aug-00	1.5 - 2.5	DNT, collocated 0-1' sample CSO-308
AB0163	PBOW-00-SS-TNTC-SO163-AB0163-(00-01)	682	12-Aug-00	1.5 - 2.5	
AB0164	PBOW-00-SS-TNTC-SO164-AB0164-(00-01)	682	12-Aug-00	1.5 - 2.5	
AB0165	PBOW-00-SS-TNTC-SO165-AB0165-(00-01)	682	12-Aug-00	1.5 - 2.5	TNT, collocated 0-1' sample CSO-314
AB0158	PBOW-00-SS-TNTC-SO158-AB0158-(00-01)	682	12-Aug-00	2.5 - 3.5	
AB0167	PBOW-00-SS-TNTC-SO167-AB0167-(00-01)	683	12-Aug-00	0.5 - 1.0	
AB0171	PBOW-00-SS-TNTC-SO171-AB0171-(00-01)	683	12-Aug-00	0.5 - 1.0	Subsurface samples CSO-399/400 At this location.
AB0170	PBOW-00-SS-TNTC-SO170-AB0170-(00-01)	683	12-Aug-00	1.0 - 1.5	
AB0168	PBOW-00-SS-TNTC-SO168-AB0168-(00-01)	683	12-Aug-00	1.0 - 2.0	
AB0245	PBOW-00-SS-TNTC-SO245-AB0245-(00-01)	683	12-Aug-00	1.0 - 2.0	
AB0169	PBOW-00-SS-TNTC-SO169-AB0169-(00-01)	683	12-Aug-00	1.5 - 2.5	
AB0149	PBOW-00-SS-TNTC-SO149-AB0149-(00-01)	686	12-Aug-00	0.0 - 1.0	
AB0147	PBOW-00-SS-TNTC-SO147-AB0147-(00-01)	686	12-Aug-00	0.33 - 1.0	
AB0148	PBOW-00-SS-TNTC-SO148-AB0148-(00-01)	686	12-Aug-00	0.33 - 1.0	
AB0150	PBOW-00-SS-TNTC-SO150-AB0150-(00-01)	686	12-Aug-00	0.33 - 1.0	TNT, 2A46DNT, 4A26DNT
AB0146	PBOW-00-SS-TNTC-SO146-AB0146-(00-01)	686	12-Aug-00	1.0 - 1.5	
AB0153	PBOW-00-SS-TNTC-SO153-AB0153-(00-01)	686	12-Aug-00	1.0 - 2.0	
AB0154	PBOW-00-SS-TNTC-SO154-AB0154-(00-01)	686	12-Aug-00	1.0 - 2.0	
AB0151	PBOW-00-SS-TNTC-SO151-AB0151-(00-01)	686	12-Aug-00	1.3 - 2.3	TNT, 2A46DNT, collocated 0-1' sample CSO-301
AB0143	PBOW-00-SS-TNTC-SO143-AB0143-(00-01)	686	12-Aug-00	1.6 - 2.6	
AB0142	PBOW-00-SS-TNTC-SO142-AB0142-(00-01)	686	12-Aug-00	2.0 - 3.0	
AB0145	PBOW-00-SS-TNTC-SO145-AB0145-(00-01)	686	12-Aug-00	2.0 - 3.0	
AB0152	PBOW-00-SS-TNTC-SO152-AB0152-(00-01)	686	12-Aug-00	2.0 - 3.0	
AB0156	PBOW-00-SS-TNTC-SO156-AB0156-(00-01)	686	12-Aug-00	2.0 - 3.0	

Table 2-1

TNT Area C Soil Sample Summary
Plum Brook Ordnance Works
Sandusky, Ohio

Surface/Subsurface/Sediment Screening and Confirmation Soil Samples

Sample ID	Sample Name	Building ID	Sample Date	Sample Depth (ft)	Comments
AB0144	PBOW-00-SS-TNTC-SO144-AB0144-(00-01)	686	12-Aug-00	2.5 - 3.0	
AB0155	PBOW-00-SS-TNTC-SO155-AB0155-(00-01)	686	12-Aug-00	2.5 - 3.5	
AB0001	PBOW-00-SS-TNTC-SO001-AB0001-(00-01)	689	25-Jul-00	0.0 - 1.0	DNT, 4A26DNT >PRGs. Subsurface samples CSO-401/402 At this location.
AB0002	PBOW-00-SS-TNTC-SO002-AB0002-(00-01)	689	25-Jul-00	0.0 - 1.0	
AB0003	PBOW-00-SS-TNTC-SO003-AB0003-(00-01)	689	25-Jul-00	0.0 - 1.0	
AB0004	PBOW-00-SS-TNTC-SO004-AB0004-(00-01)	689	25-Jul-00	0.0 - 1.0	
AB0005	PBOW-00-SS-TNTC-SO005-AB0005-(00-01)	689	25-Jul-00	0.0 - 1.0	
AB0006	PBOW-00-SS-TNTC-SO006-AB0006-(00-01)	689	25-Jul-00	0.5 - 1.5	
AB0019	PBOW-00-SS-TNTC-SO019-AB0019-(00-01)	691	25-Jul-00	0.5 - 1.5	
AB0020	PBOW-00-SS-TNTC-SO020-AB0020-(00-01)	691	25-Jul-00	0.5 - 1.5	
AB0021	PBOW-00-SS-TNTC-SO021-AB0021-(00-01)	691	25-Jul-00	0.5 - 1.5	Subsurface samples CSO-403/404 At this approximate location.
AB0022	PBOW-00-SS-TNTC-SO022-AB0022-(00-01)	691	25-Jul-00	0.5 - 1.5	Subsurface samples CSO-403/404 At this approximate location.
AB0023	PBOW-00-SS-TNTC-SO023-AB0023-(00-01)	691	25-Jul-00	0.5 - 1.5	Subsurface samples CSO-403/404 At this approximate location.
AB0024	PBOW-00-SS-TNTC-SO024-AB0024-(00-01)	691	25-Jul-00	0.5 - 1.5	
AB0230	PBOW-00-SS-TNTC-SO230-AB0230-(00-01)	692	11-Aug-00	0.5 - 1.5	
AB0228	PBOW-00-SS-TNTC-SO228-AB0228-(00-01)	692	11-Aug-00	1.0 - 2.0	
AB0229	PBOW-00-SS-TNTC-SO229-AB0229-(00-01)	692	11-Aug-00	1.0 - 2.0	
AB0241	PBOW-00-SS-TNTC-SO241-AB0241-(00-01)	692	11-Aug-00	1.0 - 2.0	TNT, DNT, collocated 0-1' sample CSO-283. Subsurface samples CSO-405/406 At this location.
AB0242	PBOW-00-SS-TNTC-SO242-AB0242-(00-01)	692	11-Aug-00	1.0 - 2.0	
AB0243	PBOW-00-SS-TNTC-SO243-AB0243-(00-01)	692	11-Aug-00	1.0 - 2.0	
AB0244	PBOW-00-SS-TNTC-SO244-AB0244-(00-01)	692	11-Aug-00	1.0 - 2.0	
AB0231	PBOW-00-SS-TNTC-SO231-AB0231-(00-01)	692	11-Aug-00	1.5 - 2.5	
AB0232	PBOW-00-SS-TNTC-SO232-AB0232-(00-01)	692	11-Aug-00	1.5 - 2.5	
AB0233	PBOW-00-SS-TNTC-SO233-AB0233-(00-01)	692	11-Aug-00	1.5 - 2.5	

Table 2-1

TNT Area C Soil Sample Summary
Plum Brook Ordnance Works
Sandusky, Ohio

Surface/Subsurface/Sediment Screening and Confirmation Soil Samples

Sample ID	Sample Name	Building ID	Sample Date	Sample Depth (ft)	Comments
AB0173	PBOW-00-SS-TNTC-SO173-AB0173-(00-01)	693	11-Aug-00	1.0 - 2.0	Subsurface samples CSO-407/408 At this approximate location.
AB0174	PBOW-00-SS-TNTC-SO174-AB0174-(00-01)	693	11-Aug-00	1.0 - 2.0	
AB0175	PBOW-00-SS-TNTC-SO175-AB0175-(00-01)	693	11-Aug-00	1.0 - 2.0	Subsurface samples CSO-407/408 At this approximate location.
AB0176	PBOW-00-SS-TNTC-SO176-AB0176-(00-01)	693	11-Aug-00	1.0 - 2.0	Subsurface samples CSO-407/408 At this approximate location.
AB0177	PBOW-00-SS-TNTC-SO177-AB0177-(00-01)	693	11-Aug-00	1.0 - 2.0	
AB0172	PBOW-00-SS-TNTC-SO172-AB0172-(00-01)	693	11-Aug-00	1.5 - 2.5	
AB0191	PBOW-00-SS-TNTC-SO191-AB0191-(00-01)	696	11-Aug-00	0.5 - 1.5	
AB0178	PBOW-00-SS-TNTC-SO178-AB0178-(00-01)	696	11-Aug-00	1.0 - 2.0	
AB0179	PBOW-00-SS-TNTC-SO179-AB0179-(00-01)	696	11-Aug-00	1.0 - 2.0	
AB0181	PBOW-00-SS-TNTC-SO181-AB0181-(00-01)	696	11-Aug-00	1.0 - 2.0	
AB0183	PBOW-00-SS-TNTC-SO183-AB0183-(00-01)	696	11-Aug-00	1.0 - 2.0	
AB0185	PBOW-00-SS-TNTC-SO185-AB0185-(00-01)	696	11-Aug-00	1.0 - 2.0	
AB0186	PBOW-00-SS-TNTC-SO186-AB0186-(00-01)	696	11-Aug-00	1.0 - 2.0	
AB0187	PBOW-00-SS-TNTC-SO187-AB0187-(00-01)	696	11-Aug-00	1.0 - 2.0	
AB0188	PBOW-00-SS-TNTC-SO188-AB0188-(00-01)	696	11-Aug-00	1.0 - 2.0	
AB0190	PBOW-00-SS-TNTC-SO190-AB0190-(00-01)	696	11-Aug-00	1.0 - 2.0	2A46DNT, 4A26DNT, collocated 0-1' sample CSO-288.
AB0184	PBOW-00-SS-TNTC-SO184-AB0184-(00-01)	696	11-Aug-00	1.5 - 2.5	
AB0189	PBOW-00-SS-TNTC-SO189-AB0189-(00-01)	696	11-Aug-00	1.5 - 2.5	
AB0180	PBOW-00-SS-TNTC-SO180-AB0180-(00-01)	696	11-Aug-00	1.6 - 2.6	
AB0182	PBOW-00-SS-TNTC-SO182-AB0182-(00-01)	696	11-Aug-00	1.6 - 2.6	
AB0192	PBOW-00-SS-TNTC-SO192-AB0192-(00-01)	696	11-Aug-00	1.6 - 2.6	TNT, collocated 0-1' sample CSO-293.
AB0137	PBOW-00-SS-TNTC-SO137-AB0137-(00-01)	698	27-Jul-00	0.0 - 1.0	
AB0138	PBOW-00-SS-TNTC-SO138-AB0138-(00-01)	698	27-Jul-00	0.0 - 1.0	
AB0140	PBOW-00-SS-TNTC-SO140-AB0140-(00-01)	698	27-Jul-00	0.0 - 1.0	
AB0141	PBOW-00-SS-TNTC-SO141-AB0141-(00-01)	698	27-Jul-00	0.0 - 1.0	
AB0139	PBOW-00-SS-TNTC-SO139-AB0139-(00-01)	698	27-Jul-00	1.5 - 2.5	
AB0013	PBOW-00-SS-TNTC-SO013-AB0013-(00-01)	699	25-Jul-00	1.0 - 2.0	

Table 2-1

TNT Area C Soil Sample Summary
Plum Brook Ordnance Works
Sandusky, Ohio

Surface/Subsurface/Sediment Screening and Confirmation Soil Samples

Sample ID	Sample Name	Building ID	Sample Date	Sample Depth (ft)	Comments
AB0014	PBOW-00-SS-TNTC-SO014-AB0014-(00-01)	699	25-Jul-00	1.0 - 2.0	
AB0015	PBOW-00-SS-TNTC-SO015-AB0015-(00-01)	699	25-Jul-00	1.0 - 2.0	
AB0016	PBOW-00-SS-TNTC-SO016-AB0016-(00-01)	699	25-Jul-00	1.0 - 2.0	
AB0018	PBOW-00-SS-TNTC-SO018-AB0018-(00-01)	699	25-Jul-00	1.0 - 2.0	
AB0017	PBOW-00-SS-TNTC-SO017-AB0017-(00-01)	699	25-Jul-00	2.0 - 3.0	Subsurface samples CSO-409/410 At this location.
AB0318	PBOW-00-SS-TNTC-SO318-AB0318-(00-01)	601	23-Sep-00	1.0 - 1.5	**(Delineation Samples)**
AB0331	PBOW-00-SS-TNTC-SO331-AB0331-(00-01)	602	23-Sep-00	0.0 - 1.0	0-1' sample for CSO-134
AB0319	PBOW-00-SS-TNTC-SO319-AB0319-(00-01)	612	23-Sep-00	1.0 - 2.0	
AB0251	PBOW-00-SS-TNTC-SO251-AB0251-(00-01)	616	18-Aug-00	0.5 - 1.5	TNT, DNT
AB0252	PBOW-00-SS-TNTC-SO252-AB0252-(00-01)	616	18-Aug-00	0.5 - 1.5	TNT, DNT, 2A46DNT
AB0253	PBOW-00-SS-TNTC-SO253-AB0253-(00-01)	616	18-Aug-00	0.0 - 1.0	0-1' sample for CSO-100
AB0254	PBOW-00-SS-TNTC-SO254-AB0254-(00-01)	616	18-Aug-00	1.5 - 2.5	
AB0255	PBOW-00-SS-TNTC-SO255-AB0255-(00-01)	616	18-Aug-00	1.0 - 2.0	
AB0256	PBOW-00-SS-TNTC-SO256-AB0256-(00-01)	616	18-Aug-00	0.5 - 1.5	
AB0257	PBOW-00-SS-TNTC-SO257-AB0257-(00-01)	616	18-Aug-00	1.0 - 2.0	
AB0258	PBOW-00-SS-TNTC-SO258-AB0258-(00-01)	616	18-Aug-00	1.0 - 2.0	
AB0259	PBOW-00-SS-TNTC-SO259-AB0259-(00-01)	616	18-Aug-00	0.5 - 1.5	
AB0260	PBOW-00-SS-TNTC-SO260-AB0260-(00-01)	616	18-Aug-00	0.0 - 1.0	0-1' sample for CSO-107
AB0261	PBOW-00-SS-TNTC-SO261-AB0261-(00-01)	616	18-Aug-00	1.0 - 2.0	
AB0262	PBOW-00-SS-TNTC-SO262-AB0262-(00-01)	616	18-Aug-00	1.0 - 2.0	
AB0263	PBOW-00-SS-TNTC-SO263-AB0263-(00-01)	616	18-Aug-00	0.0 - 1.0	0-1' sample for CSO-110
AB0264	PBOW-00-SS-TNTC-SO264-AB0264-(00-01)	616	18-Aug-00	1.0 - 2.0	
AB0300	PBOW-00-SS-TNTC-SO300-AB0300-(00-01)	616	19-Aug-00	5.0 - 6.0	Collected in Manhole below 5' water
AB0316	PBOW-00-SS-TNTC-SO316-AB0316-(00-01)	616	23-Sep-00	1.0 - 2.0	
AB0317	PBOW-00-SS-TNTC-SO317-AB0317-(00-01)	616	23-Sep-00	1.0 - 2.0	
AB0298	PBOW-00-SS-TNTC-SO298-AB0298-(00-01)	619	19-Aug-00	3.0 - 4.0	Collected in Manhole
AB0321	PBOW-00-SS-TNTC-SO321-AB0321-(00-01)	622	23-Sep-00	1.5 - 2.5	
AB0322	PBOW-00-SS-TNTC-SO322-AB0322-(00-01)	622	23-Sep-00	1.5 - 2.5	
AB0323	PBOW-00-SS-TNTC-SO323-AB0323-(00-01)	622	23-Sep-00	1.5 - 2.5	
AB0274	PBOW-00-SS-TNTC-SO274-AB0274-(00-01)	623	19-Aug-00	0.0 - 0.5	Collected in ditch

Table 2-1

TNT Area C Soil Sample Summary
Plum Brook Ordnance Works
Sandusky, Ohio

Surface/Subsurface/Sediment Screening and Confirmation Soil Samples

Sample ID	Sample Name	Building ID	Sample Date	Sample Depth (ft)	Comments
AB0265	PBOW-00-SS-TNTC-SO265-AB0265-(00-01)	629	18-Aug-00	1.0 - 2.0	
AB0266	PBOW-00-SS-TNTC-SO266-AB0266-(00-01)	629	18-Aug-00	1.0 - 2.0	
AB0267	PBOW-00-SS-TNTC-SO267-AB0267-(00-01)	629	18-Aug-00	1.0 - 1.75	
AB0268	PBOW-00-SS-TNTC-SO268-AB0268-(00-01)	629	18-Aug-00	1.0 - 2.0	
AB0269	PBOW-00-SS-TNTC-SO269-AB0269-(00-01)	629	18-Aug-00	1.5 - 2.5	
AB0270	PBOW-00-SS-TNTC-SO270-AB0270-(00-01)	629	18-Aug-00	1.0 - 2.0	
AB0271	PBOW-00-SS-TNTC-SO271-AB0271-(00-01)	629	18-Aug-00	0.0 - 1.0	0-1' sample for CSO-065
AB0272	PBOW-00-SS-TNTC-SO272-AB0272-(00-01)	629	18-Aug-00	0.0 - 1.0	DNT, 0-1' sample for CSO-066
AB0278	PBOW-00-SS-TNTC-SO278-AB0278-(00-01)	629	19-Aug-00	6.5 - 7.0	Collected in manhole
AB0297	PBOW-00-SS-TNTC-SO297-AB0297-(00-01)	629	19-Aug-00	0.0 - 1.0	Collected in drainage ditch
AB0280	PBOW-00-SS-TNTC-SO280-AB0280-(00-01)	682	19-Aug-00	0.25 - 1.25	Drainage Basin. TNT, 2A4,6DNT and 4A2,6DNT
AB0281	PBOW-00-SS-TNTC-SO281-AB0281-(00-01)	682	19-Aug-00	0.25 - 1.25	Drainage Basin. TNT, DNT
AB0282	PBOW-00-SS-TNTC-SO282-AB0282-(00-01)	682	19-Aug-00	0.25 - 1.25	Collected in low area
AB0308	PBOW-00-SS-TNTC-SO308-AB0308-(00-01)	682	22-Aug-00	0.0 - 1.0	0-1' sample for CSO-157
AB0309	PBOW-00-SS-TNTC-SO309-AB0309-(00-01)	682	22-Aug-00	0.5 - 1.5	
AB0310	PBOW-00-SS-TNTC-SO310-AB0310-(00-01)	682	22-Aug-00	0.5 - 1.5	
AB0311	PBOW-00-SS-TNTC-SO311-AB0311-(00-01)	682	22-Aug-00	0.5 - 1.5	DNT
AB0312	PBOW-00-SS-TNTC-SO312-AB0312-(00-01)	682	22-Aug-00	0.25 - 1.5	
AB0313	PBOW-00-SS-TNTC-SO313-AB0313-(00-01)	682	22-Aug-00	2.0 - 2.5	
AB0314	PBOW-00-SS-TNTC-SO314-AB0314-(00-01)	682	22-Aug-00	0.0 - 1.0	0-1' sample for CSO-165
AB0315	PBOW-00-SS-TNTC-SO315-AB0315-(00-01)	682	22-Aug-00	0.25 - 1.25	
AB0301	PBOW-00-SS-TNTC-SO301-AB0301-(00-01)	686	23-Aug-00	0.0 - 1.0	TNT, 0-1' sample for CSO-151
AB0302	PBOW-00-SS-TNTC-SO302-AB0302-(00-01)	686	23-Aug-00	0.5 - 1.5	TNT, 2A46DNT, 4A26DNT
AB0303	PBOW-00-SS-TNTC-SO303-AB0303-(00-01)	686	23-Aug-00	0.5 - 1.5	TNT, 2A46DNT, 4A26DNT
AB0304	PBOW-00-SS-TNTC-SO304-AB0304-(00-01)	686	23-Aug-00	0.5 - 1.5	
AB0305	PBOW-00-SS-TNTC-SO305-AB0305-(00-01)	686	23-Aug-00	0.5 - 1.5	TNT, 2A46DNT, 4A26DNT
AB0306	PBOW-00-SS-TNTC-SO306-AB0306-(00-01)	686	23-Aug-00	0.5 - 1.5	
AB0307	PBOW-00-SS-TNTC-SO307-AB0307-(00-01)	686	23-Aug-00	0.75 - 1.25	TNT, 2A46DNT, 4A26DNT
AB0324	PBOW-00-SS-TNTC-SO324-AB0324-(00-01)	686	23-Sep-00	1.0 - 2.0	
AB0325	PBOW-00-SS-TNTC-SO325-AB0325-(00-01)	686	23-Sep-00	1.0 - 2.0	

Table 2-1

TNT Area C Soil Sample Summary
Plum Brook Ordnance Works
Sandusky, Ohio

Surface/Subsurface/Sediment Screening and Confirmation Soil Samples

Sample ID	Sample Name	Building ID	Sample Date	Sample Depth (ft)	Comments
AB0329	PBOW-00-SS-TNTC-SO329-AB0329-(00-01)	686	23-Sep-00	1.0 - 2.0	
AB0330	PBOW-00-SS-TNTC-SO330-AB0330-(00-01)	686	23-Sep-00	1.0 - 2.0	
AB0335	PBOW-00-SS-TNTC-SO335-AB0335-(00-01)	686	13-Oct-00	1.0 - 2.0	
AB0336	PBOW-00-SS-TNTC-SO336-AB0336-(00-01)	686	13-Oct-00	1.0 - 2.0	
AB0246	PBOW-00-SS-TNTC-SO246-AB0246-(00-01)	689	18-Aug-00	2.5 - 3.0	Collected in sump.
AB0247	PBOW-00-SS-TNTC-SO247-AB0247-(00-01)	689	18-Aug-00	0.5 - 1.0	
AB0248	PBOW-00-SS-TNTC-SO248-AB0248-(00-01)	689	18-Aug-00	0.5 - 1.0	
AB0249	PBOW-00-SS-TNTC-SO249-AB0249-(00-01)	689	18-Aug-00	1.0 - 2.0	
AB0250	PBOW-00-SS-TNTC-SO250-AB0250-(00-01)	689	18-Aug-00	2.5 - 3.5	Collected in sump
AB0275	PBOW-00-SS-TNTC-SO275-AB0275-(00-01)	689	19-Aug-00	3.0 - 3.5	Collected in drain
AB0276	PBOW-00-SS-TNTC-SO276-AB0276-(00-01)	689	19-Aug-00	2.0 - 2.5	Collected in drain
AB0279	PBOW-00-SS-TNTC-SO279-AB0279-(00-01)	692	19-Aug-00	2.5 - 3.5	Collected in utility pole hole
AB0283	PBOW-00-SS-TNTC-SO283-AB0283-(00-01)	692	19-Aug-00	0.0 - 1.0	0-1' sample for CSO-241
AB0284	PBOW-00-SS-TNTC-SO284-AB0284-(00-01)	692	19-Aug-00	1.0 - 2.0	TNT, DNT AND 4A26DNT
AB0285	PBOW-00-SS-TNTC-SO285-AB0285-(00-01)	692	19-Aug-00	1.0 - 2.0	
AB0286	PBOW-00-SS-TNTC-SO286-AB0286-(00-01)	692	19-Aug-00	1.0 - 2.0	TNT, 2A46DNT, 4A26DNT
AB0320	PBOW-00-SS-TNTC-SO320-AB0320-(00-01)	692	23-Sep-00	1.5 - 2.5	
AB0332	PBOW-00-SS-TNTC-SO332-AB0332-(00-01)	692	13-Oct-00	2.0 - 2.5	
AB0287	PBOW-00-SS-TNTC-SO287-AB0287-(00-01)	696	19-Aug-00	1.0 - 2.0	
AB0288	PBOW-00-SS-TNTC-SO288-AB0288-(00-01)	696	19-Aug-00	0.0 - 1.0	0-1' sample for CSO-190
AB0289	PBOW-00-SS-TNTC-SO289-AB0289-(00-01)	696	19-Aug-00	0.5 - 1.5	
AB0290	PBOW-00-SS-TNTC-SO290-AB0290-(00-01)	696	19-Aug-00	1.0 - 2.0	
AB0291	PBOW-00-SS-TNTC-SO291-AB0291-(00-01)	696	19-Aug-00	1.5 - 2.5	TNT
AB0292	PBOW-00-SS-TNTC-SO292-AB0292-(00-01)	696	19-Aug-00	1.0 - 2.0	
AB0293	PBOW-00-SS-TNTC-SO293-AB0293-(00-01)	696	19-Aug-00	0.0 - 1.0	TNT, 0-1' sample for CSO-192
AB0294	PBOW-00-SS-TNTC-SO294-AB0294-(00-01)	696	19-Aug-00	1.0 - 2.0	
AB0295	PBOW-00-SS-TNTC-SO295-AB0295-(00-01)	696	19-Aug-00	1.0 - 2.0	
AB0326	PBOW-00-SS-TNTC-SO326-AB0326-(00-01)	696	23-Sep-00	1.5 - 2.5	
AB0327	PBOW-00-SS-TNTC-SO327-AB0327-(00-01)	696	23-Sep-00	2.0 - 3.0	
AB0328	PBOW-00-SS-TNTC-SO328-AB0328-(00-01)	696	23-Sep-00	1.0 - 2.0	
AB0333	PBOW-00-SS-TNTC-SO333-AB0333-(00-01)	696	13-Oct-00	2.0 - 2.5	

Table 2-1

TNT Area C Soil Sample Summary
Plum Brook Ordnance Works
Sandusky, Ohio

Surface/Subsurface/Sediment Screening and Confirmation Soil Samples

Sample ID	Sample Name	Building ID	Sample Date	Sample Depth (ft)	Comments
AB0334	PBOW-00-SS-TNTC-SO334-AB0334-(00-01)	696	13-Oct-00	1.0 - 2.0	
AB0277	PBOW-00-SS-TNTC-SO277-AB0277-(00-01)	699	19-Aug-00	3.0 - 4.0	Collected in manhole
AB0375	PBOW-00-SS-TNTC-SO375-AB0375-(00-01)	601	9/16/00	4.0 - 6.0	**(Subsurface screening samples)** Midpoint of 031/032/033 at drowning tank.
AB0376	PBOW-00-SS-TNTC-SO376-AB0376-(00-01)	601	9/16/00	8.0 - 10.0	Midpoint of -031/032/033 at drowning tank.
AB0377	PBOW-00-SS-TNTC-SO377-AB0377-(00-01)	602	9/15/00	5.0 - 7.0	At CSO-134.
AB0378	PBOW-00-SS-TNTC-SO378-AB0378-(00-01)	602	9/15/00	8.0 - 10.0	At CSO-134.
AB0379	PBOW-00-SS-TNTC-SO379-AB0379-(00-01)	603	9/15/00	5.0 - 7.0	At CSO-123
AB0380	PBOW-00-SS-TNTC-SO380-AB0380-(00-01)	603	9/15/00	8.0 - 10.0	At CSO-123
AB0381	PBOW-00-SS-TNTC-SO381-AB0381-(00-01)	606	15-Sep-00	4.0 - 6.0	At CSO-202
AB0382	PBOW-00-SS-TNTC-SO382-AB0382-(00-01)	606	15-Sep-00	8.0 - 10.0	At CSO-202
AB0383	PBOW-00-SS-TNTC-SO383-AB0383-(00-01)	611	9/16/00	4.0 - 6.0	At CSO-038/039/040.
AB0384	PBOW-00-SS-TNTC-SO384-AB0384-(00-01)	611	9/16/00	8.0 - 10.0	At CSO-038/039/040.
AB0385	PBOW-00-SS-TNTC-SO385-AB0385-(00-01)	612	9/16/00	4.0 - 6.0	At CSO-093/094/095.
AB0386	PBOW-00-SS-TNTC-SO386-AB0386-(00-01)	612	9/16/00	8.0 - 10.0	At CSO-093/094/095.
AB0387	PBOW-00-SS-TNTC-SO387-AB0387-(00-01)	613	9/16/00	4.0 - 6.0	At CSO-117/118/119.
AB0388	PBOW-00-SS-TNTC-SO388-AB0388-(00-01)	613	9/16/00	8.0 - 10.0	At CSO-117/118/119.
AB0361	PBOW-00-SS-TNTC-SO361-AB0361-(00-01)	616	9/14/00	4.0 - 6.0	At CSO-252
AB0362	PBOW-00-SS-TNTC-SO362-AB0362-(00-01)	616	9/14/00	8.0 - 10.0	At CSO-252
AB0411	PBOW-00-SS-TNTC-SO411-AB0411-(00-01)	619	9/16/00	4.0 - 6.0	At CSO-046.
AB0412	PBOW-00-SS-TNTC-SO412-AB0412-(00-01)	619	9/16/00	6.0 - 7.0	At CSO-046.
AB0389	PBOW-00-SS-TNTC-SO389-AB0389-(00-01)	621	9/16/00	4.0 - 6.0	At CSO-052/053/054.
AB0390	PBOW-00-SS-TNTC-SO390-AB0390-(00-01)	621	9/16/00	6.0 - 7.0	At CSO-052/053/054.
AB0391	PBOW-00-SS-TNTC-SO391-AB0391-(00-01)	622	9/16/00	4.0 - 6.0	At CSO-062/063/064. Sample 392 not collected.
AB0393	PBOW-00-SS-TNTC-SO393-AB0393-(00-01)	623	9/16/00	4.0 - 6.0	At CSO-237
AB0394	PBOW-00-SS-TNTC-SO394-AB0394-(00-01)	623	9/16/00	8.0 - 10.0	At CSO-237
AB0395	PBOW-00-SS-TNTC-SO395-AB0395-(00-01)	626	9/16/00	4.0 - 6.0	At CSO-075
AB0396	PBOW-00-SS-TNTC-SO396-AB0396-(00-01)	626	9/16/00	8.0 - 10.0	At CSO-075
AB0363	PBOW-00-SS-TNTC-SO363-AB0363-(00-01)	629	9/14/00	5.0 - 7.0	At CSO-066
AB0364	PBOW-00-SS-TNTC-SO364-AB0364-(00-01)	629	9/14/00	8.0 - 10.0	At CSO-066

Table 2-1

TNT Area C Soil Sample Summary
Plum Brook Ordnance Works
Sandusky, Ohio

Surface/Subsurface/Sediment Screening and Confirmation Soil Samples

Sample ID	Sample Name	Building ID	Sample Date	Sample Depth (ft)	Comments
AB0365	PBOW-00-SS-TNTC-SO365-AB0365-(00-01)	657	9/14/00	3.0 - 5.0	At CSO-222
AB0366	PBOW-00-SS-TNTC-SO366-AB0366-(00-01)	657	9/14/00	5.0 - 6.0	At CSO-222
AB0397	PBOW-00-SS-TNTC-SO397-AB0397-(00-01)	681	9/16/00	4.0 - 6.0	At CSO-008/011/012.
AB0398	PBOW-00-SS-TNTC-SO398-AB0398-(00-01)	681	9/16/00	8.0 - 10.0	At CSO-008/011/012.
AB0367	PBOW-00-SS-TNTC-SO367-AB0367-(00-01)	682	9/14/00	4.0 - 6.0	At CSO-165
AB0368	PBOW-00-SS-TNTC-SO368-AB0368-(00-01)	682	9/14/00	8.0 - 10.0	At CSO-165
AB0369	PBOW-00-SS-TNTC-SO369-AB0369-(00-01)	682	9/14/00	4.0 - 6.0	At CSO-311
AB0370	PBOW-00-SS-TNTC-SO370-AB0370-(00-01)	682	9/14/00	8.0 - 10.0	At CSO-311
AB0399	PBOW-00-SS-TNTC-SO399-AB0399-(00-01)	683	9/16/00	4.0 - 6.0	At CSO-171.
AB0400	PBOW-00-SS-TNTC-SO400-AB0400-(00-01)	683	9/16/00	8.0 - 10.0	At CSO-171.
AB0371	PBOW-00-SS-TNTC-SO371-AB0371-(00-01)	686	9/14/00	4.0 - 6.0	At CSO-302
AB0372	PBOW-00-SS-TNTC-SO372-AB0372-(00-01)	686	9/14/00	8.0 - 10.0	At CSO-302
AB0401	PBOW-00-SS-TNTC-SO401-AB0401-(00-01)	689	9/16/00	4.0 - 6.0	At CSO-001
AB0402	PBOW-00-SS-TNTC-SO402-AB0402-(00-01)	689	9/16/00	6.0 - 7.0	At CSO-001
AB0403	PBOW-00-SS-TNTC-SO403-AB0403-(00-01)	691	9/16/00	4.0 - 6.0	At CSO-021/022/023.
AB0404	PBOW-00-SS-TNTC-SO404-AB0404-(00-01)	691	9/16/00	8.0 - 10.0	At CSO-021/022/023.
AB0405	PBOW-00-SS-TNTC-SO405-AB0405-(00-01)	692	9/16/00	4.0 - 6.0	At CSO-241.
AB0406	PBOW-00-SS-TNTC-SO406-AB0406-(00-01)	692	9/16/00	8.0 - 10.0	At CSO-241.
AB0407	PBOW-00-SS-TNTC-SO407-AB0407-(00-01)	693	9/16/00	4.0 - 6.0	At CSO-173/175/176.
AB0408	PBOW-00-SS-TNTC-SO408-AB0408-(00-01)	693	9/16/00	8.0 - 10.0	At CSO-173/175/176.
AB0373	PBOW-00-SS-TNTC-SO373-AB0373-(00-01)	696	9/14/00	4.0 - 6.0	At CSO-191
AB0374	PBOW-00-SS-TNTC-SO374-AB0374-(00-01)	696	9/14/00	8.0 - 10.0	At CSO-191
AB0409	PBOW-00-SS-TNTC-SO409-AB0409-(00-01)	699	9/16/00	4.0 - 6.0	At CSO-017
AB0410	PBOW-00-SS-TNTC-SO410-AB0410-(00-01)	699	9/16/00	8.0 - 10.0	At CSO-017
AB0434	PBOW-00-SO-TNTC-SO134-AB0434-(03-04)	602	9/26/00	2.5 - 3.5	**(Confirmation samples)** FD for 436 at CSO-134
AB0435	PBOW-00-SO-TNTC-SO134-AB0434-(03-04)	602	9/26/00	2.5 - 3.5	FS for 436 at CSO-134
AB0436	PBOW-00-SO-TNTC-SO134-AB0434-(03-04)	602	9/26/00	2.5 - 3.5	At CSO-134
AB0447	PBOW-00-SO-TNTC-SO206-AB0427-(01-02)	606	12-Oct-00	1.0 - 2.0	At CSO-206, MS, MSD also
AB0432	PBOW-00-SO-TNTC-SO107-AB0432-(00-01)	616	10/10/00	0.0 - 1.0	At CSO-260
AB0433	PBOW-00-SO-TNTC-SO107-AB0433-(03-04)	616	10/10/00	3.0 - 4.0	At CSO-107

Table 2-1

TNT Area C Soil Sample Summary
Plum Brook Ordnance Works
Sandusky, Ohio

Surface/Subsurface/Sediment Screening and Confirmation Soil Samples

Sample ID	Sample Name	Building ID	Sample Date	Sample Depth (ft)	Comments
AB0449	PBOW-00-SO-TNTC-SO252-AB0449-(01-02)	616	9/27/00	0.5 - 1.5	FD for 451 at CSO-252
AB0450	PBOW-00-SO-TNTC-SO252-AB0450-(01-02)	616	9/27/00	0.5 - 1.5	FS for 451 at CSO-252
AB0451	PBOW-00-SO-TNTC-SO252-AB0451-(01-02)	616	9/27/00	0.5 - 1.5	At CSO-252
AB0476	PBOW-00-SO-TNTC-SO100-AB0476-(02-03)	616	10/12/00	2.0 - 3.0	At CSO-100
AB0431	PBOW-00-SO-TNTC-SO074-AB0431-(03-04)	626	10/12/00	2.5 - 3.5	At CSO-074
AB0427	PBOW-00-SO-TNTC-SO066-AB0427-(00-01)	629	9/27/00	1.0 - 2.0	FD for 429 at CSO-272
AB0428	PBOW-00-SO-TNTC-SO066-AB0428-(00-01)	629	9/27/00	1.0 - 2.0	FS for 429 at CSO-272.
AB0429	PBOW-00-SO-TNTC-SO066-AB0429-(00-01)	629	9/27/00	0.0 - 1.0	At CSO-066.
AB0430	PBOW-00-SO-TNTC-SO066-AB0430-(03-04)	629	10/12/00	2.5 - 3.5	At CSO-066.
AB0475	PBOW-00-SO-TNTC-SO065-AB0475-(03-04)	629	10/12/00	2.5 - 3.5	At CSO-065
AB0442	PBOW-00-SO-TNTC-SO165-AB0442-(02-03)	682	9/27/00	1.5 - 2.5	At CSO-165
AB0452	PBOW-00-SO-TNTC-SO280-AB0452-(00-01)	682	9/27/00	0.25 - 1.25	FD for 454 at CSO-280
AB0453	PBOW-00-SO-TNTC-SO280-AB0453-(00-01)	682	9/27/00	0.25 - 1.25	FS for 454 at CSO-280
AB0454	PBOW-00-SO-TNTC-SO280-AB0454-(00-01)	682	9/27/00	0.25 - 1.25	At CSO-280
AB0455	PBOW-00-SO-TNTC-SO311-AB0455-(01-02)	682	9/27/00	0.5 - 1.5	At CSO-311, MS, MSD also
AB0437	PBOW-00-SO-TNTC-SO134-AB0437-(00-01)	686	10/10/00	0.3 - 1.0	At CSO-150
AB0438	PBOW-00-SO-TNTC-SO151-AB0438-(00-01)	686	10/10/00	0.0 - 1.0	At CSO-301
AB0439	PBOW-00-SO-TNTC-SO151-AB0439-(01-02)	686	10/10/00	1.3 - 2.3	At CSO-301
AB0478	PBOW-00-SO-TNTC-SO325-AB0478-(01-02)	686	10/12/00	1.0 - 2.0	At CSO-325
AB0426	PBOW-00-SO-TNTC-SO001-AB0426-(00-01)	689	10/12/00	1.0 - 2.0	At CSO-001.
AB0448	PBOW-00-SO-TNTC-SO241-AB0448-(01-02)	692	10/11/00	1.0 - 2.0	At CSO-241.
AB0477	PBOW-00-SO-TNTC-SO320-AB0476-(02-03)	692	10/12/00	1.5 - 2.5	At CSO-320
AB0443	PBOW-00-SO-TNTC-SO173-AB0443-(01-02)	693	10/11/00	1.0 - 2.0	At CSO-173
AB0444	PBOW-00-SO-TNTC-SO190-AB0444-(01-02)	696	10/11/00	1.0 - 2.0	At CSO-190
AB0445	PBOW-00-SO-TNTC-SO192-AB0445-(00-01)	696	10/11/00	0.0 - 1.0	At CSO-192/293
AB0446	PBOW-00-SO-TNTC-SO192-AB0446-(02-03)	696	10/11/00	2.0 - 2.5	At CSO-291
AB0479	PBOW-00-SO-TNTC-SO327-AB0479-(02-03)	696	10/12/00	2.0 - 3.0	At CSO-327
AB0465	PBOW-00-SO-TNTC-SO134-AB0465-(05-07)	602	9/27/00	5.0 - 7.0	(Subsurface Confirmation Samples) At CSO-134
AB0463	PBOW-00-SO-TNTC-SO123-AB0463-(05-07)	603	9/27/00	5.0 - 7.0	At CSO-123
AB0464	PBOW-00-SO-TNTC-SO123-AB0464-(08-10)	603	9/27/00	8.0 - 10.0	At CSO-123

Table 2-1

TNT Area C Soil Sample Summary
Plum Brook Ordnance Works
Sandusky, Ohio

Surface/Subsurface/Sediment Screening and Confirmation Soil Samples

Sample ID	Sample Name	Building ID	Sample Date	Sample Depth (ft)	Comments
AB0470	PBOW-00-SO-TNTC-SO383-AB0470-(04-06)	611	9/27/00	4.0 - 6.0	At CSO-383
AB0473	PBOW-00-SO-TNTC-SO252-AB0473-(04-06)	616	9/29/00	4.0 - 6.0	At CSO-252
AB0474	PBOW-00-SO-TNTC-SO252-AB0474-(08-10)	616	9/29/00	8.0 - 10.0	At CSO-252
AB0461	PBOW-00-SO-TNTC-SO066-AB0461-(05-07)	629	9/28/00	5.0 - 7.0	At CSO-066
AB0462	PBOW-00-SO-TNTC-SO066-AB0462-(08-10)	629	9/28/00	8.0 - 10.0	At CSO-066
AB0468	PBOW-00-SO-TNTC-SO222-AB0468-(03-05)	657	9/28/00	3.0 - 5.0	At CSO-222
AB0471	PBOW-00-SO-TNTC-SO397-AB0471-(04-06)	681	9/28/00	4.0 - 6.0	At CSO-397/398
AB0466	PBOW-00-SO-TNTC-SO171-AB0466-(04-06)	683	9/28/00	4.0 - 6.0	At CSO-171
AB0467	PBOW-00-SO-TNTC-SO171-AB0467-(08-10)	683	9/28/00	8.0 - 10.0	At CSO-171
AB0460	PBOW-00-SO-TNTC-SO001-AB0460-(04-06)	689	9/28/00	4.0 - 6.0	At CSO-001
AB0469	PBOW-00-SO-TNTC-SO241-AB0469-(04-06)	692	9/27/00	4.0 - 6.0	At CSO-241
AB0472	PBOW-00-SO-TNTC-SO407-AB0472-(08-10)	693	9/28/00	8.0 - 10.0	At CSO-407/408

Table 2-1

TNT Area C Soil Sample Summary
Plum Brook Ordnance Works
Sandusky, Ohio

Surface/Subsurface/Sediment Screening and Confirmation Soil Samples

Sample ID	Sample Name	Building ID	Sample Date	Sample Depth (ft)	Comments
AB1001	PBOW-00-SD-TNTC-SD01-AB1001-(00-00)		9/18/00	0.0 - 1.0	MS, MSD **(Sediment Samples)**
AB1002	PBOW-00-SD-TNTC-SD02-AB1002-(00-00)		9/18/00	0.0 - 1.0	
AB1003	PBOW-00-SD-TNTC-SD03-AB1003-(00-00)		9/18/00	0.0 - 1.0	
AB1004	PBOW-00-SD-TNTC-SD04-AB1004-(00-00)		9/18/00	0.0 - 1.0	
AB1005	PBOW-00-SD-TNTC-SD055-AB1005-(00-00)		9/19/00	0.0 - 1.0	
AB1006	PBOW-00-SD-TNTC-SD06-AB1006-(00-00)		9/18/00	0.0 - 1.0	
AB1007	PBOW-00-SD-TNTC-SD07-AB1007-(00-00)		9/18/00	1.0 - 1.5	
AB1008	PBOW-00-SD-TNTC-SD08-AB1008-(00-00)		9/19/00	1.0 - 1.5	
AB1009	PBOW-00-SD-TNTC-SD09-AB1009-(00-00)		9/19/00	1.0 - 1.5	
AB1010	PBOW-00-SD-TNTC-SD10-AB1010-(00-00)		9/19/00	1.0 - 1.5	
AB1011	PBOW-00-SD-TNTC-SD11-AB1011-(00-00)		9/19/00	1.0 - 1.5	
AB1012	PBOW-00-SD-TNTC-SD12-AB1012-(00-00)		9/19/00	1.0 - 1.5	
AB1013	PBOW-00-SD-TNTC-SD13-AB1013-(00-00)		9/19/00	1.0 - 1.5	
AB1014	PBOW-00-SD-TNTC-SD14-AB1014-(00-00)		9/19/00	1.0 - 1.5	
AB1015	PBOW-00-SD-TNTC-SD15-AB1015-(00-00)		9/19/00	1.0 - 1.5	
AB1016	PBOW-00-SD-TNTC-SD01-AB1016-(00-00)		9/18/00	0.0 - 1.0	FD for SD01
AB1017	PBOW-00-SD-TNTC-SD01-AB1017-(00-00)		9/18/00	0.0 - 1.0	FS for SD01
AB1018	PBOW-00-SD-TNTC-SD08-AB1018-(00-00)		9/19/00	1.0 - 1.5	FD for SD08
AB1019	PBOW-00-SD-TNTC-SD08-AB1019-(00-00)		9/19/00	1.0 - 1.5	FS for SD08

Table 2-2

Summary of Detected Analytes in Confirmation Soil Samples
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter	Location Code:		TNTC-SO134			TNTC-SO134			TNTC-SO123			TNTC-SO123			TNTC-SO206			TNTC-SO383		
	Building:		602			602			603			603			606			611		
	Sample No:		AB0436			AB0465			AB0463			AB0464			AB0447			AB0470		
	Sample Date:		26-SEP-00			27-SEP-00			27-SEP-00			27-SEP-00			12-OCT-00			27-SEP-00		
	Sample Depth:		2.5 - 3.5			5 - 7			5 - 7			8 - 10			1 - 2			4 - 6		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.146			-			0.934			0.896			**4.48**			0.192		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	0.108			-			**3.61**			**10.3**			**6.9**			0.182		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	0.165			-			**3.5**			**16.8**			-			0.156		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			0.27			2.8			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			0.275			0.328			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			1.47			-			-		
Tetryl	mg/kg		-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			0.205			0.507			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	0.049	J	J	0.119			5.26			15.1			3.45			0.0956	J	J
VOLATILES																				
Acetone	mg/kg	1600	0.0535		J	0.015			0.0081	J	J	0.034			0.0846			0.0228		
Benzene	mg/kg	0.67	-			-			-			-			0.00162	J	J	-		
Butanone, 2-	mg/kg	7300	-			0.00545	J	J	-			-			-			-		
Carbon disulfide	mg/kg	360	0.00379	J	J	0.00175	J	J	-			0.00215	J	J	0.01			-		
Ethylbenzene	mg/kg	1500	-			-			-			-			-			-		
Methylene chloride	mg/kg	8.9	0.00878	JB	B	0.0104			0.00443	J	B	0.00272	J	B	0.00622	B	B	0.00706	B	B
Styrene	mg/kg	4600	-			-			-			-			-			-		
Toluene	mg/kg	590	-			-			-			-			0.00184	J	J	-		
Xylene, o-	mg/kg	1400	-			-			-			-			-			-		
Xylenes, m,p-	mg/kg	1400	-			-			-			-			-			-		
SEMIVOLATILES																				
Acenaphthylene	mg/kg		-			-			-			-			-			-		
Anthracene	mg/kg	22000	-			-			-			-			-			-		
Benzo(a)anthracene	mg/kg	0.62	-			-			-			-			0.0498	J	J	-		
Benzo(a)pyrene	mg/kg	0.062	-			-			-			-			0.0449	J	J	-		
Benzo(b)fluoranthene	mg/kg	0.62	-			-			-			-			0.0826	J	J	-		
Benzo(ghi)perylene	mg/kg		-			-			-			-			-			-		
Benzo(k)fluoranthene	mg/kg	6.2	-			-			-			-			-			-		
Bis(2-ethylhexyl)phthalate	mg/kg	35	-			0.0264	J	J	-			-			0.0419	J	J	-		
Carbazole	mg/kg	24	-			-			-			-			-			-		
Chrysene	mg/kg	62	-			-			-			-			-			-		
Di-n-butyl phthalate	mg/kg	6100	-			-			-			-			0.0494	J	J	-		
Dibenz(a,h)anthracene	mg/kg	0.062	-			-			-			-			-			-		
Diethyl phthalate	mg/kg	49000	-			-			-			-			0.624	B	B	-		
Dinitrotoluene, 2,4-	mg/kg	0.72	0.0732	J	J	-			0.617	J	J	**8.19**			-			-		
Dinitrotoluene, 2,6-	mg/kg	0.72	-			-			**7.21**			**6.83**			-			-		
Fluoranthene	mg/kg	2300	-			-			-			-			0.086	J	J	-		
Indeno(1,2,3-cd)pyrene	mg/kg	0.62	-			-			-			-			-			-		
Methylnaphthalene, 2-	mg/kg		-			-			-			-			-			-		
Phenanthrene	mg/kg		-			-			-			-			-			-		
Pyrene	mg/kg	2300	-			-			-			-			-			-		
PCBs																				
Aroclor 1254	mg/kg	0.22	**0.46**			0.176			-			-			-			-		
Aroclor 1260	mg/kg	0.22	-			0.135			-			-			0.14		J	0.0244	J	J

Table 2-2

Summary of Detected Analytes in Confirmation Soil Samples
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter	Location Code:		TNTC-SO134			TNTC-SO134			TNTC-SO123			TNTC-SO123			TNTC-SO206			TNTC-SO383		
	Building:		602			602			603			603			606			611		
	Sample No:		AB0436			AB0465			AB0463			AB0464			AB0447			AB0470		
	Sample Date:		26-SEP-00			27-SEP-00			27-SEP-00			27-SEP-00			12-OCT-00			27-SEP-00		
	Sample Depth:		2.5 - 3.5			5 - 7			5 - 7			8 - 10			1 - 2			4 - 6		
METALS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Aluminum	mg/kg	76000	5490		J	5010		J	4310		J	6950		J	7260	H	J	7180		J
Antimony	mg/kg	31	-		UJ	-		UJ	-		UJ	-		UJ	-		UJ	-		UJ
Arsenic	mg/kg	0.39	**3.95**			**4.22**			**2.99**			**2.90**			**6.59**			**2.90**		
Barium	mg/kg	5400	30.5		J	25.3			24.4			21.5			40.4			27.3		
Beryllium	mg/kg	150	0.36			0.342			0.321			0.515			0.823		J	0.389		
Cadmium	mg/kg	37	-			0.16	B	J	0.136	B	J	-			0.345	B	J	-		
Calcium	mg/kg		35800		J	16600		J	65300		J	126000		J	34900	H	J	1410		J
Chromium	mg/kg	210	8.44			9.89			7.13			14.1			13.2			6.34		
Cobalt	mg/kg	4700	6.29			4.78			3.62			8.38			5.77			1.63		
Copper	mg/kg	2900	11.1			28		J	11.2		J	11.5		J	19			3.38		B
Iron	mg/kg	23000	13100			10600			10100			14000			16900			6930		
Lead	mg/kg	48.6	21.6		J	**157**		J	27.9		J	4.05		J	**79.5**		J	6.03		J
Magnesium	mg/kg		2230			1910		J	1160		J	3960		J	4250		J	629		J
Manganese	mg/kg	1800	484			244			361			764			387		J	81.9		
Mercury	mg/kg	23	-			-			-			-			0.086		J	0.02	B	J
Nickel	mg/kg	1600	18.4			13			10.4			23.1			17			4.37		
Potassium	mg/kg		1250			1150			897			2640			1080		J	253		
Selenium	mg/kg	390	-			-			-			-			-			-		
Silver	mg/kg	390	-			0.497	B	J	-			-			-			-		
Sodium	mg/kg		196	B	B	263			288			355			186	B	B	210	B	J
Vanadium	mg/kg	550	9.69			12.7			8.95			9.79			18.8			11.9		
Zinc	mg/kg	23000	55.1			33.8			41.2			17.3			151			27.1		

Table 2-2

Summary of Detected Analytes in Confirmation Soil Samples
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Location Code:		TNTC-SO100			TNTC-SO107			TNTC-SO107			TNTC-SO252			TNTC-SO252			TNTC-SO252			TNTC-SO074		
	Building:		616			616			616			616			616			616			626		
	Sample No:		AB0476			AB0432			AB0433			AB0451			AB0473			AB0474			AB0431		
	Sample Date:		12-OCT-00			10-OCT-00			10-OCT-00			27-SEP-00			29-SEP-00			29-SEP-00			12-OCT-00		
Parameter	Sample Depth:		2 - 3			0 - 1			3 - 4			0.5 - 1.5			4 - 6			4 - 6			2.5 - 3.5		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			0.293			**4.78**			-			-			0.784		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	**6.44**			-			0.226			**3.77**			0.275			-			2.67		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			0.0829	J	J	-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			0.57			0.121			-			-		
Nitrobenzene	mg/kg	20	0.195			-			-			0.283			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			0.462			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-		
Tetryl	mg/kg		-			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	0.499			-			0.238			0.966			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	**2226**			0.566			**47.3**			**681**			1.32			-			1.41		
VOLATILES																							
Acetone	mg/kg	1600	0.0196		J	0.0861		J	0.0204		J	0.0438			-			-		UJ	0.0986		
Benzene	mg/kg	0.67	-			-			-			-			-			-		UJ	0.00216	J	J
Butanone, 2-	mg/kg	7300	-			-			-			0.015			-			-		UJ	-		
Carbon disulfide	mg/kg	360	0.00175	J	J	-			-			0.00347	J	J	-			-		UJ	0.00376	J	J
Ethylbenzene	mg/kg	1500	-			-			-			-			-			-			-		
Methylene chloride	mg/kg	8.9	0.00798	B	B	0.0188	B	B	0.00523	JB	B	0.00772	B	B	-			0.00138	JB	B	0.00434	JB	B
Styrene	mg/kg	4600	-			-			-			-			-			-			-		
Toluene	mg/kg	590	-			-			-			-			-			-		UJ	0.00255	J	J
Xylene, o-	mg/kg	1400	-			-			-			-			-			-			-		
Xylenes, m,p-	mg/kg	1400	-			-			-			-			-			-			-		
SEMIVOLATILES																							
Acenaphthylene	mg/kg		-			-			-			-			-			-			-		
Anthracene	mg/kg	22000	-			-			-			-			-			-			0.151	J	J
Benzo(a)anthracene	mg/kg	0.62	-			0.269	J	J	-			-			-			-			0.135	J	J
Benzo(a)pyrene	mg/kg	0.062	-			**0.306**	J	J	-			-			-			-			0.0536	J	J
Benzo(b)fluoranthene	mg/kg	0.62	-			0.443			-			-			-			-			0.116	J	J
Benzo(ghi)perylene	mg/kg		-			0.222	J	J	-			-			-			-			-		
Benzo(k)fluoranthene	mg/kg	6.2	-			0.178	J	J	-			-			-			-			-		
Bis(2-ethylhexyl)phthalate	mg/kg	35	0.0324	J	J	0.0328	J	J	0.0883	J	J	-			0.0207	J	J	-			-		
Carbazole	mg/kg	24	-			-			-			-			-			-			-		
Chrysene	mg/kg	62	-			0.31	J	J	-			-			-			-			0.113	J	J
Di-n-butyl phthalate	mg/kg	6100	-			-			-			-			-			-			-		
Dibenz(a,h)anthracene	mg/kg	0.062	-			**0.0817**	J	J	-			-			-			-			-		
Diethyl phthalate	mg/kg	49000	0.622	B	B	-			-			-			-			-			0.307	JB	B
Dinitrotoluene, 2,4-	mg/kg	0.72	0.496			-			-			**0.899**	J	J	-			-			0.068	J	J
Dinitrotoluene, 2,6-	mg/kg	0.72	-			-			-			-			-			-			-		
Fluoranthene	mg/kg	2300	-			0.409	J	J	-			-			-			-			0.469		
Indeno(1,2,3-cd)pyrene	mg/kg	0.62	-			0.21	J	J	-			-			-			-			-		
Methylnaphthalene, 2-	mg/kg		-			-			-			-			-			-			-		
Phenanthrene	mg/kg		-			0.107	J	J	-			-			-			-			0.227	J	J
Pyrene	mg/kg	2300	-			0.33	J	J	-			-			-			-			0.248	J	J
PCBs																							
Aroclor 1254	mg/kg	0.22	-			-			-			-			-			-			-		
Aroclor 1260	mg/kg	0.22	**0.26**			0.088			0.03	J	J	**0.41**			-			-			0.15		J

Table 2-2

Summary of Detected Analytes in Confirmation Soil Samples
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter	Location Code:		TNTC-SO100			TNTC-SO107			TNTC-SO107			TNTC-SO252			TNTC-SO252			TNTC-SO252			TNTC-SO074		
	Building:		616			616			616			616			616			616			626		
	Sample No:		AB0476			AB0432			AB0433			AB0451			AB0473			AB0474			AB0431		
	Sample Date:		12-OCT-00			10-OCT-00			10-OCT-00			27-SEP-00			29-SEP-00			29-SEP-00			12-OCT-00		
	Sample Depth:		2 - 3			0 - 1			3 - 4			0.5 - 1.5			4 - 6			4 - 6			2.5 - 3.5		
METALS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Aluminum	mg/kg	76000	4540	H	J	5290		J	3750		J	3880		J	11000			10800			8310	H	J
Antimony	mg/kg	31	0.654	B	B	1.59			-			1.03	B	J	-		UJ	1.15	B	J	-		UJ
Arsenic	mg/kg	0.39	**3.32**			**3.86**		B	**3.68**		B	**3.75**			**18.5**			**13.2**			**8.45**		
Barium	mg/kg	5400	28.3			57.7			14.6			19.6			62.3			43			63.2		
Beryllium	mg/kg	150	0.36		J	0.403			0.28			0.294			0.683			0.633			0.543		J
Cadmium	mg/kg	37	0.498	B	J	0.316	B	J	-			0.163	B	J	-			-			0.316	B	J
Calcium	mg/kg		10700	H	J	10700			2790			5710		J	34700			50800			15400	H	J
Chromium	mg/kg	210	9.85			13.7			7.44			38			17.2			17.3			16.5		
Cobalt	mg/kg	4700	3.23			5.03			3.16			3.45			10.8			12.1			7.29		
Copper	mg/kg	2900	35.9			99.8			5.36			13.1		J	29.7			27.2			30.1		
Iron	mg/kg	23000	11500			12900			8140			11500			**27600**			**25600**			19100		
Lead	mg/kg	48.6	**111**		J	**361**			15.3			**117**		J	14.6			13.4			**134**		J
Magnesium	mg/kg		1910		J	1660			1660			1600		J	10300			14000			3260		J
Manganese	mg/kg	1800	211		J	505			122			119			295			426			454		J
Mercury	mg/kg	23	0.072		J	0.04		B	0.114		B	0.247			0.019	B	J	0.019	B	J	0.022	B	J
Nickel	mg/kg	1600	8.95			11.9			9.44			24.9			31.9			33			23.8		
Potassium	mg/kg		706		J	1070			639			507			2690			2830			1640		J
Selenium	mg/kg	390	-			-			-			-			-			-			-		
Silver	mg/kg	390	-			-			-			-			-			-			-		
Sodium	mg/kg		134	B	B	227	B	J	110	B	J	252			264			253			140	B	B
Vanadium	mg/kg	550	17.1			16.9			12.2			18			20.9			19.8			18.6		
Zinc	mg/kg	23000	86.1			171			31.3			55.4			91.4			83.9			123		

Table 2-2

Summary of Detected Analytes in Confirmation Soil Samples
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter		Location Code:	TNTC-SO065			TNTC-SO066			TNTC-SO066			TNTC-SO066			TNTC-SO066			TNTC-SO222			TNTC-SO397		
		Building:	629			629			629			629			629			657			681		
		Sample No:	AB0475			AB0429			AB0461			AB0462			AB0430			AB0468			AB0471		
		Sample Date:	12-OCT-00			27-SEP-00			28-SEP-00			28-SEP-00			12-OCT-00			28-SEP-00			28-SEP-00		
		Sample Depth:	2.5 - 3.5			0 - 1			5 - 7			8 - 10			2.5 - 3.5			3 - 5			4 - 6		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			0.0721	J	J	-			-			-			0.151			0.946		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			0.0538	J	J	-			-			-			-			0.359		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			0.451			**297**			**36.3**			**165**			0.483			**2.03**		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			50.8			6.32			2.05			1.94			0.921		
Nitrotoluene, 3-	mg/kg	370	-			-			8.61			1.09			4.82			0.263			0.31		
Nitrotoluene, 4-	mg/kg	370	-			-			67.4			6.59			-			1.99			1.18		
Tetryl	mg/kg		-			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			3.59			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			0.164			5.19			0.167			**38**			0.166			0.448		
VOLATILES																							
Acetone	mg/kg	1600	0.112			0.445			-		R	-		R	0.0495		J	0.0644		J	0.151		J
Benzene	mg/kg	0.67	0.00241	J	J	-			0.00342	J	J	0.00492		J	-			-			-		
Butanone, 2-	mg/kg	7300	-			0.0818			-			-		UJ	-			-			0.0165		J
Carbon disulfide	mg/kg	360	0.0109			0.0123			-			-		UJ	0.00365	J	J	0.0075			0.00605		J
Ethylbenzene	mg/kg	1500	-			-			-			0.00248	J	J	-			-			-		
Methylene chloride	mg/kg	8.9	0.0061	B	B	0.0188	B	B	0.00358	JB	B	0.00456	JB	B	0.00902	B	B	0.00308	JB	B	0.0052	JB	B
Styrene	mg/kg	4600	-			-			-			-		UJ	-			-			-		
Toluene	mg/kg	590	0.00385	J	J	-			0.0781		J	0.0186		J	-			0.00194	J	J	0.00208	J	J
Xylene, o-	mg/kg	1400	-			-			0.0019	J	J	0.00323	J	J	-			-			-		
Xylenes, m,p-	mg/kg	1400	-			-			-			0.00605		J	-			-			-		
SEMIVOLATILES																							
Acenaphthylene	mg/kg		-			-			-			-			-			-			-		
Anthracene	mg/kg	22000	-			-			-			-			-			0.113	J	J	-		
Benzo(a)anthracene	mg/kg	0.62	0.0454	J	J	-			-			-			-			0.289	J	J	0.0384	J	J
Benzo(a)pyrene	mg/kg	0.062	0.043	J	J	-			-			-			-			**0.356**	J	J	0.0361	J	J
Benzo(b)fluoranthene	mg/kg	0.62	-			-			-			-			-			0.492			-		
Benzo(ghi)perylene	mg/kg		-			-			-			-			-			0.352	J	J	-		
Benzo(k)fluoranthene	mg/kg	6.2	-			-			-			-			-			0.155	J	J	-		
Bis(2-ethylhexyl)phthalate	mg/kg	35	0.0237	J	J	-			-			-			-			0.202	J	J	-		
Carbazole	mg/kg	24	-			-			-			-			-			0.109	J	J	-		
Chrysene	mg/kg	62	-			-			-			-			-			0.357	J	J	-		
Di-n-butyl phthalate	mg/kg	6100	-			-			-			-			-			-			-		
Dibenz(a,h)anthracene	mg/kg	0.062	-			-			-			-			-			**0.123**	J	J	-		
Diethyl phthalate	mg/kg	49000	0.585	B	B	-			-			-			-			-			-		
Dinitrotoluene, 2,4-	mg/kg	0.72	0.0558	J	J	0.239	J	J	**170**			**13.2**			**43.1**			-			**0.74**		
Dinitrotoluene, 2,6-	mg/kg	0.72	-			0.0668	J	J	**65.5**			**6.83**			**6.92**			-			0.117	J	J
Fluoranthene	mg/kg	2300	-			-			-			-			-			0.666			-		
Indeno(1,2,3-cd)pyrene	mg/kg	0.62	-			-			-			-			-			0.27	J	J	-		
Methylnaphthalene, 2-	mg/kg		-			-			-			-			-			0.0381	J	J	-		
Phenanthrene	mg/kg		-			-			-			-			-			0.568			-		
Pyrene	mg/kg	2300	-			-			-			-			-			0.605			-		
PCBs																							
Aroclor 1254	mg/kg	0.22	**0.969**			-			-			-			-			-			-		
Aroclor 1260	mg/kg	0.22	**1.58**			**5.07**			0.16		J	0.103		J	**2.09**		J	0.0613	J	J	0.0592	J	J

Table 2-2

Summary of Detected Analytes in Confirmation Soil Samples
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Location Code:		TNTC-SO065			TNTC-SO066			TNTC-SO066			TNTC-SO066			TNTC-SO066			TNTC-SO222			TNTC-SO397		
	Building:		629			629			629			629			629			657			681		
	Sample No:		AB0475			AB0429			AB0461			AB0462			AB0430			AB0468			AB0471		
	Sample Date:		12-OCT-00			27-SEP-00			28-SEP-00			28-SEP-00			12-OCT-00			28-SEP-00			28-SEP-00		
Parameter	Sample Depth:		2.5 - 3.5			0 - 1			5 - 7			8 - 10			2.5 - 3.5			3 - 5			4 - 6		
METALS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Aluminum	mg/kg	76000	11200	H	J	6560		J	7850		J	5180		J	2330	H	J	6810		J	4630		J
Antimony	mg/kg	31	1.09	B	B	8.15		J	-			-			-		UJ	-			-		
Arsenic	mg/kg	0.39	**6.79**			**7.55**			**6.06**			**2.47**			**7.43**			**9.27**			**6.08**		
Barium	mg/kg	5400	96.6			365			35.4			22.9			427			57.5			92.4		
Beryllium	mg/kg	150	0.721		J	0.602			0.595			0.5			0.219	B	J	0.487			0.376		
Cadmium	mg/kg	37	0.194	B	J	-			-			-			-			0.385	B	J	-		
Calcium	mg/kg		28700	H	J	18500		J	157000			225000			28200	H	J	67600			26300		
Chromium	mg/kg	210	14.3			11			13.7			9.53			3.71			11			8.03		
Cobalt	mg/kg	4700	7.71			9.63			12			6.24			0.297	B	J	3.89			4.4		
Copper	mg/kg	2900	12.9			17.1		J	19.2			11			3.56			15.2			13		
Iron	mg/kg	23000	**30500**			**35500**			**32600**			11300			4010			15400			**23100**		
Lead	mg/kg	48.6	41.1		J	**132**		J	9.86			4.86		B	**761**		J	**68.9**			**129**		
Magnesium	mg/kg		3320		J	5780		J	3670			3390			422		J	6710			7380		
Manganese	mg/kg	1800	**2120**		J	**5160**			1130			1620			105		J	396			1700		
Mercury	mg/kg	23	0.068		J	0.048			-			-			0.059		J	0.113			0.026	B	J
Nickel	mg/kg	1600	21.8			15.8			46.6			18.5			4.17			12			12.6		
Potassium	mg/kg		951		J	800			2730			2410			1180		J	968			476		
Selenium	mg/kg	390	-			-			-			-			-			-			-		
Silver	mg/kg	390	-			-			-			-			-			-			-		
Sodium	mg/kg		140	B	B	223	B	J	292		B	387			78.2	B	B	214	B	B	133	B	B
Vanadium	mg/kg	550	24.6			16			12			8.92			6.68			16.5			14.6		
Zinc	mg/kg	23000	96.1			93.1			44.5			10.9			5.8			158			51		

Table 2-2

Summary of Detected Analytes in Confirmation Soil Samples
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Location Code:		TNTC-SO165			TNTC-SO280			TNTC-SO311			TNTC-SO171			TNTC-SO171			TNTC-SO150			TNTC-SO151			TNTC-SO151			TNTC-SO325		
	Building:		682			682			682			683			683			686			686			686			686		
	Sample No:		AB0442			AB0454			AB0455			AB0466			AB0467			AB0437			AB0438			AB0439			AB0478		
	Sample Date:		27-SEP-00			27-SEP-00			27-SEP-00			28-SEP-00			28-SEP-00			10-OCT-00			10-OCT-00			10-OCT-00			12-OCT-00		
Parameter	Sample Depth:		1.5 - 2.5			0.25 - 1.2			0.5 - 1.5			4 - 6			8 - 10			0.33 - 1			0 - 1			1.3 - 2.3			1 - 2		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	**7.28**			-			0.588			-			**3.76**			**14.6**			**10.8**			-			2.45		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	**11.9**			-			0.948			-			0.647			**38**			**9.41**			**4.8**			**11.4**		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			0.566			-			-			-			0.12			0.142			0.127			-		
Dinitrotoluene, total	mg/kg	0.72	**5.63**			**22.1**			**0.781**			**236**			**47.8**			-			**1.59**			-			-		
Nitrobenzene	mg/kg	20	0.0966	J	J	0.227			-			0.0963	J	J	-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	1.28			-			-			-			0.484			1.71			-			0.271			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			0.29			-			-			-			-		
Tetryl	mg/kg		0.626			-			-			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	7.93			10.1			-			0.146			0.119			0.902			2.43			2.69			0.283		
Trinitrotoluene, 2,4,6-	mg/kg	16	**1343**			**54969**			1.35			**448**			**173**			**51.1**			**5067**			**2588**			**33.7**		
VOLATILES																													
Acetone	mg/kg	1600	0.0114	J	J	0.118			0.0375			-		R	-		R	0.187		J	0.0969		J	-		R	0.0602		
Benzene	mg/kg	0.67	-			-			-			-			-			-		UJ	0.00194	J	J	-		UJ	0.00184	J	J
Butanone, 2-	mg/kg	7300	-			-			-			-			-			-		UJ	-		UJ	-		R	-		
Carbon disulfide	mg/kg	360	0.0022	J	J	-			0.00343	J	J	0.00337	J	J	-			-		UJ	-			-		UJ	-		
Ethylbenzene	mg/kg	1500	-			-			-			-			-			0.00156	J	J	-			-		UJ	-		
Methylene chloride	mg/kg	8.9	0.0155	B	B	0.00831	B	B	0.00864		B	0.00625	B	B	0.00668	B	B	0.0266	B	B	0.00597	B	B	-		UJ	0.0122	B	B
Styrene	mg/kg	4600	-			-			-			-			-			-		UJ	-			-		UJ	-		
Toluene	mg/kg	590	-			-			-			-			-			0.0142		J	0.00324	J	J	0.00726		J	0.0032	J	J
Xylene, o-	mg/kg	1400	-			-			-			-			-			0.00246	J	J	-			0.00166	J	J	-		
Xylenes, m,p-	mg/kg	1400	-			-			-			-			-			-		UJ	-			0.00399	J	J	-		J
SEMIVOLATILES																													
Acenaphthylene	mg/kg		-			-			-			-			-			0.545	J	J	-			-			-		
Anthracene	mg/kg	22000	-			-			-			-			-			0.351	J	J	1.34	J	J	-			-		
Benzo(a)anthracene	mg/kg	0.62	-			-			-			-			-			**3.32**			**6.94**			-			-		
Benzo(a)pyrene	mg/kg	0.062	-			-			-			-			-			**3.63**			**6.33**			-			-		
Benzo(b)fluoranthene	mg/kg	0.62	-			-			-			-			-			**4.82**			**9.06**			-			-		
Benzo(ghi)perylene	mg/kg		-			-			-			-			-			1.78			2.78	J	J	-			-		
Benzo(k)fluoranthene	mg/kg	6.2	-			-			-			-			-			1.65			3.02	J	J	-			-		
Bis(2-ethylhexyl)phthalate	mg/kg	35	-			-			-			-			-			-			-			-			-		
Carbazole	mg/kg	24	-			-			-			-			-			-			-			-			-		
Chrysene	mg/kg	62	-			-			-			-			-			3.02			6.28			-			-		
Di-n-butyl phthalate	mg/kg	6100	-			-			-			-			-			-			-			-			-		
Dibenz(a,h)anthracene	mg/kg	0.062	-			-			-			-			-			**0.601**	J	J	**1.03**	J	J	-			-		
Diethyl phthalate	mg/kg	49000	-			-			-			-			-			-			-			-			0.672	B	B
Dinitrotoluene, 2,4-	mg/kg	0.72	**10.6**			**13.9**			**1.72**			**275**			**24.1**			-			**1.65**	J	J	-			0.06	J	J
Dinitrotoluene, 2,6-	mg/kg	0.72	**2.88**	J	J	**8.43**			**0.428**			**23.8**	J	J	**1.68**	J	J	-			-			-			-		
Fluoranthene	mg/kg	2300	-			-			-			-			-			4.75			12.9			-			-		
Indeno(1,2,3-cd)pyrene	mg/kg	0.62	-			-			-			-			-			**1.89**			**2.91**	J	J	-			-		
Methylnaphthalene, 2-	mg/kg		-			-			-			-			-			-			-			-			-		
Phenanthrene	mg/kg		-			-			-			-			-			0.667	J	J	4.13	J	J	-			-		
Pyrene	mg/kg	2300	-			-			-			-			-			4.61			10.1			-			-		
PCBs																													
Aroclor 1254	mg/kg	0.22	-			-			-			-			-			-			-			-			-		
Aroclor 1260	mg/kg	0.22	**0.509**			**0.883**			0.162			0.0768		J	0.106		J	**1.37**		J	**2.11**		J	**1.02**		J	0.0542	J	J

Table 2-2

Summary of Detected Analytes in Confirmation Soil Samples
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter	Location Code:		TNTC-SO165			TNTC-SO280			TNTC-SO311			TNTC-SO171			TNTC-SO171			TNTC-SO150			TNTC-SO151			TNTC-SO151			TNTC-SO325		
	Building:		682			682			682			683			683			686			686			686			686		
	Sample No:		AB0442			AB0454			AB0455			AB0466			AB0467			AB0437			AB0438			AB0439			AB0478		
	Sample Date:		27-SEP-00			27-SEP-00			27-SEP-00			28-SEP-00			28-SEP-00			10-OCT-00			10-OCT-00			10-OCT-00			12-OCT-00		
	Sample Depth:		1.5 - 2.5			0.25 - 1.2			0.5 - 1.5			4 - 6			8 - 10			0.33 - 1			0 - 1			1.3 - 2.3			1 - 2		
METALS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Aluminum	mg/kg	76000	2610		J	1870		J	4060		J	3150		J	3930		J	3630		J	3090		J	3690		J	3750	H	J
Antimony	mg/kg	31	-		UJ	-		UJ	0.82	B	J	-			0.904	B	J	0.68	B	J	-			0.783	B	J	-		
Arsenic	mg/kg	0.39	**2.26**			**3.83**			**5.59**			**1.77**			**1.79**			**3.94**		B	**4.02**		B	**2.95**		B	**2.14**		
Barium	mg/kg	5400	28.2			30.3			27.9			31.9			33.3			24.1			26.4			22.5			14.1		
Beryllium	mg/kg	150	0.156	B	J	0.159	B	J	0.311			0.203	B	J	0.246			0.297			0.247	B	J	0.275			0.277		J
Cadmium	mg/kg	37	-			-			0.285	B	J	-			-			0.272	B	J	0.545	B	J	0.606	B	J	-		
Calcium	mg/kg		9330		J	959		J	5300		J	1430			1420			35600			55100			13400			7300	H	J
Chromium	mg/kg	210	4.36			3.04			12.5			5.24			6.25			6.76			8.17			7.85			6.27		
Cobalt	mg/kg	4700	1.39			1.14			2.41			1.37			1.75			2.25			2.25			2.56			2.2		
Copper	mg/kg	2900	4.54		B	6.38		J	23.3		J	1.36			2.96			43.7			28.6			30.3			3.73		
Iron	mg/kg	23000	6600			5520			9560			4310			5200			10900			11400			9550			6800		
Lead	mg/kg	48.6	25.6		J	**97**		J	**721**		J	8.8			43.8			**195**			**621**			**212**			14.2		J
Magnesium	mg/kg		1040		J	388		J	1270		J	658			761			5890			6770			2710			1870		J
Manganese	mg/kg	1800	74			46.7			63.7			33.7			38.1			334			286			199			111		J
Mercury	mg/kg	23	0.027	B	J	0.034			0.022	B	J	-			-			0.269			0.39			-		B	0.021	B	J
Nickel	mg/kg	1600	4.48			3.3			12.3			3.72			4.8			8.17			8.74			8.26			6.44		
Potassium	mg/kg		308			390			678			242			369			441			452			469			354		J
Selenium	mg/kg	390	-			-			-			-			-			-			-			-			-		
Silver	mg/kg	390	-			-			-			-			0.421	B	J	-			-			-			-		
Sodium	mg/kg		195	B	J	163	B	J	251			249		B	118	B	B	223	B	J	173	B	J	207	B	J	151	B	B
Vanadium	mg/kg	550	7.9			6.56			11.3			8.01			9.2			10.9			10.5			11.7			12.4		
Zinc	mg/kg	23000	25.6			25.2			112			23.9			25			121			240			193			19.2		

Table 2-2

Summary of Detected Analytes in Confirmation Soil Samples
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter	Location Code:		TNTC-SO001			TNTC-SO001			TNTC-SO241			TNTC-SO241			TNTC-SO320			TNTC-SO173			TNTC-SO407		
	Building:		689			689			692			692			692			693			693		
	Sample No:		AB0460			AB0426			AB0469			AB0448			AB0477			AB0443			AB0472		
	Sample Date:		28-SEP-00			12-OCT-00			27-SEP-00			11-OCT-00			12-OCT-00			11-OCT-00			28-SEP-00		
	Sample Depth:		4 - 6			0 - 1			4 - 6			1 - 2			1.5 - 2.5			1 - 2			8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.436			**6.93**			0.589			**11.5**			2.6			2.26			0.333		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			**3.76**			0.911			**17.3**			**6.23**			1.28			0.433		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	**3.66**			**8.33**			0.257			**2.76**			-			0.288			**0.824**		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	3.27			-			-			-			-			-			0.295		
Nitrotoluene, 3-	mg/kg	370	0.45			-			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	2.86			-			-			-			-			-			0.39		
Tetryl	mg/kg		-			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			0.0616	J	J	2.6			3.24			0.153			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	1.96			4.76			0.213			**900**			**38.7**			8.07			0.257		
VOLATILES																							
Acetone	mg/kg	1600	0.0307		J	0.456		J	0.0519			0.0503		J	-		R	0.0444		J	-		R
Benzene	mg/kg	0.67	-			-		UJ	-			-			-		UJ	-			-		
Butanone, 2-	mg/kg	7300	-			-		UJ	-			-			-		UJ	-			-		
Carbon disulfide	mg/kg	360	0.00398	J	J	-		UJ	-			-			-		UJ	-			-		
Ethylbenzene	mg/kg	1500	-			0.00207	J	J	-			-			-		UJ	-			-		
Methylene chloride	mg/kg	8.9	0.00198	JB	B	0.0355	B	J	0.0162	B	B	0.00505	JB	B	0.0514	B	J	0.00594	B	B	0.006	JB	B
Styrene	mg/kg	4600	-			0.00197	J	J	-			-			-		UJ	-			-		
Toluene	mg/kg	590	-			0.0264		J	-			-			0.0139		J	-			-		
Xylene, o-	mg/kg	1400	-			0.00307	J	J	-			-			-		UJ	-			-		
Xylenes, m,p-	mg/kg	1400	-			0.0075		J	-			-			0.00389	J	J	-			-		
SEMIVOLATILES																							
Acenaphthylene	mg/kg		-			-			-			-			-			-			-		
Anthracene	mg/kg	22000	-			-			-			-			-			-			-		
Benzo(a)anthracene	mg/kg	0.62	0.0465	J	J	0.0753	J	J	-			-			-			-			-		
Benzo(a)pyrene	mg/kg	0.062	0.0413	J	J	**0.0787**	J	J	-			-			-			-			-		
Benzo(b)fluoranthene	mg/kg	0.62	-			0.176	J	J	-			-			-			-			-		
Benzo(ghi)perylene	mg/kg		-			-			-			-			-			-			-		
Benzo(k)fluoranthene	mg/kg	6.2	-			-			-			-			-			-			-		
Bis(2-ethylhexyl)phthalate	mg/kg	35	-			0.0493	J	J	-			-			0.0335	J	J	0.0409	J	J	-		
Carbazole	mg/kg	24	-			-			-			-			-			-			-		
Chrysene	mg/kg	62	0.0535	J	J	0.114	J	J	-			-			-			-			-		
Di-n-butyl phthalate	mg/kg	6100	-			-			-			-			0.169	J	J	-			-		
Dibenz(a,h)anthracene	mg/kg	0.062	-			-			-			-			-			-			-		
Diethyl phthalate	mg/kg	49000	-			0.425	B	B	-			-			-			-			-		
Dinitrotoluene, 2,4-	mg/kg	0.72	0.689			**1.01**			0.0493	J	J	**5.68**			0.176	J	J	0.0916	J	J	-		
Dinitrotoluene, 2,6-	mg/kg	0.72	0.0977	J	J	0.458			-			**10.7**			0.386			-			-		
Fluoranthene	mg/kg	2300	-			0.189	J	J	-			-			-			-			-		
Indeno(1,2,3-cd)pyrene	mg/kg	0.62	-			-			-			-			-			-			-		
Methylnaphthalene, 2-	mg/kg		-			-			-			-			-			-			-		
Phenanthrene	mg/kg		-			0.0543	J	J	-			-			-			-			-		
Pyrene	mg/kg	2300	-			0.131	J	J	-			-			-			-			-		
PCBs																							
Aroclor 1254	mg/kg	0.22	-			-			-			-			-			-			-		
Aroclor 1260	mg/kg	0.22	0.183			**1.42**			0.0196	J	J	**0.517**			0.0237	J	J	0.0366	J	J	0.0405	J	J

Table 2-2

Summary of Detected Analytes in Confirmation Soil Samples
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter	Location Code:		TNTC-SO001			TNTC-SO001			TNTC-SO241			TNTC-SO241			TNTC-SO320			TNTC-SO173			TNTC-SO407		
	Building:		689			689			692			692			692			693			693		
	Sample No:		AB0460			AB0426			AB0469			AB0448			AB0477			AB0443			AB0472		
	Sample Date:		28-SEP-00			12-OCT-00			27-SEP-00			11-OCT-00			12-OCT-00			11-OCT-00			28-SEP-00		
	Sample Depth:		4 - 6			0 - 1			4 - 6			1 - 2			1.5 - 2.5			1 - 2			8 - 10		
METALS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Aluminum	mg/kg	76000	1420		J	4560	H	J	5360		J	5570			4170	H	J	4110			1610		J
Antimony	mg/kg	31	0.757	B	J	-		UJ	-		UJ	-		UJ	-		UJ	0.78	B	B	0.779	B	J
Arsenic	mg/kg	0.39	**3.64**			**10.5**			**3.43**			**9.38**			**9.88**			**3.63**			**3.39**		
Barium	mg/kg	5400	56.5			141			28.3			81.6			52.8			42.8			38.7		
Beryllium	mg/kg	150	0.178	B	J	0.442		J	0.325			0.46			0.42		J	0.274			0.154	B	J
Cadmium	mg/kg	37	0.281	B	J	1.15			-			1.19			0.159	B	J	0.191	B	B	-		
Calcium	mg/kg		252000			38300	H	J	7710		J	24000		J	45900	H	J	2590		J	1610		
Chromium	mg/kg	210	3.86			8.13			6.49			9.87		J	8.08			5.92		J	3.84		
Cobalt	mg/kg	4700	1.94			4.79			2.41			4.5			3.77			2.61			1.11	B	J
Copper	mg/kg	2900	8.19			21.3			4.46		B	14.2			10.5			5.09			3.53		
Iron	mg/kg	23000	9790			18100			9180			**28800**			**28500**			8480			6370		
Lead	mg/kg	48.6	**76.4**			**355**		J	9.27		J	**58.1**		J	9.46		J	8.07		J	4.22		B
Magnesium	mg/kg		18700			11300		J	3030		J	5900		J	13200		J	1170		J	434		
Manganese	mg/kg	1800	713			512		J	263			1400			1120		J	388			34.2		
Mercury	mg/kg	23	0.059			0.173		J	0.024	B	J	0.043		J	-			-			-		
Nickel	mg/kg	1600	7.55			21.1			6			15.4			14			6.73			3.29		
Potassium	mg/kg		510			858		J	304			506		J	680		J	339		J	355		
Selenium	mg/kg	390	-			-			-			-			-			-			-		
Silver	mg/kg	390	-			-			-			0.455	B	J	-			-			-		
Sodium	mg/kg		235		B	182	B	B	173	B	J	228			152	B	B	170	B	J	115	B	B
Vanadium	mg/kg	550	5.87			12.7			11			17.3			14.8			11.9			10.1		
Zinc	mg/kg	23000	56.9			199			29.3			359		J	94.6			45.8		J	12.3		

Table 2-2

Summary of Detected Analytes in Confirmation Soil Samples
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter														
	Location Code:		TNTC-SO190			TNTC-SO192			TNTC-SO192			TNTC-SO327		
	Building:		696			696			696			696		
	Sample No:		AB0444			AB0445			AB0446			AB0479		
	Sample Date:		11-OCT-00			11-OCT-00			11-OCT-00			12-OCT-00		
	Sample Depth:		1 - 2			0 - 1			2 - 2.5			2 - 3		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.99			**6.62**			**4.76**			2.2		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	1.24			**5.14**			3.27			3.02		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			0.751			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			**3.7**			0.705			-		
Nitrobenzene	mg/kg	20	-			-			0.212			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-		
Tetryl	mg/kg		-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			0.723			0.811			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	0.634			**878**			**251**			9.91		
VOLATILES														
Acetone	mg/kg	1600	0.109		J	0.0975		J	-		R	0.0696		
Benzene	mg/kg	0.67	-			0.00601			0.00291	J	J	0.00185	J	J
Butanone, 2-	mg/kg	7300	-			-			-			-		
Carbon disulfide	mg/kg	360	0.00598			-			0.00423	J	J	0.0272		
Ethylbenzene	mg/kg	1500	-			-			-			0.00119	J	J
Methylene chloride	mg/kg	8.9	0.00731	B	B	0.0054	JB	B	0.00443	JB	B	0.00583	B	B
Styrene	mg/kg	4600	-			-			-			-		
Toluene	mg/kg	590	0.00302	J	J	0.00258	J	J	0.00692			0.00296	J	J
Xylene, o-	mg/kg	1400	-			-			-			-		
Xylenes, m,p-	mg/kg	1400	-			-			-			0.00114	J	J
SEMIVOLATILES														
Acenaphthylene	mg/kg		-			-			-			-		
Anthracene	mg/kg	22000	-			-			4.14			-		
Benzo(a)anthracene	mg/kg	0.62	0.0648	J	J	**1**	J	J	**11.1**			-		
Benzo(a)pyrene	mg/kg	0.062	0.0596	J	J	**0.704**	J	J	**8.2**			-		
Benzo(b)fluoranthene	mg/kg	0.62	0.102	J	J	**0.929**	J	J	**10.2**			-		
Benzo(ghi)perylene	mg/kg		-			-			3.4	J	J	-		
Benzo(k)fluoranthene	mg/kg	6.2	-			-			4.38			-		
Bis(2-ethylhexyl)phthalate	mg/kg	35	0.0302	J	J	-			-			0.0392	J	J
Carbazole	mg/kg	24	-			-			-			-		
Chrysene	mg/kg	62	0.0656	J	J	0.831	J	J	8.74			-		
Di-n-butyl phthalate	mg/kg	6100	-			-			-			-		
Dibenz(a,h)anthracene	mg/kg	0.062	-			-			**1.4**	J	J	-		
Diethyl phthalate	mg/kg	49000	-			-			-			0.529	B	B
Dinitrotoluene, 2,4-	mg/kg	0.72	-			**2.41**	J	J	**1.64**	J	J	-		
Dinitrotoluene, 2,6-	mg/kg	0.72	-			-			-			-		
Fluoranthene	mg/kg	2300	0.11	J	J	2.05	J	J	20.3			-		
Indeno(1,2,3-cd)pyrene	mg/kg	0.62	-			-			**3.64**	J	J	-		
Methylnaphthalene, 2-	mg/kg		-			-			-			-		
Phenanthrene	mg/kg		-			1.35	J		5.21			-		
Pyrene	mg/kg	2300	0.0873	J	J	1.54	J	J	17.1			-		
PCBs														
Aroclor 1254	mg/kg	0.22	-			-			-			-		
Aroclor 1260	mg/kg	0.22	-			**0.373**		J	**0.3**			0.00951	J	J

Table 2-2

Summary of Detected Analytes in Confirmation Soil Samples
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter														
	Location Code:		TNTC-SO190			TNTC-SO192			TNTC-SO192			TNTC-SO327		
	Building:		696			696			696			696		
	Sample No:		AB0444			AB0445			AB0446			AB0479		
	Sample Date:		11-OCT-00			11-OCT-00			11-OCT-00			12-OCT-00		
	Sample Depth:		1 - 2			0 - 1			2 - 2.5			2 - 3		
METALS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Aluminum	mg/kg	76000	7340			5580			2820			6190	H	J
Antimony	mg/kg	31	-		UJ	-		UJ	-		UJ	0.633	B	B
Arsenic	mg/kg	0.39	**5.58**			**7.12**			**2.58**			**4.07**		
Barium	mg/kg	5400	50.3			89.8			398			46		
Beryllium	mg/kg	150	0.482			0.394			0.205	B	J	0.408		J
Cadmium	mg/kg	37	0.693	B		2.19			0.913			-		
Calcium	mg/kg		25000		J	45900		J	46800		J	6520	H	J
Chromium	mg/kg	210	13.1		J	16.2		J	202		J	10.1		
Cobalt	mg/kg	4700	6.25			4.36			3.69			4.59		
Copper	mg/kg	2900	9.9			52.2			16.4			7.22		
Iron	mg/kg	23000	20600			21400			8120			18000		
Lead	mg/kg	48.6	20.1		J	**934**		J	**228**		J	8.61		J
Magnesium	mg/kg		2130		J	4660		J	5360		J	1640		J
Manganese	mg/kg	1800	562			614			374			424		J
Mercury	mg/kg	23	0.03	B	J	0.107		J	0.085		J	0.031	B	J
Nickel	mg/kg	1600	18.8			22.1			90.8			14.3		
Potassium	mg/kg		1140		J	878		J	492		J	822		J
Selenium	mg/kg	390	1.11	B	B	0.948	B	B	-			-		
Silver	mg/kg	390	-			-			-			-		
Sodium	mg/kg		185	B	J	403			146	B	J	109	B	B
Vanadium	mg/kg	550	21.9			28.8			19.9			18		
Zinc	mg/kg	23000	204		J	708		J	170		J	29.5		

Table 2-3

Summary of Groundwater Analytical Detections, Overburden Temporary Piezometers TNT Area C - RI Report Former Plum Brook Ordnance Works, Sandusky, Ohio

(Page 1 of 2)

		Location Code:		TNTC-GW02			TNTC-GW03			TNTC-GW04			TNTC-GW05			TNTC-GW06			TNTC-GW07			TNTC-GW08			TNTC-GW09			TNTC-GW10		
		Building:		682			602			603			616			692			693			683			681			611		
		Sample No:		AB3002			AB3003			AB3004			AB3005			AB3006			AB3007			AB3008			AB3009			AB3010		
		Sample Date:		10-OCT-00			28-SEP-00			28-SEP-00			10-OCT-00			28-SEP-00			28-SEP-00			10-OCT-00			29-SEP-00			27-SEP-00		
Parameter	Fl	Unit	PRG	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ
NITROAROMATICS																														
Amino-2,6-dinitrotoluene, 4-		ug/L	2.2	436			0.715			59.4			48			2.27			2.74			419			17.4			21.1		
Amino-4,6-dinitrotoluene, 2-		ug/L	2.2	-	U	U	0.181	J	J	147	D	D	34.9			2.88			3.2			-			40.3			15.1		
Dinitrobenzene, 1,3-		ug/L	3.6	0.802			-	U	U	-			-			-			-			-			-			-		
Dinitrotoluene, total		ug/L	0.099	1260			-	U	U	338	D	D	9.64			0.754			1.8			21100			453			7.9		
Nitrobenzene		ug/L	3.4	-	U	U	-	U	U	-			0.488			-			-			-			-			-		
Nitrotoluene, 2-		ug/L	61	258			-	U	U	4.73			-			-			0.791			236			2310			2.61		
Nitrotoluene, 3-		ug/L	61	16.1			-	U	U	0.88			-			-			-			18.4			182			0.481	J	J
Nitrotoluene, 4-		ug/L	61	94.7			-	U	U	-			-			-			-			189			1290			0.396	J	J
Trinitrobenzene, 1,3,5-		ug/L	1100	-	U	U	-	U	U	-			10.3			-			-			-			-			-		
Trinitrotoluene, 2,4,6-		ug/L	2.2	1880			2.13			620	D	D	9720			0.547			0.208	J	J	20100			3.9			9.7		
VOLATILES																														
Acetone		ug/L	610	6.92	B	B	13.4		J	-		R	-		R	-		R	-		R	-		R	-		R	-		R
Benzene		ug/L	0.41	-	U	U	0.51	J	J	-			-			-			-			-			0.59	J	J	-		
Carbon disulfide		ug/L	1000	0.76	J	J	-	U	U	-			-			-			-			-			-			-		
Methylene chloride		ug/L	4.3	1.18	B	B	0.68	J	B	1.2		B	1.15	B	B	0.91	J	B	1.34		B	0.94	JB	B	0.96	J	B	0.71	J	B
Toluene		ug/L	720	1	J	J	0.83	J	J	-			-			-			-			-			7.88			-		
SEMIVOLATILES																														
Dinitrotoluene, 2,4-		ug/L	0.099	4610			-	U	U	215			3.64	J	J	-			6.91	J	J	37600			442			4.05	J	J
Dinitrotoluene, 2,6-		ug/L	0.099	1330			-	U	U	45.5	J	J	-			-			-			1060	J	J	122			2.4	J	J
METALS																														
Aluminum	Y	ug/L	36000							107	B	B				334												-		
Aluminum		ug/L	36000	15400			9370			12300			26400			7310			19500			4470			221000			426		
Antimony	Y	ug/L	150							-						-												-		UJ
Antimony		ug/L	150	4.02	B	J	-	U	U	-			-			-			-			-			-			-		UJ
Arsenic	Y	ug/L	0.045							-		J				-												-		
Arsenic		ug/L	0.045	9.86		J	11		J	8.22		J	21.6		J	9.23		J	39.1		J	5.15		J	432		J	-		
Barium	Y	ug/L	2600							42.4						76.1												16.4		
Barium		ug/L	2600	264			178			143			207			155			579			140			3540			21.5		
Beryllium	Y	ug/L	73							0.104	B	B				-												-		
Beryllium		ug/L	73	1.18			0.766	B	J	1.07			2.35			0.608	B	J	1.6			0.343	B	B	17.2	B	J	-		
Cadmium	Y	ug/L	18							-						-												-		
Cadmium		ug/L	18	-	U	U	-	U	U	-			0.962	B	J	-			-			-			-			-		
Calcium	Y	ug/L								132000						197000												135000		
Calcium		ug/L		214000			223000			338000			224000			214000			514000			154000			2664000			147000		
Chromium	Y	ug/L	110							-						1.54	B	J										-		
Chromium		ug/L	110	48.6			32.2			24.4			64			19.3			47.2			10			450			-		
Cobalt	Y	ug/L	2200							1.8	B	J				-												-		
Cobalt		ug/L	2200	15.6			13.5			16.2			28.2			7.23			21.1			5.93			471			-		
Copper	Y	ug/L	1400							2.58	B	J				2.07	B	J										3.23	B	B
Copper		ug/L	1400	41.4			29.7			26.5			516			14			45.5			15.2			1110			4.13	B	J
Iron	Y	ug/L	11000							240						771												-		
Iron		ug/L	11000	32200			47100			29100			72900			21800			68500			7450			979000			810		

Table 2-3

Summary of Groundwater Analytical Detections, Overburden Temporary Piezometers TNT Area C - RI Report Former Plum Brook Ordnance Works, Sandusky, Ohio

		Location Code:		TNTC-GW02			TNTC-GW03			TNTC-GW04			TNTC-GW05			TNTC-GW06			TNTC-GW07			TNTC-GW08			TNTC-GW09			TNTC-GW10		
		Building:		682			602			603			616			692			693			683			681			611		
		Sample No:		AB3002			AB3003			AB3004			AB3005			AB3006			AB3007			AB3008			AB3009			AB3010		
		Sample Date:		10-OCT-00			28-SEP-00			28-SEP-00			10-OCT-00			28-SEP-00			28-SEP-00			10-OCT-00			29-SEP-00			27-SEP-00		
Parameter	Fl	Unit	PRG	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ
Lead	Y	ug/L	15							-						-												-		
Lead		ug/L	15	**46.1**			**241**			**23.6**			**2050**			**15.5**			**54.6**			**20.8**			**1460**			-		
Magnesium	Y	ug/L								29100						46500												12100		
Magnesium		ug/L		37000			43600			34700			50100			49100			90000			20700			726000			12500		
Manganese	Y	ug/L	880							236						226												115		
Manganese		ug/L	880	**1170**			**1070**			**1890**			**1040**			**958**			**1300**			317			**38100**			109		
Mercury	Y	ug/L	11							0.11	B	J																-		
Mercury		ug/L	11	-	U	U	-	U	U	0.146	B	J	9.3			-			0.15	B	J	-			-			0.105	B	J
Nickel	Y	ug/L	730							2.04	B	J				-												-		
Nickel		ug/L	730	38.6			52.5			40.8			86.4			18.5			56.3			16.6			**1540**			2.5	B	J
Potassium	Y	ug/L								1110						848												4770		
Potassium		ug/L		4560			5080			6490			13600			2220			5820			1650			32500			6020		
Selenium	Y	ug/L	180							-						2.73	B	J										-		
Selenium		ug/L	180	-	U	U	-	U	U	-			-			-			2.31	B	J	-			**202**	B	J	-		
Silver	Y	ug/L	180							-						-												-		
Silver		ug/L	180	-	U	U	-	U	U	-			0.703	B	J	-			-			-			-			-		
Sodium	Y	ug/L								2030						3190												2900		
Sodium		ug/L		2640			2730			2520			23600			3630			7360			1810			28100	B	J	3400		
Vanadium	Y	ug/L	260							-						1.27	B	J										-		
Vanadium		ug/L	260	70.4			49.3			24			111			32.6			93.9			17.7			**647**			1.02	B	J
Zinc	Y	ug/L	11000							5.89	B	J				5.74	B	J										16.5		
Zinc		ug/L	11000	137			162			99.6			993			53.2			175			42.5			3960			24.9		

Table 2-4

Summary of Nitroaromatic Analytical Detections in Soil
Building 657, Wastewater Settling Tanks
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO216			TNTC-SO217			TNTC-SO218			TNTC-SO219			TNTC-SO220			TNTC-SO221			TNTC-SO222		
	Sample No:		AB0216			AB0217			AB0218			AB0219			AB0220			AB0221			AB0222		
	Sample Date:		27-JUL-00			27-JUL-00			27-JUL-00			27-JUL-00			27-JUL-00			27-JUL-00			27-JUL-00		
Parameter	Sample Depth:		0 - 1			0 - 1			0 - 1			0 - 1			0 - 1			0 - 1			0 - 1		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			-			-			-			-			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			0.246			-			-			-			-		

	Sample Type:		Confirmation			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO222			TNTC-SO223			TNTC-SO224			TNTC-SO225			TNTC-SO226			TNTC-SO365			TNTC-SO366		
	Sample No:		AB0468			AB0223			AB0224			AB0225			AB0226			AB0365			AB0366		
	Sample Date:		28-SEP-00			27-JUL-00			27-JUL-00			27-JUL-00			27-JUL-00			14-SEP-00			14-SEP-00		
Parameter	Sample Depth:		3 - 5			0 - 1			0 - 1			0 - 1			0 - 1			3 - 5			5 - 6		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.151			-			-			-			-			0.276			0.785		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			-			-			-			0.208	J		0.775		
Dinitrotoluene, total	mg/kg	0.72	0.483			-			-			-			-			**0.948**			-		
Nitrotoluene, 2-	mg/kg	370	1.94			-			-			-			-			0.864			-		
Nitrotoluene, 3-	mg/kg	370	0.263			-			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	1.99			-			-			-			-			0.695			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	0.166			-			1.13			0.56			-			0.489			0.367		

Table 2-5

Summary of Nirtoaromatic Analytical Detections in Soil
Building 681, Mono House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Confirmation			Screening		
	Location Code:		TNTC-SO007			TNTC-SO008			TNTC-SO009			TNTC-SO010			TNTC-SO011			TNTC-SO012			TNTC-SO397						TNTC-SO398		
	Sample No:		AB0007			AB0008			AB0009			AB0010			AB0011			AB0012			AB0397			AB0471			AB0398		
	Sample Date:		25-JUL-00			25-JUL-00			25-JUL-00			25-JUL-00			25-JUL-00			25-JUL-00			16-SEP-00			28-SEP-00			16-SEP-00		
Parameter	Sample Depth:		0 - 1			0 - 1			0 - 1			0 - 1			0 - 1			0 - 1			4 - 6						8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			-			-			-			-			0.79			0.946			0.223	J	
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			-			-			-			-			0.374			0.359			0.142	J	
Dinitrotoluene, total	mg/kg	0.72	0.15	J		-			-			-			-			-			**1.09**			**2.03**			0.14	J	
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-			0.921			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			-			-			0.31			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-			1.18			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			-			-			-			-			0.107	J		0.448			-		

Table 2-6

Summary of Nitroaromatic Analytical Detections in Soil
Building 682, Bi-Tri House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO157			TNTC-SO158			TNTC-SO159			TNTC-SO160			TNTC-SO161			TNTC-SO162			TNTC-SO163			TNTC-SO164		
	Sample No:		AB0157			AB0158			AB0159			AB0160			AB0161			AB0162			AB0163			AB0164		
	Sample Date:		12-AUG-00			12-AUG-00			12-AUG-00			12-AUG-00			12-AUG-00			12-AUG-00			12-AUG-00			12-AUG-00		
	Sample Depth:		1.5 - 2.5			2.5 - 3			1 - 2			0.5 - 1.5			1 - 2			1 - 2			1.5 - 2.5			1.5 - 2.5		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.914			0.58			-			-			-			-			-			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	1.62			0.569			-			-			-			-			-			-		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	**1.38**			0.209	J		-			-			-			-			-			-		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	0.306	J		-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-			-		
Tetryl	mg/kg		-			-			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	8.35			0.463			-			-			-			-			-			-		

Parameter	Sample Type:		Screening			Confirmation			Screening			Screening			Confirmation			Screening			Screening			Screening		
	Location Code:		TNTC-SO165						TNTC-SO166			TNTC-SO280						TNTC-SO281			TNTC-SO282			TNTC-SO308		
	Sample No:		AB0165			AB0442			AB0166			AB0280			AB0454			AB0281			AB0282			AB0308		
	Sample Date:		12-AUG-00			27-SEP-00			12-AUG-00			19-AUG-00			27-SEP-00			19-AUG-00			19-AUG-00			22-AUG-00		
	Sample Depth:		1.5 - 2.5						1.5 - 1.8			0.25 - 1.2						0.25 - 1.2			0.25 - 1.2			0 - 1		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	1.26			**7.28**			-			**3.54**			-			1.29			-			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	2.23			**11.9**			-			**3.57**			-			2.3			-			-		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			0.566			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	0.627			**5.63**			-			0.672			**22.1**			**0.866**			-			-		
Nitrobenzene	mg/kg	20	-			0.0966	J	J	-			-			0.227			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			1.28			-			0.298	J		-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-			-		
Tetryl	mg/kg		-			0.626			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	0.95			7.93			-			0.121	J		10.1			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	729			**1343**			-			**62.9**			**54969**			**47.5**			-			-		

Table 2-6

Summary of Nitroaromatic Analytical Detections in Soil
Building 682, Bi-Tri House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter	Sample Type:		Screening			Screening			Screening			Confirmation			Screening			Screening		
	Location Code:		TNTC-SO309			TNTC-SO310			TNTC-SO311			TNTC-SO312						TNTC-SO313		
	Sample No:		AB0309			AB0310			AB0311			AB0455			AB0312			AB0313		
	Sample Date:		22-AUG-00			22-AUG-00			22-AUG-00			27-SEP-00			22-AUG-00			22-AUG-00		
	Sample Depth:		0.5 - 1.5			0.5 - 1.5			0.5 - 1.5			0.25 - 1.5						2.0 - 2.5		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.27			0.293			0.107	J		0.588			0.914			0.71		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	0.338			0.493			0.148	J		0.948			1.18			0.739		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			0.274			0.0994	J		**0.781**			-			0.123	J	
Nitrobenzene	mg/kg	20	-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-		
Tetryl	mg/kg		-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			-			-			-			0.208		
Trinitrotoluene, 2,4,6-	mg/kg	16	0.194	J		0.629			0.329			1.35			0.848			0.277		

Parameter	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO314			TNTC-SO315			TNTC-SO367			TNTC-SO368			TNTC-SO369			TNTC-SO370		
	Sample No:		AB0314			AB0315			AB0367			AB0368			AB0369			AB0370		
	Sample Date:		22-AUG-00			22-AUG-00			14-SEP-00			14-SEP-00			14-SEP-00			14-SEP-00		
	Sample Depth:		0 - 1			0.25 - 1.2			4 - 6			8 - 10			4 - 6			8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.583			-			0.494			0.992			-			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	0.762			-			0.43			0.46			-			-		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	0.133	J		-			-			0.194	J		0.181	J		-		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			0.272	J		-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			0.24	J		-		
Tetryl	mg/kg		-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			0.601			0.114	J		-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	8.67			-			3.43			4.14			-			-		

Table 2-7

Summary of Nitroaromatic Analytical Detections in Soil
Building 683, Fortifer House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter	Sample Type:		Screening			Screening			Screening			Screening			Screening			Confirmation			Confirmation			Screening			Screening			Screening		
	Location Code:		TNTC-SO167			TNTC-SO168			TNTC-SO169			TNTC-SO170			TNTC-SO171			TNTC-SO171			TNTC-SO171			TNTC-SO245			TNTC-SO399			TNTC-SO400		
	Sample No:		AB0167			AB0168			AB0169			AB0170			AB0171			AB0466			AB0467			AB0245			AB0399			AB0400		
	Sample Date:		12-AUG-00			12-AUG-00			12-AUG-00			12-AUG-00			12-AUG-00			28-SEP-00			28-SEP-00			12-AUG-00			16-SEP-00			16-SEP-00		
	Sample Depth:		0.5 - 1			1 - 2			1.5 - 2.5			1 - 1.5			0.5 - 1			4 - 6			8 - 10			1 - 2			4 - 6			8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			-			-			-			-			**3.76**			-			1.53			2.86		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			-			-			-			-			0.647			-			1.45			2.05		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			**236**			**47.8**			-			-			-		
Nitrobenzene	mg/kg	20	-			-			-			-			-			0.0963	J	J	-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			-			0.484			-			0.597			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			0.29			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			-			-			-			0.146			0.119			-			-			0.249		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			-			-			-			**448**			**173**			-			**18.2**			**16.4**		

Table 2-8

Summary of Analytical Detections in Soil
Building 686, Wash House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter		Sample Type:	Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening			Confirmation		
		Location Code:	TNTC-SO142			TNTC-SO143			TNTC-SO144			TNTC-SO145			TNTC-SO146			TNTC-SO147			TNTC-SO148			TNTC-SO149			TNTC-SO150					
		Sample No:	AB0142			AB0143			AB0144			AB0145			AB0146			AB0147			AB0148			AB0149			AB0150			AB0437		
		Sample Date:	12-AUG-00			12-AUG-00			12-AUG-00			12-AUG-00			12-AUG-00			12-AUG-00			12-AUG-00			12-AUG-00			12-AUG-00			10-OCT-00		
		Sample Depth:	2 - 3			1.6 - 2.6			2.5 - 3.0			2 - 3			1 - 1.5			0.33 - 1			0.33 - 1			0 - 1			0.33 - 1					
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			0.142	J		1.14			-			0.319			-			-			0.138	J		**7.69**			**14.6**		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			0.17	J		0.823			-			0.496			-			0.126	J		0.151	J		**12.8**			**38**		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-			-			-			-			0.12		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			0.147	J		-			0.15	J		-			-			-			-		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			0.3	J		-			-			-			-			-			0.687			1.71		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-			-			-			-		
Tetryl	mg/kg		-			-			-			-			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			-			-			-			-			-			-			0.206	J		0.902		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			0.139	J		9.19			0.132	J		8.33			0.114	J		1.64			0.686			**38.1**			**51.1**		

Parameter		Sample Type:	Screening			Confirmation			Confirmation			Screening			Screening			Screening			Screening			Screening		
		Location Code:	TNTC-SO151			TNTC-SO151			TNTC-SO151			TNTC-SO152			TNTC-SO153			TNTC-SO154			TNTC-SO155			TNTC-SO156		
		Sample No:	AB0151			AB0438			AB0439			AB0152			AB0153			AB0154			AB0155			AB0156		
		Sample Date:	12-AUG-00			10-OCT-00			10-OCT-00			12-AUG-00			12-AUG-00			12-AUG-00			12-AUG-00			12-AUG-00		
		Sample Depth:	1.3 - 2.3			0 - 1			1.3 - 2.3			2 - 3			1 - 2			1 - 2			2.5 - 3.5			2 - 3		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	2.17			**10.8**			-			1.68			-			-			-			0.191	J	
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	**3.48**			**9.41**			**4.8**			1.97			-			-			-			0.377		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			0.142			0.127			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			**1.59**			-			-			-			-			-			-		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			0.271			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-			-		
Tetryl	mg/kg		0.429	J		-			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	1.85			2.43			2.69			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	**196**			**5067**			**2588**			0.692			-			-			-			-		

Table 2-8

Summary of Analytical Detections in Soil
Building 686, Wash House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter		Sample Type:	Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening		
		Location Code:	TNTC-SO301			TNTC-SO302			TNTC-SO303			TNTC-SO304			TNTC-SO305			TNTC-SO306			TNTC-SO307			TNTC-SO324		
		Sample No:	AB0301			AB0302			AB0303			AB0304			AB0305			AB0306			AB0307			AB0324		
		Sample Date:	23-AUG-00			23-AUG-00			23-AUG-00			23-AUG-00			23-AUG-00			23-AUG-00			23-AUG-00			23-SEP-00		
		Sample Depth:	0 - 1			0.5 - 1.5			0.5 - 1.5			0.5 - 1.5			0.5 - 1.5			0.5 - 1.5			0.75 - 1.2			1 - 2		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	1.17			**10.3**			**4.42**			-			**3.73**			0.976			**12.3**			1.39		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	1.33			**10.5**			**6.55**			-			**4.8**			1.51			**13.4**			1.89		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			-			**2.27**			-		
Nitrobenzene	mg/kg	20	0.109	J		0.353			-			-			-			-			-			0.127	J	
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			0.577			0.5	J		-			0.849			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-			-		
Tetryl	mg/kg		-			0.654			-			-			-			-			0.693			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	0.126	J		1.75			0.684			-			-			-			1.26			0.184	J	
Trinitrotoluene, 2,4,6-	mg/kg	16	**20.1**			**902**			**383**			0.428			**26.2**			3.73			**159**			**22.5**		

Parameter		Sample Type:	Screening			Confirmation			Screening			Screening			Screening			Screening			Screening			Screening		
		Location Code:	TNTC-SO325						TNTC-SO329			TNTC-SO330			TNTC-SO335			TNTC-SO336			TNTC-SO371			TNTC-SO372		
		Sample No:	AB0325			AB0478			AB0329			AB0330			AB0335			AB0336			AB0371			AB0372		
		Sample Date:	23-SEP-00			12-OCT-00			23-SEP-00			23-SEP-00			13-OCT-00			13-OCT-00			14-SEP-00			14-SEP-00		
		Sample Depth:	1 - 2						1 - 2			1 - 2			1 - 2			1 - 2			4 - 6			8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	**6.53**			2.45			-			-			0.488			1.23			0.18	J		-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	**11.1**			**11.4**			-			-			0.566			0.687			0.48			0.208	J	
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			-			-			-		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			0.195	J		0.365	J	
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			2.38			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-			0.324	J	
Tetryl	mg/kg		0.395	J		-			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	0.326			0.283			-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	**19.2**			**33.7**			-			0.975			0.842			1.31			0.192	J		0.555		

Table 2-9

Summary of Nitroaromatic Analytical detections in Soil
Building 689, Acid and Fume Recovery
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Confirmation			Confirmation			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO001			TNTC-SO001			TNTC-SO001			TNTC-SO002			TNTC-SO003			TNTC-SO004			TNTC-SO005			TNTC-SO006			TNTC-SO246		
	Sample No:		AB0001			AB0460			AB0426			AB0002			AB0003			AB0004			AB0005			AB0006			AB0246		
	Sample Date:		25-JUL-00			28-SEP-00			12-OCT-00			25-JUL-00			25-JUL-00			25-JUL-00			25-JUL-00			25-JUL-00			18-AUG-00		
Farameter	Sample Depth:		0 - 1			4 - 6			0 - 1			0 - 1			0 - 1			0 - 1			0 - 1			0.5 - 1.5			2.5 - 3		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	**6.08**			0.436			**6.93**			-			-			-			0.388			-			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	3.29			-			**3.76**			-			-			-			0.374			-			-		
Dinitrotoluene, total	mg/kg	0.72	**4.17**			**3.65**			**8.33**			0.272			-			-			0.304			-			-		
Nitrotoluene, 2-	mg/kg	370	0.565			3.27			-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			0.45			-			-			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			2.86			-			-			-			-			-			-			-		
Tetryl	mg/kg		1.86			-			-			-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	2.04			1.96			4.76			-			-			-			0.239			-			-		

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO247			TNTC-SO248			TNTC-SO249			TNTC-SO250			TNTC-SO275			TNTC-SO276			TNTC-SO401			TNTC-SO402		
	Sample No:		AB0247			AB0248			AB0249			AB0250			AB0275			AB0276			AB0401			AB0402		
	Sample Date:		18-AUG-00			18-AUG-00			18-AUG-00			18-AUG-00			19-AUG-00			19-AUG-00			16-SEP-00			16-SEP-00		
Parameter	Sample Depth:		0.5 - 1			0.5 - 1			1 - 2			2.5 - 3.5			3 - 3.5			2 - 2.5			4 - 6			6 - 7		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.343			-			0.269			-			-			-			**3.34**			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	0.399			-			0.255			-			-			-			**4.57**			-		
Dinitrotoluene, total	mg/kg	0.72	0.558			-			0.322			-			-			-			**14.3**			0.147	J	
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			2.5			0.411	J	
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			-			0.643			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			0.746			0.253	J	
Tetryl	mg/kg		-			-			-			-			-			-			0.615			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			-			-			-			-			1.67			-		

Table 2-10

Summary of Nitroaromatic Analytical Detections in Soil
Building 691, Mono House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO019			TNTC-SO020			TNTC-SO021			TNTC-SO022			TNTC-SO023			TNTC-SO024			TNTC-SO403			TNTC-SO404		
	Sample No:		AB0019			AB0020			AB0021			AB0022			AB0023			AB0024			AB0403			AB0404		
	Sample Date:		25-JUL-00			25-JUL-00			25-JUL-00			25-JUL-00			25-JUL-00			25-JUL-00			16-SEP-00			16-SEP-00		
Parameter	Sample Depth:		0.5 - 1.5			0.5 - 1.5			0.5 - 1.5			0.5 - 1.5			0.5 - 1.5			0.5 - 1.5			4 - 6			8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.274			-			1.72			-			-			-			-			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	0.156	J		-			-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	0.306			-			-			-			-			-			-			-		

Table 2-11

Summary of Nitroaromatic Analytical Detections in Soil
Building 692, Bi-Tri House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter	Sample Type;		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Confirmation			Confirmation			Screening			Screening		
	Location Code:		TNTC-SO228			TNTC-SO229			TNTC-SO230			TNTC-SO231			TNTC-SO232			TNTC-SO233			TNTC-SO241			TNTC-SO241			TNTC-SO241			TNTC-SO242			TNTC-SO243		
	Sample No:		AB0228			AB0229			AB0230			AB0231			AB0232			AB0233			AB0241			AB0448			AB0469			AB0242			AB0243		
	Sample Date:		11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			11-OCT-00			27-SEP-00			11-AUG-00			11-AUG-00		
	Sample Depth:		1 - 2			1 - 2			0.5 - 1.5			1.5 - 2.5			1.5 - 2.5			1.5 - 2.5			1 - 2			1 - 2			4 - 6			1 - 2			1 - 2		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.368			0.213	J		-			-			0.172	J		0.247	J		-			**11.5**			0.589			-			0.158	J	
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	0.659			0.108	J		-			0.135	J		-			0.287			-			**17.3**			0.911			-			0.191	J	
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-			0.317			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			0.126	J		-			-			-			-			**640**			**2.75**			0.257			-			0.132	J	
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			0.366			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			-			2.14			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			1.3			-			-			-			-		
Tetryl	mg/kg		-			-			-			-			-			-			1.29			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			-			-			-			-			3.88			2.6			0.0616	J	J	-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	0.589			0.165	J		-			15.6			-			-			**1319**			**900**			0.213			-			-		

Parameter	Sample Type;		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Confirmation			Screening			Screening			Screening		
	Location Code:		TNTC-SO244			TNTC-SO279			TNTC-SO283			TNTC-SO284			TNTC-SO285			TNTC-SO286			TNTC-SO320						TNTC-SO332			TNTC-SO405			TNTC-SO406		
	Sample No:		AB0244			AB0279			AB0283			AB0284			AB0285			AB0286			AB0320			AB0477			AB0332			AB0405			AB0406		
	Sample Date:		11-AUG-00			19-AUG-00			19-AUG-00			19-AUG-00			19-AUG-00			19-AUG-00			23-SEP-00			12-OCT-00			13-OCT-00			16-SEP-00			16-SEP-00		
	Sample Depth:		1 - 2			2.5 - 3.5			0 - 1			1 - 2			1 - 2			1 - 2			1.5 - 2.5						2 - 2.5			4 - 6			8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.4			0.394			0.999			**4.78**			-			**4.01**			**8.15**			2.6			0.62			**5.01**			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	0.564			0.361			0.908			-			-			**4.45**			**9.42**			**6.23**			0.614			**5.35**			-		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			0.132	J		-			-			-			-			-			0.211	J		-		
Dinitrotoluene, total	mg/kg	0.72	0.581			0.137	J		0.283			**986**			0.362			-			**1.67**			-			0.134			**0.975**			-		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			0.448			-			-			-			0.323	J		-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-			-			-			-			-		
Tetryl	mg/kg		-			-			-			-			-			0.237	J		0.437	J		-			-			0.458	J		-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			-			-			-			-			2.04			3.24			-			0.149	J		-		
Trinitrotoluene, 2,4,6-	mg/kg	16	0.228	J		0.634			0.869			**489**			0.752			**41.1**			**399**			**38.7**			0.0884	J		2.55			-		

Table 2-12

Summary of Nitroaromatic Analytical Detections in Soil
Building 693, Fortifier House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Confirmation			Screening			Screening			Screening			Screening			Screening			Confirmation			Screening		
	Location Code:		TNTC-SO172			TNTC-SO173						TNTC-SO174			TNTC-SO175			TNTC-SO176			TNTC-SO177			TNTC-SO407			TNTC-SO407			TNTC-SO408		
	Sample No:		AB0172			AB0173			AB0443			AB0174			AB0175			AB0176			AB0177			AB0407			AB0472			AB0408		
	Sample Date:		11-AUG-00			11-AUG-00			11-OCT-00			11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			16-SEP-00			28-SEP-00			16-SEP-00		
Parameter	Sample Depth:		1.5 - 2.5			1 - 2						1 - 2			1 - 2			1 - 2			1 - 2			4 - 6			8 - 10			8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			0.306			2.26			-			-			-			-			-			0.333			0.275		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			0.392			1.28			-			-			-			-			-			0.433			2.29		
Dinitrotoluene, total	mg/kg	0.72	-			-			0.288			-			-			-			-			0.144	J		**0.824**			**0.733**		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-			-			0.295			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-			-			0.39			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			0.153			-			-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			0.194	J		8.07			-			0.224	J		-			-			-			0.257			0.33		

Table 2-13

Summary of Nitroaromatic Analytical Detections in Soil
Building 696, Wash House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO178			TNTC-SO179			TNTC-SO180			TNTC-SO181			TNTC-SO182			TNTC-SO183			TNTC-SO184			TNTC-SO185			TNTC-SO186		
	Sample No:		AB0178			AB0179			AB0180			AB0181			AB0182			AB0183			AB0184			AB0185			AB0186		
	Sample Date:		11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00		
Parameter	Sample Depth:		1 - 2			1 - 2			1.6 - 2.6			1 - 2			1.6 - 2.6			1 - 2			1.5 - 2.5			1 - 2			1 - 2		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			0.152	J		-			-			-			0.155	J		-			0.5		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	0.118	J		0.138	J		0.188	J		-			-			-			0.141	J		-			0.734		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	0.114	J		-			-			-			-			-			-			-			-		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-			-			-		
Tetryl	mg/kg		-			-			-			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			-			-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			1.37			-			-			-			-			0.163	J		0.253			0.14	J	

	Sample Type:		Screening			Screening			Screening			Screening			Confirmation			Screening			Screening			Confirmation			Confirmation		
	Location Code:		TNTC-SO187			TNTC-SO188			TNTC-SO189			TNTC-SO190						TNTC-SO191			TNTC-SO192			TNTC-SO192			TNTC-SO192		
	Sample No:		AB0187			AB0188			AB0189			AB0190			AB0444			AB0191			AB0192			AB0445			AB0446		
	Sample Date:		11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			11-OCT-00			11-AUG-00			11-AUG-00			11-OCT-00			11-OCT-00		
Parameter	Sample Depth:		1 - 2			1 - 2			1.5 - 2.5			1 - 2						0.5 - 1.5			1.6 - 2.6			0 - 1			2 - 2.5		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			0.194	J		1.41			**4.26**			0.99			1.23			0.603			**6.62**			**4.76**		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			0.224	J		1.27			**7.21**			1.24			1.19			0.694			**5.14**			3.27		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-			-			0.751			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			0.192	J		-			-			0.278			**3.7**			0.705		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			-			-			0.212		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			1.4			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-			-			-		
Tetryl	mg/kg		-			-			-			0.233	J		-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			-			-			-			-			0.447			0.723			0.811		
Trinitrotoluene, 2,4,6-	mg/kg	16	1.31			-			13.9			1.28			0.634			0.24			**20.3**			**878**			**251**		

Table 2-13

Summary of Nitroaromatic Analytical Detections in Soil
Building 696, Wash House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO287			TNTC-SO288			TNTC-SO289			TNTC-SO290			TNTC-SO291			TNTC-SO292			TNTC-SO293			TNTC-SO294			TNTC-SO295		
	Sample No:		AB0287			AB0288			AB0289			AB0290			AB0291			AB0292			AB0293			AB0294			AB0295		
	Sample Date:		19-AUG-00			19-AUG-00			19-AUG-00			19-AUG-00			19-AUG-00			19-AUG-00			19-AUG-00			19-AUG-00			19-AUG-00		
	Sample Depth:		1 - 2			0 - 1			0.5 - 1.5			1 - 2			1.5 - 2.5			1 - 2			0 - 1			1 - 2			1 - 2		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amno-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			0.398			1.38			0.563			2.22			0.739			1.97			-			0.281		
Amno-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			0.413			1.52			0.39			2.48			0.585			1.89			-			0.355		
Dintrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-			-			-			-		
Dintrotoluene, total	mg/kg	0.72	-			-			-			-			-			0.308			-			-			-		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			0.62			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-			-			-		
Tetryl	mg/kg		-			-			-			-			-			-			-			-			-		
Triritrobenzene, 1,3,5-	mg/kg	1800	-			-			-			-			0.52			-			-			-			-		
Triritrotoluene, 2,4,6-	mg/kg	16	-			0.658			2.75			0.833			**33.1**			3.31			**24.7**			0.206	J		0.155	J	

Parameter	Sample Type:		Screening			Screening			Confirmation			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO326			TNTC-SO327						TNTC-SO328			TNTC-SO333			TNTC-SO334			TNTC-SO373			TNTC-SO374		
	Sample No:		AB0326			AB0327			AB0479			AB0328			AB0333			AB0334			AB0373			AB0374		
	Sample Date:		23-SEP-00			23-SEP-00			12-OCT-00			23-SEP-00			13-OCT-00			13-OCT-00			14-SEP-00			14-SEP-00		
	Sample Depth:		1.5 - 2.5			2 - 3						1 - 2			2 - 2.5			1 - 2			4 - 6			8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amno-2,6-dinitrotoluene, 4-	mg/kg	3.3	**4.04**			2.06			2.2			1.51			1.07			-			-			-		
Amno-4,6-dinitrotoluene, 2-	mg/kg	3.3	3.21			2.75			3.02			2.76			0.981			-			0.159	J		-		
Dintrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-			-			-		
Dintrotoluene, total	mg/kg	0.72	-			-			-			-			0.0713	J		-			-			0.125	J	
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			0.31	J		0.21	J	
Nitrotoluene, 3-	mg/kg	370	-			0.775			-			-			0.137	J		-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			0.324	J		-		
Tetryl	mg/kg		-			-			-			-			-			-			-			-		
Triritrobenzene, 1,3,5-	mg/kg	1800	0.196	J		-			-			-			-			-			-			-		
Triritrotoluene, 2,4,6-	mg/kg	16	**46.2**			2.92			9.91			0.243	J		0.273			-			-			-		

Table 2-14

Summary of Nitroaromatic Analytical Detections in Soil
Building 698, Nailing House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO137			TNTC-SO138			TNTC-SO139			TNTC-SO140			TNTC-SO141		
	Sample No:		AB0137			AB0138			AB0139			AB0140			AB0141		
	Sample Date:		27-JUL-00			27-JUL-00			27-JUL-00			27-JUL-00			27-JUL-00		
Parameter	Sample Depth:		0 - 1			0 - 1			1.5 - 2.5			0 - 1			0 - 1		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.295			-			-			-			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	0.419			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	0.677			0.25			-			-			0.338		

Table 2-15

Summary of Nitroaromatic Analytical Detections in Soil
Building 699, Acid and Fume Recovery
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sundusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO013			TNTC-SO014			TNTC-SO015			TNTC-SO016			TNTC-SO017			TNTC-SO018			TNTC-SO277			TNTC-SO409			TNTC-SO410		
	Sample No:		AB0013			AB0014			AB0015			AB0016			AB0017			AB0018			AB0277			AB0409			AB0410		
	Sample Date:		25-JUL-00			25-JUL-00			25-JUL-00			25-JUL-00			25-JUL-00			25-JUL-00			19-AUG-00			16-SEP-00			16-SEP-00		
Parameter	Sample Depth:		1 - 2			1 - 2			1 - 2			1 - 2			2 - 3			1 - 2			3.5 - 4			4 - 6			8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			0.184	J		0.259			-			-			0.229			-			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			-			0.199	J		-			-			0.14	J		-			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			0.368			0.128	J		0.639			-			0.19	J		0.158	J		-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			0.197	J		-			-			-			0.288			-			-		

Table 2-16

Summary of Nitroaromatic Analytical Detections in Soil
Building 601, Mono House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO031			TNTC-SO032			TNTC-SO033			TNTC-SO034			TNTC-SO035			TNTC-SO036			TNTC-SO318			TNTC-SO375			TNTC-SO376		
	Sample No:		AB0031			AB0032			AB0033			AB0034			AB0035			AB0036			AB0318			AB0375			AB0376		
	Sample Date:		25-JUL-00			25-JUL-00			25-JUL-00			25-JUL-00			25-JUL-00			25-JUL-00			23-SEP-00			16-SEP-00			16-SEP-00		
Parameter	Sample Depth:		0 - 1			0 - 1			0 - 1			0.5 - 1.5			0 - 1			0 - 1			1 - 1.5			4 - 6			8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			0.145	J		-			-			-		
Nitrobenzene	mg/kg	20	-			0.14	J		-			-			-			-			-			-			-		

Table 2-17

Summary of Nitroaromatic Analytical Detections in Soil
Building 602, Bi-Tri House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening			Confirmation		
	Location Code:		TNTC-SO127			TNTC-SO128			TNTC-SO129			TNTC-SO130			TNTC-SO131			TNTC-SO132			TNTC-SO133			TNTC-SO134					
	Sample No:		AB0127			AB0128			AB0129			AB0130			AB0131			AB0132			AB0133			AB0134			AB0436		
	Sample Date:		10-AUG-00			10-AUG-00			10-AUG-00			10-AUG-00			10-AUG-00			10-AUG-00			10-AUG-00			10-AUG-00			26-SEP-00		
	Sample Depth:		2.6 - 3.6			2 - 3			2 - 3			2.5 - 3.5			1.8 - 2.8			1.5 - 2			2 - 3			2.5 - 3.5					
NITROAROMATICS	Unit	PRG	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			-			-			-			-			-			0.546			0.146		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			-			-			-			-			-			0.483			0.108		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			-			-			1.29			0.165		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			-			-			-			-			-			0.772			0.049	J	J

Parameter	Sample Type:		Confirmation			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO134			TNTC-SO135			TNTC-SO136			TNTC-SO331			TNTC-SO377			TNTC-SO378		
	Sample No:		AB0465			AB0135			AB0136			AB0331			AB0377			AB0378		
	Sample Date:		27-SEP-00			10-AUG-00			10-AUG-00			23-SEP-00			15-SEP-00			15-SEP-00		
	Sample Depth:		5 - 7			1.6 - 2.6			1.5 - 2.5			0 - 1			5 - 7			8 - 10		
NITROAROMATICS	Unit	PRG	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			0.224			0.181	J		0.252			10.21			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			0.182	J		0.338			0.227	J		0.899			-		
Dinitrotoluene, total	mg/kg	0.72	-			0.178	J		-			0.732			3.39			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			1.07			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			0.18	J		-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			0.266	J		-		
Trinitrotoluene, 2,4,6-	mg/kg	16	0.119			0.888			-			1.03			0.395			-		

Table 2-18

Summary of Nitroaromatic Analytical Detections in Soil
Building 603, Fortifier House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Confirmation			Confirmation			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO120			TNTC-SO121			TNTC-SO122			TNTC-SO123			TNTC-SO123			TNTC-SO123			TNTC-SO124			TNTC-SO125			TNTC-SO126			TNTC-SO379			TNTC-SO380		
	Sample No:		AB0120			AB0121			AB0122			AB0123			AB0463			AB0464			AB0124			AB0125			AB0126			AB0379			AB0380		
	Sample Date:		10-AUG-00			10-AUG-00			10-AUG-00			10-AUG-00			27-SEP-00			27-SEP-00			10-AUG-00			10-AUG-00			10-AUG-00			15-SEP-00			15-SEP-00		
Parameter	Sample Depth:		1.5 - 2.5			1 - 2			2.5 - 3			1 - 2			5 - 7			8 - 10			1 - 2			1 - 2			0 - 1			5 - 7			8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.402			-			-			-			0.934			0.896			-			-			-			1			0.479		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	0.614			-			-			-			3.61			10.3			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	0.302			-			-			-			3.6			16.8			-			-			-			8.9			56.1		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			0.27			2.8			-			-			-			0.219	J		7.71		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			0.275			0.328			-			-			-			-			1.09		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			1.47			-			-			-			-			6.75		
Tetryl	mg/kg		-			-			-			-			-			-			-			-			-			0.828			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			-			-			0.205			0.507			-			-			-			0.807			0.449		
Trinitrotoluene, 2,4,6-	mg/kg	16	1.38			-			-			2.73			5.26			15.1			-			0.499			-			5.44			7.39		

Table 2-19

Summary of Nitroaromatic Analytical Detections in Soil
Building 606, Wash House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO193			TNTC-SO194			TNTC-SO195			TNTC-SO196			TNTC-SO197			TNTC-SO198			TNTC-SO199			TNTC-SO200			TNTC-SO201		
	Sample No:		AB0193			AB0194			AB0195			AB0196			AB0197			AB0198			AB0199			AB0200			AB0201		
	Sample Date:		11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00		
Parameter	Sample Depth:		1 - 2			1 - 2			1 - 2			1 - 2			1 - 2			1 - 2			1 - 2			0.5 - 1.5			0.3 - 1.3		
NITROAROMATICS	Unit	PRG	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.723			0.935			0.193	J		-			-			0.75			-			0.593			0.19	J	
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	0.703			1.64			0.158	J		-			-			0.934			-			0.925			0.295		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			-			-			0.156	J		-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			0.268			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	0.126	J		-			0.29			-			-			0.884			-			0.638			-		

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Confirmation			Screening			Screening		
	Location Code:		TNTC-SO202			TNTC-SO203			TNTC-SO204			TNTC-SO205			TNTC-SO206						TNTC-SO381			TNTC-SO382		
	Sample No:		AB0202			AB0203			AB0204			AB0205			AB0206			AB0447			AB0381			AB0382		
	Sample Date:		11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			11-AUG-00			12-OCT-00			15-SEP-00			15-SEP-00		
Parameter	Sample Depth:		1 - 2			0.5 - 1.5			0.5 - 1.5			1 - 2			1 - 2						4 - 6			8 - 10		
NITROAROMATICS	Unit	PRG	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.441			0.224	J		0.133	J		0.251			-			4.48			-			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	0.752			0.295			0.137	J		0.183	J		-			6.9			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-			0.372	J	
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	1.42			0.569			-			0.289			-			3.45			0.233	J		0.213	J	

Table 2-20

Summary of Nitroaromatic Analytical Detections in Soil
Building 609, Acid and Fume Recovery
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO025			TNTC-SO026			TNTC-SO027			TNTC-SO028			TNTC-SO029			TNTC-SO030		
	Sample No:		AB0025			AB0026			AB0027			AB0028			AB0029			AB0030		
	Sample Date:		25-JUL-00			25-JUL-00			25-JUL-00			25-JUL-00			25-JUL-00			25-JUL-00		
Parameter	Sample Depth:		1 - 2			1.5 - 2.5			0.5 - 1.5			1 - 2			2 - 3			1 - 2		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			0.801			-			-			-			0.107	J	
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			0.69			-			-			-			0.123	J	
Dinitrotoluene, total	mg/kg	0.72	-			0.162	J		-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			0.127	J		-			-			-			0.123	J	

Table 2-21

Summary of Nitroaromatic Analytical Detections in Soil
Building 611, Mono House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Confirmation			Screening		
	Location Code:		TNTC-SO037			TNTC-SO038			TNTC-SO039			TNTC-SO040			TNTC-SO041			TNTC-SO042			TNTC-SO383						TNTC-SO384		
	Sample No:		AB0037			AB0038			AB0039			AB0040			AB0041			AB0042			AB0383			AB0470			AB0384		
	Sample Date:		26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			16-SEP-00			27-SEP-00			16-SEP-00		
	Sample Depth:		1 - 2			1 - 2			1.5 - 2.5			1 - 2			1.5 - 2.5			1 - 2			4 - 6						8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			-			-			-			-			1.46			0.192			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			-			-			-			-			1.97			0.182			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			-			3.38			0.156			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			0.609			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			0.299	J		-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			-			-			-			-			0.662			0.0956	J	J	-		

Table 2-22

Summary of Nitroaromatic Analytical Detections in Soil
Building 612, Bi-Tri House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO085			TNTC-SO086			TNTC-SO087			TNTC-SO088			TNTC-SO089			TNTC-SO090			TNTC-SO091			TNTC-SO092		
	Sample No:		AB0085			AB0086			AB0087			AB0088			AB0089			AB0090			AB0091			AB0092		
	Sample Date:		26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			27-JUL-00		
Parameter	Sample Depth:		2 - 3			2 - 3			1 - 2			1 - 2			1.5 - 2.5			1.5 - 2.5			1.5 - 2.5			2 - 3		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.325			-			-			-			-			-			-			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	0.514			-			-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	5.9			-			-			-			-			-			-			-		

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO093			TNTC-SO094			TNTC-SO095			TNTC-SO096			TNTC-SO097			TNTC-SO319			TNTC-SO385			TNTC-SO386		
	Sample No:		AB0093			AB0094			AB0095			AB0096			AB0097			AB0319			AB0385			AB0386		
	Sample Date:		26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			23-SEP-00			16-SEP-00			16-SEP-00		
Parameter	Sample Depth:		1.5 - 2.5			1 - 2			1 - 2			1 - 2			1.5 - 2.5			1 - 2			4 - 6			8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			-			0.237			-			-			-			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			-			0.25			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	0.192	J		-			-			0.132	J		-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			-			-			-			-			-			-		

Table 2-23

Summary of Nitroaromatic Analytical Detections in Soil
Building 613, Fortifer House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO114			TNTC-SO115			TNTC-SO116			TNTC-SO117			TNTC-SO118			TNTC-SO119			TNTC-SO387			TNTC-SO388		
	Sample No:		AB0114			AB0115			AB0116			AB0117			AB0118			AB0119			AB0387			AB0388		
	Sample Date:		26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			16-SEP-00			16-SEP-00		
Parameter	Sample Depth:		1.5 - 2.5			2 - 3			2 - 3			2 - 3			2 - 3			2 - 3			4 - 6			8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			-			-			0.135	J	

Summary of Nitroaromatic Analytical Detections in Soil
Building 616, Wash House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

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Parameter	Sample Type:		Screening			Screening			Screening			Confirmation			Screening			Screening			Screening		
	Location Code:		TNTC-SO098			TNTC-SO099			TNTC-SO100						TNTC-SO101			TNTC-SO102			TNTC-SO103		
	Sample No:		AB0098			AB0099			AB0100			AB0476			AB0101			AB0102			AB0103		
	Sample Date:		27-JUL-00			27-JUL-00			27-JUL-00			12-OCT-00			27-JUL-00			27-JUL-00			27-JUL-00		
	Sample Depth:		1 - 2			0.5 - 1			2 - 3						0.5 - 1.5			1 - 2			1 - 2		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.168	J		-			0.442			-			-			-			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	0.275			-			0.644			6.44			-			-			-		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			-			-		
HMX	mg/kg	3100	-			-			-			-			-			-			-		
Nitrobenzene	mg/kg	20	-			-			-			0.195			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-		
RDX	mg/kg	180	-			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			0.536			0.499			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	1.07			-			47.2			2226			-			-			-		

Parameter	Sample Type:		Screening			Screening			Screening			Screening			Confirmation			Confirmation			Screening		
	Location Code:		TNTC-SO104			TNTC-SO105			TNTC-SO106			TNTC-SO107			TNTC-SO107			TNTC-SO107			TNTC-SO108		
	Sample No:		AB0104			AB0105			AB0106			AB0107			AB0432			AB0433			AB0108		
	Sample Date:		27-JUL-00			27-JUL-00			27-JUL-00			27-JUL-00			10-OCT-00			10-OCT-00			27-JUL-00		
	Sample Depth:		2 - 3			0.5 - 1.5			3 - 4			3 - 4			0 - 1			3 - 4			1 - 2		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			0.112	J		-			-			0.293			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			0.14	J		0.13	J		-			0.226			0.182	J	
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			-			0.141	J	
HMX	mg/kg	3100	-			-			-			-			-			-			-		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-		
RDX	mg/kg	180	-			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			-			-			-			0.238			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	0.194	J		-			0.241			39.9			0.566			47.3			0.631		

Parameter	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO109			TNTC-SO110			TNTC-SO111			TNTC-SO112			TNTC-SO113			TNTC-SO251		
	Sample No:		AB0109			AB0110			AB0111			AB0112			AB0113			AB0251		
	Sample Date:		27-JUL-00			27-JUL-00			27-JUL-00			27-JUL-00			27-JUL-00			18-AUG-00		
	Sample Depth:		1 - 2			1 - 2			0.5 - 1.5			0.5 - 1.5			0.5 - 1.5			0.5 - 1.5		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			1.94			-			-			-			2.38		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			3.25			-			-			-			1.93		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			-		
HMX	mg/kg	3100	-			-			-			-			-			-		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-		
RDX	mg/kg	180	-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			0.323			-			-			-			0.229	J	
Trinitrotoluene, 2,4,6-	mg/kg	16	-			1.34			-			-			-			68.6		

Summary of Nitroaromatic Analytical Detections in Soil
Building 616, Wash House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

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Parameter	Sample Type:		Screening			Confirmation			Confirmation						Screening			Screening			Screening		
	Location Code:		TNTC-SO252						TNTC-SO252						TNTC-SO253			TNTC-SO254			TNTC-SO255		
	Sample No:		AB0252			AB0451			AB0473			AB0474			AB0253			AB0254			AB0255		
	Sample Date:		18-AUG-00			27-SEP-00			29-SEP-00			29-SEP-00			18-AUG-00			18-AUG-00			18-AUG-00		
	Sample Depth:		0.5 - 1.5						4 - 6						0 - 1			1.5 - 2.5			1 - 2		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			4.78			-			-			0.164	J		-			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	5.45			3.77			0.275			-			0.164	J		0.144	J		-		
Dinitrobenzene, 1,3-	mg/kg	6.1	0.239	J		0.0829	J	J	-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	1.86			0.57			0.121			-			-			-			-		
HMX	mg/kg	3100	0.401	J		-			-			-			-			-			-		
Nitrobenzene	mg/kg	20	-			0.283			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			0.462			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-		
RDX	mg/kg	180	1.51			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	1.5			0.966			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	797			681			1.32			-			1.97			0.296			-		

Parameter	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO256			TNTC-SO257			TNTC-SO258			TNTC-SO259			TNTC-SO260			TNTC-SO261			TNTC-SO262		
	Sample No:		AB0256			AB0257			AB0258			AB0259			AB0260			AB0261			AB0262		
	Sample Date:		18-AUG-00			18-AUG-00			18-AUG-00			18-AUG-00			18-AUG-00			18-AUG-00			18-AUG-00		
	Sample Depth:		0.5 - 1.5			1 - 2			1 - 2			0.5 - 1.5			0 - 1			1 - 2			1 - 2		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			0.32			-			-			-			0.141	J	
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			0.369			-			-			-			0.159	J	
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			-			0.122	J	
HMX	mg/kg	3100	-			-			-			-			-			-			-		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-		
RDX	mg/kg	180	-			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			1.13			-			-			1.1			1.36		

Parameter	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO263			TNTC-SO264			TNTC-SO300			TNTC-SO316			TNTC-SO317			TNTC-SO361			TNTC-SO362		
	Sample No:		AB0263			AB0264			AB0300			AB0316			AB0317			AB0361			AB0362		
	Sample Date:		18-AUG-00			18-AUG-00			19-AUG-00			23-SEP-00			23-SEP-00			14-SEP-00			14-SEP-00		
	Sample Depth:		0 - 1			1 - 2			5 - 6			1 - 2			1 - 2			4 - 6			8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	0.477			0.57			-			-			0.226	J		-			0.455		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	0.631			0.602			-			-			0.444			-			1.67		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			-			-		
HMX	mg/kg	3100	-			-			-			-			-			-			-		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			0.494	J	
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			0.346	J	
RDX	mg/kg	180	-			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	0.154	J		-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	0.163	J		0.122	J		-			-			0.608			4.81			8.66		

Table 2-25

Summary of Nitroaromatic Analytical Detections in Soil
Building 618, Nailing House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTCSO207			TNTC-SO208			TNTC-SO209			TNTC-SO210			TNTC-SO227		
	Sample No:		AB0207			AB0208			AB0209			AB0210			AB0227		
	Sample Date:		14-AUG-00			14-AUG-00			14-AUG-00			14-AUG-00			14-AUG-00		
Parameter	Sample Depth:		2 - 3			1.6 - 2.6			1 - 2			1 - 2			1 - 2		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			-			0.217	J		-		

Table 2-26

Summary of Nitroaromatic Analytical Detections in Soil
Building 619, Acid and Fume Recovery
TNT C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO043			TNTC-SO044			TNTC-SO045			TNTC-SO046			TNTC-SO047			TNTC-SO048			TNTC-SO298			TNTC-SO411			TNTC-SO412		
	Sample No:		AB0043			AB0044			AB0045			AB0046			AB0047			AB0048			AB0298			AB0411			AB0412		
	Sample Date:		26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			19-AUG-00			16-SEP-00			16-SEP-00		
Parameter	Sample Depth:		1.5 - 2.5			1.5 - 2.5			1.5 - 2.5			1.5 - 2.5			1.5 - 2.5			1.5 - 2.5			3 - 4			4 - 6			6 - 7		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Dinitrotoluene, total	mg/kg	0.72	-			0.164	J		-			0.122	J		0.226	J		0.301			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			-			-			-			0.329			-			-			-		

Table 2-27

Summary of Nitroaromatic Analytical Detections in Soil
Building 621, Mono House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO049			TNTC-SO050			TNTC-SO051			TNTC-SO052			TNTC-SO053			TNTC-SO054			TNTC-SO389			TNTC-SO390		
	Sample No:		AB0049			AB0050			AB0051			AB0052			AB0053			AB0054			AB0389			AB0390		
	Sample Date:		26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			16-SEP-00			16-SEP-00		
Parameter	Sample Depth:		1.5 - 2.5			0.5 - 1.5			2 - 3			0.5 - 1.5			0.5 - 1.5			0.5 - 1.5			4 - 6			6 - 7		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			0.444			-			-			-			0.361			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			0.366			-			-			0.153	J		-			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			0.359			-			-			0.135	J		-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			0.82			-			-			-			-			-		

Table 2-28

Summary of Niitroaromatic Analytical Detections in Soil
Building 622, Bi-Tri House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO055			TNTC-SO056			TNTC-SO057			TNTC-SO058			TNTC-SO059			TNTC-SO061		
	Sample No:		AB0055			AB0056			AB0057			AB0058			AB0059			AB0061		
	Sample Date:		26-JUL-00			26-JUL-00			26-JUL-00			26-JUL-00			14-SEP-00			14-SEP-00		
Parameter	Sample Depth:		2.5 - 3.5			2.5 - 3.5			2.5 - 3.5			4 - 5			4 - 5			4 - 5		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			-			-			-			-		

Table 2-28

Summary of Niitroaromatic Analytical Detections in Soil
Building 622, Bi-Tri House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO062			TNTC-SO063			TNTC-SO064			TNTC-SO321			TNTC-SO322			TNTC-SO323			TNTC-SO391		
	Sample No:		AB0062			AB0063			AB0064			AB0321			AB0322			AB0323			AB0391		
	Sample Date:		26-JUL-00			26-JUL-00			26-JUL-00			23-SEP-00			23-SEP-00			23-SEP-00			16-SEP-00		
Parameter	Sample Depth:		2.5 - 3.5			2.5 - 3.5			2.5 - 3.5			1.5 - 2.5			1.5 - 2.5			1.5 - 2.5			4 - 6		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			-			-			-			0.157	J		-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			-			0.172	J		-			-			-		

Table 2-29

Summary of Nitroaromatic Analytical Detections in Soil
Building 623, Fortifier House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO234			TNTC-SO235			TNTC-SO236			TNTC-SO237			TNTC-SO238			TNTC-SO239			TNTC-SO274			TNTC-SO393			TNTC-SO394		
	Sample No:		AB0234			AB0235			AB0236			AB0237			AB0238			AB0239			AB0274			AB0393			AB0394		
	Sample Date:		10-AUG-00			10-AUG-00			10-AUG-00			10-AUG-00			10-AUG-00			10-AUG-00			19-AUG-00			16-SEP-00			16-SEP-00		
Parameter	Sample Depth:		1 - 2			1 - 2			1 - 2			1 - 2			1 - 2			1.5 - 2.5			0.0 -0.5			4 - 6			8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Dinitrotoluene, 2,4-	mg/kg	0.72	-			0.505	J		-			-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			0.134	J		-			0.126	J		-			-			0.127	J		-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			2.98			1.18			-			-			-			0.301			-			-		

Table 2-30

Summary of Nitroaromatic Analytical Detections in Soil
Building 626, Wash House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Confirmation			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO071			TNTC-SO072			TNTC-SO073			TNTC-SO074						TNTC-SO075			TNTC-SO076			TNTC-SO077			TNTC-SO078			TNTC-SO079		
	Sample No:		AB0071			AB0072			AB0073			AB0074			AB0431			AB0075			AB0076			AB0077			AB0078			AB0079		
	Sample Date:		27-JUL-00			27-JUL-00			27-JUL-00			27-JUL-00			12-OCT-00			27-JUL-00			27-JUL-00			27-JUL-00			27-JUL-00			27-JUL-00		
Parameter	Sample Depth:		2.5 - 3.5			2.5 - 3.5			2.5 - 3.5			2.5 - 3.5						1 - 2			2.5 - 3.5			2.5 - 3.5			2.5 - 3.5			2.5 - 3.5		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			-			-			0.784			-			-			-			-			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			0.237	J		-			-			2.67			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			-			-			-			0.222	J		-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	0.226	J		-			-			-			-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	0.878			0.305			-			-			1.41			3.87			-			-			-			-		

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO080			TNTC-SO081			TNTC-SO082			TNTC-SO083			TNTC-SO084			TNTC-SO240			TNTC-SO395			TNTC-SO396		
	Sample No:		AB0080			AB0081			AB0082			AB0083			AB0084			AB0240			AB0395			AB0396		
	Sample Date:		27-JUL-00			27-JUL-00			27-JUL-00			27-JUL-00			27-JUL-00			10-AUG-00			16-SEP-00			16-SEP-00		
Parameter	Sample Depth:		2.5 - 3.5			2.5 - 3.5			0 - 1			0 - 1			0 - 1			0 - 1			4 - 6			8 - 10		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			-			-			-			-			-			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			0.231	J		0.151	J		-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			-			-			-			-			0.259			-		

Table 2-31

Summary of Nitroaromatic Analytical Detections in Soil
Building 628, Nail House
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO211			TNTC-SO212			TNTC-SO213			TNTC-SO214			TNTC-SO215		
	Sample No:		AB0211			AB0212			AB0213			AB0214			AB0215		
	Sample Date:		14-AUG-00			14-AUG-00			14-AUG-00			14-AUG-00			14-AUG-00		
Parameter	Sample Depth:		0.75 - 1.7			0.5 - 1.5			1 - 2			1 - 2			0.5 - 1.5		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Dini:rotoluene, total	mg/kg	0.72	-			-			-			-			0.132	J	

Table 2-32

Summary of Nitroaromatic Analytical Detections in Soil
Building 629, Acid and Fume Recovery
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

	Sample Type:		Screening			Confirmation			Screening			Confirmation			Confirmation			Confirmation			Confirmation			Screening		
	Location Code:		TNTC-SO065						TNTC-SO066			TNTC-SO066			TNTC-SO066			TNTC-SO066			TNTC-SO066			TNTC-SO067		
	Sample No:		AB0065			AB0475			AB0066			AB0429			AB0461			AB0462			AB0430			AB0067		
	Sample Date:		26-JUL-00			12-OCT-00			26-JUL-00			27-SEP-00			28-SEP-00			28-SEP-00			12-OCT-00			26-JUL-00		
Parameter	Sample Depth:		2.5 - 3.5						2.5 - 3.5			0 - 1			5 - 7			8 - 10			2.5 - 3.5			0 - 1		
NITROAROMATICS	Unit	PRG	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			5.04			0.0721	J	J	-			-			-			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			-			0.0538	J	J	-			-			-			-		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			0.154	J		-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	1.06			-			40.8			0.451			297			36.3			165			-		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			0.588			-			50.8			6.32			2.05			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			8.61			1.09			4.82			-		
Nitrotoluene, 4-	mg/kg	370	-			-			0.328			-			67.4			6.59			-			-		
Tetryl	mg/kg		-			-			3.9			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			0.423			-			3.59			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	0.486			-			14.5			0.164			5.19			0.167			38			-		

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO068			TNTC-SO069			TNTC-SO070			TNTC-SO265			TNTC-SO266			TNTC-SO267			TNTC-SO268			TNTC-SO269		
	Sample No:		AB0068			AB0069			AB0070			AB0265			AB0266			AB0267			AB0268			AB0269		
	Sample Date:		26-JUL-00			26-JUL-00			26-JUL-00			18-AUG-00			18-AUG-00			18-AUG-00			18-AUG-00			18-AUG-00		
Parameter	Sample Depth:		1 - 2			1 - 2			0 - 1			1 - 2			1 - 2			1 - 1.7			1 - 2			1.5 - 2.5		
NITROAROMATICS	Unit	PRG	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			-			-			-			-			-			0.181	J	
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			-			-			-			-			-			0.179	J	
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			-			-			-		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			-			-			-			-			0.297		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			-			-		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			-			-			-		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			-			-			-		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			-			-			-		
Tetryl	mg/kg		-			-			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			-			-			-			-			-			-		

	Sample Type:		Screening			Screening			Screening			Screening			Screening			Screening			Screening		
	Location Code:		TNTC-SO270			TNTC-SO271			TNTC-SO272			TNTC-SO278			TNTC-SO297			TNTC-SO363			TNTC-SO364		
	Sample No:		AB0270			AB0271			AB0272			AB0278			AB0297			AB0363			AB0364		
	Sample Date:		18-AUG-00			18-AUG-00			18-AUG-00			19-AUG-00			19-AUG-00			14-SEP-00			14-SEP-00		
Parameter	Sample Depth:		1 - 2			0 - 1			0 - 1			6.5 - 7			0 - 1			5 - 7			8 - 10		
NITROAROMATICS	Unit	PRG	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			0.32			-			-			0.908			-		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			0.458			-			-			-			-		
Dinitrobenzene, 1,3-	mg/kg	6.1	-			-			-			-			-			0.176	J		0.359		
Dinitrotoluene, total	mg/kg	0.72	-			-			1.41			0.281			-			319			456		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			0.382		
Nitrotoluene, 2-	mg/kg	370	-			-			-			-			-			88.2			628		
Nitrotoluene, 3-	mg/kg	370	-			-			-			-			-			13.6			71.7		
Nitrotoluene, 4-	mg/kg	370	-			-			-			-			-			120			597		
Tetryl	mg/kg		-			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			-			-			-			4.06			0.321		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			0.442			0.551			-			1.21			84.2		

Table 2-33

Summary of Analytical Detections in Surface Water
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter	Location Code:	TNTC-SW01			TNTC-SW02			TNTC-SW03			TNTC-SW04			TNTC-SW05			TNTC-SW06			TNTC-SW07			TNTC-SW08			TNTC-SW10			TNTC-SW11		
	Sample No:	AB2001			AB2002			AB2003			AB2004			AB2005			AB2006			AB2007			AB2008			AB2010			AB2011		
	Sample Date:	18-SEP-00			18-SEP-00			18-SEP-00			18-SEP-00			19-SEP-00			18-SEP-00			19-SEP-00			19-SEP-00			19-SEP-00			19-SEP-00		
NITROAROMATICS	Unit	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ	Result	LQ	VQ
Amino-2,6-dinitrotoluene, 4-	µg/L	-			-			-			-			0.549			-			-			-			0.332			-		
Amino-4,6-dinitrotoluene, 2-	µg/L	-			-			-			-			0.984			-			-			-			-			-		
Dinitrotoluene, total	µg/L	-			-			-			7.92			0.969			-			-			-			-			-		
Nitrotoluene, 2-	µg/L	-			-			-			10.4			-			-			-			-			-			-		
Nitrotoluene, 3-	µg/L	-			-			-			1.47			-			-			-			-			-			-		
Nitrotoluene, 4-	µg/L	-			-			-			4.3			-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	µg/L	-			-			-			-			0.344			-			-			-			-			-		
VOLATILES																															
Acetone	µg/L	-		R	-		R	-		R	-		R	-		R	-		R	-		R	-		R	10.8		J	-		R
Carbon disulfide	µg/L	0.59	J	J	12.7			2.43			8.09			1.72			10.5			23.1			8.32			10.5			3.12		
Methylene chloride	µg/L	1.13		B	0.74	J	B	0.68	J	B	0.6	J	B	0.93	J	B	0.71	J	B	0.75	J	B	0.69	J	B	0.75	J	B	0.71	J	B
SEMIVOLATILES																															
Di-n-butyl phthalate	µg/L	-			-			-			-			-			-			-			4.95	J	J	-			-		
Dinitrotoluene, 2,4-	µg/L	-			-			-			2.57	J	J	-			-			-			-			-			-		
Dinitrotoluene, 2,6-	µg/L	-			-			-			2.95	J	J	-			-			-			-			-			-		
METALS																															
Aluminum	µg/L	454			876			176	J	B	1190			1360			3830			543			80.9	J	B	152	J	B	815		
Barium	µg/L	40.9			28.1			28			125			48.2			76.3			39.5			32.2			80.4			67.1		
Beryllium	µg/L	0.144	J	B	0.162	J	B	0.122	J	B	0.206	J	B	0.119	J	B	0.316	J	B	0.154	J	B	-			0.101	J	B	0.123	J	B
Cadmium	µg/L	-			-			-			-			-			-			2.12	J	J	-			-			-		
Calcium	µg/L	195000			103000			99700			162000			156000			146000			199000			199000			235000			193000		
Chromium	µg/L	1.35	J	J	1.93	J	J	2.04	J	J	2.23	J	J	2	J	J	4.45	J	J	1.16	J	J	-			-			1.01	J	J
Cobalt	µg/L	-			-			-			-			2.77	J	J	2.43	J	J	1.23	J	J	-			-			4.4	J	J
Copper	µg/L	1.36	J	J	3.82	J	J	-			1.95	J	J	3	J	J	5.81			1.81	J	J	-			-			1.29	J	J
Iron	µg/L	455			1370			555			15300			5540			7510			1180			103		B	383			1520		
Lead	µg/L	-			2.57	J	J	2.2	J	J	6.89			-			5.84			-			-			1.62	J	J	-		
Magnesium	µg/L	43900			25600			27200			25700			33300			32300			43600			42200			51700			37900		
Manganese	µg/L	69.2			167			74			1230			694			621			392			156			1370			3010		
Nickel	µg/L	3.49	J	J	-			-			-			2.86	J	J	5.99			5.48			5.61			-			8.69		
Potassium	µg/L	2090			1490			967			1880			2050			2520			1730			1300			3100			2820		
Selenium	µg/L	-			-			-			-			-			-			3.09	J	J	-			-			2.78	J	J
Sodium	µg/L	5300			1820			1350			2990			2750			5290			5250			5090			4120			5480		
Vanadium	µg/L	1.07	J	J	2.05	J	J	-			3	J	J	1.73	J	J	7.12			1.32	J	J	-			-			1.98	J	J
Zinc	µg/L	4.52	J	J	22.3			6.88	J	J	18.2			21.3			24.3			9.84	J	J	4.76	J	J	27.9			17.5		

Table 2-34

Summary of Analytical Detections in Sediment
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter	Location Code:		TNTC-SD01			TNTC-SD02			TNTC-SD03			TNTC-SD04			TNTC-SD05			TNTC-SD06			TNTC-SD07			TNTC-SD08		
	Sample No:		AB1001			AB1002			AB1003			AB1004			AB1005			AB1006			AB1007			AB1008		
	Sample Date:		18-SEP-00			18-SEP-00			18-SEP-00			18-SEP-00			19-SEP-00			18-SEP-00			19-SEP-00			19-SEP-00		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	-			-			-			-			0.1260			-			-			0.3850		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	-			-			-			-			0.2140			-			-			0.2990		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			0.3540			0.2040			-			-			0.2460		
Nitrobenzene	mg/kg	20	-			-			-			-			-			-			-			-		
RDX	mg/kg	180	-			-			-			-			-			-			-			-		
Trinitrobenzene, 1,3,5-	mg/kg	1800	-			-			-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	-			-			-			-			0.1760			0.0715	J	J	-			0.7060		
VOLATILES																										
Acetone	mg/kg	1600	0.0187		B	0.0179		B	0.0298		B	0.0137	J	B	-			0.0379			-			0.0056	J	J
Benzene	mg/kg	0.67	0.0034	J	J	-			-			-			-			-			-			-		
Butanone, 2-	mg/kg	7300	0.0099	J	J	-			-			-			-			-			-			-		
Methylene chloride	mg/kg	8.9	0.0275		B	0.074			0.0327		B	0.039		B	0.0045	J	J	0.0542			0.0055	J	J	0.0048	J	J
Toluene	mg/kg	590	0.0068			-			0.0034	J	J	-			-			0.0063	J	J	-			-		
SEMIVOLATILES																										
Benzo(a)anthracene	mg/kg	0.62	-			0.0693	J	J	-			-			-			-			-			-		
Benzo(a)pyrene	mg/kg	0.062	-			0.0602	J	J	-			-			-			-			-			-		
Benzo(b)fluoranthene	mg/kg	0.62	-			-			-			-			-			-			-			-		
Bis(2-ethylhexyl)phthalate	mg/kg	35	-			-			-			-			-			0.0553	J	J	-			-		
Chrysene	mg/kg	62	-			-			-			-			-			-			-			-		
Di-n-butyl phthalate	mg/kg	6100	0.0677	J	J	-			-			-			-			-			-			-		
Dinitrotoluene, 2,4-	mg/kg	0.72	-			-			-			-			-			-			-			0.1010	J	J
Dinitrotoluene, 2,6-	mg/kg	0.72	-			-			-			-			-			-			-			-		
Fluoranthene	mg/kg	2300	-			0.1470	J	J	-			-			-			-			-			-		
Pyrene	mg/kg	2300	-			-			-			-			-			-			-			-		

Table 2-34

Summary of Analytical Detections in Sediment
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter	Location Code:		TNTC-SD01			TNTC-SD02			TNTC-SD03			TNTC-SD04			TNTC-SD05			TNTC-SD06			TNTC-SD07			TNTC-SD08		
	Sample No:		AB1001			AB1002			AB1003			AB1004			AB1005			AB1006			AB1007			AB1008		
	Sample Date:		18-SEP-00			18-SEP-00			18-SEP-00			18-SEP-00			19-SEP-00			18-SEP-00			19-SEP-00			19-SEP-00		
PCBs	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Aroclor 1260	mg/kg	0.22	-			-			.0374	J	J	**0.712**		J	-			**0.0733**	J	J	-			**.0224**	J	J
METALS																										
Aluminum	mg/kg	76000	15600			4990			8000			3950			7520			11000			7160			4610		
Arsenic	mg/kg	0.39	20			-			3.27			4.97			10.7			25.3			10.3			4.13		
Barium	mg/kg	5400	94.2			33.6			42.6			324			61.9			98.2			65.9			32.4		
Beryllium	mg/kg	150	0.941			0.272	J	J	0.646			0.356			0.774			0.77			0.613			0.21	J	J
Cadmium	mg/kg	37	0.728	J	J	0.365	J	B	0.381	J	B	0.737	J	J	0.907			1.24			0.801			0.371	J	B
Calcium	mg/kg		6740		J	11500		J	182000		J	5070		J	73300		J	9160		J	83600		J	6480		J
Chromium	mg/kg	210	25.2			9.35			12.6			9.39			13.8			19.5			16.6			8.73		
Cobalt	mg/kg	4700	18.5			3.84			7.7			3.93			11.9			18.4			11.4			4.7		
Copper	mg/kg	2900	30.5			15.4			13		B	10		B	35.9			38.8			25.5			9.7		B
Iron	mg/kg	23000	44800			11500			16200			34800			26800			64600			26000			12900		
Lead	mg/kg	48.6	15.9			22.5			14.4			86.3			24.9			38.9			14.4			14		
Magnesium	mg/kg		5450			1790			3190			1130			3180			4210			8230			1790		
Manganese	mg/kg	1800	943			154			1130			696			405			1040			516			239		
Mercury	mg/kg	23	0.046			0.04	J	J	-			0.034	J	J	0.037			0.033	J	J	-			0.023	J	J
Nickel	mg/kg	1600	46.5			12.1			19.3			11.5			45.5			47.3			31.3			14.6		
Potassium	mg/kg		3280		J	1230		J	2160		J	674		J	3310		J	2760		J	2680		J	943		J
Selenium	mg/kg	390	1.17	J	J	1.72			-			2.47			2.23			2.04			0.945	J	J	-		
Sodium	mg/kg		229	J	B	196	J	B	263		B	169	J	B	272			164	J	B	239	J	J	160	J	J
Vanadium	mg/kg	550	37.9			12.9			13.4			15.4			17.6			24.6			20.1			14.2		
Zinc	mg/kg	23000	86.7			52.9			19.8			58.5			105			131			71.9			33		

Table 2-34

Summary of Analytical Detections in Sediment
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

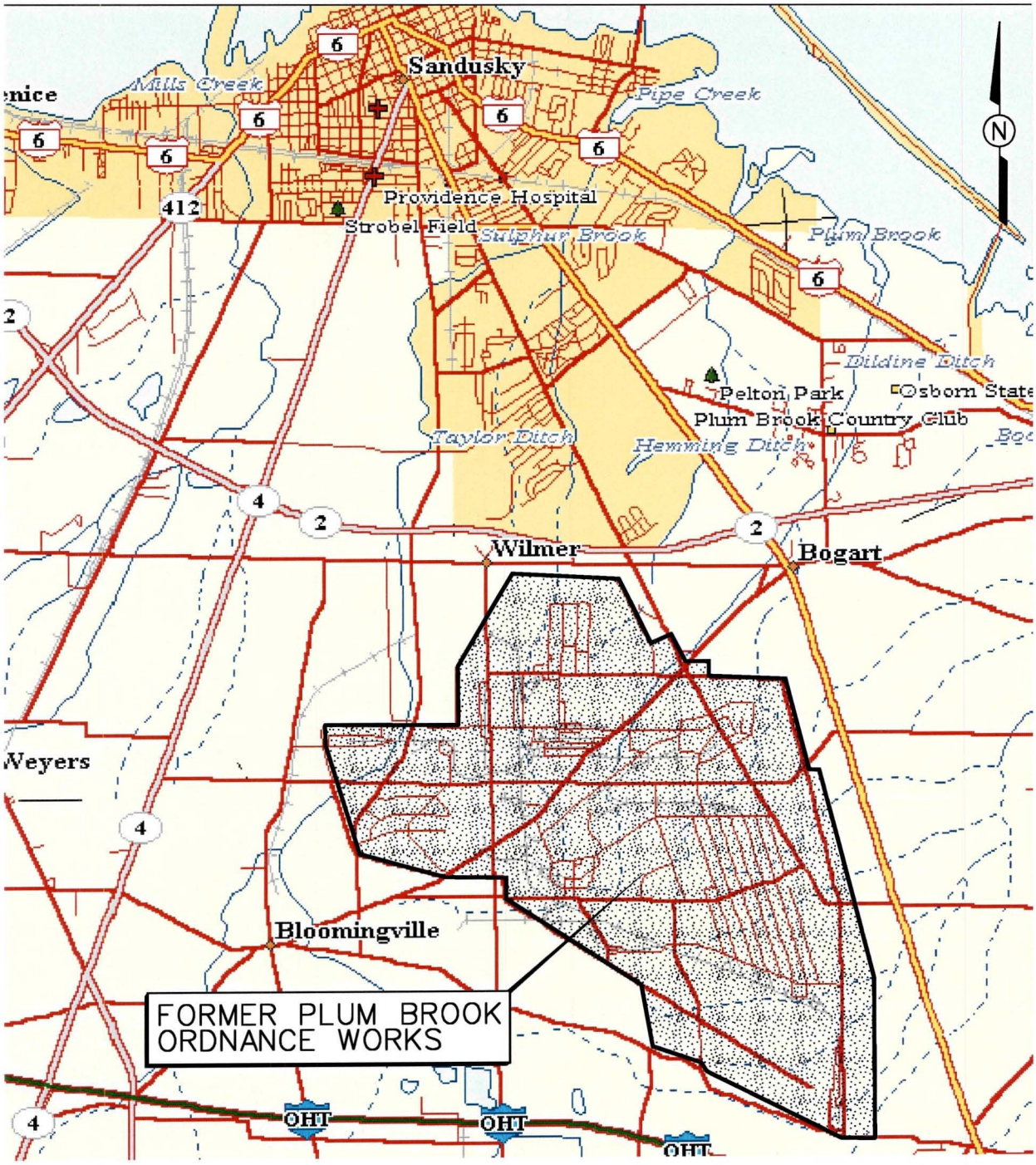
Parameter	Location Code:		TNTC-SD09			TNTC-SD10			TNTC-SD11			TNTC-SD12			TNTC-SD13			TNTC-SD14			TNTC-SD15		
	Sample No:		AB1009			AB1010			AB1011			AB1012			AB1013			AB1014			AB1015		
	Sample Date:		19-SEP-00			19-SEP-00			19-SEP-00			19-SEP-00			19-SEP-00			19-SEP-00			19-SEP-00		
NITROAROMATICS	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Amino-2,6-dinitrotoluene, 4-	mg/kg	3.3	**11.2**			-			-			-			-			-			2.79		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.3	**12.8**			-			-			-			-			-			3.25		
Dinitrotoluene, total	mg/kg	0.72	-			-			-			0.1040			0.1020			0.1120			0.4140		
Nitrobenzene	mg/kg	20	-			0.0510	J	J	-			-			-			-			-		
RDX	mg/kg	180	-			-			-			-			-			-			0.5210		
Trinitrobenzene, 1,3,5-	mg/kg	1800	0.8320			-			-			-			-			-			-		
Trinitrotoluene, 2,4,6-	mg/kg	16	**1496**			0.198			-			0.0918	J	J	-			0.1100			2.9		
VOLATILES																							
Acetone	mg/kg	1600	-			0.0048	J	J	0.0035	J	J	-			-			-			-		
Benzene	mg/kg	0.67	-			-			-			-			-			-			-		
Butanone, 2-	mg/kg	7300	-			-			-			-			-			-			-		
Methylene chloride	mg/kg	8.9	0.0049	J	J	0.0041	J	J	0.0037	J	J	0.0038	J	J	0.0041	J	J	0.0040	J	B	-		
Toluene	mg/kg	590	-			-			-			-			-			-			-		
SEMIVOLATILES																							
Benzo(a)anthracene	mg/kg	0.62	0.0947	J	J	-			-			-			-			-			-		
Benzo(a)pyrene	mg/kg	0.062	0.0699	J	J	-			-			-			-			-			0.0324	J	J
Benzo(b)fluoranthene	mg/kg	0.62	**0.12**	J	J	-			-			-			-			-			-		
Bis(2-ethylhexyl)phthalate	mg/kg	35	-			-			-			-			-			0.0299	J	J	-		
Chrysene	mg/kg	62	0.0737	J	J	-			-			-			-			-			-		
Di-n-butyl phthalate	mg/kg	6100	-			-			-			-			-			-			-		
Dinitrotoluene, 2,4-	mg/kg	0.72	0.2760	J	J	-			-			-			-			-			0.1340	J	J
Dinitrotoluene, 2,6-	mg/kg	0.72	0.1830	J	J	-			-			-			-			-			-		
Fluoranthene	mg/kg	2300	-			-			-			-			-			-			-		
Pyrene	mg/kg	2300	0.1100	J	J	-			-			-			-			-			-		

Table 2-34

Summary of Analytical Detections in Sediment
TNT Area C - RI Report
Former Plum Brook Ordnance Works, Sandusky, Ohio

Parameter	Location Code:		TNTC-SD09			TNTC-SD10			TNTC-SD11			TNTC-SD12			TNTC-SD13			TNTC-SD14			TNTC-SD15		
	Sample No:		AB1009			AB1010			AB1011			AB1012			AB1013			AB1014			AB1015		
	Sample Date:		19-SEP-00			19-SEP-00			19-SEP-00			19-SEP-00			19-SEP-00			19-SEP-00			19-SEP-00		
PCBs	**Unit**	**PRG**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**	**Result**	**LQ**	**VQ**
Aroclor 1260	mg/kg	0.22	**0.769**		J	-			-			0.0807	J	J	-			0.506		J	0.287		J
METALS																							
Aluminum	mg/kg	76000	9210			11300			1600			2900			6310			1200			2510		
Arsenic	mg/kg	0.39	**12.6**			**12.2**			-			**2.41**			**9.37**			**1.14**	J	J	**2.39**		
Barium	mg/kg	5400	84.9			52.3			15.3			22.6			52.8			84.3			21		
Beryllium	mg/kg	150	0.498			0.657			0.128	J	J	0.165	J	J	0.413			-			0.101	J	J
Cadmium	mg/kg	37	0.675	J	J	0.673	J	J	0.144	J	B	0.303	J	B	0.754			0.297	J	B	0.254	J	B
Calcium	mg/kg		14300		J	4090		J	1320		J	5430		J	3180		J	1760		J	1610		J
Chromium	mg/kg	210	12.3			18.3			4.05			5.25			12.5			5.24			5.15		
Cobalt	mg/kg	4700	14			9.83			3.44			2.65			8.64			0.871	J	J	1.31		
Copper	mg/kg	2900	23.8			24			3.22		B	8.31		B	12			2.49		B	6.35		B
Iron	mg/kg	23000	21200			**27900**			5320			7890			**24400**			9180			6240		
Lead	mg/kg	48.6	46.2			15			2.83			8.66			8.24			**52.5**			24.4		
Magnesium	mg/kg		2660			3700			528			1060			1980			297			532		
Manganese	mg/kg	1800	1230			428			116			58.9			656			53.4			37.3		
Mercury	mg/kg	23	0.156			-			-			-			0.04			0.146			0.034	J	J
Nickel	mg/kg	1600	29.1			29.9			7.53		B	6.36		B	22.5			2.23		B	4.14		B
Potassium	mg/kg		1240		J	2300		J	284		J	413		J	1010		J	155		J	341		J
Selenium	mg/kg	390	-			2.20			-			1.46			0.953	J	J	0.904	J	J	1.16		
Sodium	mg/kg		190	J	J	201	J	J	193	J	J	211	J	J	195	J	J	187	J	J	180	J	J
Vanadium	mg/kg	550	21.3			24.8			6.93			13.8			21.2			18.1			9.86		
Zinc	mg/kg	23000	61.3			83.4			14.5			21.8			43.9			11.1			17.8		

FIGURES



NOT TO SCALE

FIGURE 1-1
VICINITY MAP

FORMER PLUM BROOK ORDNANCE WORKS
SANDUSKY, OHIO

IT CORPORATION
A Member of The IT Group

STARTING DATE: 12/16/97	DATE LAST REV.: 10/30/01	DRAFT. CHCK. BY:	INITIATOR: D. KESSLER	DWG. NO.: \773701ES.001
DRAWN BY: D. BILLINGSLEY	DRAWN BY: bvanderg	ENGR. CHCK. BY: D. KESSLER	PROJ. MGR.: M.SPANGBERG	PROJ. NO.: 773701

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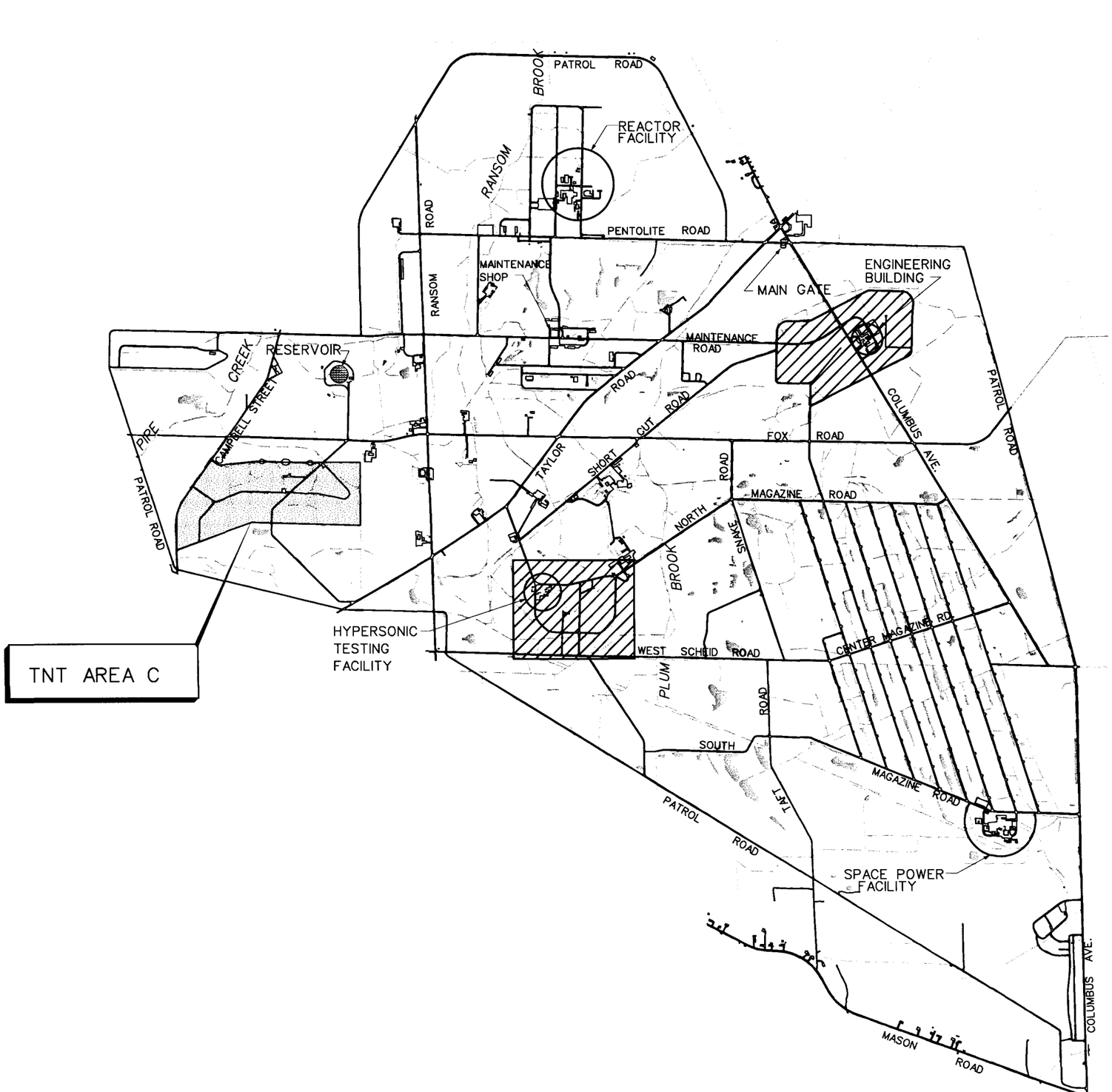

LEGEND:

- BUILDINGS
- STREAMS OR DITCHES
- ROAD
- SURFACE WATER
- AREA OF CONCERN
- TNT MANUFACTURING AREA

SCALE

0 2400 4800 FEET

FIGURE 1-2
TNT AREA C LOCATION MAP

FORMER PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

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STARTING DATE: 01/03/01	DATE LAST REV.:	DRAFT. CHCK. BY:	INITIATOR: D. KESSLER	DWG. NO.:...\807111es.033
DRAWN BY: B. VANDERGRIFF	DRAWN BY:	ENGR. CHCK. BY: M. GUNDERSON	PROJ. MGR.: M.SPANGBERG	PROJ. NO.: 807111

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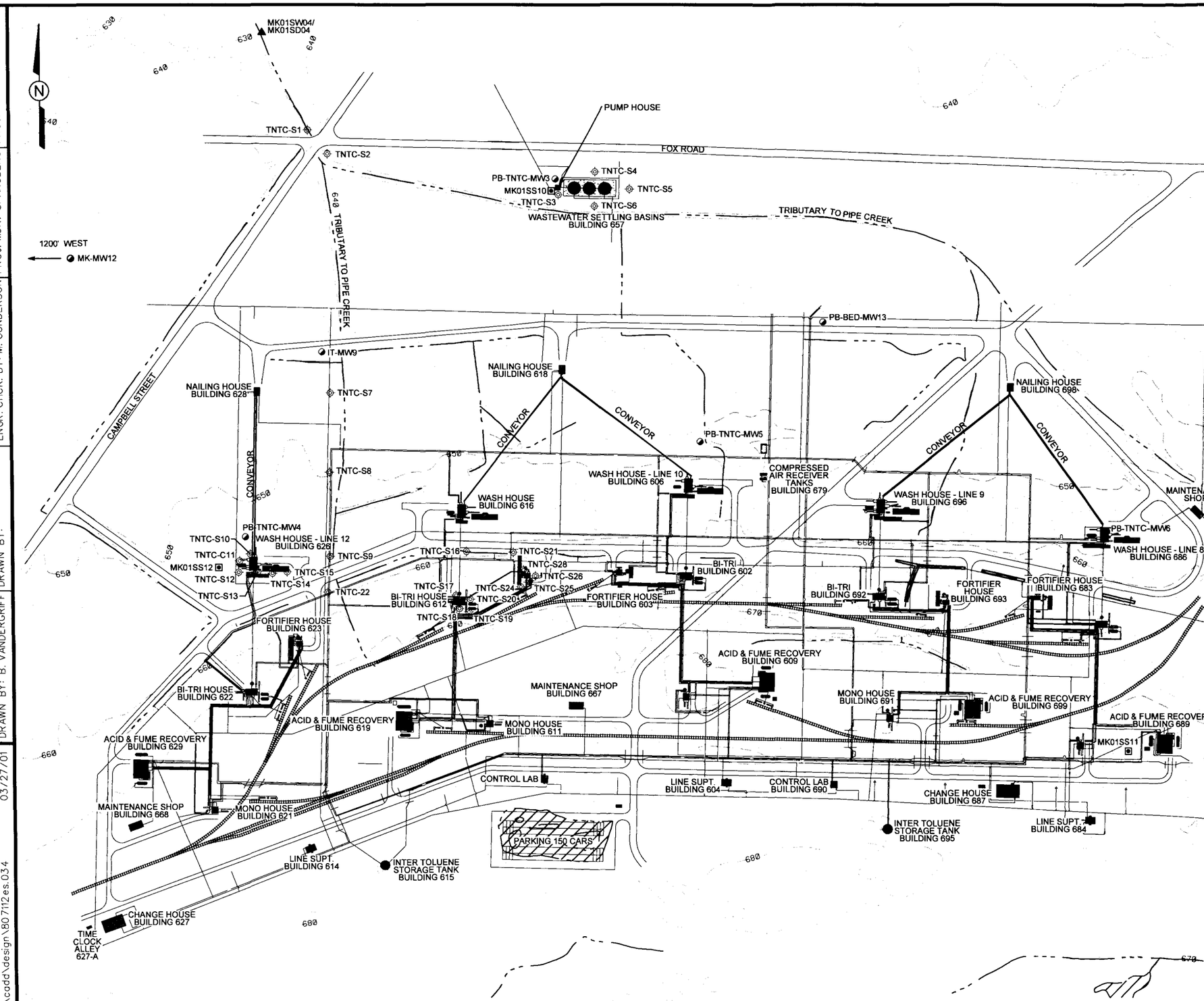

LEGEND:

- TNTC-S7 — SOIL BORING LOCATION
- PB-BED-MW13 — MONITORING WELL LOCATION
- MK01SW04/ MK01SD04 — SURFACE WATER AND SEDIMENT SAMPLING LOCATION
- MK01SS10 — SURFACE SOIL SAMPLING LOCATION
- DRAINAGE
- LOW, WET AREA
- STONE-LINED DRAINAGE DITCH
- ROAD
- HISTORICAL BUILDING OR STRUCTURE
- TANK
- HISTORICAL PROCESS LINE
- 650 — TOPOGRAPHIC CONTOUR LINE (FEET-MSL)
- RAILROAD

FIGURE 1-3
TNT AREA C GENERAL SITE FEATURES AND HISTORICAL SAMPLE LOCATION MAP

FORMER PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

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DRAFT. CHCK. BY: C. TUMLIN	INITIATOR: D. KESSLER	DWG. NO.:...\807112es.034	
ENGR. CHCK. BY: M. GUNDERSON	PROJ. MGR.: SPANGBERG	PROJ. NO.: 807112	
	STARTING DATE: 12/12/00	DATE LAST REV.:	
	DRAWN BY: B. VANDERGRIFF	DRAWN BY:	

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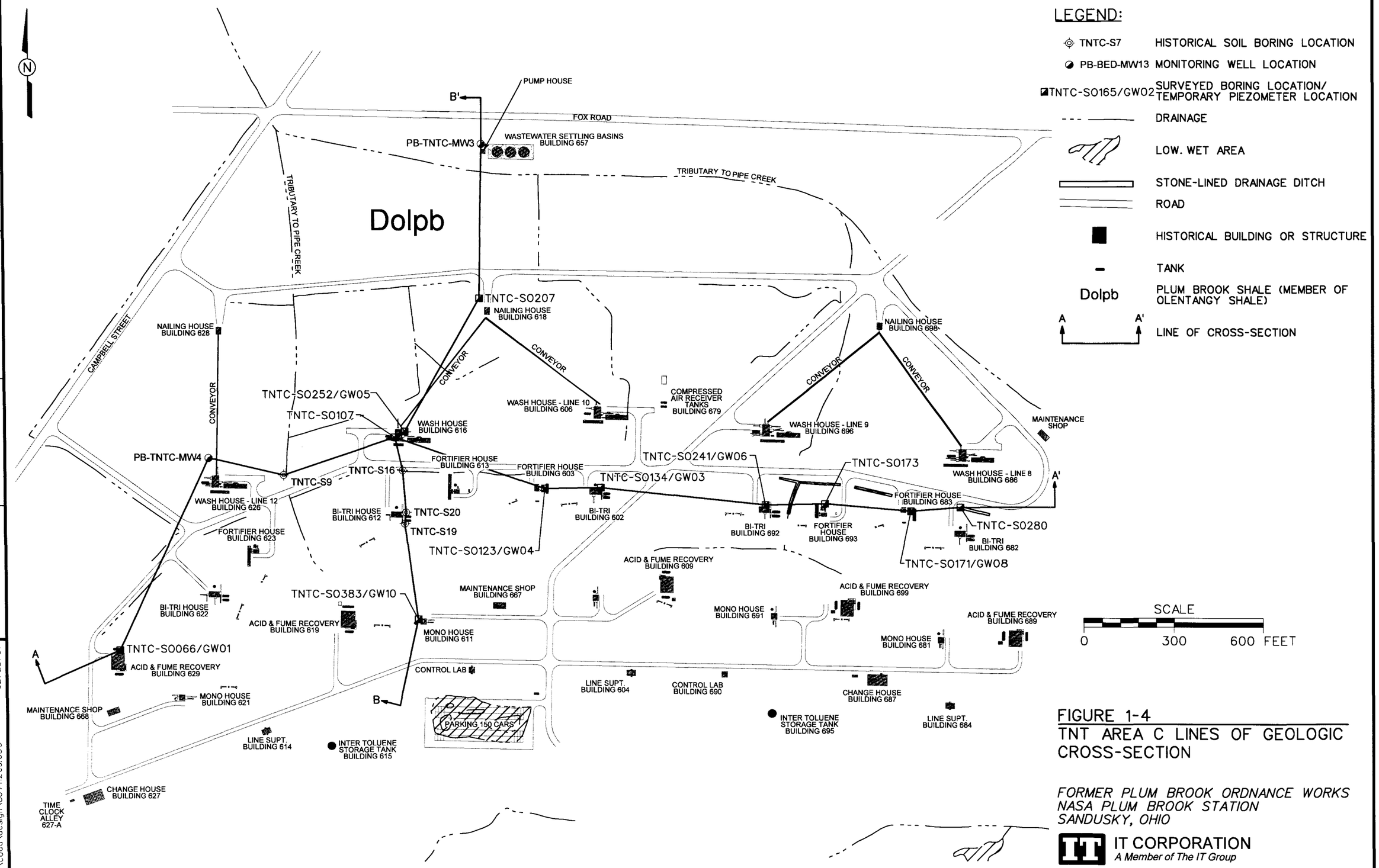

FIGURE 1-4
TNT AREA C LINES OF GEOLOGIC CROSS-SECTION

FORMER PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

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STARTING DATE: 12/19/00	DATE LAST REV.:	DRAFT. CHCK. BY: C. TUMLIN	INITIATOR: D. KESSLER
DRAWN BY: B. VANDERGRIFF	DRAWN BY:	ENGR. CHCK. BY: M. GUNDERSON	PROJ. MGR.: SPANGBERG
			DWG. NO.:...\807112es.035
			PROJ. NO.: 807112

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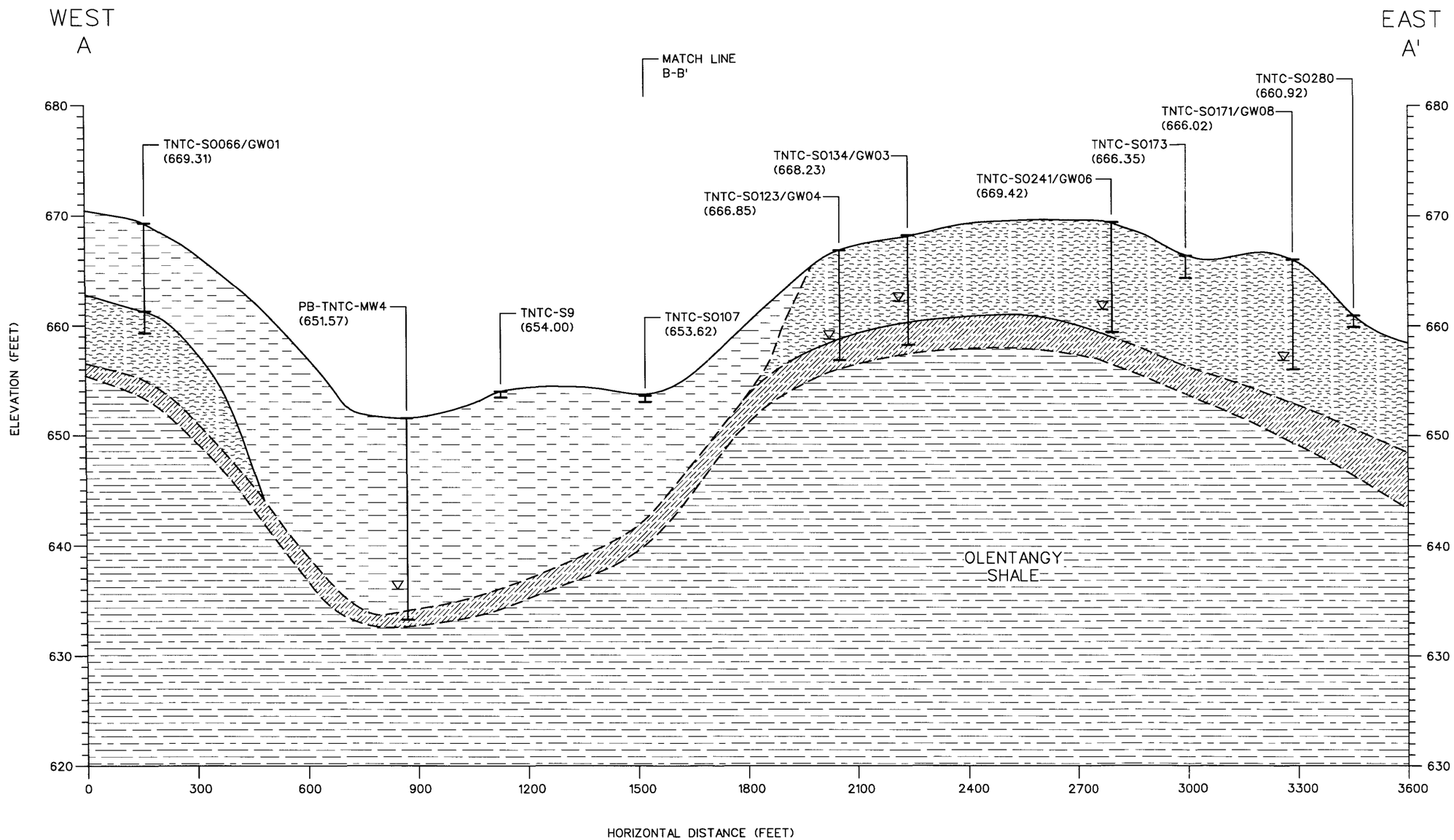

LEGEND:

- SHALE
- WEATHERED SHALE
- SILTY CLAY
- SILT
- ▽ APPROXIMATE GROUNDWATER ELEVATION DURING DRILLING
- (660.89) GROUND SURFACE ELEVATION

NOTES:

ALL ELEVATIONS ARE REFERENCED TO OHIO STATE PLANE COORDINATE SYSTEM, NAD 1983, NGVD 1929.

HORIZONTAL SCALE
0 300 600 FEET

VERTICAL SCALE
0 10 20 FEET

FIGURE 1-5
TNT AREA C
GEOLOGIC CROSS-SECTION A-A'

FORMER PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

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STARTING DATE: 01/11/01 | DATE LAST REV.: | DRAFT. CHCK. BY: C. TUMLIN | INITIATOR: R. ELLIS | DWG. NO.:..\807112es.037
DRAWN BY: B. VANDERGRIFF | DRAWN BY: | ENGR. CHCK. BY: R. ELLIS | PROJ. MGR.: SPANGBERG | PROJ. NO.: 807111

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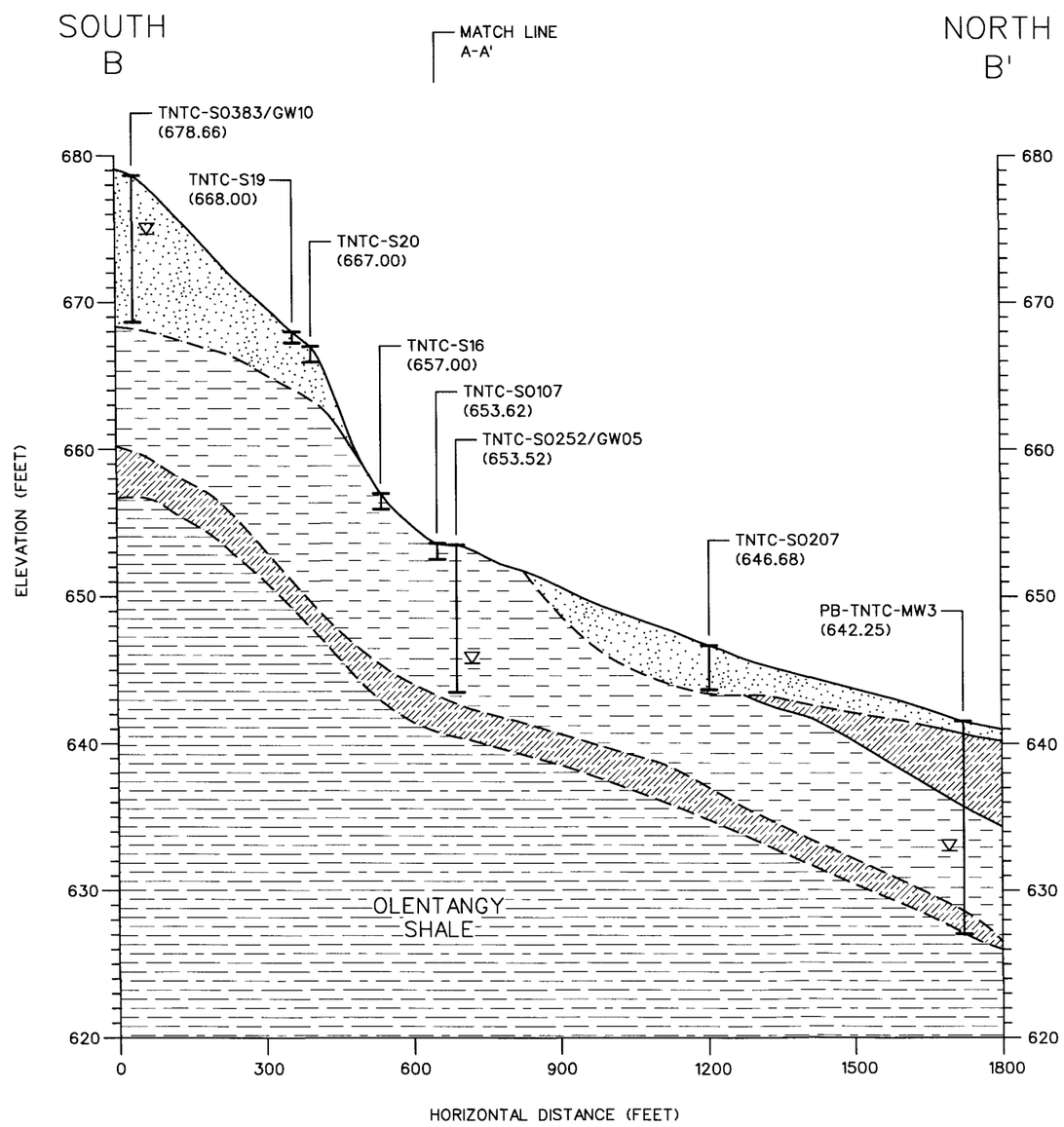

LEGEND:

- SHALE
- WEATHERED SHALE
- SAND
- SILTY CLAY
- ∇ APPROXIMATE GROUNDWATER ELEVATION DURING DRILLING
- (668.00) GROUND SURFACE ELEVATION

NOTES:

ALL ELEVATIONS ARE REFERENCED TO OHIO STATE PLANE COORDINATE SYSTEM, NAD 1983, NGVD 1929.

HORIZONTAL SCALE

0 300 600 FEET

VERTICAL SCALE

0 10 20 FEET

FIGURE 1-6
TNT AREA C
GEOLOGIC CROSS-SECTION B-B'

FORMER PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
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DWG. NO.:..\807112es.038 | PROJ. NO.: 807111
INITIATOR: R. ELLIS | PROJ. MGR.: SPANGBERG
DRAFT. CHCK. BY: C. TUMLIN | ENGR. CHCK. BY: R. ELLIS
DATE LAST REV.: | DRAWN BY:
STARTING DATE: 01/11/01 | DRAWN BY: B. VANDERGRIFF
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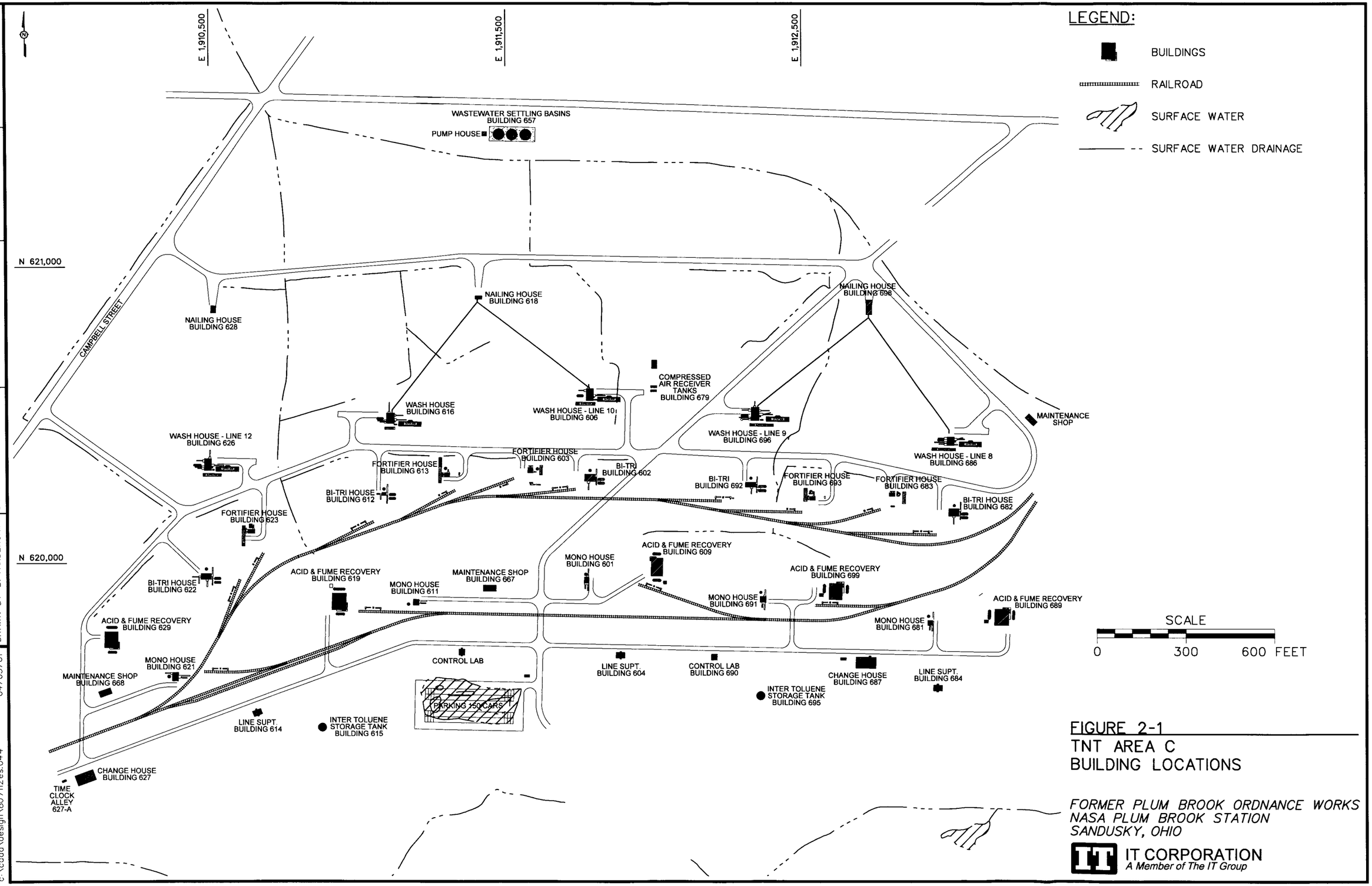

FIGURE 2-1
TNT AREA C
BUILDING LOCATIONS

FORMER PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
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STARTING DATE: 04/03/01	DATE LAST REV.:	DRAFT. CHCK. BY: C. TUMLIN	INITIATOR: M. GUNDERSON
DRAWN BY: B. VANDERGRIFF	DRAWN BY:	ENGR. CHCK. BY: M. GUNDERSON	PROJ. MGR.: SPANGBERG
			DWG. NO.: \807112es.044
			PROJ. NO.: 807112

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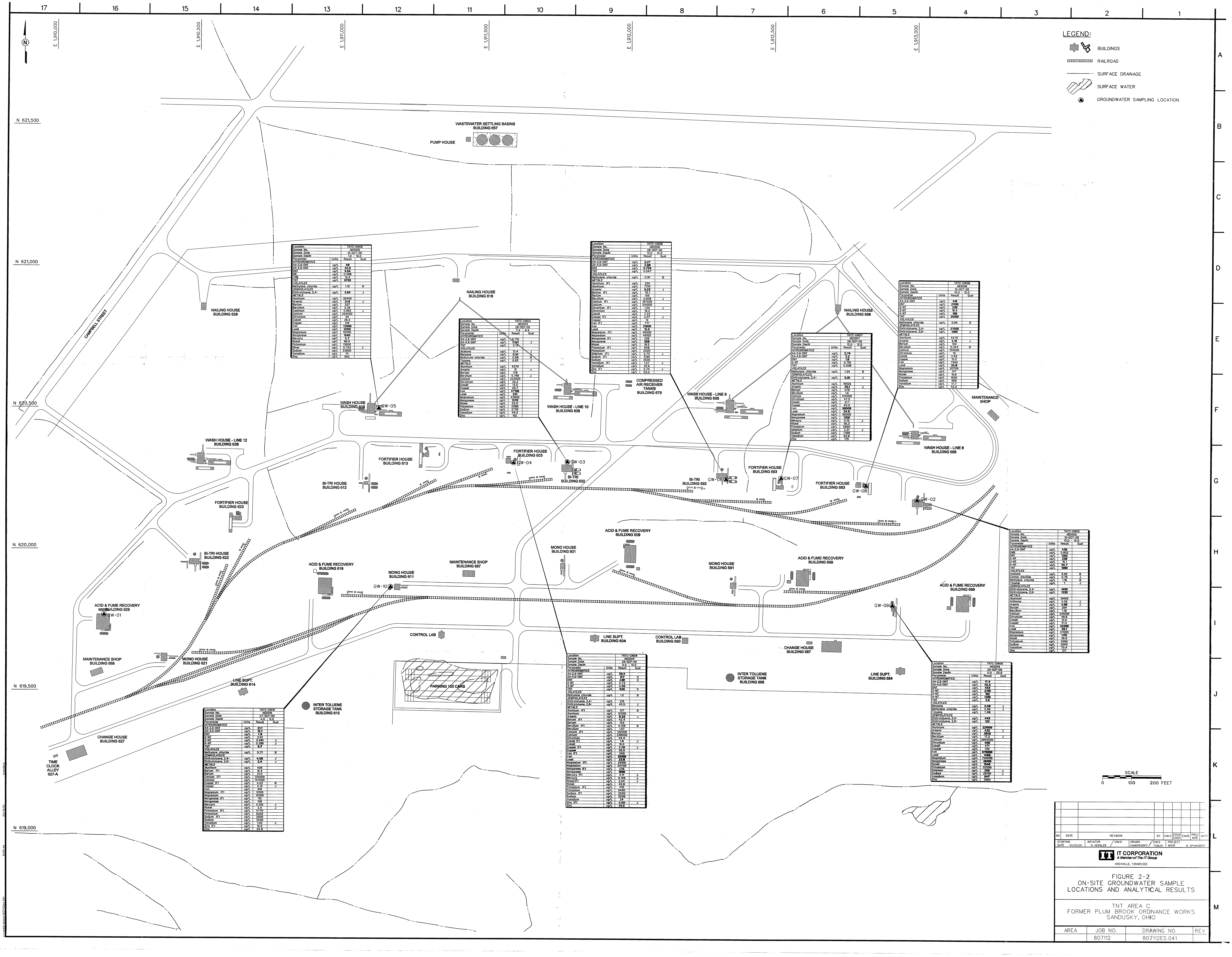

Location		TNTC-GW05	
Sample No.		AB3005	
Sample Date		10-OCT-00	
Sample Depth		1.9 - 16.0	
Parameter	Units	Result	Qual
NITROAROMATICS			
4A-2,6-DNT	ug/L	**48**	
2A-4,6-DNT	ug/L	**34.9**	
DNT	ug/L	**9.64**	
NB	ug/L	0.488	
TNB	ug/L	10.3	
TNT	ug/L	**9720**	
VOLATILES			
Methylene chloride	ug/L	1.15	B
SEMIVOLATILES			
Dinitrotoluene, 2,4-	ug/L	**3.64**	J
METALS			
Aluminum	ug/L	26400	
Arsenic	ug/L	**21.6**	J
Barium	ug/L	207	
Beryllium	ug/L	2.35	
Cadmium	ug/L	0.962	J
Calcium	ug/L	224000	
Chromium	ug/L	64	
Cobalt	ug/L	28.2	
Copper	ug/L	516	
Iron	ug/L	**72900**	
Lead	ug/L	**2050**	
Magnesium	ug/L	50100	
Manganese	ug/L	**1040**	
Mercury	ug/L	9.3	
Nickel	ug/L	86.4	
Potassium	ug/L	13600	
Silver	ug/L	0.703	J
Sodium	ug/L	23600	
Vanadium	ug/L	111	
Zinc	ug/L	993	

Location		TNTC-GW03	
Sample No.		AB3003	
Sample Date		28-SEP-00	
Sample Depth		7.4 - 8.4	
Parameter	Units	Result	Qual
NITROAROMATICS			
4A-2,6-DNT	ug/L	0.715	
2A-4,6-DNT	ug/L	0.181	J
TNT	ug/L	2.13	
VOLATILES			
Acetone	ug/L	13.4	J
Benzene	ug/L	**0.51**	J
Methylene chloride	ug/L	0.68	B
Toluene	ug/L	0.83	J
METALS			
Aluminum	ug/L	9370	
Arsenic	ug/L	**11**	J
Barium	ug/L	178	
Beryllium	ug/L	0.766	J
Calcium	ug/L	223000	
Chromium	ug/L	32.2	
Cobalt	ug/L	13.5	
Copper	ug/L	29.7	
Iron	ug/L	**47100**	
Lead	ug/L	**241**	
Magnesium	ug/L	43600	
Manganese	ug/L	**1070**	
Nickel	ug/L	52.5	
Potassium	ug/L	5080	
Sodium	ug/L	2730	
Vanadium	ug/L	49.3	
Zinc	ug/L	162	

Location		TNTC-GW06	
Sample No.		AB3006	
Sample Date		28-SEP-00	
Sample Depth		13.0 - 14.0	
Parameter	Units	Result	Qual
NITROAROMATICS			
4A-2,6-DNT	ug/L	**2.27**	
2A-4,6-DNT	ug/L	**2.88**	
DNT	ug/L	**0.754**	
TNT	ug/L	0.547	
VOLATILES			
Methylene chloride	ug/L	0.91	B
METALS			
Aluminum (F)	ug/L	334	
Aluminum	ug/L	7310	
Arsenic	ug/L	**9.23**	J
Barium (F)	ug/L	76.1	
Barium	ug/L	155	
Beryllium	ug/L	0.608	J
Calcium (F)	ug/L	197000	
Calcium	ug/L	214000	
Chromium (F)	ug/L	1.54	J
Chromium	ug/L	19.3	
Cobalt	ug/L	7.23	
Copper (F)	ug/L	2.07	J
Copper	ug/L	14	
Iron (F)	ug/L	771	
Iron	ug/L	**21800**	
Lead	ug/L	**15.5**	
Magnesium (F)	ug/L	46500	
Magnesium	ug/L	49100	
Manganese (F)	ug/L	226	
Manganese	ug/L	**958**	
Nickel	ug/L	18.5	
Potassium (F)	ug/L	848	
Potassium	ug/L	2220	
Selenium (F)	ug/L	2.73	J
Sodium (F)	ug/L	3190	
Sodium	ug/L	3630	
Vanadium (F)	ug/L	1.27	J
Vanadium	ug/L	32.6	
Zinc (F)	ug/L	5.74	J
Zinc	ug/L	53.2	

Location		TNTC-GW08	
Sample No.		AB3008	
Sample Date		10-OCT-00	
Sample Depth		10.0 - 15.0	
Parameter	Units	Result	Qual
NITROAROMATICS			
4A-2,6-DNT	ug/L	**419**	
DNT	ug/L	**21100**	
2-NT	ug/L	**236**	
3-NT	ug/L	18.4	
4-NT	ug/L	**189**	
TNT	ug/L	**20100**	
VOLATILES			
Methylene chloride	ug/L	0.94	B
SEMIVOLATILES			
Dinitrotoluene, 2,4-	ug/L	**37600**	
Dinitrotoluene, 2,6-	ug/L	**1060**	J
METALS			
Aluminum	ug/L	4470	
Arsenic	ug/L	**5.15**	J
Barium	ug/L	140	
Beryllium	ug/L	0.343	B
Calcium	ug/L	154000	
Chromium	ug/L	10	
Cobalt	ug/L	5.93	
Copper	ug/L	15.2	
Iron	ug/L	7450	
Lead	ug/L	**20.8**	
Magnesium	ug/L	20700	
Manganese	ug/L	317	
Nickel	ug/L	16.6	
Potassium	ug/L	1650	
Sodium	ug/L	1810	
Vanadium	ug/L	17.7	
Zinc	ug/L	42.5	

Location		TNTC-GW07	
Sample No.		AB3007	
Sample Date		28-SEP-00	
Sample Depth		12.0 - 12.0	
Parameter	Units	Result	Qual
NITROAROMATICS			
4A-2,6-DNT	ug/L	**2.74**	
2A-4,6-DNT	ug/L	**3.2**	
DNT	ug/L	**1.8**	
2-NT	ug/L	0.791	
TNT	ug/L	0.208	
VOLATILES			
Methylene chloride	ug/L	1.34	B
SEMIVOLATILES			
Dinitrotoluene, 2,4-	ug/L	**6.91**	J
METALS			
Aluminum	ug/L	19500	
Arsenic	ug/L	**39.1**	J
Barium	ug/L	579	
Beryllium	ug/L	1.6	
Calcium	ug/L	514000	
Chromium	ug/L	47.2	
Cobalt	ug/L	21.1	
Copper	ug/L	45.5	
Iron	ug/L	**68500**	
Lead	ug/L	**54.6**	
Magnesium	ug/L	90000	
Manganese	ug/L	**1300**	
Mercury	ug/L	0.15	J
Nickel	ug/L	56.3	
Potassium	ug/L	5820	
Selenium	ug/L	2.31	J
Sodium	ug/L	7360	
Vanadium	ug/L	93.9	
Zinc	ug/L	175	

Location		TNTC-GW02	
Sample No.		AB3002	
Sample Date		10-OCT-00	
Sample Depth		10.0 - 15.0	
Parameter	Units	Result	Qual
NITROAROMATICS			
4A-2,6-DNT	ug/L	**436**	
DNB	ug/L	0.802	
DNT	ug/L	**1260**	
2-NT	ug/L	**258**	
3-NT	ug/L	16.1	
4-NT	ug/L	**94.7**	
TNT	ug/L	**1880**	
VOLATILES			
Acetone	ug/L	6.92	B
Carbon disulfide	ug/L	0.76	J
Methylene chloride	ug/L	1.18	B
Toluene	ug/L	1	J
SEMIVOLATILES			
Dinitrotoluene, 2,4-	ug/L	**4610**	
Dinitrotoluene, 2,6-	ug/L	**1330**	
METALS			
Aluminum	ug/L	15400	
Antimony	ug/L	4.02	J
Arsenic	ug/L	**9.86**	J
Barium	ug/L	264	
Beryllium	ug/L	1.18	
Calcium	ug/L	214000	
Chromium	ug/L	48.6	
Cobalt	ug/L	15.6	
Copper	ug/L	41.4	
Iron	ug/L	**32200**	
Lead	ug/L	**46.1**	
Magnesium	ug/L	37000	
Manganese	ug/L	**1170**	
Nickel	ug/L	38.6	
Potassium	ug/L	4560	
Sodium	ug/L	2640	
Vanadium	ug/L	70.4	
Zinc	ug/L	137	

Location		TNTC-GW10	
Sample No.		AB3010	
Sample Date		27-SEP-00	
Sample Depth		4.0 - 6.0	
Parameter	Units	Result	Qual
NITROAROMATICS			
4A-2,6-DNT	ug/L	**21.1**	
2A-4,6-DNT	ug/L	**15.1**	
DNT	ug/L	**7.9**	
2-NT	ug/L	2.61	
3-NT	ug/L	0.481	J
4-NT	ug/L	0.396	J
TNT	ug/L	**9.7**	
VOLATILES			
Methylene chloride	ug/L	0.71	B
SEMIVOLATILES			
Dinitrotoluene, 2,4-	ug/L	**4.05**	J
Dinitrotoluene, 2,6-	ug/L	**2.4**	J
METALS			
Aluminum	ug/L	426	
Barium (F)	ug/L	16.4	
Barium	ug/L	21.5	
Calcium (F)	ug/L	135000	
Calcium	ug/L	147000	
Copper (F)	ug/L	3.23	B
Copper	ug/L	4.13	J
Iron	ug/L	810	
Magnesium (F)	ug/L	12100	
Magnesium	ug/L	12500	
Manganese (F)	ug/L	115	
Manganese	ug/L	109	
Mercury	ug/L	0.105	J
Nickel	ug/L	2.5	J
Potassium (F)	ug/L	4770	
Potassium	ug/L	6020	
Sodium (F)	ug/L	2900	
Sodium	ug/L	3400	
Vanadium	ug/L	1.02	J
Zinc (F)	ug/L	16.5	
Zinc	ug/L	24.9	

Location		TNTC-GW04	
Sample No.		AB3004	
Sample Date		28-SEP-00	
Sample Depth		9.0 - 10.0	
Parameter	Units	Result	Qual
NITROAROMATICS			
4A-2,6-DNT	ug/L	**59.4**	
2A-4,6-DNT	ug/L	**147**	D
DNT	ug/L	**338**	D
2-NT	ug/L	4.73	
3-NT	ug/L	0.88	
TNT	ug/L	**620**	D
VOLATILES			
Methylene chloride	ug/L	1.2	B
SEMIVOLATILES			
Dinitrotoluene, 2,4-	ug/L	215	
Dinitrotoluene, 2,6-	ug/L	45.5	J
METALS			
Aluminum (F)	ug/L	107	B
Aluminum	ug/L	12300	
Arsenic	ug/L	**8.22**	J
Barium (F)	ug/L	42.4	
Barium	ug/L	143	
Beryllium (F)	ug/L	0.104	B
Beryllium	ug/L	1.07	
Calcium (F)	ug/L	132000	
Calcium	ug/L	338000	
Chromium	ug/L	24.4	
Cobalt (F)	ug/L	1.8	J
Cobalt	ug/L	16.2	
Copper (F)	ug/L	2.58	J
Copper	ug/L	26.5	
Iron (F)	ug/L	240	
Iron	ug/L	**29100**	
Lead	ug/L	**23.6**	
Magnesium (F)	ug/L	29100	
Magnesium	ug/L	34700	
Manganese (F)	ug/L	236	
Manganese	ug/L	**1890**	
Mercury (F)	ug/L	0.11	J
Mercury	ug/L	0.146	J
Nickel (F)	ug/L	2.04	J
Nickel	ug/L	40.8	
Potassium (F)	ug/L	1110	
Potassium	ug/L	6490	
Sodium (F)	ug/L	2030	
Sodium	ug/L	2520	
Vanadium	ug/L	24	
Zinc (F)	ug/L	5.89	J
Zinc	ug/L	99.6	

Location		TNTC-GW09	
Sample No.		AB3009	
Sample Date		29-SEP-00	
Sample Depth		11.0 - 20.0	
Parameter	Units	Result	Qual
NITROAROMATICS			
4A-2,6-DNT	ug/L	**17.4**	
2A-4,6-DNT	ug/L	**40.3**	
DNT	ug/L	**453**	
2-NT	ug/L	**2310**	
3-NT	ug/L	**182**	
4-NT	ug/L	**1290**	
TNT	ug/L	**3.9**	
VOLATILES			
Benzene	ug/L	**0.59**	J
Methylene chloride	ug/L	0.96	J
Toluene	ug/L	7.88	
SEMIVOLATILES			
Dinitrotoluene, 2,4-	ug/L	**442**	
Dinitrotoluene, 2,6-	ug/L	**122**	
METALS			
Aluminum	ug/L	**221000**	
Arsenic	ug/L	**432**	J
Barium	ug/L	**3540**	
Beryllium	ug/L	17.2	J
Calcium	ug/L	2664000	
Chromium	ug/L	**450**	
Cobalt	ug/L	471	
Copper	ug/L	1110	
Iron	ug/L	**979000**	
Lead	ug/L	**1460**	
Magnesium	ug/L	726000	
Manganese	ug/L	**38100**	
Nickel	ug/L	**1540**	
Potassium	ug/L	32500	
Selenium	ug/L	**202**	J
Sodium	ug/L	28100	
Vanadium	ug/L	**647**	
Zinc	ug/L	3960	

NO	DATE	REVISION	BY	CHKD	DSGN ENGR	ENGR	PROJ MGR	APPR

STARTING DATE 01/23/01 | INITIATOR D. KESSLER | CHKD | DRAWN VANDERGRIFF | CHKD TUMLIN | PROJECT MNGR M. SPANGBERG

IT CORPORATION
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KNOXVILLE, TENNESSEE

FIGURE 2-2
ON-SITE GROUNDWATER SAMPLE
LOCATIONS AND ANALYTICAL RESULTS

TNT AREA C
FORMER PLUM BROOK ORDNANCE WORKS
SANDUSKY, OHIO

AREA	JOB NO.	DRAWING NO.	REV
	807112	807112ES.041	

STARTING DATE: 11/01/00 | DATE LAST REV.: | DRAFT. CHCK. BY: C. TUMLIN | INITIATOR: GUNDERSON | DWG. NO.: 807112es.029
DRAWN BY: B.VANDERGRIFF | DRAWN BY: | ENGR. CHCK. BY: S. MUFFLER | PROJ. MGR.: SPANGBERG | PROJ. NO.: 807112
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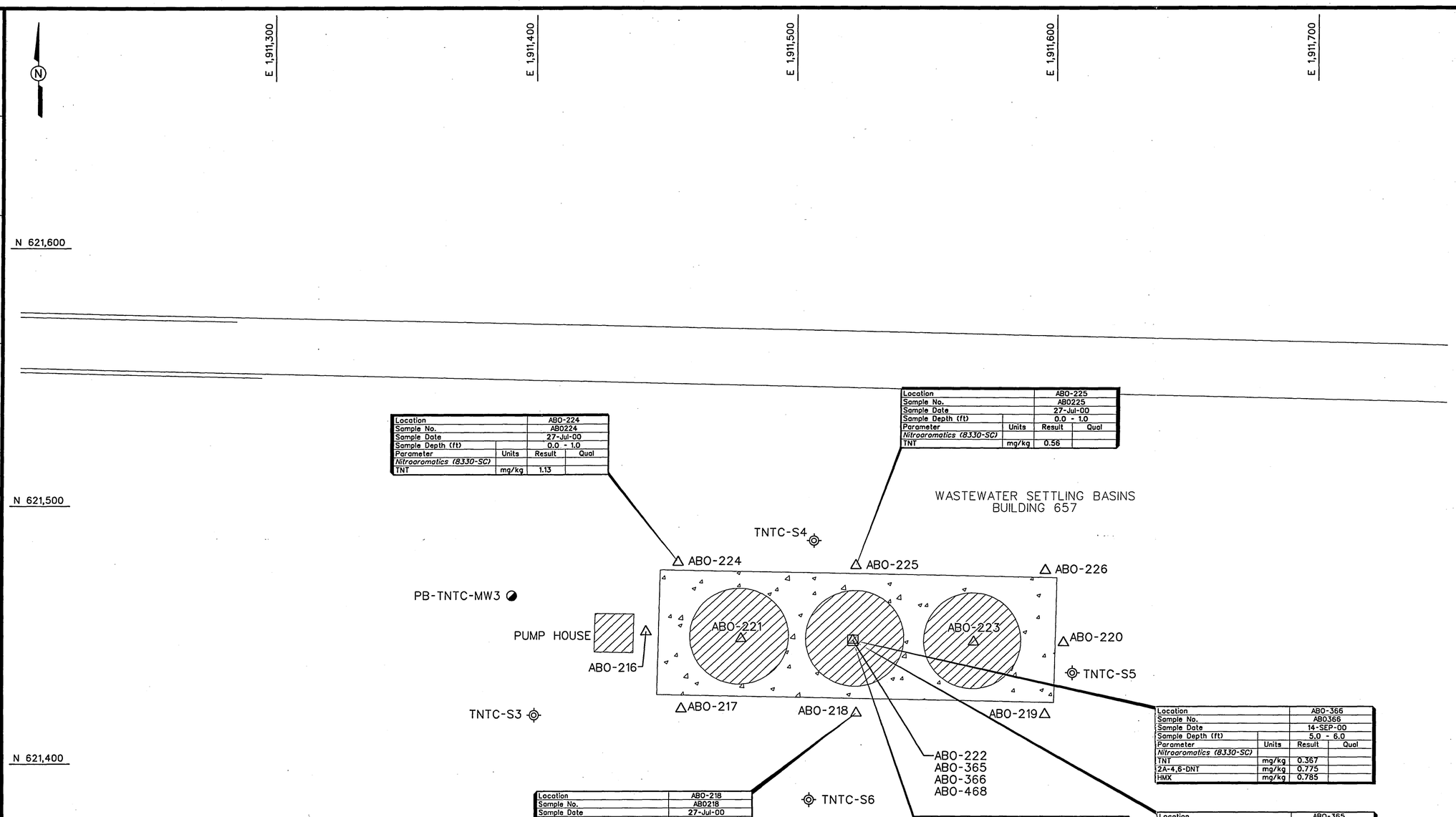

Location		ABO-224	
Sample No.		AB0224	
Sample Date		27-Jul-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	1.13	

Location		ABO-225	
Sample No.		AB0225	
Sample Date		27-Jul-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.56	

Location		ABO-366	
Sample No.		AB0366	
Sample Date		14-SEP-00	
Sample Depth (ft)		5.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.367	
2A-4,6-DNT	mg/kg	0.775	
HMX	mg/kg	0.785	

Location		ABO-218	
Sample No.		AB0218	
Sample Date		27-Jul-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.246	

Location		TNTC-S0222	
Sample No.		AB0468	
Sample Date		28-SEP-00	
Sample Depth (ft)		3.0 - 5.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	0.151	
DNT	mg/kg	0.483	
o-Nitrotoluene	mg/kg	1.94	
m-Nitrotoluene	mg/kg	0.263	
p-Nitrotoluene	mg/kg	1.99	
TNT	mg/kg	0.166	
Volatiles			
Acetone	mg/kg	0.0644	J
Carbon disulfide	mg/kg	0.0075	
Methylene chloride	mg/kg	0.00308	B
Toluene	mg/kg	0.00194	J
Semivolatiles			
Anthracene	mg/kg	0.113	J
Benzo(a)anthracene	mg/kg	0.289	J
Benzo(a)pyrene	mg/kg	0.356	J
Benzo(b)fluoranthene	mg/kg	0.492	
Benzo(ghi)perylene	mg/kg	0.352	J
Benzo(k)fluoranthene	mg/kg	0.155	J
Bis(2-ethylhexyl)phthalate	mg/kg	0.202	J
Carbazole	mg/kg	0.109	J
Chrysene	mg/kg	0.357	J
Dibenz(a,h)anthracene	mg/kg	0.123	J
Fluoranthene	mg/kg	0.666	
Indeno(1,2,3-cd)pyrene	mg/kg	0.27	J
Methylnaphthalene, 2-	mg/kg	0.0381	J
Phenanthrene	mg/kg	0.568	
Pyrene	mg/kg	0.605	
PCBs			
Aroclor 1260	mg/kg	0.0613	J
Metals			
Aluminum	mg/kg	6810	J
Arsenic	mg/kg	9.27	
Barium	mg/kg	57.5	
Beryllium	mg/kg	0.487	
Cadmium	mg/kg	0.385	J
Calcium	mg/kg	67600	
Chromium	mg/kg	11	
Cobalt	mg/kg	3.89	
Copper	mg/kg	15.2	
Iron	mg/kg	15400	
Lead	mg/kg	68.9	
Magnesium	mg/kg	6710	
Manganese	mg/kg	396	
Mercury	mg/kg	0.113	
Nickel	mg/kg	12	
Potassium	mg/kg	968	
Sodium	mg/kg	214	B
Vanadium	mg/kg	16.5	
Zinc	mg/kg	158	

Location		ABO-365	
Sample No.		AB0365	
Sample Date		14-Sep-00	
Sample Depth (ft)		3.0 - 5.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.489	
2,4-DNT	mg/kg	0.948	
2A-4,6-DNT	mg/kg	0.208	J
4A-2,6-DNT	mg/kg	0.276	
o-Nitrotoluene	mg/kg	0.864	
p-Nitrotoluene	mg/kg	0.695	

LEGEND:

- △ ABO-216 — SCREENING SOIL SAMPLING LOCATION
- □ ABO-468 — CONFIRMATION SOIL SAMPLING LOCATION
- ⊙ TNTC-S3 — SURVEYED LOCATION
- HISTORICAL SOIL BORING LOCATION
- TANK
- BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0216	0.0 - 1.0
AB0217	0.0 - 1.0
AB0218	0.0 - 1.0
AB0219	0.0 - 1.0
AB0220	0.0 - 1.0
AB0221	0.0 - 1.0
AB0222	0.0 - 1.0
AB0223	0.0 - 1.0
AB0224	0.0 - 1.0
AB0225	0.0 - 1.0
AB0226	0.0 - 1.0
AB0365	3.0 - 5.0
AB0366	5.0 - 6.0
AB0468	3.0 - 5.0

SCALE
0 30 60 FEET

FIGURE 2-3
TNT AREA C
BUILDING 657 WASTEWATER SETTLING BASIN
SAMPLE LOCATIONS AND ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
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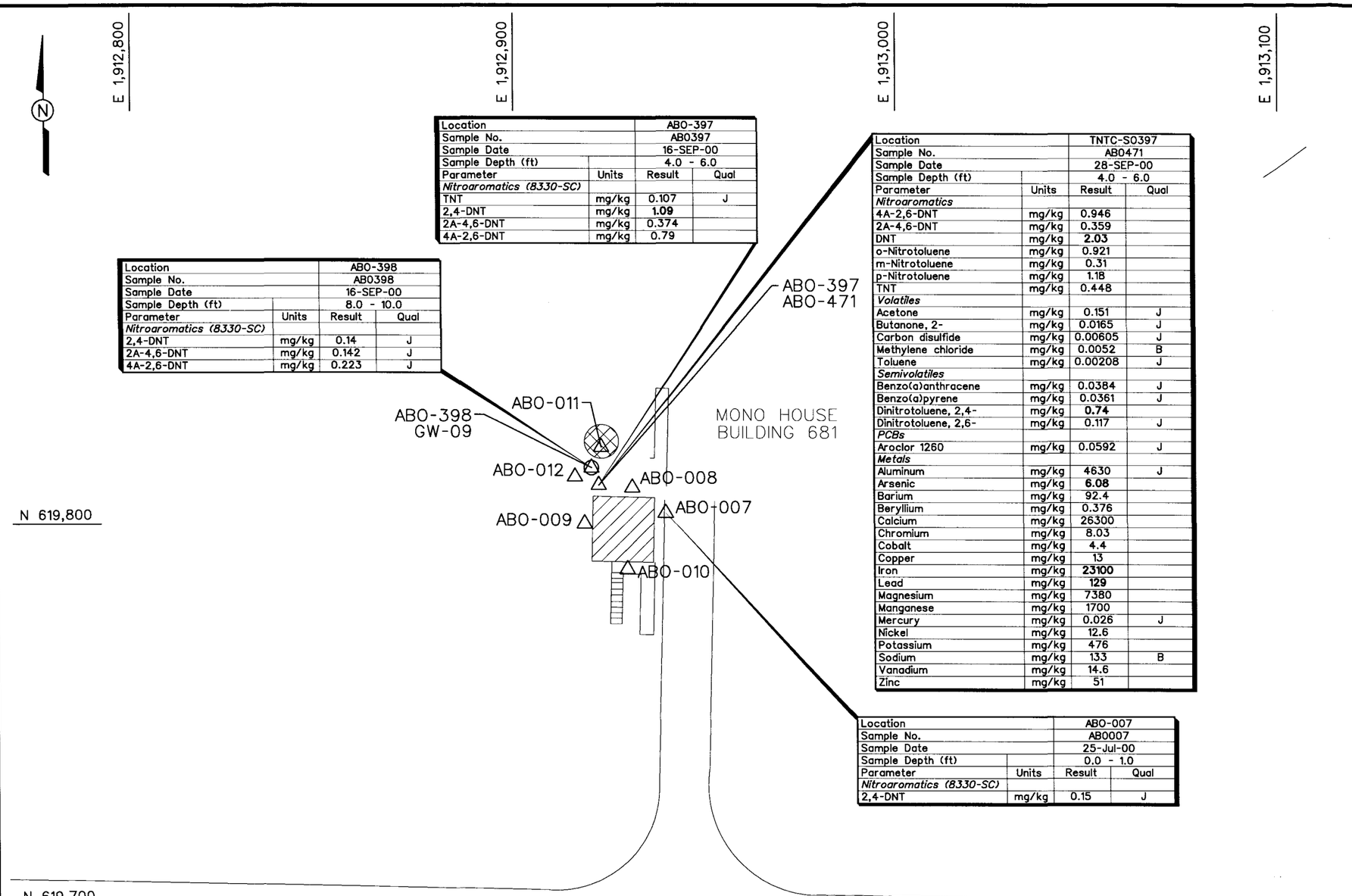

Location		AB0-397	
Sample No.		AB0397	
Sample Date		16-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.107	J
2,4-DNT	mg/kg	**1.09**	
2A-4,6-DNT	mg/kg	0.374	
4A-2,6-DNT	mg/kg	0.79	

Location		AB0-398	
Sample No.		AB0398	
Sample Date		16-SEP-00	
Sample Depth (ft)		8.0 - 10.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.14	J
2A-4,6-DNT	mg/kg	0.142	J
4A-2,6-DNT	mg/kg	0.223	J

Location		TNTC-S0397	
Sample No.		AB0471	
Sample Date		28-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	0.946	
2A-4,6-DNT	mg/kg	0.359	
DNT	mg/kg	**2.03**	
o-Nitrotoluene	mg/kg	0.921	
m-Nitrotoluene	mg/kg	0.31	
p-Nitrotoluene	mg/kg	1.18	
TNT	mg/kg	0.448	
Volatiles			
Acetone	mg/kg	0.151	J
Butanone, 2-	mg/kg	0.0165	J
Carbon disulfide	mg/kg	0.00605	J
Methylene chloride	mg/kg	0.0052	B
Toluene	mg/kg	0.00208	J
Semivolatiles			
Benzo(a)anthracene	mg/kg	0.0384	J
Benzo(a)pyrene	mg/kg	0.0361	J
Dinitrotoluene, 2,4-	mg/kg	**0.74**	
Dinitrotoluene, 2,6-	mg/kg	0.117	J
PCBs			
Aroclor 1260	mg/kg	0.0592	J
Metals			
Aluminum	mg/kg	4630	J
Arsenic	mg/kg	**6.08**	
Barium	mg/kg	92.4	
Beryllium	mg/kg	0.376	
Calcium	mg/kg	26300	
Chromium	mg/kg	8.03	
Cobalt	mg/kg	4.4	
Copper	mg/kg	13	
Iron	mg/kg	**23100**	
Lead	mg/kg	**129**	
Magnesium	mg/kg	7380	
Manganese	mg/kg	1700	
Mercury	mg/kg	0.026	J
Nickel	mg/kg	12.6	
Potassium	mg/kg	476	
Sodium	mg/kg	133	B
Vanadium	mg/kg	14.6	
Zinc	mg/kg	51	

Location		AB0-007	
Sample No.		AB0007	
Sample Date		25-Jul-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.15	J

LEGEND:

- △ AB0-007 — SCREENING SOIL SAMPLING LOCATION
- ○ GW-09 — GROUNDWATER SAMPLING LOCATION
- □ AB0-471 — CONFIRMATION SOIL SAMPLE LOCATION
- TANK
- BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0007	0.0 - 1.0
AB0008	0.0 - 1.0
AB0009	0.0 - 1.0
AB0010	0.0 - 1.0
AB0011	0.0 - 1.0
AB0012	0.0 - 1.0
AB0397	4.0 - 6.0
AB0398	8.0 - 10.0
AB0471	4.0 - 6.0

SCALE
0 30 60 FEET

FIGURE 2-4
TNT AREA C
BUILDING 681 MONO HOUSE SAMPLE LOCATIONS AND ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
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DWG. NO.:...\807112es.006 | PROJ. NO.: 807112
INITIATOR: GUNDERSON | PROJ. MGR.: SPANGBERG
DRAFT. CHCK. BY: C. TUMLIN | ENGR. CHCK. BY: S. MUFFLER
DATE LAST REV.: | DRAWN BY:
STARTING DATE: 08/01/00 | DRAWN BY: B.VANDERGRIFF
03:31:25 04/06/01
bvanderg
c:\cadd\design\807112es.006

STARTING DATE: 08/28/00	DATE LAST REV.:	DRAFT. CHCK. BY: C. TUMLIN	INITIATOR: GUNDERSON	DWG. NO.: 807112es.010
DRAWN BY: B.VANDERGRIFF	DRAWN BY:	ENGR. CHCK. BY: S. MUFFLER	PROJ. MGR.: SPANGBERG	PROJ. NO.: 807112

E 1,912,900
E 1,913,000
E 1,913,100
E 1,913,200
N 620,200
N 620,100

Location		TNTC-SO165	
Sample No.		AB0442	
Sample Date		27-SEP-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	**7.28**	
2A-4,6-DNT	mg/kg	**11.9**	
DNT	mg/kg	**5.63**	
NB	mg/kg	0.0966	J
3-NT	mg/kg	1.28	
Tetryl	mg/kg	0.626	
TNB	mg/kg	7.93	
TNT	mg/kg	**1343**	
Volatiles			
Acetone	mg/kg	0.0114	J
Carbon disulfide	mg/kg	0.0022	J
Methylene chloride	mg/kg	0.0155	B
Semivolatiles			
Dinitrotoluene, 2,4-	mg/kg	**10.6**	
Dinitrotoluene, 2,6-	mg/kg	**2.88**	J
PCBs			
Aroclor 1260	mg/kg	**0.509**	
Metals			
Aluminum	mg/kg	2610	J
Arsenic	mg/kg	**2.26**	
Barium	mg/kg	28.2	
Beryllium	mg/kg	0.156	J
Calcium	mg/kg	9330	J
Chromium	mg/kg	4.36	
Cobalt	mg/kg	1.39	
Copper	mg/kg	4.54	B
Iron	mg/kg	6600	
Lead	mg/kg	25.6	J
Magnesium	mg/kg	1040	J
Manganese	mg/kg	74	
Mercury	mg/kg	0.027	J
Nickel	mg/kg	4.48	
Potassium	mg/kg	308	
Sodium	mg/kg	195	
Vanadium	mg/kg	7.9	
Zinc	mg/kg	25.6	

Location		ABO-165	
Sample No.		AB0165	
Sample Date		12-Aug-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.95	
TNT	mg/kg	**729**	
2,4-DNT	mg/kg	0.63	
2A-4,6-DNT	mg/kg	2.23	
4A-2,6-DNT	mg/kg	1.26	

Location		ABO-367	
Sample No.		AB0367	
Sample Date		14-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.601	
TNT	mg/kg	3.43	
2A-4,6-DNT	mg/kg	0.43	
4A-2,6-DNT	mg/kg	0.494	

Location		ABO-368	
Sample No.		AB0368	
Sample Date		14-SEP-00	
Sample Depth (ft)		8.0 - 10.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.114	J
TNT	mg/kg	4.14	
2,4-DNT	mg/kg	0.194	J
2A-4,6-DNT	mg/kg	0.46	
4A-2,6-DNT	mg/kg	0.992	

Location		ABO-314	
Sample No.		AB0314	
Sample Date		22-Aug-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	8.67	
2,4-DNT	mg/kg	0.13	J
2A-4,6-DNT	mg/kg	0.76	
4A-2,6-DNT	mg/kg	0.58	

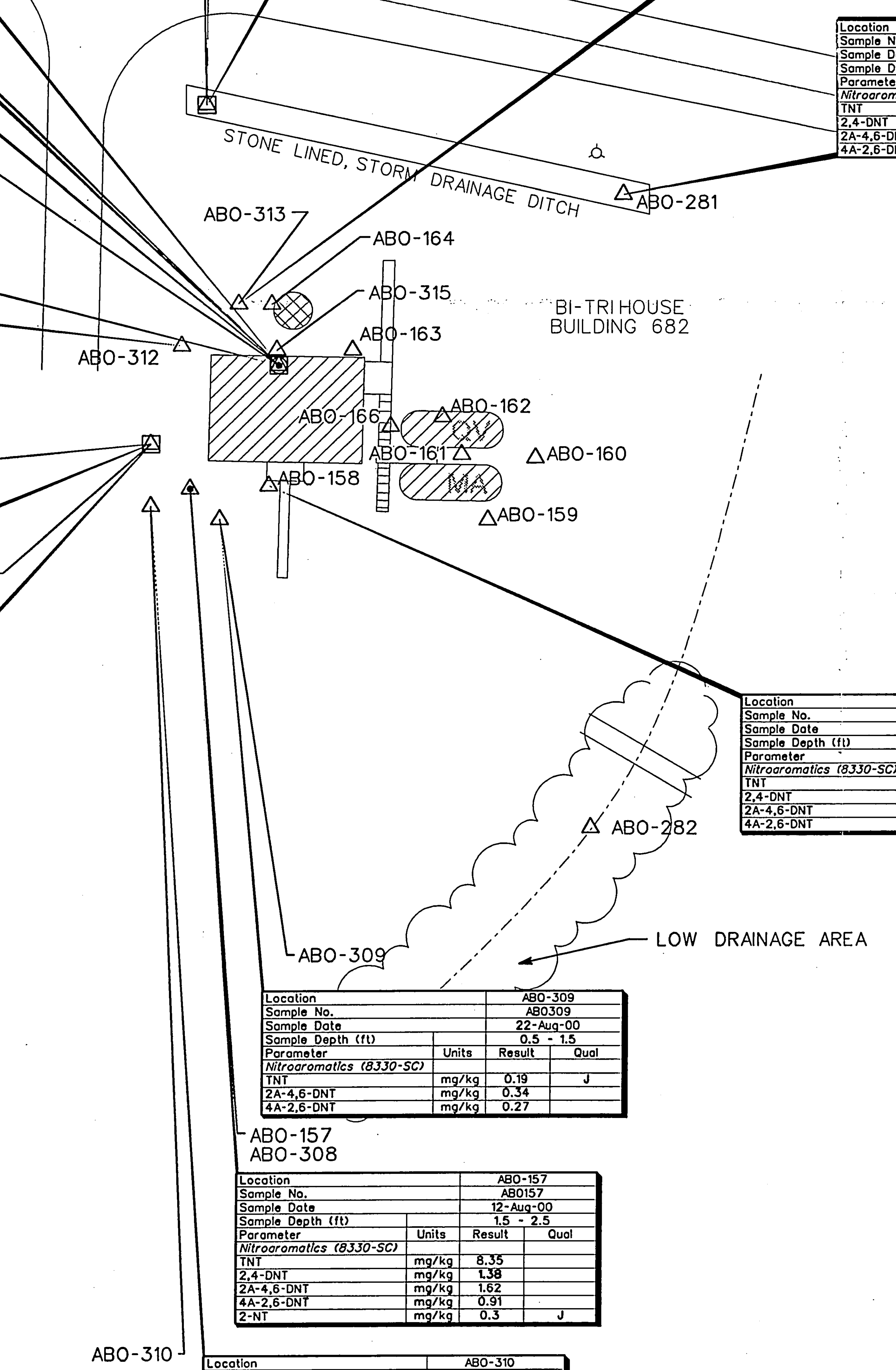
Location		ABO-280	
Sample No.		AB0280	
Sample Date		19-Aug-00	
Sample Depth (ft)		0.3 - 1.3	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.12	J
TNT	mg/kg	**62.9**	
2,4-DNT	mg/kg	0.67	
2A-4,6-DNT	mg/kg	**3.57**	
4A-2,6-DNT	mg/kg	**3.54**	
3-NT	mg/kg	0.30	J

Location		TNTC-SO280	
Sample No.		AB0454	
Sample Date		27-SEP-00	
Sample Depth (ft)		0.25 - 1.2	
Parameter	Units	Result	Qual
Nitroaromatics			
1,3-DNT	mg/kg	0.566	
DNT	mg/kg	**22.1**	
NB	mg/kg	0.227	
TNB	mg/kg	10.1	J
TNT	mg/kg	**54969**	
Volatiles			
Acetone	mg/kg	0.118	
Methylene chloride	mg/kg	0.00831	B
Semivolatiles			
Dinitrotoluene, 2,4-	mg/kg	**13.9**	
Dinitrotoluene, 2,6-	mg/kg	**8.43**	
PCBs			
Aroclor 1260	mg/kg	**0.883**	
Metals			
Aluminum	mg/kg	1870	J
Arsenic	mg/kg	**3.83**	
Barium	mg/kg	30.3	
Beryllium	mg/kg	0.159	J
Calcium	mg/kg	959	J
Chromium	mg/kg	3.04	
Cobalt	mg/kg	1.14	
Copper	mg/kg	6.38	J
Iron	mg/kg	5520	
Lead	mg/kg	**97**	J
Magnesium	mg/kg	388	J
Manganese	mg/kg	46.7	
Mercury	mg/kg	0.034	
Nickel	mg/kg	3.3	
Potassium	mg/kg	390	
Sodium	mg/kg	163	J
Vanadium	mg/kg	6.56	
Zinc	mg/kg	25.2	

Location		ABO-313	
Sample No.		AB0313	
Sample Date		22-Aug-00	
Sample Depth (ft)		2.0 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.28	
2,4-DNT	mg/kg	0.12	J
2A-4,6-DNT	mg/kg	0.74	
4A-2,6-DNT	mg/kg	0.71	

Location		ABO-281	
Sample No.		AB0281	
Sample Date		19-Aug-00	
Sample Depth (ft)		0.3 - 1.3	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	**47.5**	
2,4-DNT	mg/kg	**0.87**	
2A-4,6-DNT	mg/kg	**2.3**	
4A-2,6-DNT	mg/kg	1.29	

Location		ABO-312	
Sample No.		AB0312	
Sample Date		22-Aug-00	
Sample Depth (ft)		0.25 - 1.25	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.85	
2A-4,6-DNT	mg/kg	1.18	
4A-2,6-DNT	mg/kg	0.91	



Location		TNTC-SO311	
Sample No.		AB0455	
Sample Date		27-SEP-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	0.588	
2A-4,6-DNT	mg/kg	0.948	
DNT	mg/kg	**0.781**	
TNT	mg/kg	1.35	
Volatiles			
Acetone	mg/kg	0.0375	
Carbon disulfide	mg/kg	0.00343	J
Methylene chloride	mg/kg	0.00864	B
Semivolatiles			
Dinitrotoluene, 2,4-	mg/kg	**1.72**	
Dinitrotoluene, 2,6-	mg/kg	**0.428**	
PCBs			
Aroclor 1260	mg/kg	0.162	
Metals			
Aluminum	mg/kg	4060	J
Antimony	mg/kg	0.82	J
Arsenic	mg/kg	**5.59**	
Barium	mg/kg	27.9	
Beryllium	mg/kg	0.311	
Cadmium	mg/kg	0.285	J
Calcium	mg/kg	5300	J
Chromium	mg/kg	12.5	
Cobalt	mg/kg	2.41	
Copper	mg/kg	23.3	J
Iron	mg/kg	9560	
Lead	mg/kg	**721**	J
Magnesium	mg/kg	1270	J
Manganese	mg/kg	63.7	
Mercury	mg/kg	0.022	J
Nickel	mg/kg	12.3	
Potassium	mg/kg	678	
Sodium	mg/kg	251	
Vanadium	mg/kg	11.3	
Zinc	mg/kg	112	

Location		ABO-311	
Sample No.		AB0311	
Sample Date		22-Aug-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.33	
2,4-DNT	mg/kg	**99.4**	J
2A-4,6-DNT	mg/kg	0.15	J
4A-2,6-DNT	mg/kg	0.11	J

Location		ABO-369	
Sample No.		AB0369	
Sample Date		14-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.181	J
2-NT	mg/kg	0.272	J
4-NT	mg/kg	0.24	J

Location		ABO-158	
Sample No.		AB0158	
Sample Date		12-Aug-00	
Sample Depth (ft)		2.5 - 3.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.46	
2,4-DNT	mg/kg	0.21	J
2A-4,6-DNT	mg/kg	0.57	
4A-2,6-DNT	mg/kg	0.58	

Location		ABO-309	
Sample No.		AB0309	
Sample Date		22-Aug-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.19	J
2A-4,6-DNT	mg/kg	0.34	
4A-2,6-DNT	mg/kg	0.27	

Location		ABO-157	
Sample No.		AB0157	
Sample Date		12-Aug-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	8.35	
2,4-DNT	mg/kg	**1.38**	
2A-4,6-DNT	mg/kg	1.62	
4A-2,6-DNT	mg/kg	0.91	
2-NT	mg/kg	0.3	J

Location		ABO-310	
Sample No.		AB0310	
Sample Date		22-Aug-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.63	
2,4-DNT	mg/kg	0.27	
2A-4,6-DNT	mg/kg	0.49	
4A-2,6-DNT	mg/kg	0.29	

LEGEND:

- △ ABO-157 — SCREENING SOIL SAMPLING LOCATION
- • ABO-308 — SURFACE SOIL SAMPLE 0 - 1 FT.
- ○ GW-02 — GROUNDWATER SAMPLING LOCATION
- □ ABO-455 — CONFIRMATION SOIL SAMPLING LOCATION
- TANK
- BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0157	1.5 - 2.5
AB0158	2.5 - 3.5
AB0159	1.0 - 2.0
AB0160	0.5 - 1.5
AB0161	1.0 - 2.0
AB0162	1.0 - 2.0
AB0163	1.5 - 2.5
AB0164	1.5 - 2.5
AB0165	1.5 - 2.5
AB0166	1.5 - 1.8
AB0280	0.25 - 1.25
AB0281	0.25 - 1.25
AB0282	0.25 - 1.25
AB0308	0.0 - 1.0
AB0309	0.5 - 1.5
AB0310	0.5 - 1.5
AB0311	0.5 - 1.5
AB0312	0.25 - 1.5
AB0313	2.0 - 2.5
AB0314	0.0 - 1.0
AB0315	0.25 - 1.25
AB0367	4.0 - 6.0
AB0368	8.0 - 10.0
AB0369	4.0 - 6.0
AB0370	8.0 - 10.0
AB0442	1.5 - 2.5
AB0452	0.25 - 1.25
AB0453	0.25 - 1.25
AB0454	0.25 - 1.25
AB0455	0.5 - 1.5

SCALE
0 30 60 FEET

FIGURE 2-5
TNT AREA C
BUILDING 682 BI-TRI HOUSE
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
A Member of The IT Group

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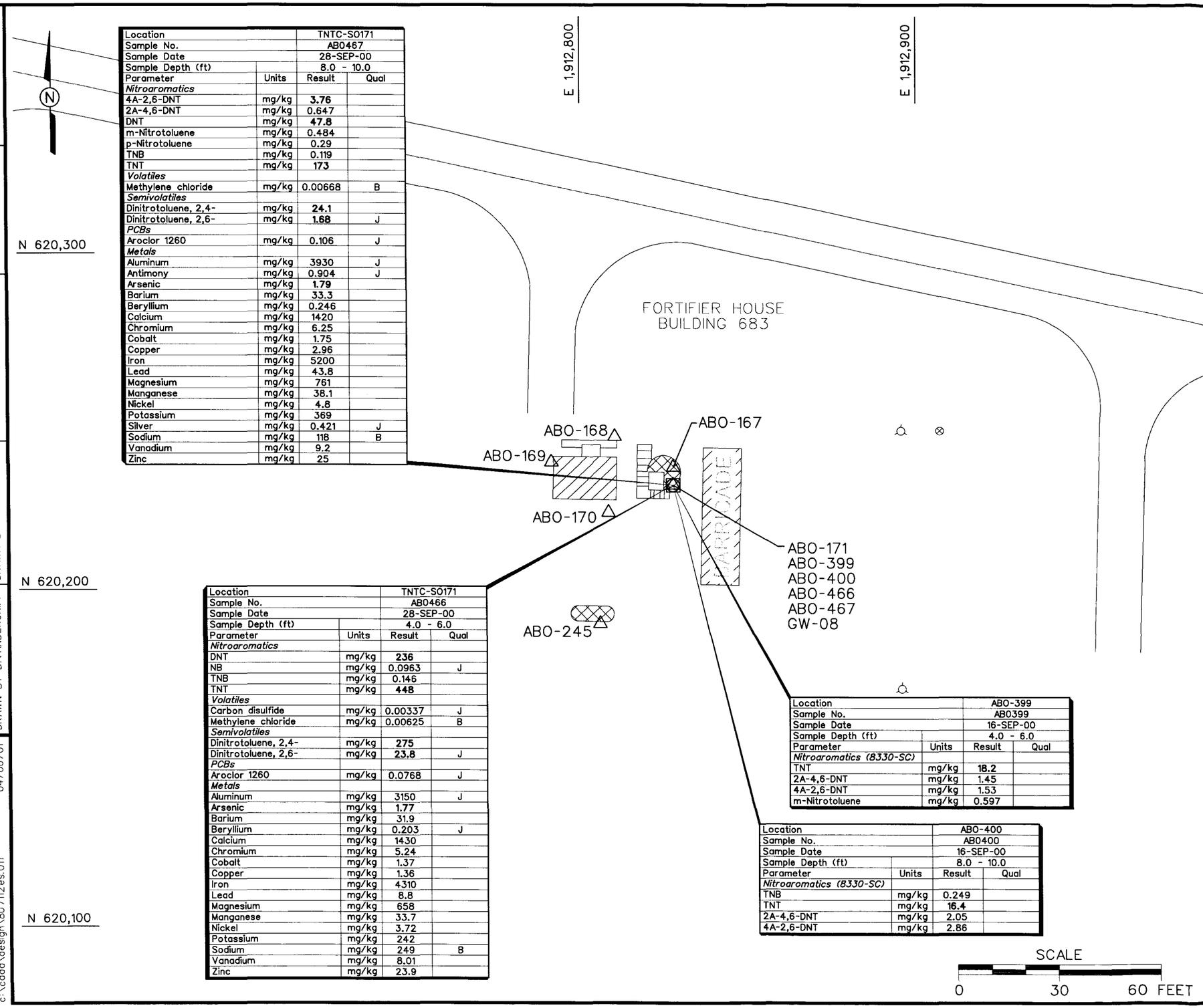

Location		TNTC-S0171	
Sample No.		AB0467	
Sample Date		28-SEP-00	
Sample Depth (ft)		8.0 - 10.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	**3.76**	
2A-4,6-DNT	mg/kg	0.647	
DNT	mg/kg	**47.8**	
m-Nitrotoluene	mg/kg	0.484	
p-Nitrotoluene	mg/kg	0.29	
TNB	mg/kg	0.119	
TNT	mg/kg	**173**	
Volatiles			
Methylene chloride	mg/kg	0.00668	B
Semivolatiles			
Dinitrotoluene, 2,4-	mg/kg	**24.1**	
Dinitrotoluene, 2,6-	mg/kg	**1.68**	J
PCBs			
Aroclor 1260	mg/kg	0.106	J
Metals			
Aluminum	mg/kg	3930	J
Antimony	mg/kg	0.904	J
Arsenic	mg/kg	**1.79**	
Barium	mg/kg	33.3	
Beryllium	mg/kg	0.246	
Calcium	mg/kg	1420	
Chromium	mg/kg	6.25	
Cobalt	mg/kg	1.75	
Copper	mg/kg	2.96	
Iron	mg/kg	5200	
Lead	mg/kg	43.8	
Magnesium	mg/kg	761	
Manganese	mg/kg	38.1	
Nickel	mg/kg	4.8	
Potassium	mg/kg	369	
Silver	mg/kg	0.421	J
Sodium	mg/kg	118	B
Vanadium	mg/kg	9.2	
Zinc	mg/kg	25	

Location		TNTC-S0171	
Sample No.		AB0466	
Sample Date		28-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics			
DNT	mg/kg	**236**	
NB	mg/kg	0.0963	J
TNB	mg/kg	0.146	
TNT	mg/kg	**448**	
Volatiles			
Carbon disulfide	mg/kg	0.00337	J
Methylene chloride	mg/kg	0.00625	B
Semivolatiles			
Dinitrotoluene, 2,4-	mg/kg	**275**	
Dinitrotoluene, 2,6-	mg/kg	**23.8**	J
PCBs			
Aroclor 1260	mg/kg	0.0768	J
Metals			
Aluminum	mg/kg	3150	J
Arsenic	mg/kg	1.77	
Barium	mg/kg	31.9	
Beryllium	mg/kg	0.203	J
Calcium	mg/kg	1430	
Chromium	mg/kg	5.24	
Cobalt	mg/kg	1.37	
Copper	mg/kg	1.36	
Iron	mg/kg	4310	
Lead	mg/kg	8.8	
Magnesium	mg/kg	658	
Manganese	mg/kg	33.7	
Nickel	mg/kg	3.72	
Potassium	mg/kg	242	
Sodium	mg/kg	249	B
Vanadium	mg/kg	8.01	
Zinc	mg/kg	23.9	

Location		ABO-399	
Sample No.		AB0399	
Sample Date		16-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	**18.2**	
2A-4,6-DNT	mg/kg	1.45	
4A-2,6-DNT	mg/kg	1.53	
m-Nitrotoluene	mg/kg	0.597	

Location		ABO-400	
Sample No.		AB0400	
Sample Date		16-SEP-00	
Sample Depth (ft)		8.0 - 10.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.249	
TNT	mg/kg	**16.4**	
2A-4,6-DNT	mg/kg	2.05	
4A-2,6-DNT	mg/kg	2.86	

LEGEND:

△ ABO-167	SCREENING SOIL SAMPLING LOCATION
○ GW-08	GROUNDWATER SAMPLING LOCATION
□ ABO-466	CONFIRMATION SOIL SAMPLING LOCATION
	TANK
	BUILDING
	FIRE HYDRANT
	WATER CONTROL VALVE

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0167	0.5 - 1.0
AB0168	1.0 - 2.0
AB0169	1.5 - 2.5
AB0170	1.0 - 1.5
AB0171	0.5 - 1.0
AB0245	1.0 - 2.0
AB0399	4.0 - 6.0
AB0400	8.0 - 10.0
AB0466	4.0 - 6.0
AB0467	8.0 - 10.0

FIGURE 2-6
TNT AREA C
BUILDING 683 FORTIFIER HOUSE
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
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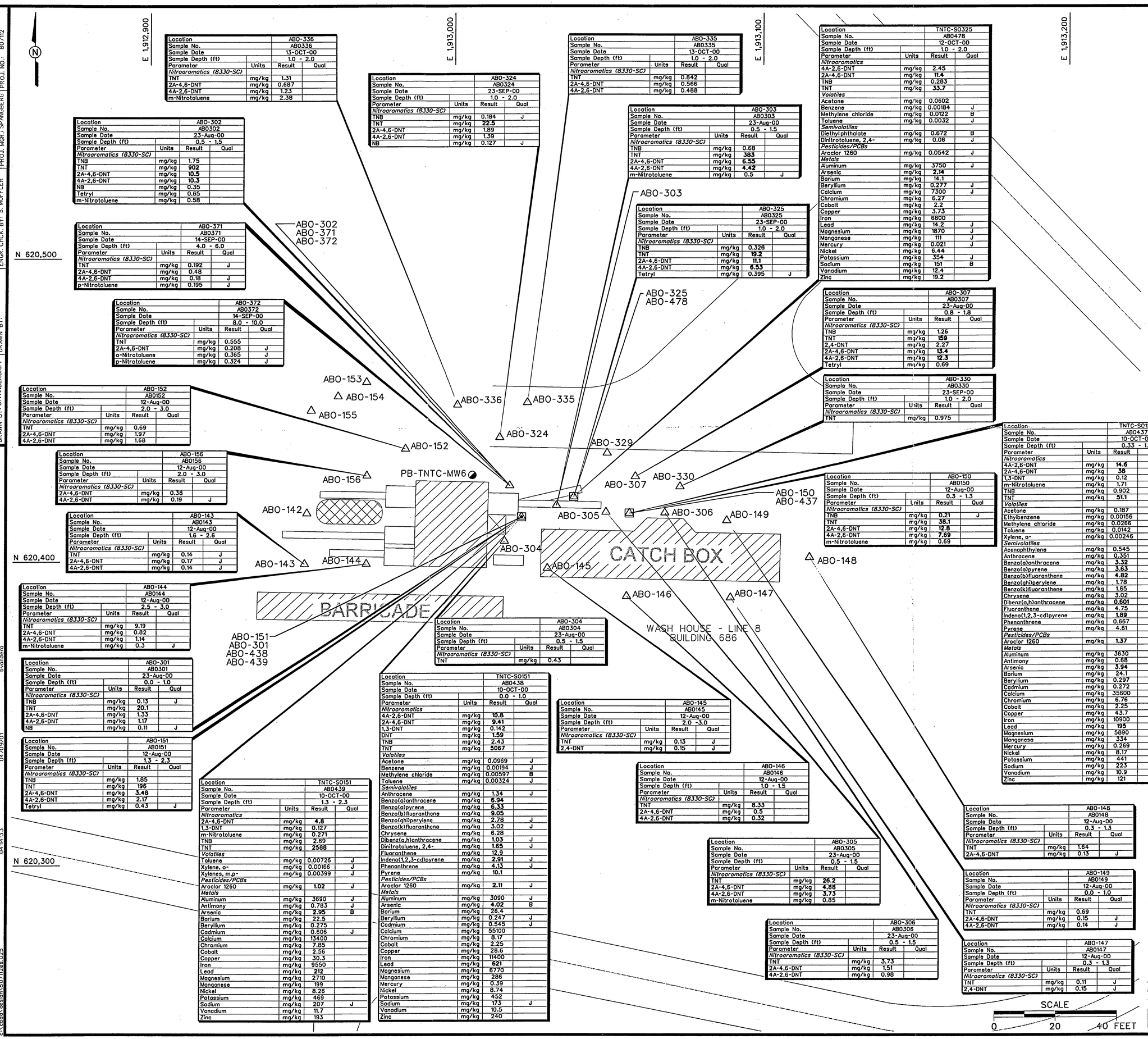
DWG. NO.: ...\807112es.011
PROJ. NO.: 807112
INITIATOR: GUNDERSON
PROJ. MGR.: SPANGBERG
DRAFT. CHCK. BY: C. TUMLIN
ENGR. CHCK. BY: S. MUFFLER
DATE LAST REV.:
DRAWN BY:
STARTING DATE: 08/28/00
DRAWN BY: B.VANDERGRIFF
03:32:58
04/06/01
bvanderg
c:\cadd\design\807112es.011



Location		ABO-336	
Sample No.		AB0336	
Sample Date		13-OCT-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	1.31	
2A-4,6-DNT	mg/kg	0.687	
4A-2,6-DNT	mg/kg	1.23	
m-Nitrotoluene	mg/kg	2.38	

Location		ABO-324	
Sample No.		AB0324	
Sample Date		23-SEP-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.184	J
TNT	mg/kg	**22.5**	
2A-4,6-DNT	mg/kg	1.89	
4A-2,6-DNT	mg/kg	1.39	
NB	mg/kg	0.127	J

Location		ABO-335	
Sample No.		AB0335	
Sample Date		13-OCT-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.842	
2A-4,6-DNT	mg/kg	0.566	
4A-2,6-DNT	mg/kg	0.488	

Location		TNTC-S0325	
Sample No.		AB0478	
Sample Date		12-OCT-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	2.45	
2A-4,6-DNT	mg/kg	**11.4**	
TNB	mg/kg	0.283	
TNT	mg/kg	**33.7**	
Volatiles			
Acetone	mg/kg	0.0602	
Benzene	mg/kg	0.00184	J
Methylene chloride	mg/kg	0.0122	B
Toluene	mg/kg	0.0032	J
Semivolatiles			
Diethylphthalate	mg/kg	0.672	B
Dinitrotoluene, 2,4-	mg/kg	0.06	J
Pesticides/PCBs			
Aroclor 1260	mg/kg	0.0542	J
Metals			
Aluminum	mg/kg	3750	J
Arsenic	mg/kg	**2.14**	
Barium	mg/kg	14.1	
Beryllium	mg/kg	0.277	J
Calcium	mg/kg	7300	J
Chromium	mg/kg	6.27	
Cobalt	mg/kg	2.2	
Copper	mg/kg	3.73	
Iron	mg/kg	6800	
Lead	mg/kg	14.2	J
Magnesium	mg/kg	1870	J
Manganese	mg/kg	111	J
Mercury	mg/kg	0.021	J
Nickel	mg/kg	6.44	
Potassium	mg/kg	354	J
Sodium	mg/kg	151	B
Vanadium	mg/kg	12.4	
Zinc	mg/kg	19.2	

Location		ABO-302	
Sample No.		AB0302	
Sample Date		23-Aug-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	1.75	
TNT	mg/kg	**902**	
2A-4,6-DNT	mg/kg	**10.5**	
4A-2,6-DNT	mg/kg	**10.3**	
NB	mg/kg	0.35	
Tetryl	mg/kg	0.65	
m-Nitrotoluene	mg/kg	0.58	

Location		ABO-303	
Sample No.		AB0303	
Sample Date		23-Aug-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.68	
TNT	mg/kg	**383**	
2A-4,6-DNT	mg/kg	**6.55**	
4A-2,6-DNT	mg/kg	**4.42**	
m-Nitrotoluene	mg/kg	0.5	J

Location		ABO-371	
Sample No.		AB0371	
Sample Date		14-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.192	J
2A-4,6-DNT	mg/kg	0.48	
4A-2,6-DNT	mg/kg	0.18	J
p-Nitrotoluene	mg/kg	0.195	J

Location		ABO-325	
Sample No.		AB0325	
Sample Date		23-SEP-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.326	
TNT	mg/kg	**19.2**	
2A-4,6-DNT	mg/kg	**11.1**	
4A-2,6-DNT	mg/kg	**6.53**	
Tetryl	mg/kg	0.395	J

Location		ABO-307	
Sample No.		AB0307	
Sample Date		23-Aug-00	
Sample Depth (ft)		0.8 - 1.8	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	1.26	
TNT	mg/kg	**159**	
2,4-DNT	mg/kg	**2.27**	
2A-4,6-DNT	mg/kg	**13.4**	
4A-2,6-DNT	mg/kg	**12.3**	
Tetryl	mg/kg	0.69	

Location		ABO-372	
Sample No.		AB0372	
Sample Date		14-SEP-00	
Sample Depth (ft)		8.0 - 10.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.555	
2A-4,6-DNT	mg/kg	0.208	J
o-Nitrotoluene	mg/kg	0.365	J
p-Nitrotoluene	mg/kg	0.324	J

Location		ABO-330	
Sample No.		AB0330	
Sample Date		23-SEP-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.975	

Location		ABO-152	
Sample No.		AB0152	
Sample Date		12-Aug-00	
Sample Depth (ft)		2.0 - 3.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.69	
2A-4,6-DNT	mg/kg	1.97	
4A-2,6-DNT	mg/kg	1.68	

Location		TNTC-S0150	
Sample No.		AB0437	
Sample Date		10-OCT-00	
Sample Depth (ft)		0.33 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	**14.6**	
2A-4,6-DNT	mg/kg	**38**	
1,3-DNT	mg/kg	0.12	
m-Nitrotoluene	mg/kg	1.71	
TNB	mg/kg	0.902	
TNT	mg/kg	**51.1**	
Volatiles			
Acetone	mg/kg	0.187	J
Ethylbenzene	mg/kg	0.00156	J
Methylene chloride	mg/kg	0.0266	B
Toluene	mg/kg	0.0142	J
Xylene, o-	mg/kg	0.00246	J
Semivolatiles			
Acenaphthylene	mg/kg	0.545	J
Anthracene	mg/kg	0.351	J
Benzo(a)anthracene	mg/kg	**3.32**	
Benzo(a)pyrene	mg/kg	**3.63**	
Benzo(b)fluoranthene	mg/kg	**4.82**	
Benzo(ghi)perylene	mg/kg	1.78	
Benzo(k)fluoranthene	mg/kg	1.65	
Chrysene	mg/kg	3.02	
Dibenz(a,h)anthracene	mg/kg	0.601	J
Fluoranthene	mg/kg	4.75	
Indeno(1,2,3-cd)pyrene	mg/kg	**1.89**	
Phenanthrene	mg/kg	0.667	J
Pyrene	mg/kg	4.61	
Pesticides/PCBs			
Aroclor 1260	mg/kg	**1.37**	J
Metals			
Aluminum	mg/kg	3630	J
Antimony	mg/kg	0.68	J
Arsenic	mg/kg	**3.94**	B
Barium	mg/kg	24.1	
Beryllium	mg/kg	0.297	
Cadmium	mg/kg	0.272	J
Calcium	mg/kg	35600	
Chromium	mg/kg	6.76	
Cobalt	mg/kg	2.25	
Copper	mg/kg	43.7	
Iron	mg/kg	10900	
Lead	mg/kg	195	
Magnesium	mg/kg	5890	
Manganese	mg/kg	334	
Mercury	mg/kg	0.269	
Nickel	mg/kg	8.17	
Potassium	mg/kg	441	
Sodium	mg/kg	223	J
Vanadium	mg/kg	10.9	
Zinc	mg/kg	121	

Location		ABO-156	
Sample No.		AB0156	
Sample Date		12-Aug-00	
Sample Depth (ft)		2.0 - 3.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2A-4,6-DNT	mg/kg	0.38	
4A-2,6-DNT	mg/kg	0.19	J

Location		ABO-150	
Sample No.		AB0150	
Sample Date		12-Aug-00	
Sample Depth (ft)		0.3 - 1.3	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.21	J
TNT	mg/kg	**38.1**	
2A-4,6-DNT	mg/kg	**12.8**	
4A-2,6-DNT	mg/kg	**7.69**	
m-Nitrotoluene	mg/kg	0.69	

Location		ABO-143	
Sample No.		AB0143	
Sample Date		12-Aug-00	
Sample Depth (ft)		1.6 - 2.6	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.14	J
2A-4,6-DNT	mg/kg	0.17	J
4A-2,6-DNT	mg/kg	0.14	J

Location		ABO-144	
Sample No.		AB0144	
Sample Date		12-Aug-00	
Sample Depth (ft)		2.5 - 3.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	9.19	
2A-4,6-DNT	mg/kg	0.82	
4A-2,6-DNT	mg/kg	1.14	
m-Nitrotoluene	mg/kg	0.3	J

Location		ABO-304	
Sample No.		AB0304	
Sample Date		23-Aug-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.43	

Location		ABO-301	
Sample No.		AB0301	
Sample Date		23-Aug-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.13	J
TNT	mg/kg	20.1	
2A-4,6-DNT	mg/kg	1.33	
4A-2,6-DNT	mg/kg	1.17	
NB	mg/kg	0.11	J

Location		TNTC-S0151	
Sample No.		AB0438	
Sample Date		10-OCT-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	**10.8**	
2A-4,6-DNT	mg/kg	**9.41**	
1,3-DNT	mg/kg	0.142	
DNT	mg/kg	**1.59**	
TNB	mg/kg	2.43	
TNT	mg/kg	**5067**	
Volatiles			
Acetone	mg/kg	0.0969	J
Benzene	mg/kg	0.00194	J
Methylene chloride	mg/kg	0.00597	B
Toluene	mg/kg	0.00324	J
Semivolatiles			
Anthracene	mg/kg	1.34	J
Benzo(a)anthracene	mg/kg	**6.94**	
Benzo(a)pyrene	mg/kg	**6.33**	
Benzo(b)fluoranthene	mg/kg	**9.05**	
Benzo(ghi)perylene	mg/kg	2.78	J
Benzo(k)fluoranthene	mg/kg	3.02	J
Chrysene	mg/kg	6.28	
Dibenz(a,h)anthracene	mg/kg	**1.03**	J
Dinitrotoluene, 2,4-	mg/kg	**1.65**	J
Fluoranthene	mg/kg	12.9	
Indeno(1,2,3-cd)pyrene	mg/kg	**2.91**	J
Phenanthrene	mg/kg	4.13	J
Pyrene	mg/kg	10.1	
Pesticides/PCBs			
Aroclor 1260	mg/kg	**2.11**	J
Metals			
Aluminum	mg/kg	3090	J
Arsenic	mg/kg	**4.02**	B
Barium	mg/kg	26.4	
Beryllium	mg/kg	0.247	J
Cadmium	mg/kg	0.545	J
Calcium	mg/kg	55100	
Chromium	mg/kg	8.17	
Cobalt	mg/kg	2.25	
Copper	mg/kg	28.6	
Iron	mg/kg	11400	
Lead	mg/kg	621	
Magnesium	mg/kg	6770	
Manganese	mg/kg	286	
Mercury	mg/kg	0.39	
Nickel	mg/kg	8.74	
Potassium	mg/kg	452	
Sodium	mg/kg	173	J
Vanadium	mg/kg	10.5	
Zinc	mg/kg	240	

Location		ABO-145	
Sample No.		AB0145	
Sample Date		12-Aug-00	
Sample Depth (ft)		2.0 -3.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.13	J
2,4-DNT	mg/kg	0.15	J

Location		ABO-151	
Sample No.		AB0151	
Sample Date		12-Aug-00	
Sample Depth (ft)		1.3 - 2.3	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	1.85	
TNT	mg/kg	196	
2A-4,6-DNT	mg/kg	**3.48**	
4A-2,6-DNT	mg/kg	2.17	
Tetryl	mg/kg	0.43	J

Location		TNTC-S0151	
Sample No.		AB0439	
Sample Date		10-OCT-00	
Sample Depth (ft)		1.3 - 2.3	
Parameter	Units	Result	Qual
Nitroaromatics			
2A-4,6-DNT	mg/kg	**4.8**	
1,3-DNT	mg/kg	0.127	
m-Nitrotoluene	mg/kg	0.271	
TNB	mg/kg	2.69	
TNT	mg/kg	**2588**	
Volatiles			
Toluene	mg/kg	0.00726	J
Xylene, o-	mg/kg	0.00166	J
Xylenes, m,p-	mg/kg	0.00399	J
Pesticides/PCBs			
Aroclor 1260	mg/kg	**1.02**	J
Metals			
Aluminum	mg/kg	3690	J
Antimony	mg/kg	0.783	J
Arsenic	mg/kg	**2.95**	B
Barium	mg/kg	22.5	
Beryllium	mg/kg	0.275	
Cadmium	mg/kg	0.606	J
Calcium	mg/kg	13400	
Chromium	mg/kg	7.85	
Cobalt	mg/kg	2.56	
Copper	mg/kg	30.3	
Iron	mg/kg	9550	
Lead	mg/kg	212	
Magnesium	mg/kg	2710	
Manganese	mg/kg	199	
Nickel	mg/kg	8.26	
Potassium	mg/kg	469	
Sodium	mg/kg	207	J
Vanadium	mg/kg	11.7	
Zinc	mg/kg	193	

Location		ABO-146	
Sample No.		AB0146	
Sample Date		12-Aug-00	
Sample Depth (ft)		1.0 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	8.33	
2A-4,6-DNT	mg/kg	0.5	
4A-2,6-DNT	mg/kg	0.32	

Location		ABO-305	
Sample No.		AB0305	
Sample Date		23-Aug-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	**26.2**	
2A-4,6-DNT	mg/kg	**4.88**	
4A-2,6-DNT	mg/kg	**3.73**	
m-Nitrotoluene	mg/kg	0.85	

Location		ABO-306	
Sample No.		AB0306	
Sample Date		23-Aug-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	3.73	
2A-4,6-DNT	mg/kg	1.51	
4A-2,6-DNT	mg/kg	0.98	

Location		ABO-148	
Sample No.		AB0148	
Sample Date		12-Aug-00	
Sample Depth (ft)		0.3 - 1.3	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	1.64	
2A-4,6-DNT	mg/kg	0.13	J

Location		ABO-149	
Sample No.		AB0149	
Sample Date		12-Aug-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.69	
2A-4,6-DNT	mg/kg	0.15	J
4A-2,6-DNT	mg/kg	0.14	J

Location		ABO-147	
Sample No.		AB0147	
Sample Date		12-Aug-00	
Sample Depth (ft)		0.3 - 1.3	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.11	J
2,4-DNT	mg/kg	0.15	J

LEGEND:

- △ ABO-142 — SCREENING SOIL SAMPLING LOCATION
- • ABO-288 — SURFACE SOIL SAMPLE (0 - 1 FT)
- □ ABO-438 — CONFIRMATION SOIL SAMPLING LOCATION
- TANK
- BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0142	2.0 - 3.0
AB0143	1.6 - 2.6
AB0144	2.5 - 3.0
AB0145	2.0 - 3.0
AB0146	1.0 - 1.5
AB0147	0.33 - 1.0
AB0148	0.33 - 1.0
AB0149	0.0 - 1.0
AB0150	0.33 - 1.0
AB0151	1.3 - 2.3
AB0152	2.0 - 3.0
AB0153	1.0 - 2.0
AB0154	1.0 - 2.0
AB0155	2.5 - 3.5
AB0156	2.0 - 3.0
AB0301	0.0 - 1.0
AB0302	0.5 - 1.5
AB0303	0.5 - 1.5
AB0304	0.5 - 1.5
AB0305	0.5 - 1.5
AB0306	0.5 - 1.5
AB0307	0.75 - 1.25
AB0324	1.0 - 2.0
AB0325	1.0 - 2.0
AB0329	1.0 - 2.0
AB0330	1.0 - 2.0
AB0335	1.0 - 2.0
AB0336	1.0 - 2.0
AB0371	4.0 - 6.0
AB0372	8.0 - 10.0
AB0437	0.3 - 1.0
AB0438	0.0 - 1.0
AB0439	1.3 - 2.3
AB0478	1.0 - 2.0

FIGURE 2-7
TNT AREA C
BUILDING 686
WASH HOUSE LINE 8
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
A Member of The IT Group

STARTING DATE: 08/31/00 | DATE LAST REV.: | DRAFT. CHCK. BY: C. TUMLIN | INITIATOR: GUNDERSON | DWG. NO.: 807112ES.025
DRAWN BY: B.VANDERGRIFF | DRAWN BY: | ENGR. CHCK. BY: S. MUFFLER | PROJ. MGR.: SPANGBERG | PROJ. NO.: 807112

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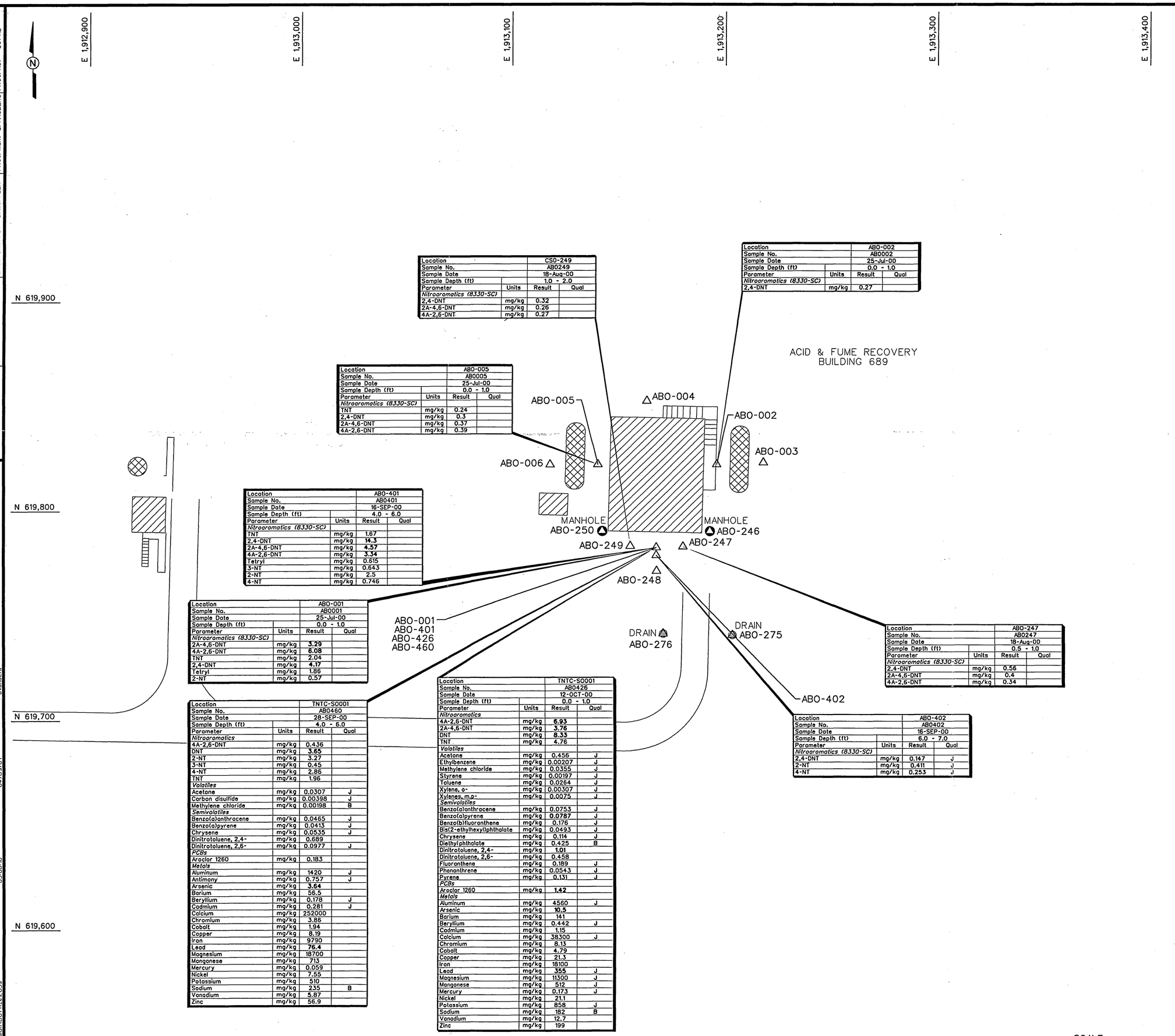
STARTING DATE: 08/01/00	DATE LAST REV.:	DRAFT. CHCK. BY: C. TUMLIN	INITIATOR: GUNDERSON	DWG.NO.: 807112es.039
DRAWN BY: B.VANDERGRIFF	DRAWN BY:	ENGR. CHCK. BY: S. MUFFLER	PROJ. MGR.: SPANGBERG	PROJ. NO.: 807112



Location		CS0-249	
Sample No.		AB0249	
Sample Date		18-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.32	
2A-4,6-DNT	mg/kg	0.26	
4A-2,6-DNT	mg/kg	0.27	

Location		ABO-002	
Sample No.		AB0002	
Sample Date		25-Jul-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.27	

Location		ABO-005	
Sample No.		AB0005	
Sample Date		25-Jul-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.24	
2,4-DNT	mg/kg	0.3	
2A-4,6-DNT	mg/kg	0.37	
4A-2,6-DNT	mg/kg	0.39	

Location		ABO-401	
Sample No.		AB0401	
Sample Date		16-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	1.67	
2,4-DNT	mg/kg	**14.3**	
2A-4,6-DNT	mg/kg	**4.57**	
4A-2,6-DNT	mg/kg	**3.34**	
Tetryl	mg/kg	0.615	
3-NT	mg/kg	0.643	
2-NT	mg/kg	2.5	
4-NT	mg/kg	0.746	

Location		ABO-001	
Sample No.		AB0001	
Sample Date		25-Jul-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2A-4,6-DNT	mg/kg	**3.29**	
4A-2,6-DNT	mg/kg	**6.08**	
TNT	mg/kg	2.04	
2,4-DNT	mg/kg	**4.17**	
Tetryl	mg/kg	1.86	
2-NT	mg/kg	0.57	

Location		TNTC-S0001	
Sample No.		AB0460	
Sample Date		28-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	0.436	
DNT	mg/kg	**3.65**	
2-NT	mg/kg	3.27	
3-NT	mg/kg	0.45	
4-NT	mg/kg	2.86	
TNT	mg/kg	1.96	
Volatiles			
Acetone	mg/kg	0.0307	J
Carbon disulfide	mg/kg	0.00398	J
Methylene chloride	mg/kg	0.00198	B
Semivolatiles			
Benzo(a)anthracene	mg/kg	0.0465	J
Benzo(a)pyrene	mg/kg	0.0413	J
Chrysene	mg/kg	0.0535	J
Dinitrotoluene, 2,4-	mg/kg	0.689	
Dinitrotoluene, 2,6-	mg/kg	0.0977	J
PCBs			
Aroclor 1260	mg/kg	0.183	
Metals			
Aluminum	mg/kg	1420	J
Antimony	mg/kg	0.757	J
Arsenic	mg/kg	**3.64**	
Barium	mg/kg	56.5	
Beryllium	mg/kg	0.178	J
Cadmium	mg/kg	0.281	J
Calcium	mg/kg	252000	
Chromium	mg/kg	3.86	
Cobalt	mg/kg	1.94	
Copper	mg/kg	8.19	
Iron	mg/kg	9790	
Lead	mg/kg	**76.4**	
Magnesium	mg/kg	18700	
Manganese	mg/kg	713	
Mercury	mg/kg	0.059	
Nickel	mg/kg	7.55	
Potassium	mg/kg	510	
Sodium	mg/kg	235	B
Vanadium	mg/kg	5.87	
Zinc	mg/kg	56.9	

Location		TNTC-S0001	
Sample No.		AB0426	
Sample Date		12-OCT-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	**6.93**	
2A-4,6-DNT	mg/kg	**3.76**	
DNT	mg/kg	**8.33**	
TNT	mg/kg	4.76	
Volatiles			
Acetone	mg/kg	0.456	J
Ethylbenzene	mg/kg	0.00207	J
Methylene chloride	mg/kg	0.0355	J
Styrene	mg/kg	0.00197	J
Toluene	mg/kg	0.0264	J
Xylene, o-	mg/kg	0.00307	J
Xylenes, m,p-	mg/kg	0.0075	J
Semivolatiles			
Benzo(a)anthracene	mg/kg	0.0753	J
Benzo(a)pyrene	mg/kg	**0.0787**	J
Benzo(b)fluoranthene	mg/kg	0.176	J
Bis(2-ethylhexyl)phthalate	mg/kg	0.0493	J
Chrysene	mg/kg	0.114	J
Diethylphthalate	mg/kg	0.425	B
Dinitrotoluene, 2,4-	mg/kg	**1.01**	
Dinitrotoluene, 2,6-	mg/kg	0.458	
Fluoranthene	mg/kg	0.189	J
Phenanthrene	mg/kg	0.0543	J
Pyrene	mg/kg	0.131	J
PCBs			
Aroclor 1260	mg/kg	**1.42**	
Metals			
Aluminum	mg/kg	4560	J
Arsenic	mg/kg	**10.5**	
Barium	mg/kg	141	
Beryllium	mg/kg	0.442	J
Cadmium	mg/kg	1.15	
Calcium	mg/kg	38300	J
Chromium	mg/kg	8.13	
Cobalt	mg/kg	4.79	
Copper	mg/kg	21.3	
Iron	mg/kg	18100	
Lead	mg/kg	**355**	J
Magnesium	mg/kg	11300	J
Manganese	mg/kg	512	J
Mercury	mg/kg	0.173	J
Nickel	mg/kg	21.1	
Potassium	mg/kg	858	J
Sodium	mg/kg	182	B
Vanadium	mg/kg	12.7	
Zinc	mg/kg	199	

Location		ABO-247	
Sample No.		AB0247	
Sample Date		18-Aug-00	
Sample Depth (ft)		0.5 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.56	
2A-4,6-DNT	mg/kg	0.4	
4A-2,6-DNT	mg/kg	0.34	

Location		ABO-402	
Sample No.		AB0402	
Sample Date		16-SEP-00	
Sample Depth (ft)		6.0 - 7.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.147	J
2-NT	mg/kg	0.411	J
4-NT	mg/kg	0.253	J

LEGEND:

- △ ABO-001 — SCREENING SOIL SAMPLING LOCATION
- □ ABO-426 — CONFIRMATION SOIL SAMPLE LOCATION
- TANK
- BUILDING

NOTES:

1. ANALTYICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0001	0.0 - 1.0
AB0002	0.0 - 1.0
AB0003	0.0 - 1.0
AB0004	0.0 - 1.0
AB0005	0.0 - 1.0
AB0006	0.5 - 1.5
AB0246	2.5 - 3.0
AB0247	0.5 - 1.0
AB0248	0.5 - 1.0
AB0249	1.0 - 2.0
AB0250	2.5 - 3.5
AB0275	3.0 - 3.5
AB0276	2.0 - 2.5
AB0401	4.0 - 6.0
AB0402	6.0 - 7.0
AB0426	1.0 - 2.0
AB0460	4.0 - 6.0

SCALE
0 30 60 FEET

FIGURE 2-8
TNT AREA C
BUILDING 689 ACID & FUME RECOVERY
SAMPLE LOCATIONS AND ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
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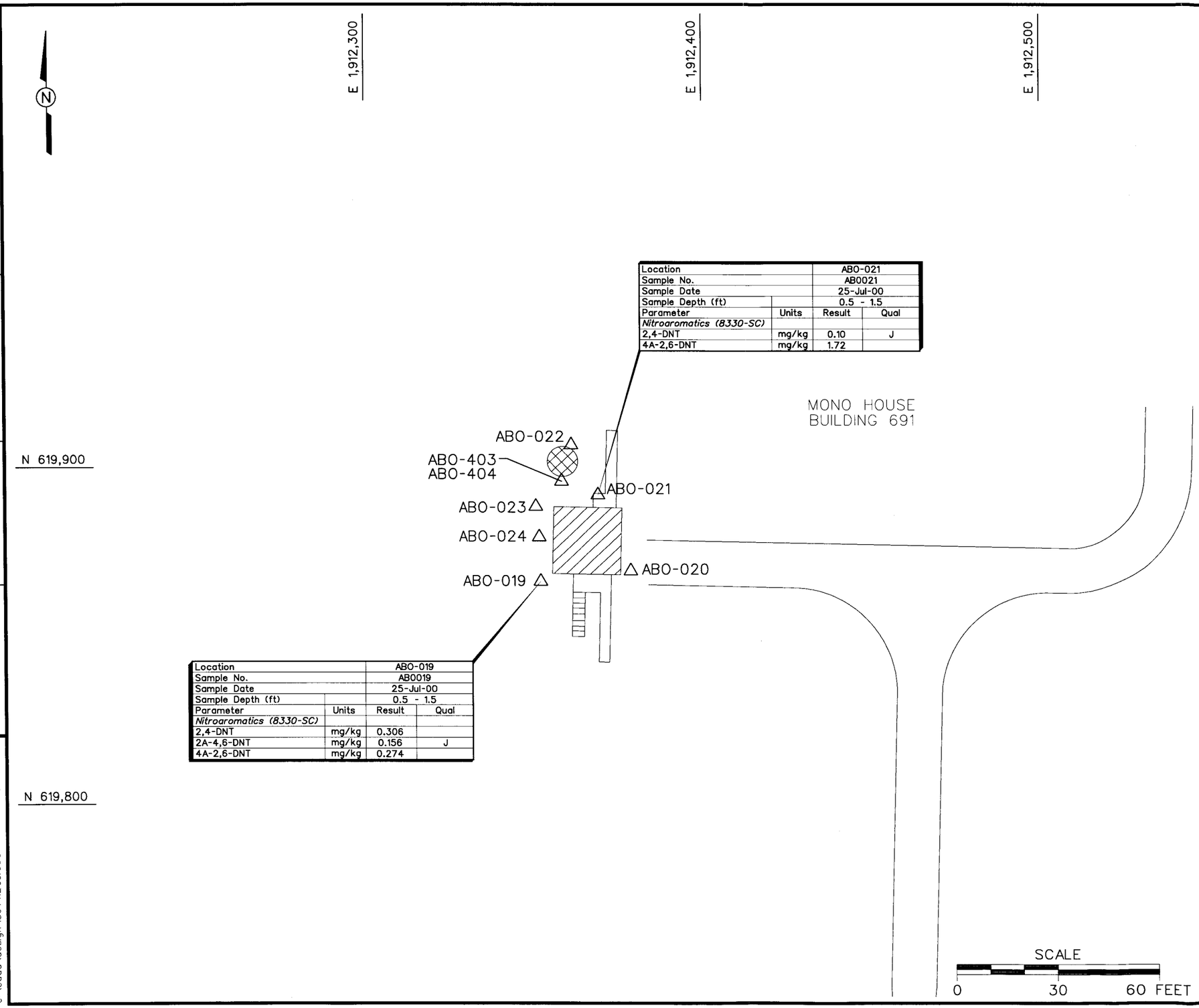

Location		AB0-021	
Sample No.		AB0021	
Sample Date		25-Jul-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.10	J
4A-2,6-DNT	mg/kg	1.72	

Location		AB0-019	
Sample No.		AB0019	
Sample Date		25-Jul-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.306	
2A-4,6-DNT	mg/kg	0.156	J
4A-2,6-DNT	mg/kg	0.274	

LEGEND:

△ AB0-065 SCREENING SOIL SAMPLING LOCATION

TANK

BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0019	0.5 - 1.5
AB0020	0.5 - 1.5
AB0021	0.5 - 1.5
AB0022	0.5 - 1.5
AB0023	0.5 - 1.5
AB0024	0.5 - 1.5
AB0403	4.0 - 6.0
AB0404	8.0 - 10.0

FIGURE 2-9
TNT AREA C
BUILDING 691 MONO HOUSE
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
A Member of The IT Group

STARTING DATE: 08/28/00 | DATE LAST REV.: | DRAFT. CHCK. BY: C. TUMLIN | INITIATOR: GUNDERSON | DWG. NO.:...\807112es.009
DRAWN BY: B.VANDERGRIFF | DRAWN BY: | ENGR. CHCK. BY: S. MUFFLER | PROJ. MGR.: SPANGBERG | PROJ. NO.: 807112

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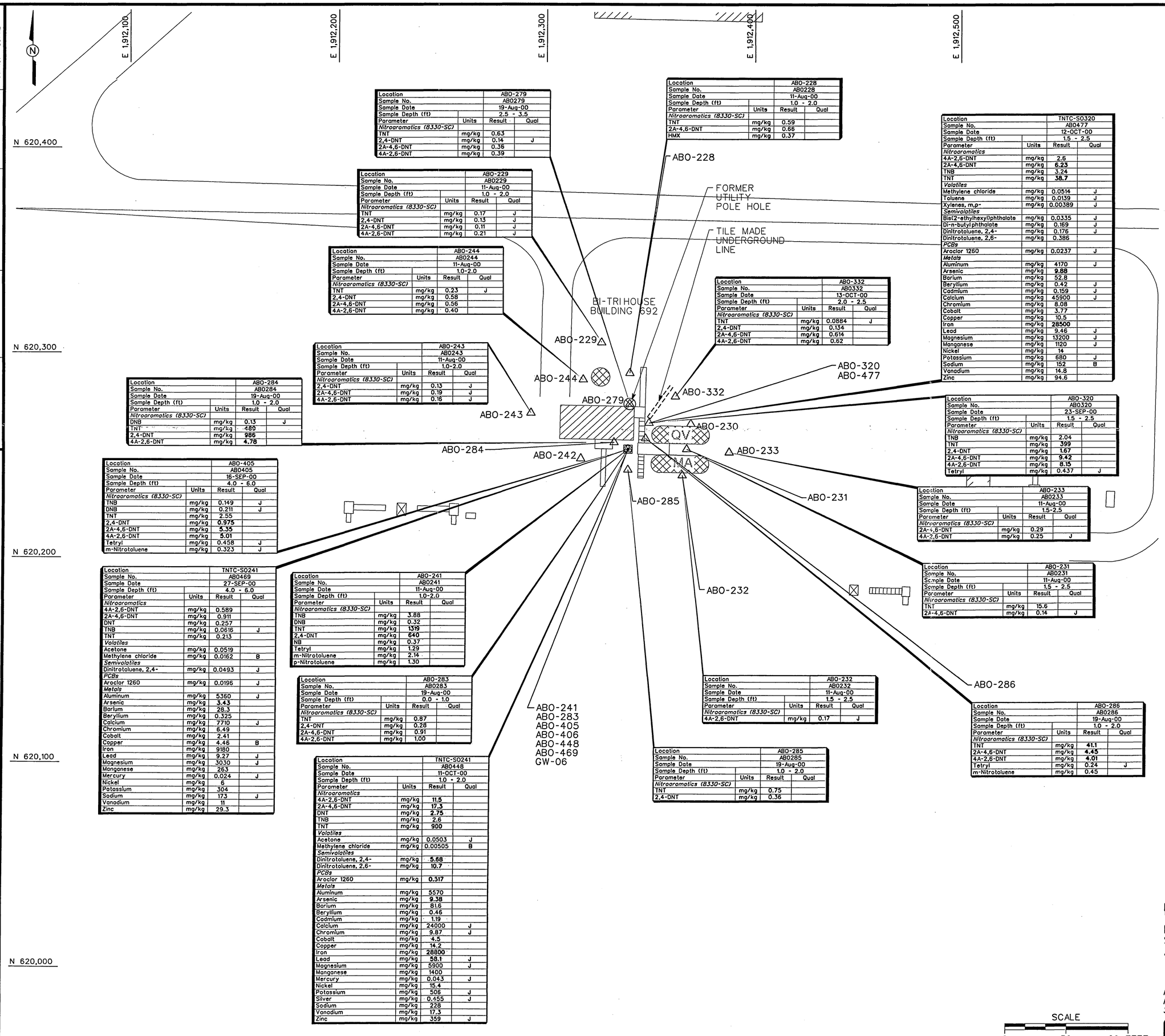

Location		ABO-279	
Sample No.		AB0279	
Sample Date		19-Aug-00	
Sample Depth (ft)		2.5 - 3.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.63	
2,4-DNT	mg/kg	0.14	J
2A-4,6-DNT	mg/kg	0.36	
4A-2,6-DNT	mg/kg	0.39	

Location		ABO-229	
Sample No.		AB0229	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.17	J
2,4-DNT	mg/kg	0.13	J
2A-4,6-DNT	mg/kg	0.11	J
4A-2,6-DNT	mg/kg	0.21	J

Location		ABO-244	
Sample No.		AB0244	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0-2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.23	J
2,4-DNT	mg/kg	0.58	
2A-4,6-DNT	mg/kg	0.56	
4A-2,6-DNT	mg/kg	0.40	

Location		ABO-243	
Sample No.		AB0243	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0-2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.13	J
2A-4,6-DNT	mg/kg	0.19	J
4A-2,6-DNT	mg/kg	0.16	J

Location		ABO-284	
Sample No.		AB0284	
Sample Date		19-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
DNB	mg/kg	0.13	J
TNT	mg/kg	489	
2,4-DNT	mg/kg	986	
4A-2,6-DNT	mg/kg	4.78	

Location		ABO-405	
Sample No.		AB0405	
Sample Date		16-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.149	J
DNB	mg/kg	0.211	J
TNT	mg/kg	2.55	
2,4-DNT	mg/kg	0.975	
2A-4,6-DNT	mg/kg	5.35	
4A-2,6-DNT	mg/kg	5.01	
Tetryl	mg/kg	0.458	J
m-Nitrotoluene	mg/kg	0.323	J

Location		TNTC-S0241	
Sample No.		AB0469	
Sample Date		27-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	0.589	
2A-4,6-DNT	mg/kg	0.911	
DNT	mg/kg	0.257	
TNB	mg/kg	0.0616	J
TNT	mg/kg	0.213	
Volatiles			
Acetone	mg/kg	0.0519	
Methylene chloride	mg/kg	0.0162	B
Semivolatiles			
Dinitrotoluene, 2,4-	mg/kg	0.0493	J
PCBs			
Aroclor 1260	mg/kg	0.0196	J
Metals			
Aluminum	mg/kg	5360	J
Arsenic	mg/kg	3.43	
Barium	mg/kg	28.3	
Beryllium	mg/kg	0.325	
Calcium	mg/kg	7710	J
Chromium	mg/kg	6.49	
Cobalt	mg/kg	2.41	
Copper	mg/kg	4.46	B
Iron	mg/kg	9180	
Lead	mg/kg	9.27	J
Magnesium	mg/kg	3030	J
Manganese	mg/kg	263	
Mercury	mg/kg	0.024	J
Nickel	mg/kg	6	
Potassium	mg/kg	304	
Sodium	mg/kg	173	J
Vanadium	mg/kg	11	
Zinc	mg/kg	29.3	

Location		ABO-241	
Sample No.		AB0241	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0-2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	3.88	
DNB	mg/kg	0.32	
TNT	mg/kg	1.319	
2,4-DNT	mg/kg	640	
NB	mg/kg	0.37	
Tetryl	mg/kg	1.29	
m-Nitrotoluene	mg/kg	2.14	
p-Nitrotoluene	mg/kg	1.30	

Location		ABO-283	
Sample No.		AB0283	
Sample Date		19-Aug-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.87	
2,4-DNT	mg/kg	0.28	
2A-4,6-DNT	mg/kg	0.91	
4A-2,6-DNT	mg/kg	1.00	

Location		TNTC-S0241	
Sample No.		AB0448	
Sample Date		11-OCT-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	11.5	
2A-4,6-DNT	mg/kg	17.3	
DNT	mg/kg	2.75	
TNB	mg/kg	2.6	
TNT	mg/kg	900	
Volatiles			
Acetone	mg/kg	0.0503	J
Methylene chloride	mg/kg	0.00505	B
Semivolatiles			
Dinitrotoluene, 2,4-	mg/kg	5.68	
Dinitrotoluene, 2,6-	mg/kg	10.7	
PCBs			
Aroclor 1260	mg/kg	0.317	
Metals			
Aluminum	mg/kg	5570	
Arsenic	mg/kg	9.38	
Barium	mg/kg	81.6	
Beryllium	mg/kg	0.46	
Cadmium	mg/kg	1.19	
Calcium	mg/kg	24000	J
Chromium	mg/kg	9.87	J
Cobalt	mg/kg	4.5	
Copper	mg/kg	14.2	
Iron	mg/kg	28800	
Lead	mg/kg	58.1	J
Magnesium	mg/kg	5900	J
Manganese	mg/kg	1400	
Mercury	mg/kg	0.043	J
Nickel	mg/kg	15.4	
Potassium	mg/kg	506	J
Silver	mg/kg	0.455	J
Sodium	mg/kg	228	
Vanadium	mg/kg	17.3	
Zinc	mg/kg	359	J

Location		ABO-228	
Sample No.		AB0228	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.59	
2A-4,6-DNT	mg/kg	0.66	
HMX	mg/kg	0.37	

Location		ABO-332	
Sample No.		AB0332	
Sample Date		13-OCT-00	
Sample Depth (ft)		2.0 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.0884	J
2,4-DNT	mg/kg	0.134	
2A-4,6-DNT	mg/kg	0.614	
4A-2,6-DNT	mg/kg	0.62	

Location		TNTC-S0320	
Sample No.		AB0477	
Sample Date		12-OCT-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	2.6	
2A-4,6-DNT	mg/kg	6.23	
TNB	mg/kg	3.24	
TNT	mg/kg	38.7	
Volatiles			
Methylene chloride	mg/kg	0.0514	J
Toluene	mg/kg	0.0139	J
Xylenes, m,p-	mg/kg	0.00389	J
Semivolatiles			
Bis(2-ethylhexyl)phthalate	mg/kg	0.0335	J
Di-n-butylphthalate	mg/kg	0.169	J
Dinitrotoluene, 2,4-	mg/kg	0.176	J
Dinitrotoluene, 2,6-	mg/kg	0.386	
PCBs			
Aroclor 1260	mg/kg	0.0237	J
Metals			
Aluminum	mg/kg	4170	J
Arsenic	mg/kg	9.88	
Barium	mg/kg	52.8	
Beryllium	mg/kg	0.42	J
Cadmium	mg/kg	0.159	J
Calcium	mg/kg	45900	J
Chromium	mg/kg	8.08	
Cobalt	mg/kg	3.77	
Copper	mg/kg	10.5	
Iron	mg/kg	28500	
Lead	mg/kg	9.46	J
Magnesium	mg/kg	13200	J
Manganese	mg/kg	1120	J
Nickel	mg/kg	14	
Potassium	mg/kg	680	J
Sodium	mg/kg	152	B
Vanadium	mg/kg	14.8	
Zinc	mg/kg	94.6	

Location		ABO-320	
Sample No.		AB0320	
Sample Date		23-SEP-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	2.04	
TNT	mg/kg	399	
2,4-DNT	mg/kg	1.67	
2A-4,6-DNT	mg/kg	9.42	
4A-2,6-DNT	mg/kg	8.15	
Tetryl	mg/kg	0.437	J

Location		ABO-233	
Sample No.		AB0233	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.5-2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2A-4,6-DNT	mg/kg	0.29	
4A-2,6-DNT	mg/kg	0.25	J

Location		ABO-231	
Sample No.		AB0231	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	15.6	
2A-4,6-DNT	mg/kg	0.14	J

Location		ABO-232	
Sample No.		AB0232	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
4A-2,6-DNT	mg/kg	0.17	J

Location		ABO-285	
Sample No.		AB0285	
Sample Date		19-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.75	
2,4-DNT	mg/kg	0.36	

Location		ABO-286	
Sample No.		AB0286	
Sample Date		19-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	41.1	
2A-4,6-DNT	mg/kg	4.45	
4A-2,6-DNT	mg/kg	4.01	
Tetryl	mg/kg	0.24	J
m-Nitrotoluene	mg/kg	0.45	

LEGEND:

- △ ABO-228 — SCREENING SOIL SAMPLING LOCATION
- • ABO-283 — SURFACE SOIL SAMPLE 0-1 FT.
- ○ GW-06 — GROUNDWATER SAMPLING LOCATION
- □ ABO-448 — CONFIRMATION SOIL SAMPLING LOCATION
- TANK
- BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0228	1.0 - 2.0
AB0229	1.0 - 2.0
AB0230	0.5 - 1.5
AB0231	1.5 - 2.5
AB0232	1.5 - 2.5
AB0233	1.5 - 2.5
AB0241	1.0 - 2.0
AB0242	1.0 - 2.0
AB0243	1.0 - 2.0
AB0244	1.0 - 2.0
AB0279	2.5 - 3.5
AB0283	0.0 - 1.0
AB0284	1.0 - 2.0
AB0285	1.0 - 2.0
AB0286	1.0 - 2.0
AB0320	1.5 - 2.5
AB0332	2.0 - 2.5
AB0405	4.0 - 6.0
AB0406	8.0 - 10.0
AB0448	1.0 - 2.0
AB0469	4.0 - 6.0
AB0477	1.5 - 2.5

FIGURE 2-10
TNT AREA C
BUILDING 692 BI-TRI HOUSE
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

SCALE
0 30 60 FEET

IT A Member of The IT Group

DRAFT. CHCK. BY: C. TUMLIN	INITIATOR: GUNDERSON	DWG. NO.: 8071les.026
ENGR. CHCK. BY: S. MUFFLER	PROJ. MGR.: SPANGBERG	PROJ. NO.: 807112
DATE LAST REV.:		
DRAWN BY: B. VANDERGRIFF	STARTING DATE: 08/31/00	

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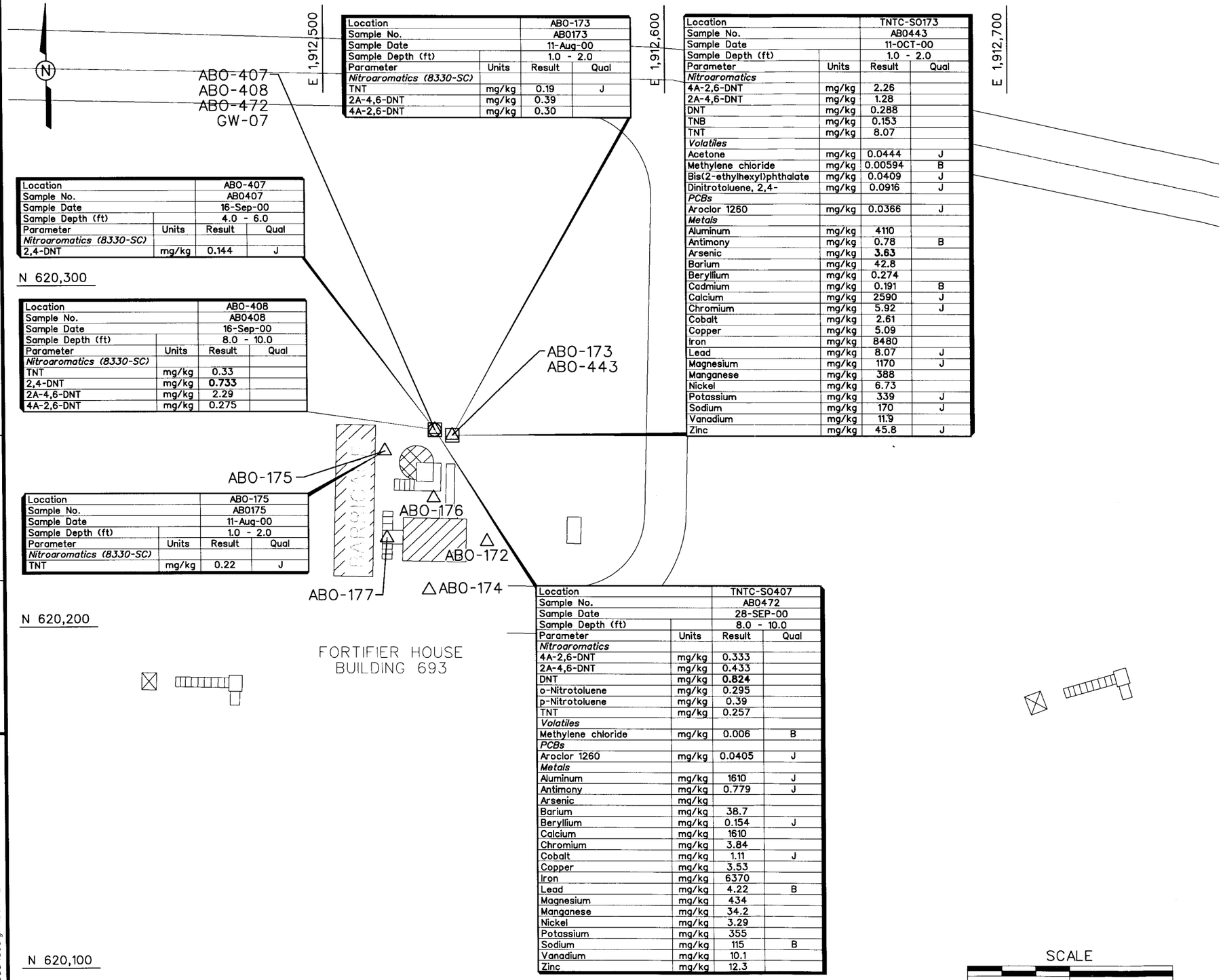

Location		ABO-173	
Sample No.		AB0173	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.19	J
2A-4,6-DNT	mg/kg	0.39	
4A-2,6-DNT	mg/kg	0.30	

Location		TNTC-S0173	
Sample No.		AB0443	
Sample Date		11-OCT-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	2.26	
2A-4,6-DNT	mg/kg	1.28	
DNT	mg/kg	0.288	
TNB	mg/kg	0.153	
TNT	mg/kg	8.07	
Volatiles			
Acetone	mg/kg	0.0444	J
Methylene chloride	mg/kg	0.00594	B
Bis(2-ethylhexyl)phthalate	mg/kg	0.0409	J
Dinitrotoluene, 2,4-	mg/kg	0.0916	J
PCBs			
Aroclor 1260	mg/kg	0.0366	J
Metals			
Aluminum	mg/kg	4110	
Antimony	mg/kg	0.78	B
Arsenic	mg/kg	**3.63**	
Barium	mg/kg	42.8	
Beryllium	mg/kg	0.274	
Cadmium	mg/kg	0.191	B
Calcium	mg/kg	2590	J
Chromium	mg/kg	5.92	J
Cobalt	mg/kg	2.61	
Copper	mg/kg	5.09	
Iron	mg/kg	8480	
Lead	mg/kg	8.07	J
Magnesium	mg/kg	1170	J
Manganese	mg/kg	388	
Nickel	mg/kg	6.73	
Potassium	mg/kg	339	J
Sodium	mg/kg	170	J
Vanadium	mg/kg	11.9	
Zinc	mg/kg	45.8	J

Location		ABO-407	
Sample No.		AB0407	
Sample Date		16-Sep-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.144	J

Location		ABO-408	
Sample No.		AB0408	
Sample Date		16-Sep-00	
Sample Depth (ft)		8.0 - 10.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.33	
2,4-DNT	mg/kg	**0.733**	
2A-4,6-DNT	mg/kg	2.29	
4A-2,6-DNT	mg/kg	0.275	

Location		ABO-175	
Sample No.		AB0175	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.22	J

Location		TNTC-S0407	
Sample No.		AB0472	
Sample Date		28-SEP-00	
Sample Depth (ft)		8.0 - 10.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	0.333	
2A-4,6-DNT	mg/kg	0.433	
DNT	mg/kg	**0.824**	
o-Nitrotoluene	mg/kg	0.295	
p-Nitrotoluene	mg/kg	0.39	
TNT	mg/kg	0.257	
Volatiles			
Methylene chloride	mg/kg	0.006	B
PCBs			
Aroclor 1260	mg/kg	0.0405	J
Metals			
Aluminum	mg/kg	1610	J
Antimony	mg/kg	0.779	J
Arsenic	mg/kg		
Barium	mg/kg	38.7	
Beryllium	mg/kg	0.154	J
Calcium	mg/kg	1610	
Chromium	mg/kg	3.84	
Cobalt	mg/kg	1.11	J
Copper	mg/kg	3.53	
Iron	mg/kg	6370	
Lead	mg/kg	4.22	B
Magnesium	mg/kg	434	
Manganese	mg/kg	34.2	
Nickel	mg/kg	3.29	
Potassium	mg/kg	355	
Sodium	mg/kg	115	B
Vanadium	mg/kg	10.1	
Zinc	mg/kg	12.3	

LEGEND:

- △ ABO-172 — SCREENING SOIL SAMPLING LOCATION
- ○ GW-07 — GROUNDWATER SAMPLING LOCATION
- □ ABO-443 — CONFIRMATION SOIL SAMPLING LOCATION
- TANK
- BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0172	1.5 - 2.5
AB0173	1.0 - 2.0
AB0174	1.0 - 2.0
AB0175	1.0 - 2.0
AB0176	1.0 - 2.0
AB0177	1.0 - 2.0
AB0407	4.0 - 6.0
AB0408	8.0 - 10.0
AB0443	1.0 - 2.0
AB0472	8.0 - 10.0

SCALE
0 30 60 FEET

FIGURE 2-11
TNT AREA C
BUILDING 693 FORTIFIER HOUSE
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
A Member of The IT Group

DWG. NO.: ...\807112es.030
PROJ. NO.: 807112
INITIATOR: GUNDERSON
PROJ. MGR.: SPANGBERG
DRAFT. CHCK. BY: C. TUMLIN
ENGR. CHCK. BY: S. MUFFLER
DATE LAST REV.:
DRAWN BY:
STARTING DATE: 11/01/00
DRAWN BY: B.VANDERGRIFF
02:08:12
04/09/01
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DWG. NO.: 807112ES.024
INITIATOR: GUNDERSON
DRAFT. CHCK. BY:
ENGR. CHCK. BY:
DATE LAST REV.:
DRAWN BY:
STARTING DATE:
DRAWN BY: D VANDERGRIFF

E 1,912,100

E 1,912,500

E 1,912,600

Location		ASO-373	
Sample No.		AB0373	
Sample Date		14-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2A-4,6-DNT	mg/kg	0.159	J
2-NT	mg/kg	0.31	J
4-NT	mg/kg	0.324	J

Location		ABO-191	
Sample No.		AB0191	
Sample Date		11-Aug-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.24	
2A-4,6-DNT	mg/kg	1.19	
4A-2,6-DNT	mg/kg	1.23	

Location		TNTC-SO190	
Sample No.		AB0444	
Sample Date		11-OCT-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	0.99	
2A-4,6-DNT	mg/kg	1.24	
TNT	mg/kg	0.634	
Volatiles			
Acetone	mg/kg	0.109	J
Carbon disulfide	mg/kg	0.00598	
Methylene chloride	mg/kg	0.00731	B
Toluene	mg/kg	0.00302	J
Semivolatiles			
Benzo(a)anthracene	mg/kg	0.0648	J
Benzo(a)pyrene	mg/kg	0.0596	J
Benzo(b)fluoranthene	mg/kg	0.102	J
Bis(2-ethylhexyl)phthalate	mg/kg	0.0302	J
Chrysene	mg/kg	0.0656	J
Fluoranthene	mg/kg	0.11	J
Pyrene	mg/kg	0.0873	J
Metals			
Aluminum	mg/kg	7340	
Arsenic	mg/kg	**5.58**	
Barium	mg/kg	50.3	
Beryllium	mg/kg	0.482	
Cadmium	mg/kg	0.693	
Calcium	mg/kg	25000	J
Chromium	mg/kg	13.1	J
Cobalt	mg/kg	6.25	
Copper	mg/kg	9.9	
Iron	mg/kg	20600	
Lead	mg/kg	20.1	J
Magnesium	mg/kg	2130	J
Manganese	mg/kg	562	
Mercury	mg/kg	0.03	J
Nickel	mg/kg	18.8	
Potassium	mg/kg	1140	J
Selenium	mg/kg	1.11	B
Sodium	mg/kg	185	J
Vanadium	mg/kg	21.9	
Zinc	mg/kg	204	J

LEGEND:

- △ ABO-178 — SCREENING SOIL SAMPLING LOCATION
- • ABO-288 — SURFACE SOIL SAMPLE (0 - 1 FT)
- □ ABO-444 — CONFIRMATION SOIL SAMPLING LOCATION
- TANK
- BUILDING

Location		ASO-374	
Sample No.		AB0374	
Sample Date		14-SEP-00	
Sample Depth (ft)		8.0 - 10.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.125	J
2-NT	mg/kg	0.21	J

Location		ABO-290	
Sample No.		AB0290	
Sample Date		19-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.83	
2A-4,6-DNT	mg/kg	0.39	
4A-2,6-DNT	mg/kg	0.56	

Location		ASO-327	
Sample No.		AB0327	
Sample Date		23-SEP-00	
Sample Depth (ft)		2.0 - 3.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	2.92	
2A-4,6-DNT	mg/kg	2.75	
4A-2,6-DNT	mg/kg	2.06	
3-NT	mg/kg	0.775	

Location		ASO-333	
Sample No.		AB0333	
Sample Date		13-OCT-00	
Sample Depth (ft)		2.0 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.273	
2,4-DNT	mg/kg	0.0713	J
2A-4,6-DNT	mg/kg	0.981	
4A-2,6-DNT	mg/kg	1.07	
3-NT	mg/kg	0.137	J

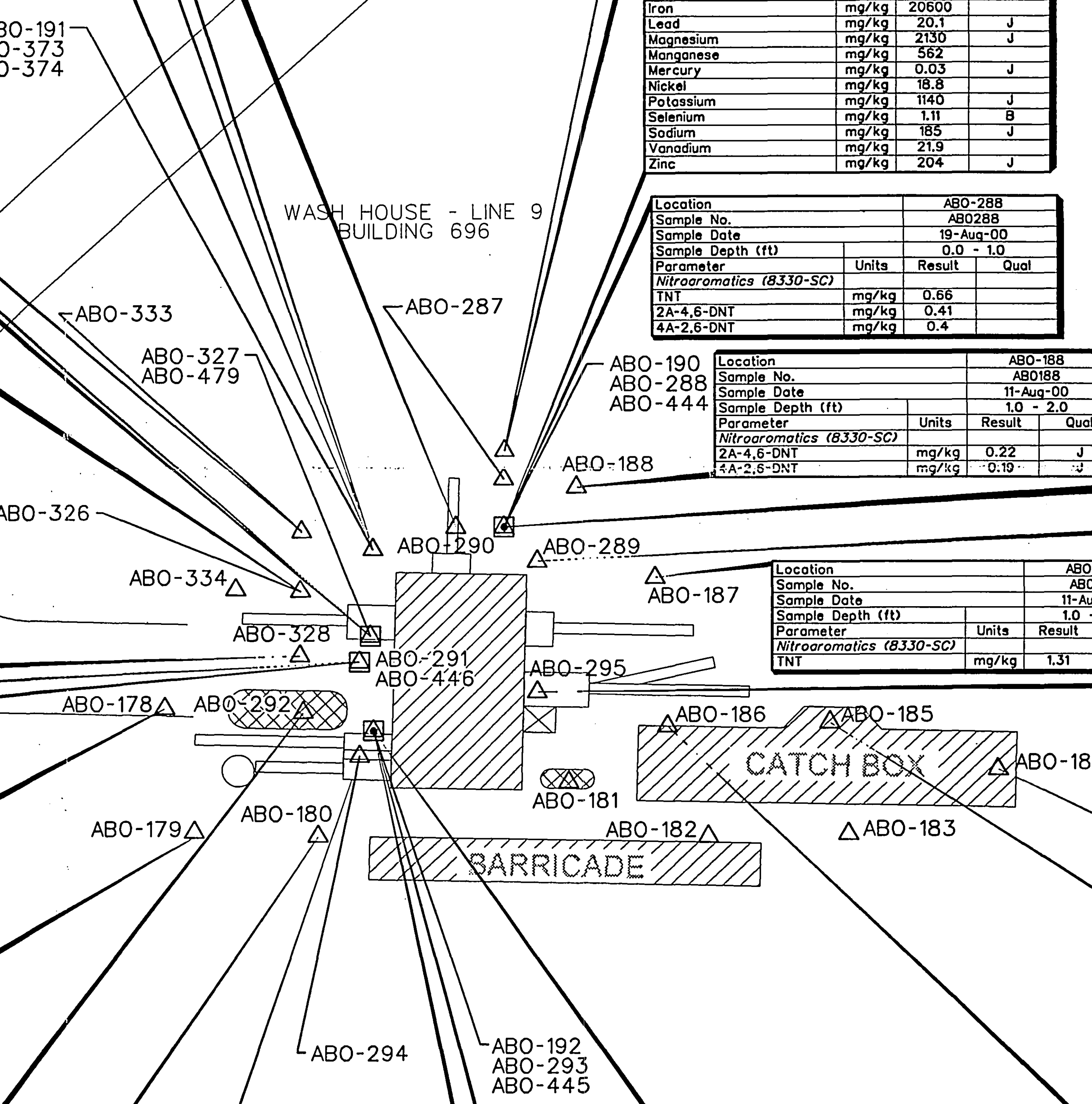
Location		ABO-189	
Sample No.		AB0189	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	**13.9**	
2A-4,6-DNT	mg/kg	1.27	
4A-2,6-DNT	mg/kg	1.41	

Location		TNTC-SO327	
Sample No.		AB0479	
Sample Date		12-OCT-00	
Sample Depth (ft)		2.0 - 3.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	2.2	
TNT	mg/kg	9.91	
Volatiles			
Acetone	mg/kg	0.0696	
Benzene	mg/kg	0.00185	J
Carbon disulfide	mg/kg	0.0272	
Ethylbenzene	mg/kg	0.00119	J
Methylene chloride	mg/kg	0.00583	B
Xylenes, m,p-	mg/kg	0.00114	J
Pesticides/PCBs			
Aroclor 1260	mg/kg	0.00951	J
Metals			
Aluminum	mg/kg	6190	J
Antimony	mg/kg	0.633	B
Arsenic	mg/kg	**4.07**	
Barium	mg/kg	46	
Calcium	mg/kg	6520	J
Chromium	mg/kg	10.1	
Cobalt	mg/kg	4.59	
Copper	mg/kg	7.22	
Iron	mg/kg	18000	
Lead	mg/kg	8.61	J
Magnesium	mg/kg	1640	J
Manganese	mg/kg	424	J
Mercury	mg/kg	0.031	J
Nickel	mg/kg	14.3	
Sodium	mg/kg	109	B
Vanadium	mg/kg	18	
Zinc	mg/kg	29.5	

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0178	1.0 - 2.0
AB0179	1.0 - 2.0
AB0180	1.6 - 2.6
AB0181	1.0 - 2.0
AB0182	1.6 - 2.6
AB0183	1.0 - 2.0
AB0184	1.5 - 2.5
AB0185	1.0 - 2.0
AB0186	1.0 - 2.0
AB0187	1.0 - 2.0
AB0188	1.0 - 2.0
AB0189	1.5 - 2.5
AB0190	1.0 - 2.0
AB0191	0.5 - 1.5
AB0192	1.6 - 2.6
AB0287	1.0 - 2.0
AB0288	0.0 - 1.0
AB0289	0.5 - 1.5
AB0290	1.0 - 2.0
AB0291	1.5 - 2.5
AB0292	1.0 - 2.0
AB0293	0.0 - 1.0
AB0294	1.0 - 2.0
AB0295	1.0 - 2.0
AB0326	1.5 - 2.5
AB0327	2.0 - 3.0
AB0328	1.0 - 2.0
AB0333	2.0 - 2.5
AB0334	1.0 - 2.0
AB0373	4.0 - 6.0
AB0374	8.0 - 10.0
AB0444	1.0 - 2.0
AB0445	0.0 - 1.0
AB0446	2.0 - 2.5
AB0479	2.0 - 3.0



Location		ABO-288	
Sample No.		AB0288	
Sample Date		19-Aug-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.66	
2A-4,6-DNT	mg/kg	0.41	
4A-2,6-DNT	mg/kg	0.4	

Location		ABO-190	
Sample No.		AB0190	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	1.28	
2,4-DNT	mg/kg	0.19	J
2A-4,6-DNT	mg/kg	**7.21**	
4A-2,6-DNT	mg/kg	**4.26**	
Tetryl	mg/kg	0.23	J
3-NT	mg/kg	1.4	

Location		ASO-326	
Sample No.		AB0326	
Sample Date		23-SEP-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.196	J
TNT	mg/kg	**46.2**	
2A-4,6-DNT	mg/kg	**3.21**	
4A-2,6-DNT	mg/kg	**4.04**	

Location		ABO-188	
Sample No.		AB0188	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2A-4,6-DNT	mg/kg	0.22	J
4A-2,6-DNT	mg/kg	0.19	J

Location		ABO-291	
Sample No.		AB0291	
Sample Date		19-Aug-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.52	
TNT	mg/kg	**33.1**	
2A-4,6-DNT	mg/kg	2.48	
4A-2,6-DNT	mg/kg	2.22	
3-NT	mg/kg	0.62	

Location		ASO-328	
Sample No.		AB0328	
Sample Date		23-SEP-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
4A-2,6-DNT	mg/kg	1.51	
2A-4,6-DNT	mg/kg	2.76	
TNT	mg/kg	0.243	J

Location		ABO-289	
Sample No.		AB0289	
Sample Date		19-Aug-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	2.75	
2A-4,6-DNT	mg/kg	1.52	
4A-2,6-DNT	mg/kg	1.38	

Location		ABO-187	
Sample No.		AB0187	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	1.31	

Location		ABO-295	
Sample No.		AB0295	
Sample Date		19-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.16	J
2A-4,6-DNT	mg/kg	0.36	
4A-2,6-DNT	mg/kg	0.28	

Location		TNTC-SO192	
Sample No.		AB0446	
Sample Date		11-OCT-00	
Sample Depth (ft)		2.0 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	**4.76**	
2A-4,6-DNT	mg/kg	**3.27**	
DNT	mg/kg	0.705	
NB	mg/kg	0.212	
TNB	mg/kg	0.811	
TNT	mg/kg	**251**	
Volatiles			
Benzene	mg/kg	0.00291	J
Carbon disulfide	mg/kg	0.00423	J
Methylene chloride	mg/kg	0.00443	B
Toluene	mg/kg	0.00692	
Semivolatiles			
Anthracene	mg/kg	4.14	
Benzo(a)anthracene	mg/kg	**11.1**	
Benzo(a)pyrene	mg/kg	**8.2**	
Benzo(b)fluoranthene	mg/kg	**10.2**	
Benzo(ghi)perylene	mg/kg	3.4	J
Benzo(k)fluoranthene	mg/kg	4.38	
Chrysene	mg/kg	8.74	
Dibenz(a,h)anthracene	mg/kg	**1.4**	J
Dinitrotoluene, 2,4-	mg/kg	**1.64**	J
Fluoranthene	mg/kg	20.3	
Indeno(1,2,3-cd)pyrene	mg/kg	**3.64**	J
Phenanthrene	mg/kg	5.21	
Pyrene	mg/kg	17.1	
Pesticides/PCBs			
Aroclor 1260	mg/kg	**0.3**	
Metals			
Aluminum	mg/kg	2820	
Arsenic	mg/kg	**2.58**	
Barium	mg/kg	398	
Beryllium	mg/kg	0.205	J
Cadmium	mg/kg	0.913	
Calcium	mg/kg	46800	J
Chromium	mg/kg	202	J
Cobalt	mg/kg	3.69	
Copper	mg/kg	16.4	
Iron	mg/kg	8120	
Lead	mg/kg	**228**	J
Magnesium	mg/kg	5360	J
Manganese	mg/kg	374	
Mercury	mg/kg	0.085	J
Nickel	mg/kg	90.8	
Potassium	mg/kg	492	J
Sodium	mg/kg	146	J
Vanadium	mg/kg	19.9	
Zinc	mg/kg	170	J

Location		ABO-178	
Sample No.		AB0178	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.11	J
2A-4,6-DNT	mg/kg	0.12	J

Location		ABO-179	
Sample No.		AB0179	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	1.37	
2A-4,6-DNT	mg/kg	0.14	J

Location		ABO-184	
Sample No.		AB0184	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.5 -2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.16	J
2A-4,6-DNT	mg/kg	0.14	J
4A-2,6-DNT	mg/kg	0.16	J

Location		ABO-292	
Sample No.		AB0292	
Sample Date		19-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	**3.31**	
2,4-DNT	mg/kg	0.31	
2A-4,6-DNT	mg/kg	0.59	
4A-2,6-DNT	mg/kg	0.74	

Location		TNTC-SO192	
Sample No.		AB0445	
Sample Date		11-OCT-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	**6.62**	
2A-4,6-DNT	mg/kg	**5.14**	
1,3-DNT	mg/kg	0.751	
DNT	mg/kg	**3.7**	
TNB	mg/kg	0.723	
TNT	mg/kg	**878**	
Volatiles			
Acetone	mg/kg	0.0975	J
Benzene	mg/kg	0.00601	
Methylene chloride	mg/kg	0.0054	B
Toluene	mg/kg	0.00258	J
Semivolatiles			
Benzo(a)anthracene	mg/kg	**1**	J
Benzo(a)pyrene	mg/kg	**0.704**	J
Benzo(b)fluoranthene	mg/kg	**0.929**	J
Chrysene	mg/kg	0.831	J
Dinitrotoluene, 2,4-	mg/kg	**2.41**	J
Fluoranthene	mg/kg	2.05	J
Phenanthrene	mg/kg	1.35	
Pyrene	mg/kg	1.54	J
Pesticides/PCBs			
Aroclor 1260	mg/kg	**0.373**	J
Metals			
Aluminum	mg/kg	5580	
Arsenic	mg/kg	**7.12**	
Barium	mg/kg	89.8	
Beryllium	mg/kg	0.394	
Cadmium	mg/kg	2.19	
Calcium	mg/kg	45900	J
Chromium	mg/kg	16.2	J
Cobalt	mg/kg	4.36	
Copper	mg/kg	52.2	
Iron	mg/kg	21400	
Lead	mg/kg	**934**	J
Magnesium	mg/kg	4660	J
Manganese	mg/kg	614	
Mercury	mg/kg	0.107	J
Nickel	mg/kg	22.1	
Potassium	mg/kg	878	J
Selenium	mg/kg	0.948	B
Sodium	mg/kg	403	
Vanadium	mg/kg	28.8	
Zinc	mg/kg	708	J

Location		ABO-186	
Sample No.		AB0186	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.14	J
2A-4,6-DNT	mg/kg	0.73	
4A-2,6-DNT	mg/kg	0.5	

Location		ABO-185	
Sample No.		AB0185	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.25	

Location		ABO-180	
Sample No.		AB0180	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.6 - 2.6	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2A-4,6-DNT	mg/kg	0.19	J
4A-2,6-DNT	mg/kg	0.15	J

Location		ABO-192	
Sample No.		AB0192	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.6 - 2.6	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.45	
TNT	mg/kg	**20.3**	
2,4-DNT	mg/kg	0.28	
2A-4,6-DNT	mg/kg	0.69	
4A-2,6-DNT	mg/kg	0.6	

N 620,300

Location		ABO-294	
Sample No.		AB0294	
Sample Date		19-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.21	J

Location		ABO-293	
Sample No.		AB0293	
Sample Date		19-Aug-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	**24.7**	
2A-4,6-DNT	mg/kg	1.89	
4A-2,6-DNT	mg/kg	1.97	

SCALE
0 30 60 FEET

FIGURE 2-12
TNT AREA C
BUILDING 696
WASH HOUSE LINE 9
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
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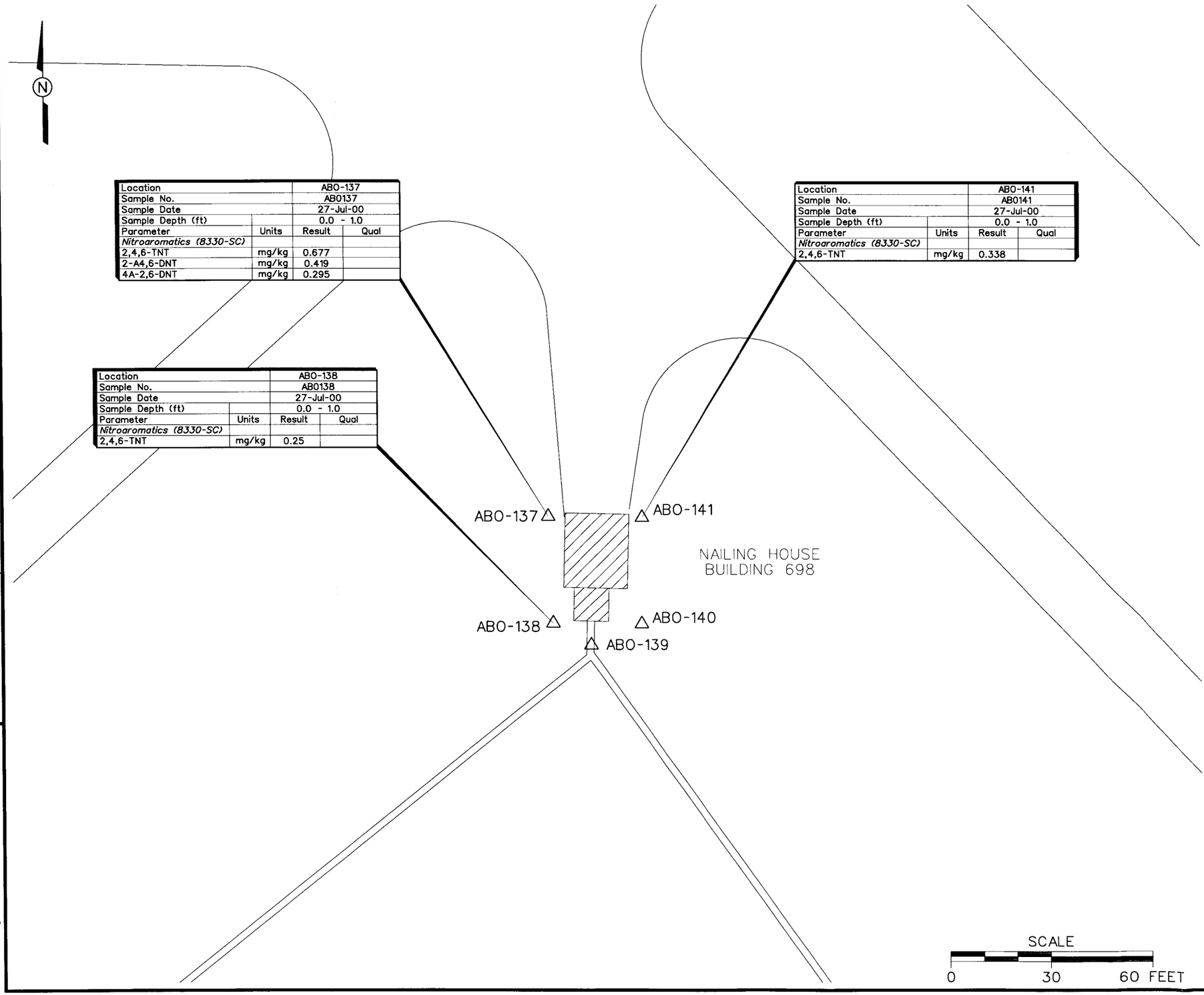

Location		ABO-137	
Sample No.		AB0137	
Sample Date		27-Jul-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4,6-TNT	mg/kg	0.677	
2-A4,6-DNT	mg/kg	0.419	
4A-2,6-DNT	mg/kg	0.295	

Location		ABO-138	
Sample No.		AB0138	
Sample Date		27-Jul-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4,6-TNT	mg/kg	0.25	

Location		ABO-141	
Sample No.		AB0141	
Sample Date		27-Jul-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4,6-TNT	mg/kg	0.338	

LEGEND:

△ ABO-137 SCREENING SOIL SAMPLING LOCATION

TANK

BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0137	0.0 - 1.0
AB0138	0.0 - 1.0
AB0139	1.5 - 2.5
AB0140	0.0 - 1.0
AB0141	0.0 - 1.0

FIGURE 2-13
TNT AREA C
BUILDING 698 NAILING HOUSE
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
A Member of The IT Group

DWG. NO.: \807112es.032 | PROJ. NO.: 807112
INITIATOR: GUNDERSON | PROJ. MGR.: SPANGBERG
DRAFT. CHCK. BY: C. TUMLIN | ENGR. CHCK. BY: S. MUFFLER
DATE LAST REV.: | DRAWN BY:
STARTING DATE: 11/01/00 | DRAWN BY: B.VANDERGRIFF
05:16:16 04/09/01
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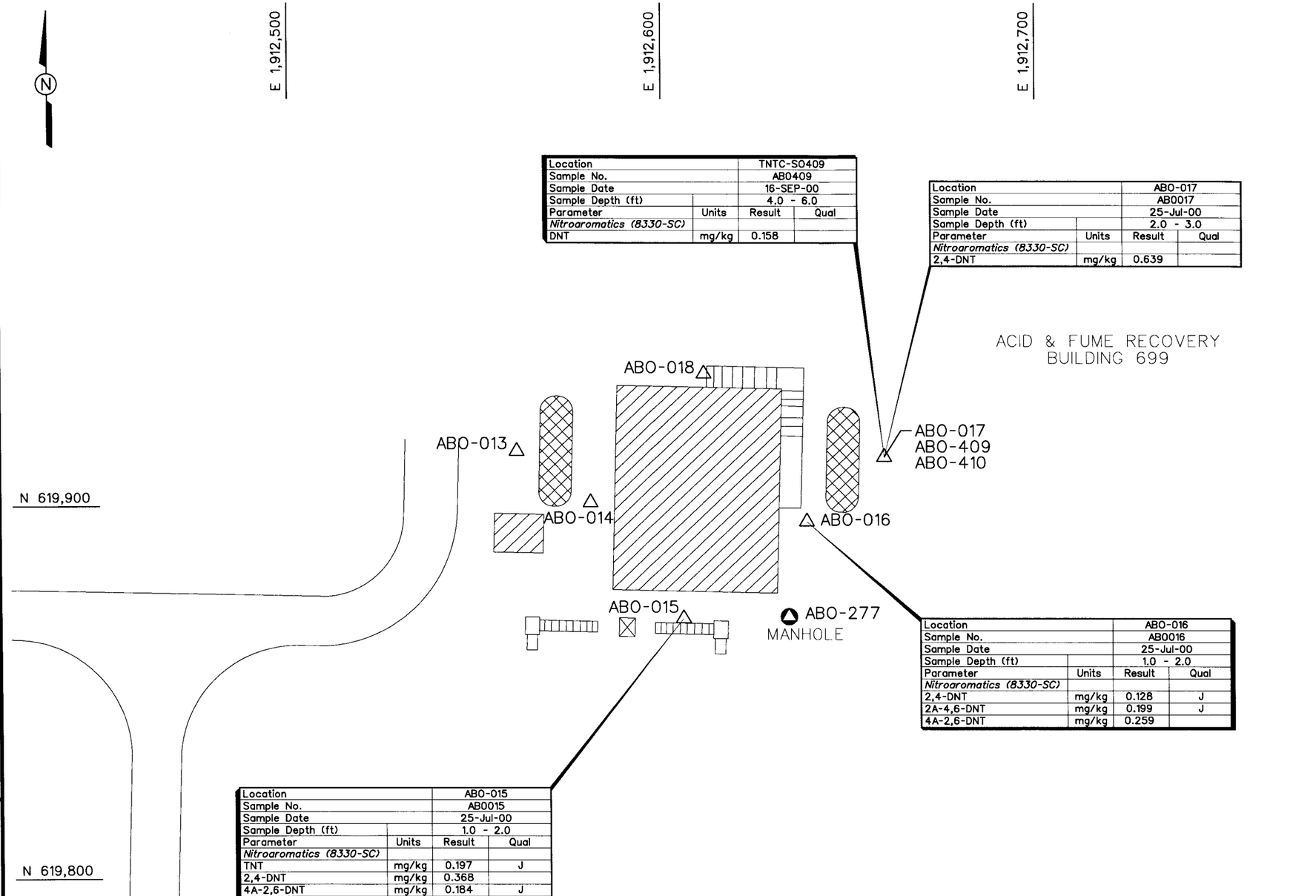

Location		TNTC-SO409	
Sample No.		AB0409	
Sample Date		16-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
DNT	mg/kg	0.158	

Location		ABO-017	
Sample No.		AB0017	
Sample Date		25-Jul-00	
Sample Depth (ft)		2.0 - 3.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.639	

Location		ABO-016	
Sample No.		AB0016	
Sample Date		25-Jul-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.128	J
2A-4,6-DNT	mg/kg	0.199	J
4A-2,6-DNT	mg/kg	0.259	

Location		ABO-015	
Sample No.		AB0015	
Sample Date		25-Jul-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.197	J
2,4-DNT	mg/kg	0.368	
4A-2,6-DNT	mg/kg	0.184	J

LEGEND:

△ ABO-014 SCREENING SOIL SAMPLING LOCATION

TANK

BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0013	1.0 - 2.0
AB0014	1.0 - 2.0
AB0015	1.0 - 2.0
AB0016	1.0 - 2.0
AB0017	2.0 - 3.0
AB0018	1.0 - 2.0
AB0277	3.0 - 4.0

SCALE

0 30 60 FEET

FIGURE 2-14
TNT AREA C
BUILDING 699
ACID & FUME RECOVERY
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
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DWG. NO.:...\807112es.031 | PROJ. NO.: 807112
INITIATOR: GUNDERSON | PROJ. MGR.: SPANGBERG
DRAFT. CHCK. BY: C. TUMLIN | ENGR. CHCK. BY: S. MUFFLER
DATE LAST REV.: | DRAWN BY:
STARTING DATE: 11/01/00 | DRAWN BY: B. VANDERGRIFF
01:47:38 04/09/01
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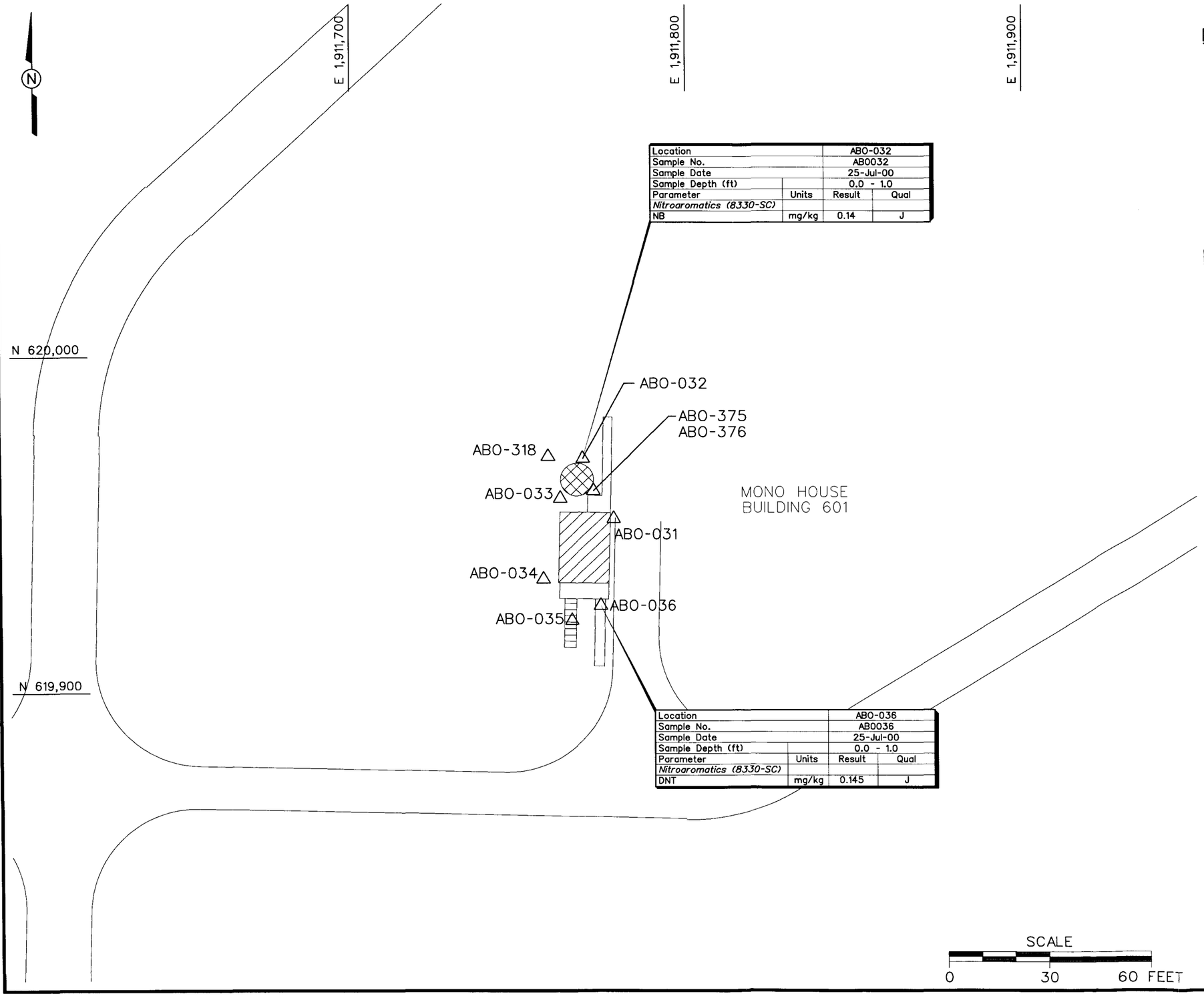

Location		ABO-032	
Sample No.		AB0032	
Sample Date		25-Jul-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
NB	mg/kg	0.14	J

Location		ABO-036	
Sample No.		AB0036	
Sample Date		25-Jul-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
DNT	mg/kg	0.145	J

LEGEND:

△ ABO-031 SCREENING SOIL SAMPLING LOCATION

TANK

BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0031	0.0 - 1.0
AB0032	0.0 - 1.0
AB0033	0.0 - 1.0
AB0034	0.5 - 1.0
AB0035	0.0 - 1.0
AB0036	0.0 - 1.0
AB0318	1.0 - 1.5
AB0375	4.0 - 6.0
AB0376	8.0 - 10.0

FIGURE 2-15
TNT AREA C
BUILDING 601 MONO HOUSE
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
A Member of The IT Group

DWG. NO.:...\807112es.016
PROJ. NO.: 807112
INITIATOR: GUNDERSON
PROJ. MGR.: SPANGBERG
DRAFT. CHCK. BY: C. TUMLIN
ENGR. CHCK. BY: S. MUFFLER
DATE LAST REV.:
DRAWN BY:
STARTING DATE: 08/29/00
DRAWN BY: B.VANDERGRIFF
01:50:34
04/09/01
bvanderg
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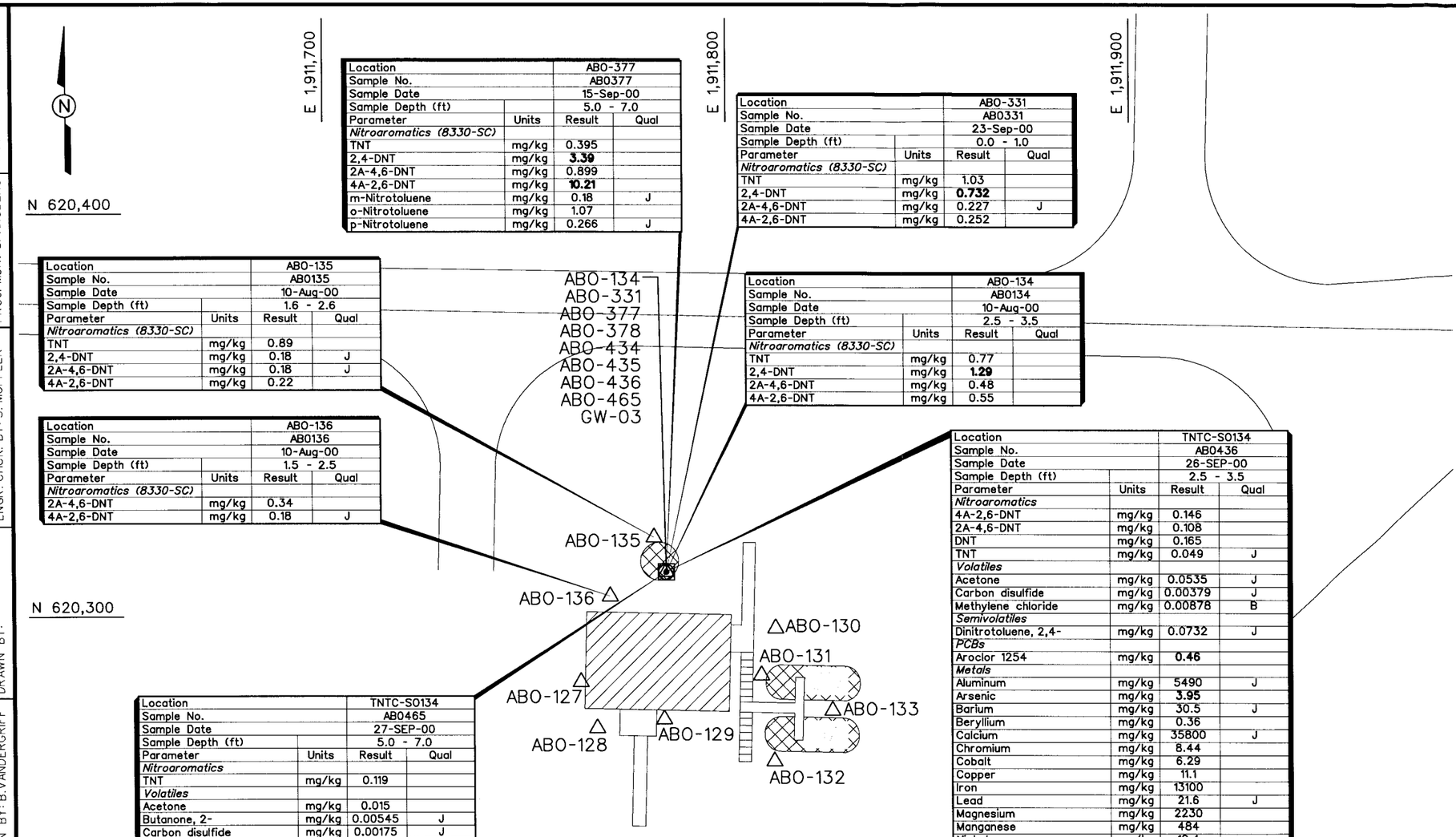


Location		AB0-377	
Sample No.		AB0377	
Sample Date		15-Sep-00	
Sample Depth (ft)		5.0 - 7.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.395	
2,4-DNT	mg/kg	**3.39**	
2A-4,6-DNT	mg/kg	0.899	
4A-2,6-DNT	mg/kg	**10.21**	
m-Nitrotoluene	mg/kg	0.18	J
o-Nitrotoluene	mg/kg	1.07	
p-Nitrotoluene	mg/kg	0.266	J

Location		AB0-331	
Sample No.		AB0331	
Sample Date		23-Sep-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	1.03	
2,4-DNT	mg/kg	**0.732**	
2A-4,6-DNT	mg/kg	0.227	J
4A-2,6-DNT	mg/kg	0.252	

Location		AB0-135	
Sample No.		AB0135	
Sample Date		10-Aug-00	
Sample Depth (ft)		1.6 - 2.6	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.89	
2,4-DNT	mg/kg	0.18	J
2A-4,6-DNT	mg/kg	0.18	J
4A-2,6-DNT	mg/kg	0.22	

Location		AB0-134	
Sample No.		AB0134	
Sample Date		10-Aug-00	
Sample Depth (ft)		2.5 - 3.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.77	
2,4-DNT	mg/kg	**1.29**	
2A-4,6-DNT	mg/kg	0.48	
4A-2,6-DNT	mg/kg	0.55	

Location		AB0-136	
Sample No.		AB0136	
Sample Date		10-Aug-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2A-4,6-DNT	mg/kg	0.34	
4A-2,6-DNT	mg/kg	0.18	J

Location		TNTC-S0134	
Sample No.		AB0436	
Sample Date		26-SEP-00	
Sample Depth (ft)		2.5 - 3.5	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	0.146	
2A-4,6-DNT	mg/kg	0.108	
DNT	mg/kg	0.165	
TNT	mg/kg	0.049	J
Volatiles			
Acetone	mg/kg	0.0535	J
Carbon disulfide	mg/kg	0.00379	J
Methylene chloride	mg/kg	0.00878	B
Semivolatiles			
Dinitrotoluene, 2,4-	mg/kg	0.0732	J
PCBs			
Aroclor 1254	mg/kg	**0.46**	
Metals			
Aluminum	mg/kg	5490	J
Arsenic	mg/kg	**3.95**	
Barium	mg/kg	30.5	J
Beryllium	mg/kg	0.36	
Calcium	mg/kg	35800	J
Chromium	mg/kg	8.44	
Cobalt	mg/kg	6.29	
Copper	mg/kg	11.1	
Iron	mg/kg	13100	
Lead	mg/kg	21.6	J
Magnesium	mg/kg	2230	
Manganese	mg/kg	484	
Nickel	mg/kg	18.4	
Potassium	mg/kg	1250	
Sodium	mg/kg	196	B
Vanadium	mg/kg	9.69	
Zinc	mg/kg	55.1	

Location		TNTC-S0134	
Sample No.		AB0465	
Sample Date		27-SEP-00	
Sample Depth (ft)		5.0 - 7.0	
Parameter	Units	Result	Qual
Nitroaromatics			
TNT	mg/kg	0.119	
Volatiles			
Acetone	mg/kg	0.015	
Butanone, 2-	mg/kg	0.00545	J
Carbon disulfide	mg/kg	0.00175	J
Methylene chloride	mg/kg	0.0104	
Semivolatiles			
Bis(2-ethylhexyl)phthalate	mg/kg	0.0264	J
PCBs			
Aroclor 1254	mg/kg	0.176	
Aroclor 1260	mg/kg	0.135	
Metals			
Aluminum	mg/kg	5010	J
Arsenic	mg/kg	**0.0264**	
Barium	mg/kg	25.3	
Beryllium	mg/kg	0.342	
Cadmium	mg/kg	0.16	J
Calcium	mg/kg	16600	J
Chromium	mg/kg	9.89	
Cobalt	mg/kg	4.78	
Copper	mg/kg	28	J
Iron	mg/kg	10600	
Lead	mg/kg	**0.0264**	J
Magnesium	mg/kg	1910	J
Manganese	mg/kg	244	
Nickel	mg/kg	13	
Potassium	mg/kg	1150	
Silver	mg/kg	0.497	J
Sodium	mg/kg	263	
Vanadium	mg/kg	12.7	
Zinc	mg/kg	33.8	

LEGEND:

△ AB0-127	SCREENING SOIL SAMPLING LOCATION
• AB0-331	SURFACE SOIL SAMPLE (0 - 1 FT)
○ GW-03	GROUNDWATER SAMPLING LOCATION
□ AB0-465	CONFIRMATION SOIL SAMPLING LOCATION
	TANK
	BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0127	2.6 - 3.6
AB0128	2.0 - 3.0
AB0129	2.0 - 3.0
AB0130	2.5 - 3.5
AB0131	1.8 - 2.8
AB0132	1.5 - 2.0
AB0133	2.0 - 3.0
AB0134	2.5 - 3.5
AB0135	1.6 - 2.6
AB0136	1.5 - 2.5
AB0331	0.0 - 1.0
AB0377	5.0 - 7.0
AB0378	8.0 - 10.0
AB0434	2.5 - 3.5
AB0435	2.5 - 3.5
AB0436	2.5 - 3.5
AB0465	5.0 - 7.0

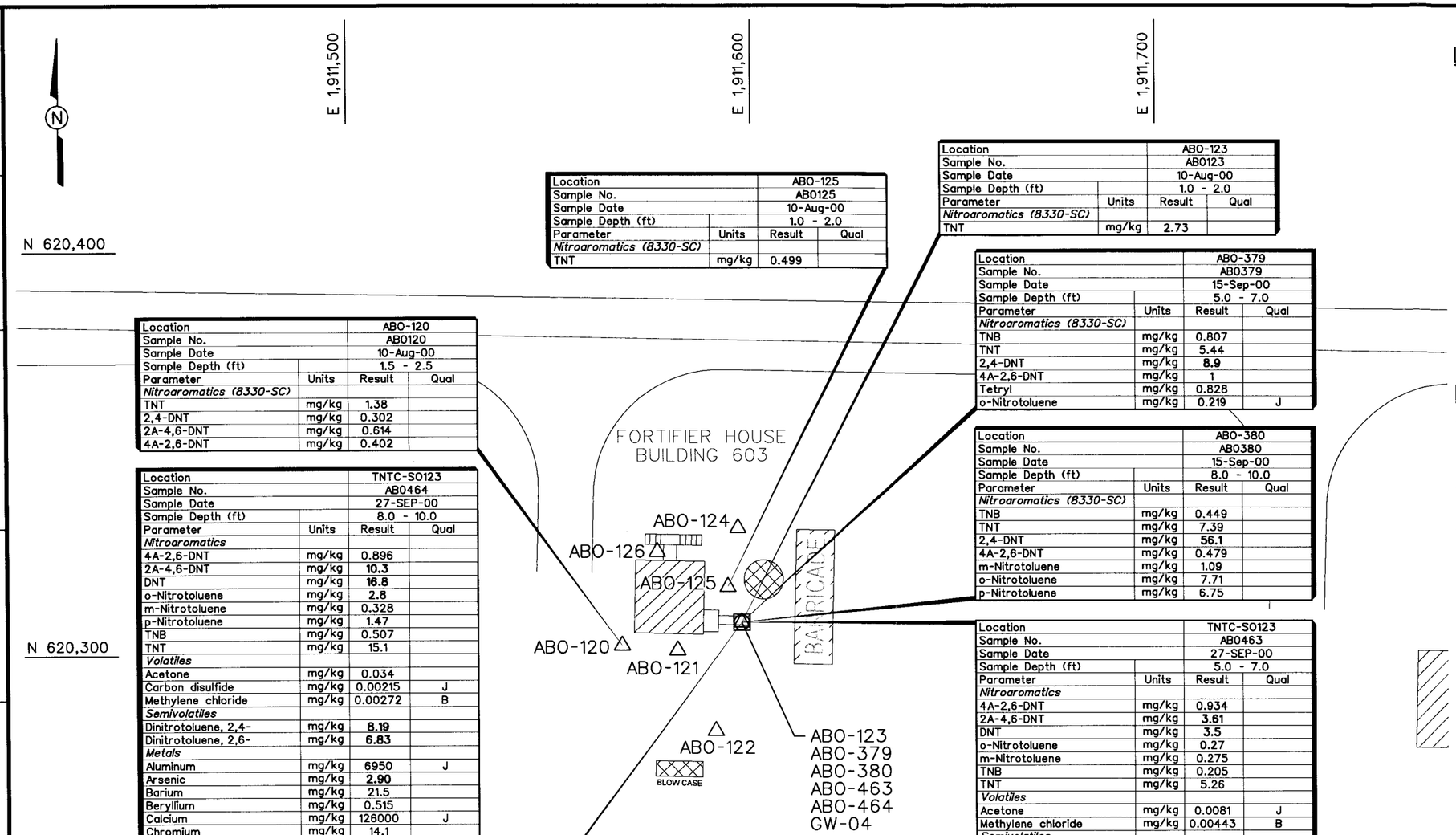
SCALE
0 30 60 FEET

FIGURE 2-16
TNT AREA C
BUILDING 602 BI-TRI HOUSE
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
A Member of The IT Group

DWG. NO.: ...\807112es.015
PROJ. NO.: 807112
INITIATOR: GUNDERSON
PROJ. MGR.: SPANGBERG
DRAFT. CHCK. BY: C. TUMLIN
ENGR. CHCK. BY: S. MUFFLER
DATE LAST REV.:
DRAWN BY:
STARTING DATE: 08/29/00
DRAWN BY: B.VANDERGRIFF
03:02:47
04/06/01
bvanderg
c:\cadd\design\807112es.015



Location		ABO-125	
Sample No.		AB0125	
Sample Date		10-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.499	

Location		ABO-123	
Sample No.		AB0123	
Sample Date		10-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	2.73	

Location		ABO-379	
Sample No.		AB0379	
Sample Date		15-Sep-00	
Sample Depth (ft)		5.0 - 7.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.807	
TNT	mg/kg	5.44	
2,4-DNT	mg/kg	**8.9**	
4A-2,6-DNT	mg/kg	1	
Tetryl	mg/kg	0.828	
o-Nitrotoluene	mg/kg	0.219	J

Location		ABO-380	
Sample No.		AB0380	
Sample Date		15-Sep-00	
Sample Depth (ft)		8.0 - 10.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.449	
TNT	mg/kg	7.39	
2,4-DNT	mg/kg	**56.1**	
4A-2,6-DNT	mg/kg	0.479	
m-Nitrotoluene	mg/kg	1.09	
o-Nitrotoluene	mg/kg	7.71	
p-Nitrotoluene	mg/kg	6.75	

Location		ABO-120	
Sample No.		AB0120	
Sample Date		10-Aug-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	1.38	
2,4-DNT	mg/kg	0.302	
2A-4,6-DNT	mg/kg	0.614	
4A-2,6-DNT	mg/kg	0.402	

Location		TNTC-S0123	
Sample No.		AB0464	
Sample Date		27-SEP-00	
Sample Depth (ft)		8.0 - 10.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	0.896	
2A-4,6-DNT	mg/kg	**10.3**	
DNT	mg/kg	**16.8**	
o-Nitrotoluene	mg/kg	2.8	
m-Nitrotoluene	mg/kg	0.328	
p-Nitrotoluene	mg/kg	1.47	
TNB	mg/kg	0.507	
TNT	mg/kg	15.1	
Volatiles			
Acetone	mg/kg	0.034	
Carbon disulfide	mg/kg	0.00215	J
Methylene chloride	mg/kg	0.00272	B
Semivolatiles			
Dinitrotoluene, 2,4-	mg/kg	**8.19**	
Dinitrotoluene, 2,6-	mg/kg	**6.83**	
Metals			
Aluminum	mg/kg	6950	J
Arsenic	mg/kg	**2.90**	
Barium	mg/kg	21.5	
Beryllium	mg/kg	0.515	
Calcium	mg/kg	126000	J
Chromium	mg/kg	14.1	
Cobalt	mg/kg	8.38	
Copper	mg/kg	11.5	J
Iron	mg/kg	14000	
Lead	mg/kg	4.05	J
Magnesium	mg/kg	3960	J
Manganese	mg/kg	764	
Nickel	mg/kg	23.1	
Potassium	mg/kg	2640	
Sodium	mg/kg	355	
Vanadium	mg/kg	9.79	
Zinc	mg/kg	17.3	

Location		TNTC-S0123	
Sample No.		AB0463	
Sample Date		27-SEP-00	
Sample Depth (ft)		5.0 - 7.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	0.934	
2A-4,6-DNT	mg/kg	**3.61**	
DNT	mg/kg	**3.5**	
o-Nitrotoluene	mg/kg	0.27	
m-Nitrotoluene	mg/kg	0.275	
TNB	mg/kg	0.205	
TNT	mg/kg	5.26	
Volatiles			
Acetone	mg/kg	0.0081	J
Methylene chloride	mg/kg	0.00443	B
Semivolatiles			
Dinitrotoluene, 2,4-	mg/kg	0.617	J
Dinitrotoluene, 2,6-	mg/kg	**7.21**	
Metals			
Aluminum	mg/kg	4310	J
Arsenic	mg/kg	**2.99**	
Barium	mg/kg	24.4	
Beryllium	mg/kg	0.321	
Cadmium	mg/kg	0.136	J
Calcium	mg/kg	65300	J
Chromium	mg/kg	7.13	
Cobalt	mg/kg	3.62	
Copper	mg/kg	11.2	J
Iron	mg/kg	10100	
Lead	mg/kg	27.9	J
Magnesium	mg/kg	1160	J
Manganese	mg/kg	361	
Nickel	mg/kg	10.4	
Potassium	mg/kg	897	
Sodium	mg/kg	288	
Vanadium	mg/kg	8.95	
Zinc	mg/kg	41.2	

LEGEND:

- △ ABO-120 — SCREENING SOIL SAMPLING LOCATION
- ○ GW-04 — GROUNDWATER SAMPLING LOCATION
- □ ABO-464 — CONFIRMATION SOIL SAMPLING LOCATION
- TANK
- BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0120	1.5 - 2.5
AB0121	1.0 - 2.0
AB0122	2.5 - 3.5
AB0123	1.0 - 2.0
AB0124	1.0 - 2.0
AB0125	1.0 - 2.0
AB0126	0.0 - 1.0
AB0379	5.0 - 7.0
AB0380	8.0 - 10.0
AB0463	5.0 - 7.0
AB0464	8.0 - 10.0

SCALE

0 30 60 FEET

FIGURE 2-17
TNT AREA C
BUILDING 603 FORTIFIER HOUSE
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
A Member of The IT Group

DWG. NO.: ...\807112es.014 | PROJ. NO.: 807112
INITIATOR: GUNDERSON | PROJ. MGR.: SPANGBERG
DRAFT. CHCK. BY: C. TUMLIN | ENGR. CHCK. BY: S. MUFFLER
DATE LAST REV.: | DRAWN BY:
STARTING DATE: 08/29/00 | DRAWN BY: B.VANDERGRIFF
03:01:59 04/06/01
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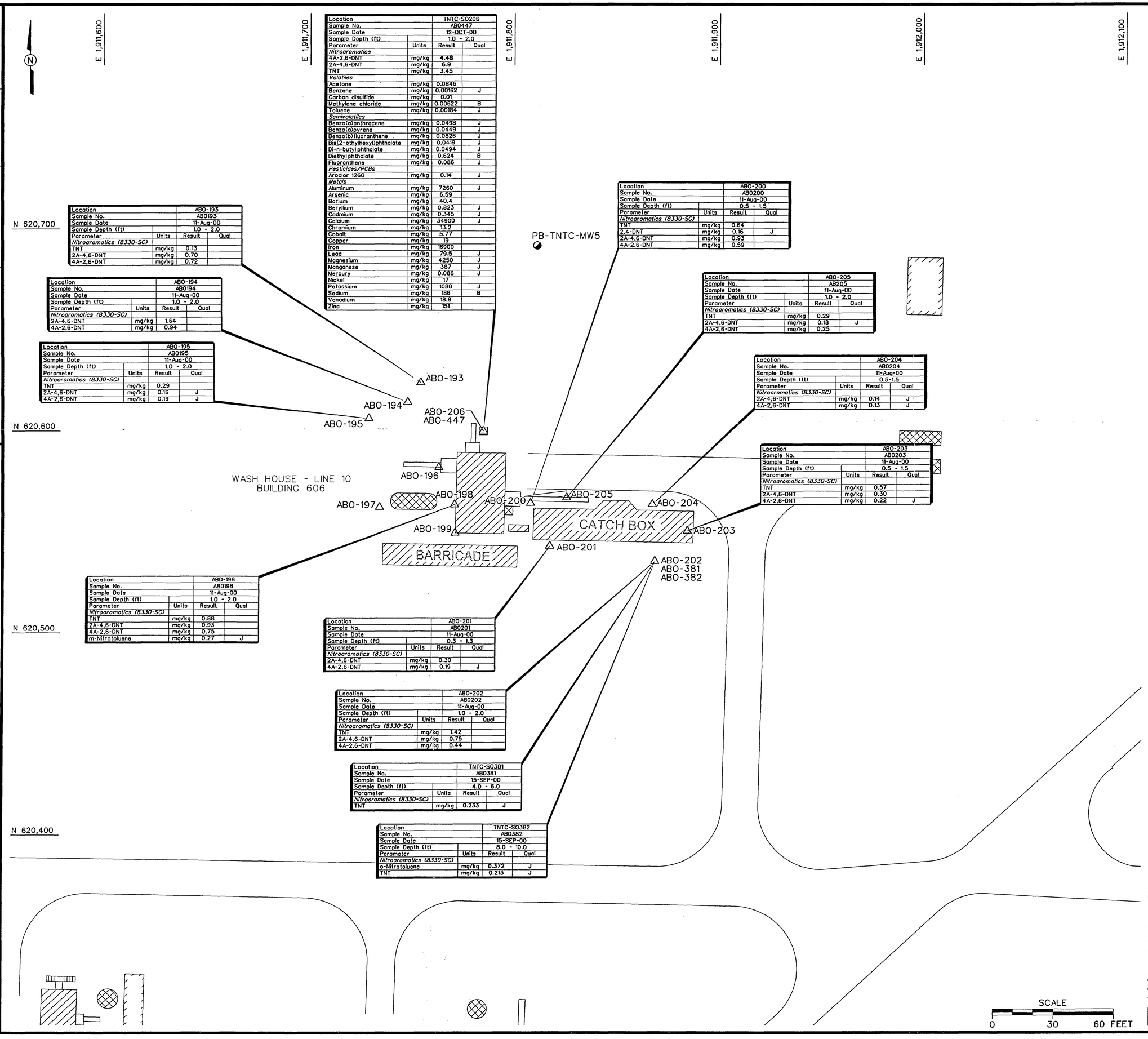

Location		ABO-193	
Sample No.		AB0193	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.13	
2A-4,6-DNT	mg/kg	0.70	
4A-2,6-DNT	mg/kg	0.72	

Location		ABO-194	
Sample No.		AB0194	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2A-4,6-DNT	mg/kg	1.64	
4A-2,6-DNT	mg/kg	0.94	

Location		ABO-195	
Sample No.		AB0195	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.29	
2A-4,6-DNT	mg/kg	0.16	J
4A-2,6-DNT	mg/kg	0.19	J

Location		TNTC-S0206	
Sample No.		AB0447	
Sample Date		12-OCT-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	**4.48**	
2A-4,6-DNT	mg/kg	**6.9**	
TNT	mg/kg	3.45	
Volatiles			
Acetone	mg/kg	0.0846	
Benzene	mg/kg	0.00162	J
Carbon disulfide	mg/kg	0.01	
Methylene chloride	mg/kg	0.00622	B
Toluene	mg/kg	0.00184	J
Semivolatiles			
Benzo(a)anthracene	mg/kg	0.0498	J
Benzo(a)pyrene	mg/kg	0.0449	J
Benzo(b)fluoranthene	mg/kg	0.0826	J
Bis(2-ethylhexyl)phthalate	mg/kg	0.0419	J
Di-n-butyl phthalate	mg/kg	0.0494	J
Diethyl phthalate	mg/kg	0.624	B
Fluoranthene	mg/kg	0.086	J
Pesticides/PCBs			
Aroclor 1260	mg/kg	0.14	J
Metals			
Aluminum	mg/kg	7260	J
Arsenic	mg/kg	**6.59**	
Barium	mg/kg	40.4	
Beryllium	mg/kg	0.823	J
Cadmium	mg/kg	0.345	J
Calcium	mg/kg	34900	J
Chromium	mg/kg	13.2	
Cobalt	mg/kg	5.77	
Copper	mg/kg	19	
Iron	mg/kg	16900	
Lead	mg/kg	**79.5**	J
Magnesium	mg/kg	4250	J
Manganese	mg/kg	387	J
Mercury	mg/kg	0.086	J
Nickel	mg/kg	17	
Potassium	mg/kg	1080	J
Sodium	mg/kg	186	B
Vanadium	mg/kg	18.8	
Zinc	mg/kg	151	

Location		ABO-200	
Sample No.		AB0200	
Sample Date		11-Aug-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.64	
2,4-DNT	mg/kg	0.16	J
2A-4,6-DNT	mg/kg	0.93	
4A-2,6-DNT	mg/kg	0.59	

Location		ABO-205	
Sample No.		AB205	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.29	
2A-4,6-DNT	mg/kg	0.18	J
4A-2,6-DNT	mg/kg	0.25	

Location		ABO-204	
Sample No.		AB0204	
Sample Date		11-Aug-00	
Sample Depth (ft)		0.5-1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2A-4,6-DNT	mg/kg	0.14	J
4A-2,6-DNT	mg/kg	0.13	J

Location		ABO-203	
Sample No.		AB0203	
Sample Date		11-Aug-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.57	
2A-4,6-DNT	mg/kg	0.30	
4A-2,6-DNT	mg/kg	0.22	J

Location		ABO-198	
Sample No.		AB0198	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.88	
2A-4,6-DNT	mg/kg	0.93	
4A-2,6-DNT	mg/kg	0.75	
m-Nitrotoluene	mg/kg	0.27	J

Location		ABO-201	
Sample No.		AB0201	
Sample Date		11-Aug-00	
Sample Depth (ft)		0.3 - 1.3	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2A-4,6-DNT	mg/kg	0.30	
4A-2,6-DNT	mg/kg	0.19	J

Location		ABO-202	
Sample No.		AB0202	
Sample Date		11-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	1.42	
2A-4,6-DNT	mg/kg	0.75	
4A-2,6-DNT	mg/kg	0.44	

Location		TNTC-S0381	
Sample No.		AB0381	
Sample Date		15-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.233	J

Location		TNTC-S0382	
Sample No.		AB0382	
Sample Date		15-SEP-00	
Sample Depth (ft)		8.0 - 10.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
o-Nitrotoluene	mg/kg	0.372	J
TNT	mg/kg	0.213	J

LEGEND:

△ ABO-193	SCREENING SOIL SAMPLING LOCATION
□ ABO-447	CONFIRMATION SOIL SAMPLING LOCATION
	TANK
	BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0193	1.0 - 2.0
AB0194	1.0 - 2.0
AB0195	1.0 - 2.0
AB0196	1.0 - 2.0
AB0197	1.0 - 2.0
AB0198	1.0 - 2.0
AB0199	1.0 - 2.0
AB0200	0.5 - 1.5
AB0201	0.3 - 1.3
AB0202	1.0 - 2.0
AB0203	0.5 - 1.5
AB0204	0.5 - 1.5
AB0205	1.0 - 2.0
AB0206	1.0 - 2.0
AB0381	4.0 - 6.0
AB0382	8.0 - 10.0
AB0447	1.0 - 2.0

FIGURE 2-18
TNT AREA C
BUILDING 606
WASH HOUSE - LINE 10
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

SCALE
0 30 60 FEET

IT CORPORATION
A Member of The IT Group

STARTING DATE: 03/25/00 | DATE LAST REV.: | DRAFT. CHCK. BY: C. TURNER | ENGR. CHCK. BY: S. MUFFLER | PROJ. MGR.: SPANGBERG | DWG. NO.: 807112es013
DRAWN BY: B. VANDERGRIFF | DRAWN BY: | INTNT GR: GUNDERSON | PROJ. NO.: 807112

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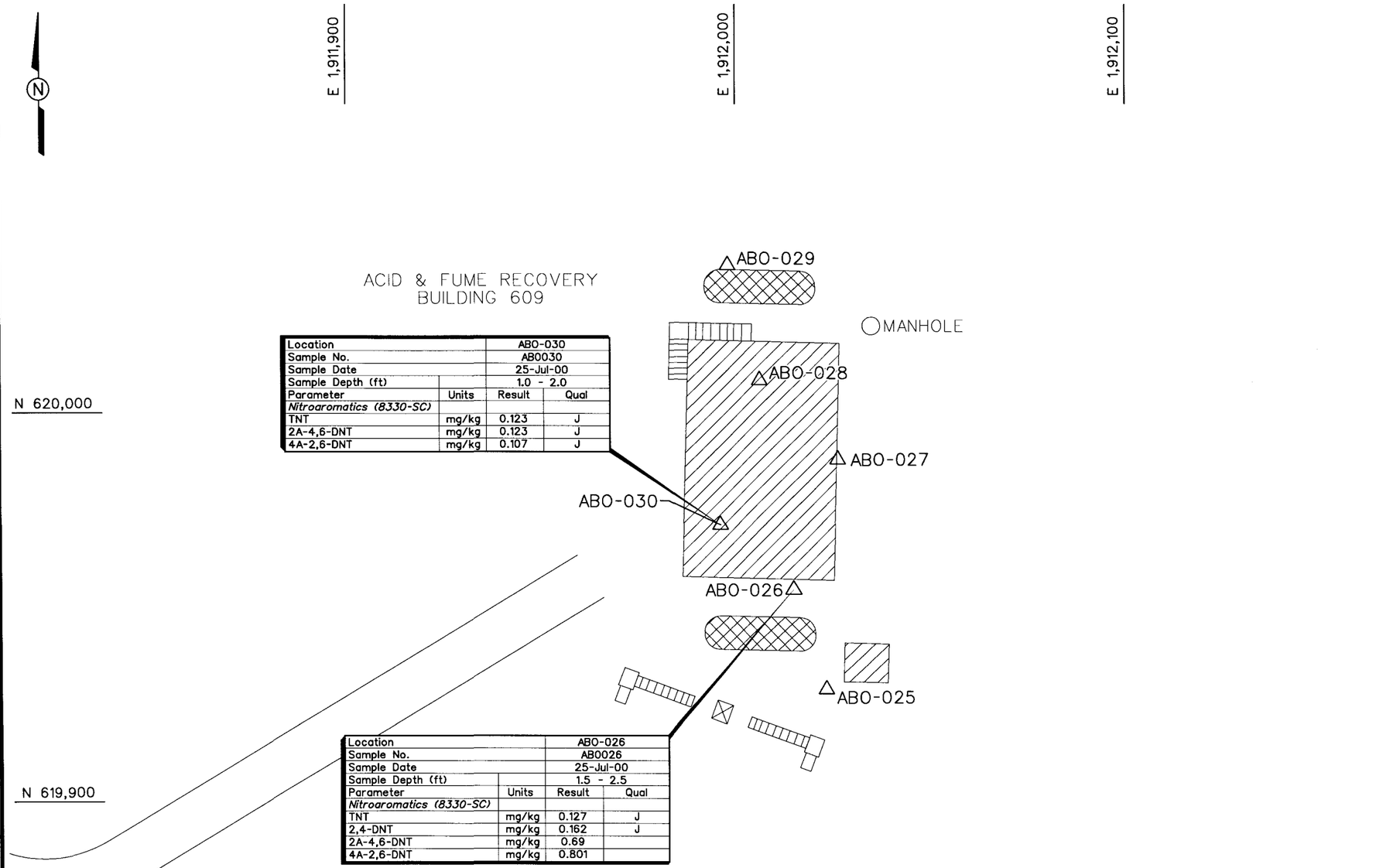

Location		ABO-030	
Sample No.		AB0030	
Sample Date		25-Jul-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.123	J
2A-4,6-DNT	mg/kg	0.123	J
4A-2,6-DNT	mg/kg	0.107	J

Location		ABO-026	
Sample No.		AB0026	
Sample Date		25-Jul-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.127	J
2,4-DNT	mg/kg	0.162	J
2A-4,6-DNT	mg/kg	0.69	
4A-2,6-DNT	mg/kg	0.801	

LEGEND:

△ ABO-025 SCREENING SOIL SAMPLING LOCATION

TANK

BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0025	1.0 - 2.0
AB0026	1.5 - 2.5
AB0027	0.5 - 1.5
AB0028	1.0 - 2.0
AB0029	2.0 - 3.0
AB0030	1.0 - 2.0

FIGURE 2-19
TNT AREA C
BUILDING 609 ACID & FUME RECOVERY, SAMPLE LOCATIONS AND ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

SCALE
0 30 60 FEET

IT CORPORATION
A Member of The IT Group

DWG. NO.: \807112es.04.3
PROJ. NO.: 807112
INITIATOR: GUNDERSON
PROJ. MGR.: SPANGBERG
DRAFT. CHCK. BY: C. TUMLIN
ENGR. CHCK. BY: S. MUFFLER
DATE LAST REV.:
DRAWN BY:
STARTING DATE: 08/29/00
DRAWN BY: B.VANDERGRIFF
03:15:27
04/06/01
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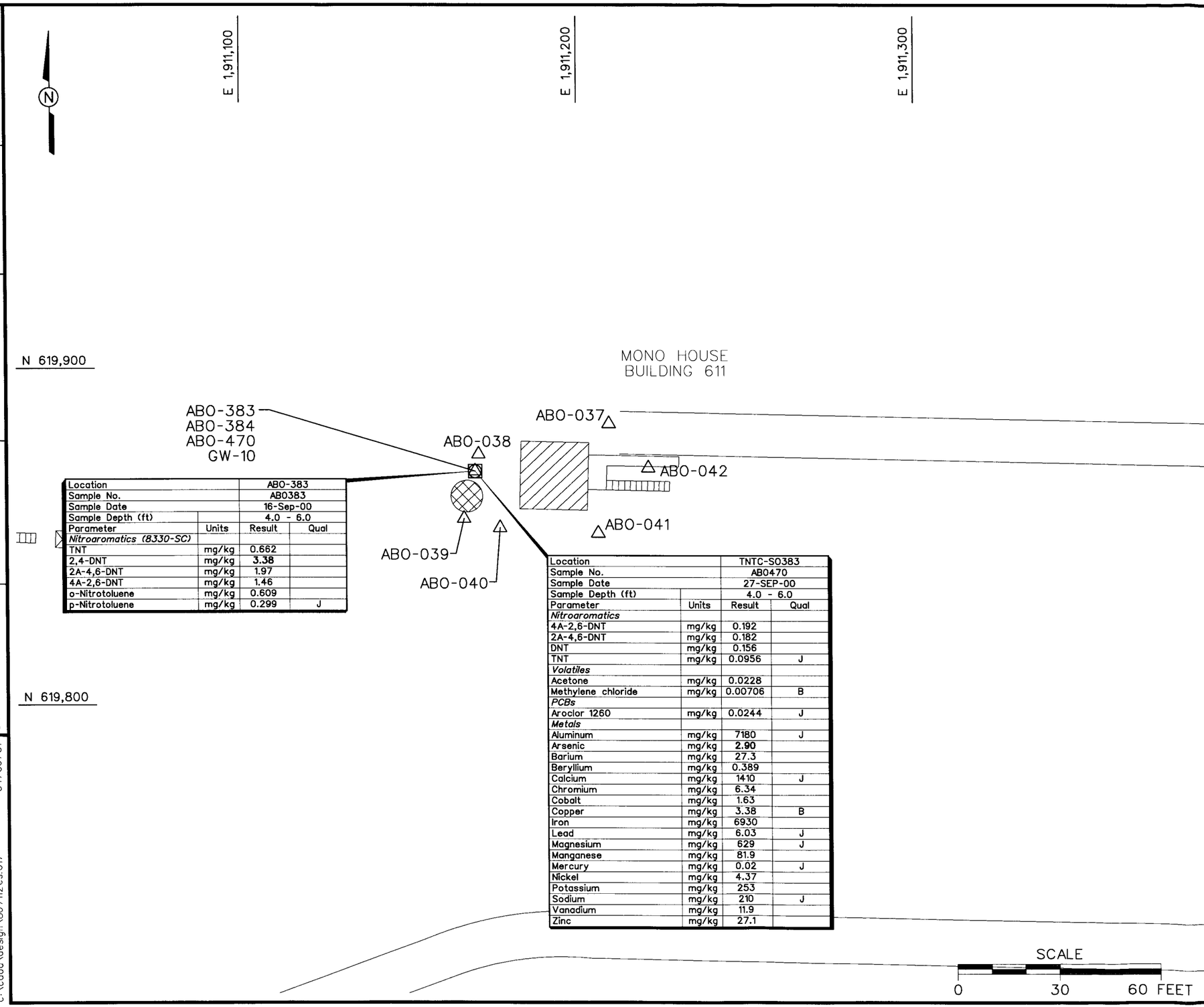


Location		AB0-383	
Sample No.		AB0383	
Sample Date		16-Sep-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.662	
2,4-DNT	mg/kg	**3.38**	
2A-4,6-DNT	mg/kg	1.97	
4A-2,6-DNT	mg/kg	1.46	
o-Nitrotoluene	mg/kg	0.609	
p-Nitrotoluene	mg/kg	0.299	J

Location		TNTC-S0383	
Sample No.		AB0470	
Sample Date		27-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	0.192	
2A-4,6-DNT	mg/kg	0.182	
DNT	mg/kg	0.156	
TNT	mg/kg	0.0956	J
Volatiles			
Acetone	mg/kg	0.0228	
Methylene chloride	mg/kg	0.00706	B
PCBs			
Aroclor 1260	mg/kg	0.0244	J
Metals			
Aluminum	mg/kg	7180	J
Arsenic	mg/kg	**2.90**	
Barium	mg/kg	27.3	
Beryllium	mg/kg	0.389	
Calcium	mg/kg	1410	J
Chromium	mg/kg	6.34	
Cobalt	mg/kg	1.63	
Copper	mg/kg	3.38	B
Iron	mg/kg	6930	
Lead	mg/kg	6.03	J
Magnesium	mg/kg	629	J
Manganese	mg/kg	81.9	
Mercury	mg/kg	0.02	J
Nickel	mg/kg	4.37	
Potassium	mg/kg	253	
Sodium	mg/kg	210	J
Vanadium	mg/kg	11.9	
Zinc	mg/kg	27.1	

LEGEND:

△ AB0-037	SCREENING SOIL SAMPLING LOCATION
○ GW-10	GROUNDWATER SAMPLING LOCATION
□ AB0-470	CONFIRMATION SOIL SAMPLING LOCATION
	TANK
	BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

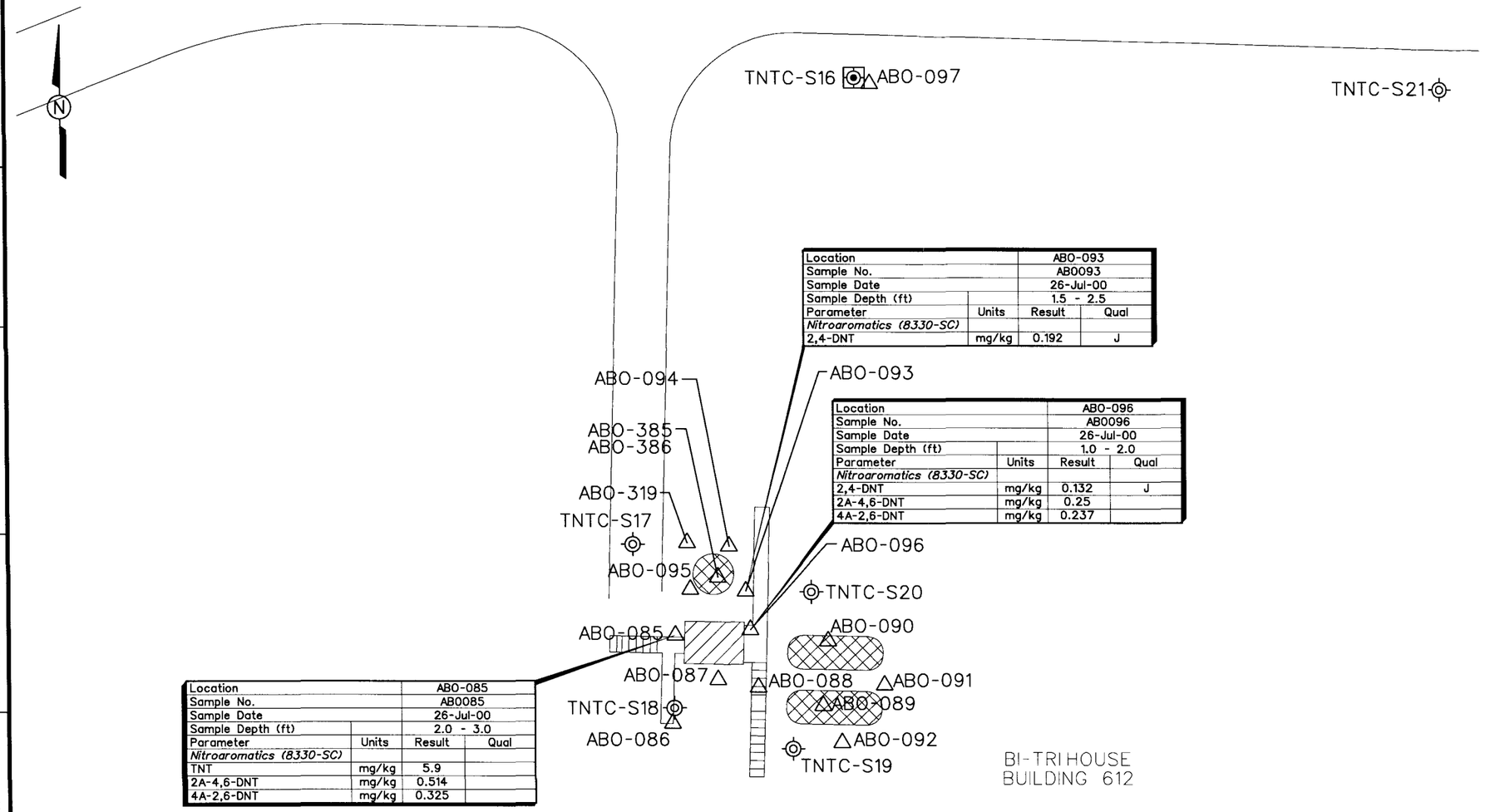
SAMPLE	DEPTH (FT)
AB0037	1.0 - 2.0
AB0038	1.0 - 2.0
AB0039	1.5 - 2.5
AB0040	1.0 - 2.0
AB0041	1.5 - 2.5
AB0042	1.0 - 2.0
AB0383	4.0 - 6.0
AB0384	8.0 - 10.0
AB0470	4.0 - 6.0

FIGURE 2-20
TNT AREA C
BUILDING 611 MONO HOUSE
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
A Member of The IT Group

DWG. NO.: ...\807112es.017
PROJ. NO.: 807112
INITIATOR: GUNDERSON
PROJ. MGR.: SPANGBERG
DRAFT. CHCK. BY: C. TUMLIN
ENGR. CHCK. BY: S. MUFFLER
DATE LAST REV.:
DRAWN BY:
STARTING DATE: 08/30/00
DRAWN BY: B.VANDERGRIFF
03:04:10
04/06/01
bvanderg
c:\cadd\design\807112es.017



Location		ABO-093	
Sample No.		AB0093	
Sample Date		26-Jul-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.192	J

Location		ABO-096	
Sample No.		AB0096	
Sample Date		26-Jul-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.132	J
2A-4,6-DNT	mg/kg	0.25	
4A-2,6-DNT	mg/kg	0.237	

Location		ABO-085	
Sample No.		AB0085	
Sample Date		26-Jul-00	
Sample Depth (ft)		2.0 - 3.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	5.9	
2A-4,6-DNT	mg/kg	0.514	
4A-2,6-DNT	mg/kg	0.325	

LEGEND:

- △ ABO-085 — SCREENING SOIL SAMPLING LOCATION
- TNTC-S17 — HISTORICAL SOIL BORING LOCATION
- TNTC-S16 — HISTORICAL SOIL BORING LOCATION WITH EXPLOSIVES DETECTION
- TANK
- BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0085	2.0 - 3.0
AB0086	2.0 - 3.0
AB0087	1.0 - 2.0
AB0088	1.0 - 2.0
AB0089	1.5 - 2.5
AB0090	1.5 - 2.5
AB0091	1.5 - 2.5
AB0092	2.0 - 3.0
AB0093	1.5 - 2.5
AB0094	1.0 - 2.0
AB0095	1.0 - 2.0
AB0096	1.0 - 2.0
AB0097	0.0 - 1.0
AB0319	1.0 - 2.0
AB0385	4.0 - 6.0
AB0386	8.0 - 10.0

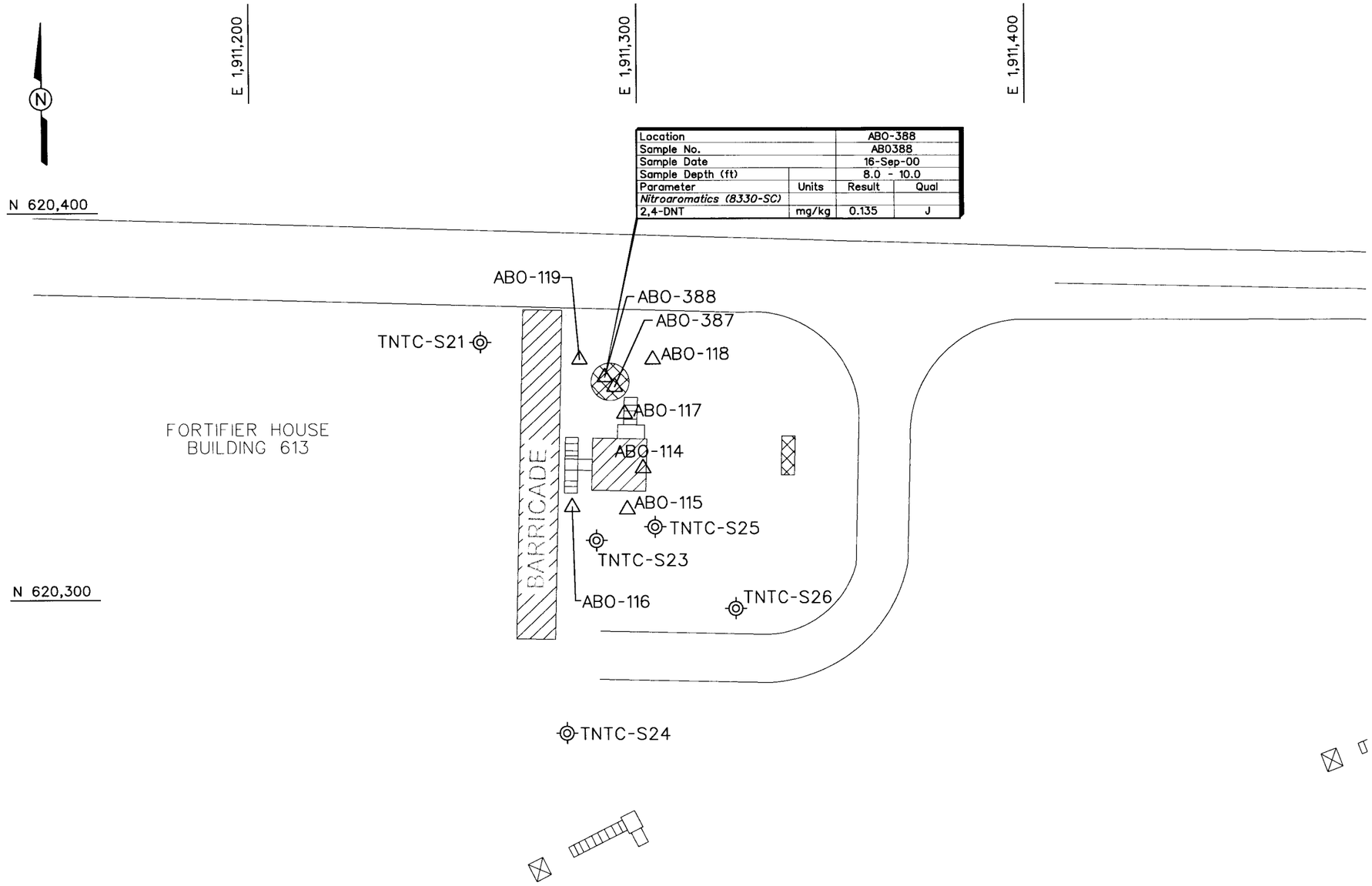
SCALE
0 30 60 FEET

FIGURE 2-21
TNT AREA C
BUILDING 612 BI-TRI HOUSE
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
A Member of The IT Group

DWG. NO.: ...\807112es.018 | INITIATOR: GUNDERSON | DRAFT. CHCK. BY: C. TUMLIN | DATE LAST REV.: | STARTING DATE: 08/30/00
PROJ. NO.: 807112 | PROJ. MGR.: SPANGBERG | ENGR. CHCK. BY: S. MUFFLER | DRAWN BY: | DRAWN BY: B.VANDERGRIFF
01:23:25 04/09/01
bvanderg
c:\cadd\design\807112es.018



Location		AB0-388	
Sample No.		AB0388	
Sample Date		16-Sep-00	
Sample Depth (ft)		8.0 - 10.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.135	J

LEGEND:

- △ AB0-234 — SCREENING SOIL SAMPLING LOCATION
- TNTC-S21 — HISTORICAL SOIL BORING LOCATION
- TANK
- BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0114	1.5 - 2.5
AB0115	2.0 - 3.0
AB0116	2.0 - 3.0
AB0117	2.0 - 3.0
AB0118	2.0 - 3.0
AB0119	2.0 - 3.0
AB0387	4.0 - 6.0
AB0388	8.0 - 10.0

SCALE
0 30 60 FEET

FIGURE 2-22
TNT AREA C
BUILDING 613 FORTIFIER HOUSE
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

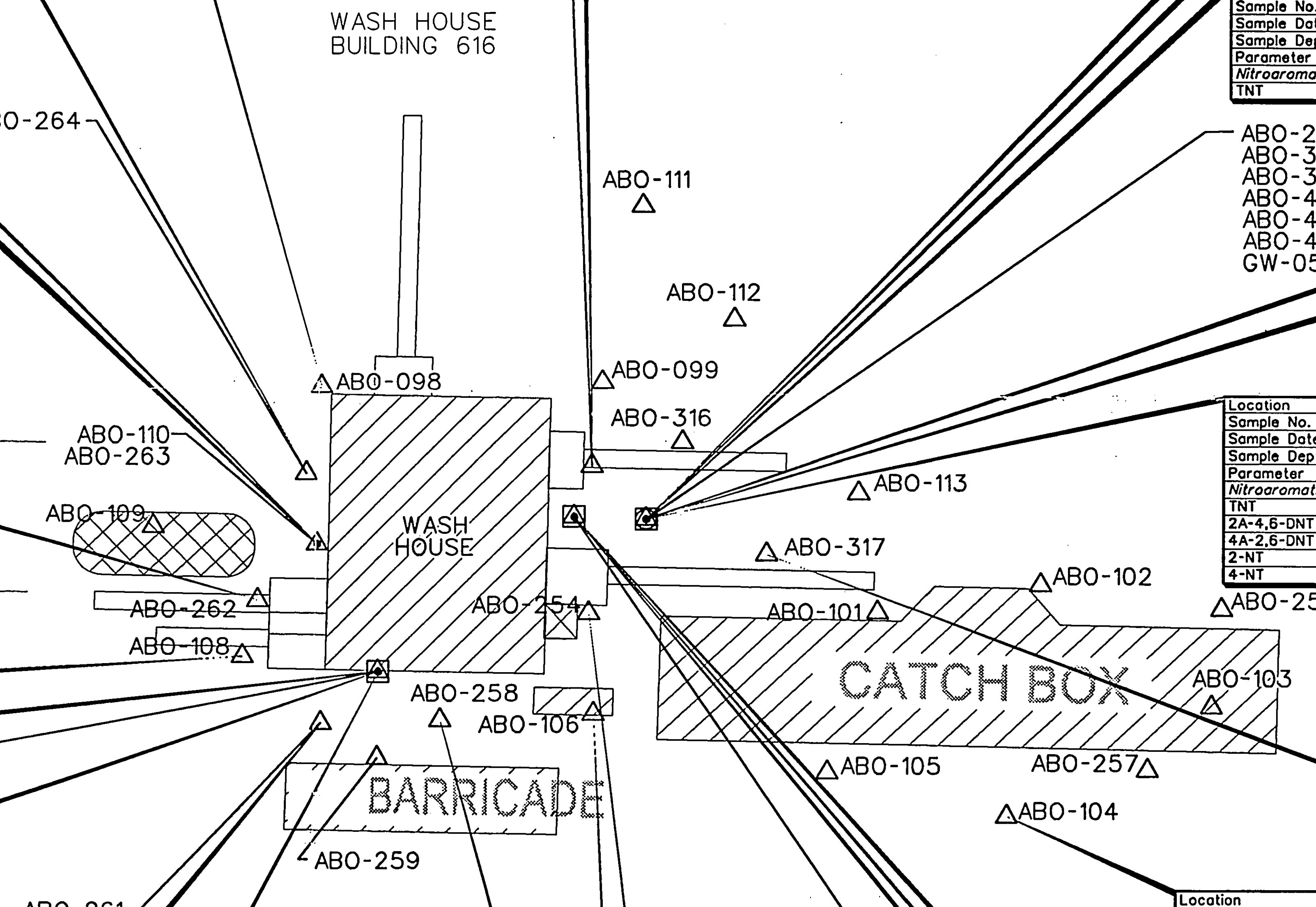
PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
A Member of The IT Group

DWG. NO.: \807112es.027 | PROJ. NO.: 807112
INTIATOR: GUNDERSON | PROJ. MGR.: SPANGBERG
DRAFT. CHCK. BY: C. TUMLIN | ENGR. CHCK. BY: M. GUNDERSON
DATE LAST REV.: | DRAWN BY:
STARTING DATE: 08/31/00 | DRAWN BY: B.VANDERGRIFF
05:25:55 04/09/01
bvanderg
c:\cadd\design\807112es.027

STARTING DATE: 08/31/00 | DATE LAST REV.: | DRAFT. CHCK. BY: | INITIATOR: | DWG. NO.: 807112ES.005
DRAWN BY: B.VANDERGRIFF | DRAWN BY: | ENGR. CHCK. BY: S. MUFFLER | PROJ. MGR.: SPANGBERG | PROJ. NO.: 807112

N 620,600 | N 620,500 | E 1,911,000 | E 1,911,100 | E 1,911,200



Location		ABO-098	
Sample No.		AB0098	
Sample Date		27-Jul-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	1.07	
2A-4,6-DNT	mg/kg	0.28	
4A-2,6-DNT	mg/kg	0.17	J

Location		ABO-251	
Sample No.		AB0251	
Sample Date		18-Aug-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.23	J
TNT	mg/kg	**68.6**	
2A-4,6-DNT	mg/kg	1.93	
4A-2,6-DNT	mg/kg	2.38	

Location		ABO-264	
Sample No.		AB0264	
Sample Date		18-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.12	J
2A-4,6-DNT	mg/kg	0.6	
4A-2,6-DNT	mg/kg	0.57	

Location		ABO-110	
Sample No.		AB0110	
Sample Date		27-Jul-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.32	
TNT	mg/kg	1.34	
2A-4,6-DNT	mg/kg	**3.25**	
4A-2,6-DNT	mg/kg	1.94	

Location		ABO-263	
Sample No.		AB0263	
Sample Date		18-Aug-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.15	J
TNT	mg/kg	0.16	J
2A-4,6-DNT	mg/kg	0.63	
4A-2,6-DNT	mg/kg	0.48	

Location		CSO-262	
Sample No.		AB0262	
Sample Date		18-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	1.36	
2,4-DNT	mg/kg	0.12	J
2A-4,6-DNT	mg/kg	0.16	J
4A-2,6-DNT	mg/kg	0.16	J

Location		ABO-108	
Sample No.		AB0108	
Sample Date		27-Jul-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.63	
2,4-DNT	mg/kg	0.14	J
2A-4,6-DNT	mg/kg	0.18	J

Location		ABO-107	
Sample No.		AB0107	
Sample Date		27-Jul-00	
Sample Depth (ft)		3.0 - 4.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	**39.9**	
2A-4,6-DNT	mg/kg	0.13	J

Location		TNTC-S0107	
Sample No.		AB0432	
Sample Date		10-OCT-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics			
TNT	mg/kg	0.566	
Volatiles			
Acetone	mg/kg	0.0861	J
Methylene chloride	mg/kg	0.0188	B
Semivolatiles			
Benzo(a)anthracene	mg/kg	0.269	J
Benzo(a)pyrene	mg/kg	**0.305**	J
Benzo(b)fluoranthene	mg/kg	0.443	
Benzo(ghi)perylene	mg/kg	0.222	J
Benzo(k)fluoranthene	mg/kg	0.178	J
Bis(2-ethylhexyl)phthalate	mg/kg	0.0328	J
Chrysene	mg/kg	0.31	J
Dibenz(a,h)anthracene	mg/kg	**0.0817**	J
Fluoranthene	mg/kg	0.409	J
Indeno(1,2,3-cd)pyrene	mg/kg	0.21	J
Phenanthrene	mg/kg	0.107	J
Pyrene	mg/kg	0.33	J
Pesticides/PCBs			
Aroclor 1260	mg/kg	0.088	
Metals			
Aluminum	mg/kg	5290	J
Antimony	mg/kg	1.59	
Arsenic	mg/kg	**3.86**	B
Barium	mg/kg	57.7	
Beryllium	mg/kg	0.403	
Cadmium	mg/kg	0.316	J
Calcium	mg/kg	10700	
Chromium	mg/kg	13.7	
Cobalt	mg/kg	5.03	
Copper	mg/kg	99.8	
Iron	mg/kg	12900	
Lead	mg/kg	**361**	
Magnesium	mg/kg	1660	
Manganese	mg/kg	505	
Mercury	mg/kg	0.04	B
Nickel	mg/kg	11.9	
Potassium	mg/kg	1070	
Sodium	mg/kg	227	J
Vanadium	mg/kg	16.9	
Zinc	mg/kg	171	

Location		ABO-261	
Sample No.		AB0261	
Sample Date		18-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	1.1	

Location		TNTC-S0107	
Sample No.		AB0433	
Sample Date		10-OCT-00	
Sample Depth (ft)		3.0 - 4.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	0.293	
2A-4,6-DNT	mg/kg	0.226	
TNB	mg/kg	0.238	
TNT	mg/kg	**47.3**	
Volatiles			
Acetone	mg/kg	0.0204	J
Methylene chloride	mg/kg	0.00523	B
Semivolatiles			
Bis(2-ethylhexyl)phthalate	mg/kg	0.0883	J
Pesticides/PCBs			
Aroclor 1260	mg/kg	0.03	J
Metals			
Aluminum	mg/kg	3750	J
Arsenic	mg/kg	**3.68**	B
Barium	mg/kg	14.6	
Beryllium	mg/kg	0.28	
Calcium	mg/kg	2790	
Chromium	mg/kg	7.44	
Cobalt	mg/kg	3.16	
Copper	mg/kg	5.36	
Iron	mg/kg	8140	
Lead	mg/kg	15.3	
Magnesium	mg/kg	1660	
Manganese	mg/kg	122	
Mercury	mg/kg	0.114	B
Nickel	mg/kg	9.44	
Potassium	mg/kg	639	
Sodium	mg/kg	110	J
Vanadium	mg/kg	12.2	
Zinc	mg/kg	31.3	

Location		ABO-258	
Sample No.		AB0258	
Sample Date		18-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	1.13	
2A-4,6-DNT	mg/kg	0.37	
4A-2,6-DNT	mg/kg	0.32	

Location		ABO-106	
Sample No.		AB0106	
Sample Date		27-Jul-00	
Sample Depth (ft)		3.0 - 4.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.24	
2A-4,6-DNT	mg/kg	0.14	J
4A-2,6-DNT	mg/kg	0.11	J

Location		ABO-254	
Sample No.		AB0254	
Sample Date		18-Aug-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
1,3-TNB	mg/kg	0.24	J
TNT	mg/kg	0.3	
2A-4,6-DNT	mg/kg	0.14	J

Location		TNTC-S0252	
Sample No.		AB0474	
Sample Date		29-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Volatiles			
Methylene chloride	mg/kg	0.00138	B
Metals			
Aluminum	mg/kg	10800	
Antimony	mg/kg	1.15	J
Arsenic	mg/kg	**13.2**	
Barium	mg/kg	43	
Beryllium	mg/kg	0.633	
Calcium	mg/kg	50800	
Chromium	mg/kg	17.3	
Cobalt	mg/kg	12.1	
Copper	mg/kg	27.2	
Iron	mg/kg	**25600**	
Lead	mg/kg	13.4	
Magnesium	mg/kg	14000	
Manganese	mg/kg	426	
Mercury	mg/kg	0.019	J
Nickel	mg/kg	33	
Potassium	mg/kg	2830	
Sodium	mg/kg	253	
Vanadium	mg/kg	19.8	
Zinc	mg/kg	83.9	

Location		ABO-252	
Sample No.		AB0252	
Sample Date		18-Aug-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	1.5	
1,3-DNB	mg/kg	0.24	J
TNT	mg/kg	**797**	
2,4-DNT	mg/kg	1.86	
2A-4,6-DNT	mg/kg	**5.45**	
HMX	mg/kg	0.4	J
RDX	mg/kg	1.51	

Location		ABO-361	
Sample No.		AB0361	
Sample Date		14-Sep-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	4.81	J

Location		ABO-362	
Sample No.		AB0362	
Sample Date		14-Sep-00	
Sample Depth (ft)		8.0 - 10.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	8.66	
2A-4,6-DNT	mg/kg	1.67	
4A-2,6-DNT	mg/kg	0.455	
2-NT	mg/kg	0.494	J
4-NT	mg/kg	0.346	J

Location		TNTC-S0252	
Sample No.		AB0451	
Sample Date		27-SEP-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	**4.78**	
2A-4,6-DNT	mg/kg	**3.77**	
1,3-DNT	mg/kg	0.0829	J
DNT	mg/kg	0.57	
NB	mg/kg	0.283	
3-NT	mg/kg	0.462	
TNB	mg/kg	0.966	
TNT	mg/kg	**681**	
Volatiles			
Acetone	mg/kg	0.0438	
Butanone, 2-	mg/kg	0.015	
Carbon disulfide	mg/kg	0.00347	J
Methylene chloride	mg/kg	0.00772	B
Semivolatiles			
Dinitrotoluene, 2,4-	mg/kg	**0.899**	J
Pesticides/PCBs			
Aroclor 1260	mg/kg	**0.41**	
Metals			
Aluminum	mg/kg	3880	J
Antimony	mg/kg	1.03	J
Arsenic	mg/kg	**3.75**	
Barium	mg/kg	19.6	
Beryllium	mg/kg	0.294	
Cadmium	mg/kg	0.163	J
Calcium	mg/kg	5710	J
Chromium	mg/kg	38	
Cobalt	mg/kg	3.45	
Copper	mg/kg	13.1	J
Iron	mg/kg	11500	
Lead	mg/kg	**117**	J
Magnesium	mg/kg	1600	J
Manganese	mg/kg	119	
Mercury	mg/kg	0.247	
Nickel	mg/kg	24.9	
Potassium	mg/kg	507	
Sodium	mg/kg	252	
Vanadium	mg/kg	18	
Zinc	mg/kg	55.4	

Location		TNTC-S0252	
Sample No.		AB0473	
Sample Date		29-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics			
2A-4,6-DNT	mg/kg	0.275	
DNT	mg/kg	0.121	
TNT	mg/kg	1.32	
Semivolatiles			
Bis(2-ethylhexyl)phthalate	mg/kg	0.0207	J
Metals			
Aluminum	mg/kg	11000	
Arsenic	mg/kg	**18.5**	
Barium	mg/kg	62.3	
Beryllium	mg/kg	0.683	
Calcium	mg/kg	34700	
Chromium	mg/kg	17.2	
Cobalt	mg/kg	10.8	
Copper	mg/kg	29.7	
Iron	mg/kg	**27600**	
Lead	mg/kg	14.6	
Magnesium	mg/kg	10300	
Manganese	mg/kg	295	
Mercury	mg/kg	0.019	J
Nickel	mg/kg	31.9	
Potassium	mg/kg	2690	
Sodium	mg/kg	264	
Vanadium	mg/kg	20.9	
Zinc	mg/kg	91.4	

Location		ABO-104	
Sample No.		AB0104	
Sample Date		27-Jul-00	
Sample Depth (ft)		2.0 - 3.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.19	J

Location		TNTC-S0317	
Sample No.		AB0317	
Sample Date		23-SEP-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
4A-2,6-DNT	mg/kg	0.226	J
2A-4,6-DNT	mg/kg	0.444	
TNT	mg/kg	0.608	

Location		ABO-253	
Sample No.		AB0253	
Sample Date		18-Aug-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	1.97	
2A-4,6-DNT	mg/kg	0.16	J
4A-2,6-DNT	mg/kg	0.16	J

Location		ABO-100	
Sample No.		AB0100	
Sample Date		27-Jul-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.54	
TNT	mg/kg	**47.2**	
2A-4,6-DNT	mg/kg	0.64	
4A-2,6-DNT	mg/kg	0.44	

Location		TNTC-S0100	
Sample No.		AB0476	
Sample Date		12-OCT-00	
Sample Depth (ft)		2.0 - 3.0	
Parameter	Units	Result	Qual
Nitroaromatics			
2A-4,6-DNT	mg/kg	**6.44**	
NB	mg/kg	0.195	
TNB	mg/kg	0.499	
TNT	mg/kg	**2226**	
Volatiles			
Acetone	mg/kg	0.0196	J
Carbon disulfide	mg/kg	0.00175	J
Methylene chloride	mg/kg	0.00798	B
Semivolatiles			
Bis(2-ethylhexyl)phthalate	mg/kg	0.0324	J
Diethyl phthalate	mg/kg	0.622	B
Dinitrotoluene, 2,4-	mg/kg	0.496	
Pesticides/PCBs			
Aroclor 1260	mg/kg	**0.26**	
Metals			
Aluminum	mg/kg	4540	J
Antimony	mg/kg	0.654	B
Arsenic	mg/kg	3.32	
Barium	mg/kg	28.3	
Beryllium	mg/kg	0.36	J
Cadmium	mg/kg	0.498	J
Calcium	mg/kg	10700	J
Chromium	mg/kg	9.85	
Cobalt	mg/kg	3.23	
Copper	mg/kg	35.9	
Iron	mg/kg	11500	
Lead	mg/kg	111	J
Magnesium	mg/kg	1910	J
Manganese	mg/kg	211	J
Mercury	mg/kg	0.072	J
Nickel	mg/kg	8.95	
Potassium	mg/kg	706	J
Sodium	mg/kg	134	B
Vanadium	mg/kg	17.1	
Zinc	mg/kg	86.1	

LEGEND:

- △ ABO-101 — SCREENING SOIL SAMPLING LOCATION
- • ABO-253 — SURFACE SOIL SAMPLE (0 - 1 FT)
- ○ GW-05 — GROUNDWATER SAMPLING LOCATION
- □ ABO-476 — CONFIRMATION SOIL SAMPLING LOCATION
- TNTC-S21 — HISTORICAL SOIL BORING LOCATION
- TNTB-S6 — HISTORICAL SOIL BORING LOCATION WITH EXPLOSIVES DETECTION
- TANK
- BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0098	1.0 - 2.0
AB0099	0.5 - 1.5
AB0100	2.0 - 3.0
AB0101	0.5 - 1.5
AB0102	1.0 - 2.0
AB0103	1.0 - 2.0
AB0104	2.0 - 3.0
AB0105	0.5 - 1.5
AB0106	3.0 - 4.0
AB0107	3.0 - 4.0
AB0108	1.0 - 2.0
AB0109	1.0 - 2.0
AB0110	1.0 - 2.0
AB0111	0.5 - 1.5
AB0112	0.5 - 1.5
AB0113	0.5 - 1.5
AB0251	0.5 - 1.5
AB0252	0.5 - 1.5
AB0253	0.0 - 1.0
AB0254	1.5 - 2.5
AB0255	1.0 - 2.0
AB0256	0.5 - 1.5
AB0257	1.0 - 2.0
AB0258	1.0 - 2.0
AB0259	0.5 - 1.5
AB0260	0.0 - 1.0
AB0261	1.0 - 2.0
AB0262	1.0 - 2.0
AB0263	0.0 - 1.0
AB0264	1.0 - 2.0
AB0300	5.0 - 6.0
AB0316	1.0 - 2.0
AB0317	1.0 - 2.0
AB0361	4.0 - 6.0
AB0362	8.0 - 10.0
AB0432	0.0 - 1.0
AB0433	3.0 - 4.0
AB0449	0.5 - 1.5
AB0450	0.5 - 1.5
AB0451	0.5 - 1.5
AB0473	4.0 - 6.0
AB0474	8.0 - 10.0
AB0476	2.0 - 3.0

SCALE
0 20 40 FEET

FIGURE 2-23
TNT AREA C
BUILDING 616 WASH HOUSE
LINE 11, SAMPLE LOCATIONS AND ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
A Member of The IT Group

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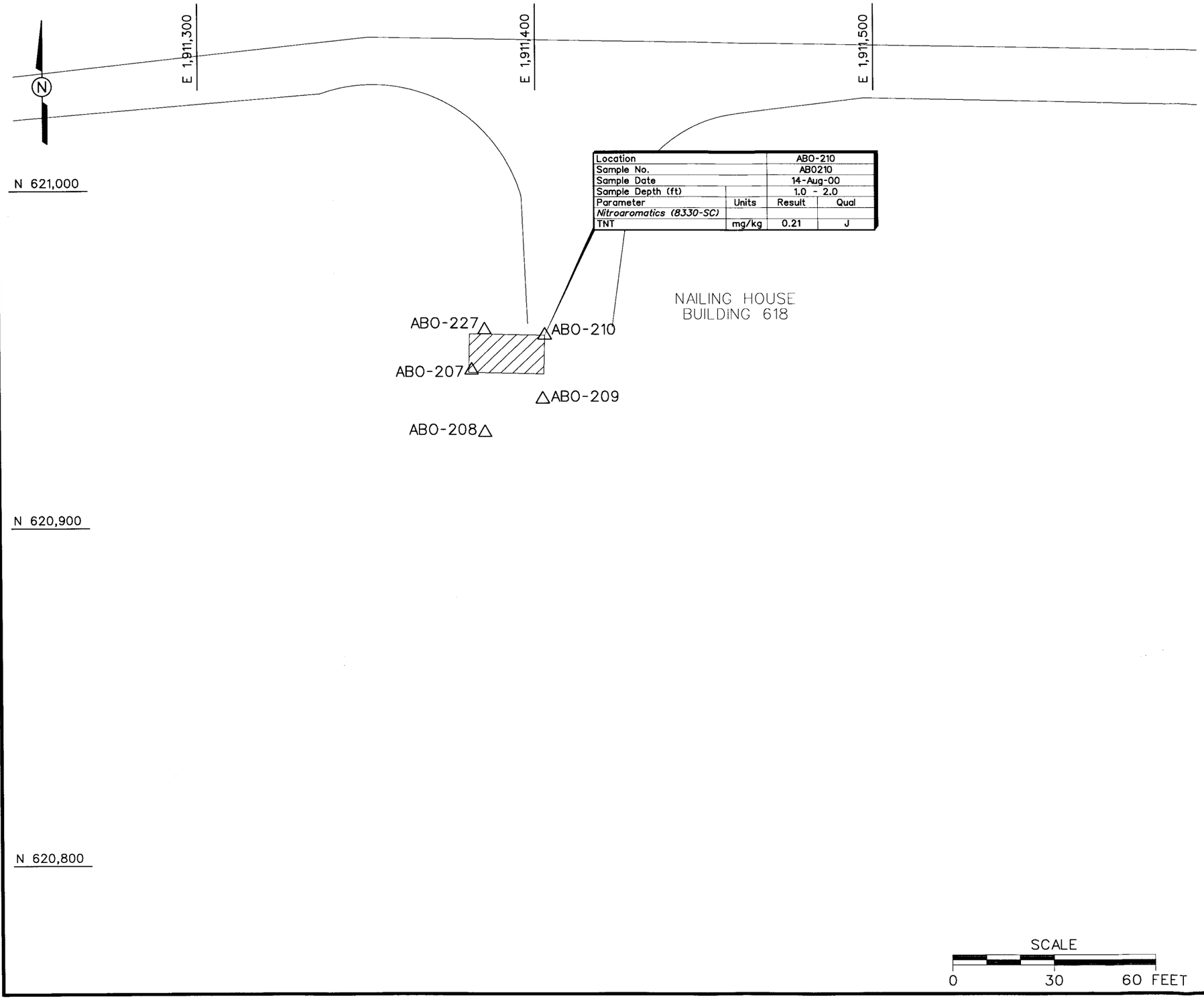

Location		AB0-210	
Sample No.		AB0210	
Sample Date		14-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.21	J

LEGEND:

△ AB0-207 SCREENING SOIL SAMPLING LOCATION

TANK

BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0207	2.0 - 3.0
AB0208	1.6 - 2.6
AB0209	1.0 - 2.0
AB0210	1.0 - 2.0
AB0227	1.0 - 2.0

FIGURE 2-24
TNT AREA C
BUILDING 618 NAILING HOUSE
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
A Member of The IT Group

DWG. NO.: ...\807112es.019
PROJ. NO.: 807112
INITIATOR: GUNDERSON
PROJ. MGR.: SPANGBERG
DRAFT. CHCK. BY: C. TUMLIN
ENGR. CHCK. BY: S. MUFFLER
DATE LAST REV.:
DRAWN BY:
STARTING DATE: 08/30/00
DRAWN BY: B. VANDERGRIFF
02:15:58
04/09/01
bvanderg
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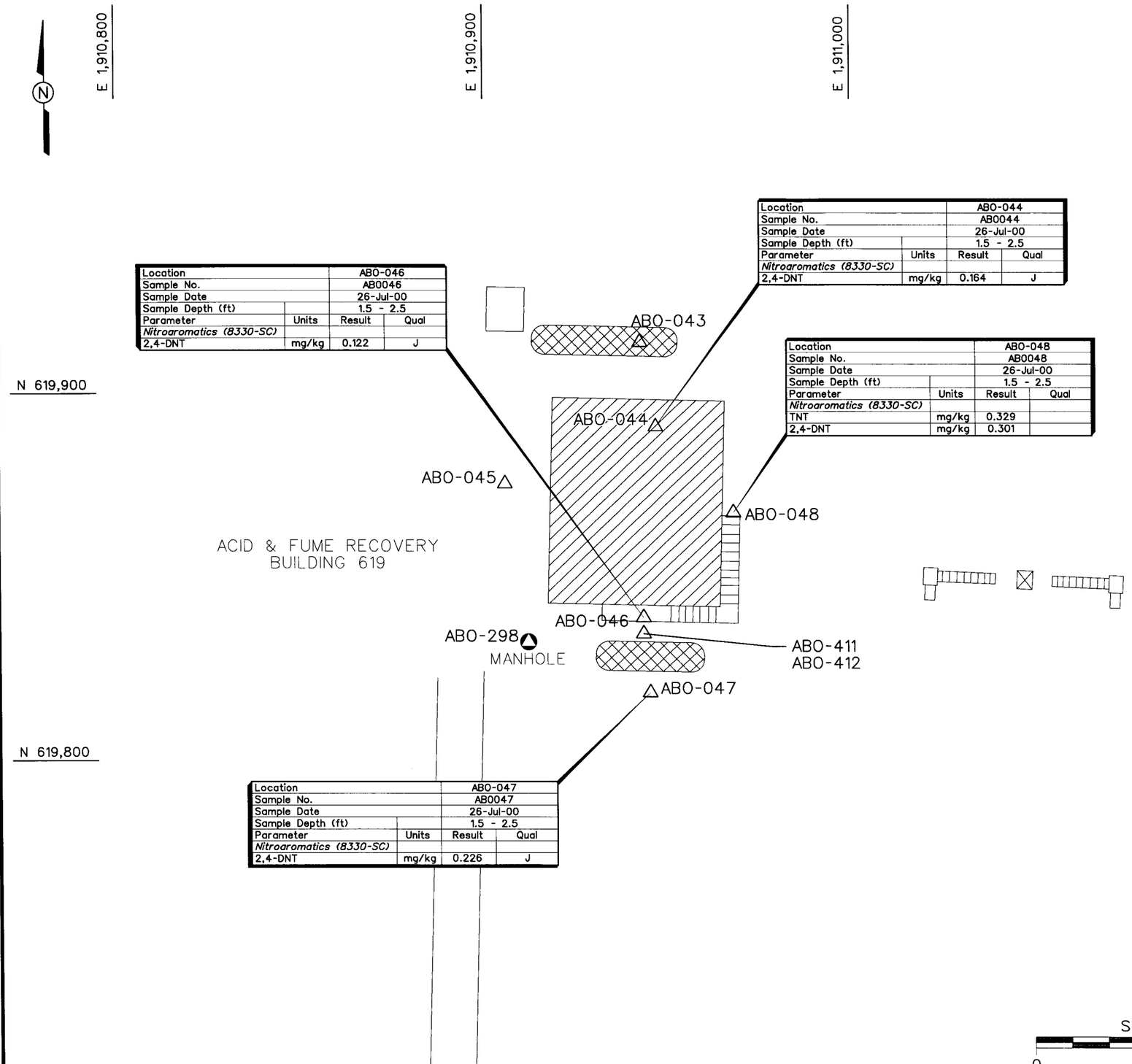

Location		ABO-046	
Sample No.		AB0046	
Sample Date		26-Jul-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.122	J

Location		ABO-044	
Sample No.		AB0044	
Sample Date		26-Jul-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.164	J

Location		ABO-048	
Sample No.		AB0048	
Sample Date		26-Jul-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.329	
2,4-DNT	mg/kg	0.301	

Location		ABO-047	
Sample No.		AB0047	
Sample Date		26-Jul-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.226	J

LEGEND:

△ ABO-043 SCREENING SOIL SAMPLING LOCATION

TANK

BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0043	1.5 - 2.5
AB0044	1.5 - 2.5
AB0045	1.5 - 2.5
AB0046	1.5 - 2.5
AB0047	1.5 - 2.5
AB0048	1.5 - 2.5
AB0298	3.0 - 4.0
AB0411	4.0 - 6.0
AB0412	6.0 - 7.0

SCALE

0 30 60 FEET

FIGURE 2-25
TNT AREA C
BUILDING 619 ACID & FUME RECOVERY, SAMPLE LOCATIONS AND ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
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DWG. NO.: \807112es.020
PROJ. NO.: 807112
INITIATOR: GUNDERSON
PROJ. MGR.: SPANGBERG
DRAFT. CHCK. BY: C. TUMLIN
ENGR. CHCK. BY: S. MUFFLER
DATE LAST REV.:
DRAWN BY:
STARTING DATE: 08/31/00
DRAWN BY: B.VANDERGRIFF
02:38:06
04/09/01
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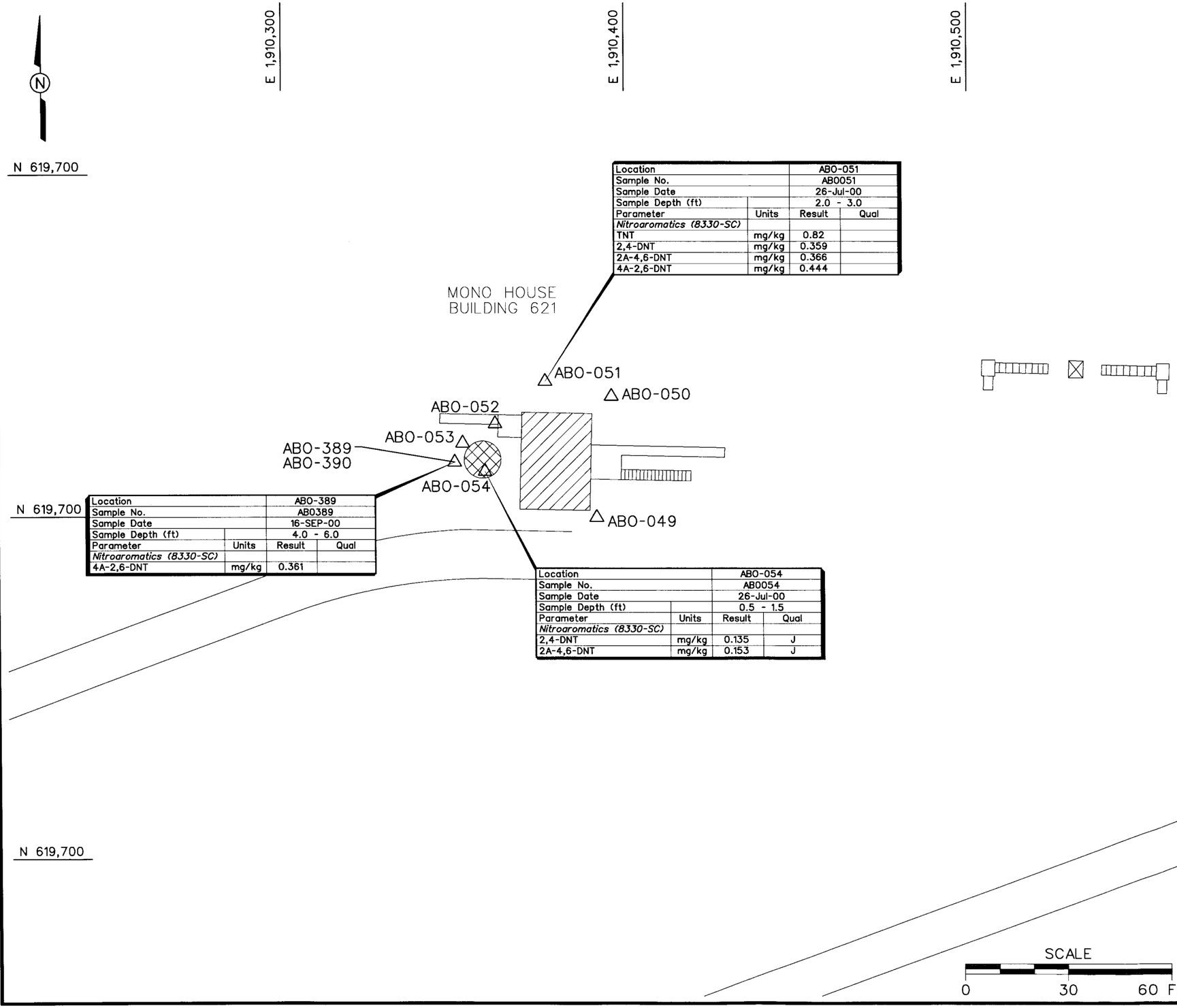

Location		AB0-051	
Sample No.		AB0051	
Sample Date		26-Jul-00	
Sample Depth (ft)		2.0 - 3.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.82	
2,4-DNT	mg/kg	0.359	
2A-4,6-DNT	mg/kg	0.366	
4A-2,6-DNT	mg/kg	0.444	

Location		AB0-389	
Sample No.		AB0389	
Sample Date		16-SEP-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
4A-2,6-DNT	mg/kg	0.361	

Location		AB0-054	
Sample No.		AB0054	
Sample Date		26-Jul-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.135	J
2A-4,6-DNT	mg/kg	0.153	J

LEGEND:

△ AB0-049 SCREENING SOIL SAMPLING LOCATION

TANK

BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0049	1.5 - 2.5
AB0050	0.5 - 1.5
AB0051	2.0 - 3.0
AB0052	0.5 - 1.5
AB0053	0.5 - 1.5
AB0054	0.5 - 1.5
AB0389	4.0 - 6.0
AB0390	6.0 - 7.0

FIGURE 2-26
TNT AREA C
BUILDING 621 MONO HOUSE
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

SCALE
0 30 60 FEET

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
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DWG. NO.:...\807112es.021 | INITIATOR: GUNDERSON | DRAFT. CHCK. BY: C. TUMLIN | DATE LAST REV.: | STARTING DATE: 08/28/00 | 03:09:24
PROJ. NO.: 807112 | PROJ. MGR.: SPANGBERG | ENGR. CHCK. BY: S. MUFFLER | DRAWN BY: | DRAWN BY: B. VANDERGRIFF | 04/06/01
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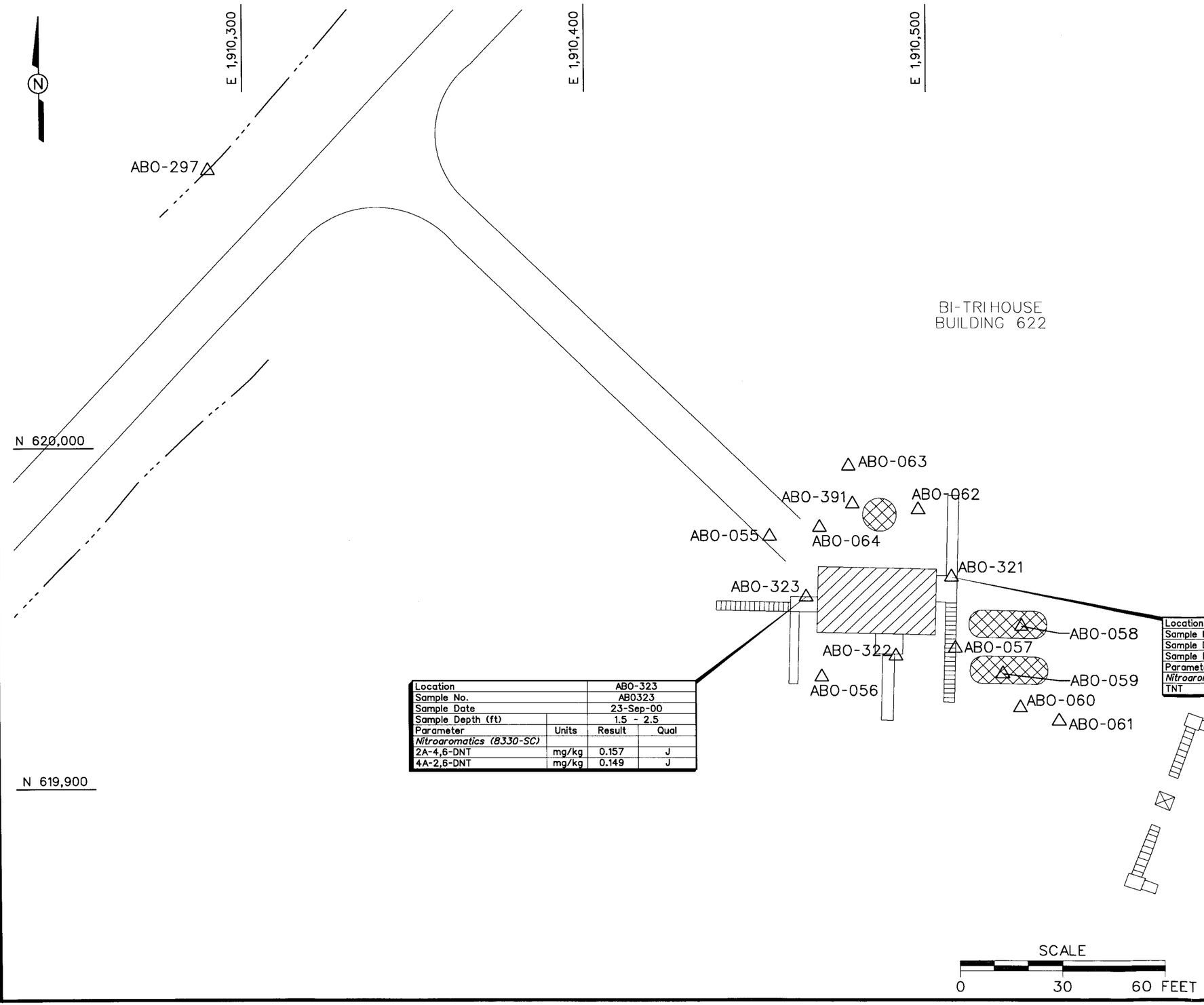

LEGEND:

△ AB0-055 SCREENING SOIL SAMPLING LOCATION

TANK

BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0055	2.5 - 3.5
AB0056	2.5 - 3.5
AB0057	2.5 - 3.5
AB0058	4.0 - 5.0
AB0059	4.0 - 5.0
AB0060	2.5 - 3.5
AB0061	4.0 - 5.0
AB0062	2.5 - 3.5
AB0063	2.5 - 3.5
AB0064	2.5 - 3.5
AB0321	1.5 - 2.5
AB0322	1.5 - 2.5
AB0323	1.5 - 2.5
AB0391	4.0 - 6.0

Location		AB0-321	
Sample No.		AB0321	
Sample Date		23-Sep-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.172	J

Location		AB0-323	
Sample No.		AB0323	
Sample Date		23-Sep-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2A-4,6-DNT	mg/kg	0.157	J
4A-2,6-DNT	mg/kg	0.149	J

FIGURE 2-27
TNT AREA C
BUILDING 622 BI-TRI HOUSE
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
A Member of The IT Group

STARTING DATE: 08/31/00 | DATE LAST REV.: | DRAFT. CHCK. BY: C. TUMLIN | INITIATOR: GUNDERSON | DWG. NO.:..\807112es.022
DRAWN BY: B.VANDERGRIFF | DRAWN BY: | ENGR. CHCK. BY: S. MUFFLER | PROJ. MGR.: SPANGBERG | PROJ. NO.: 807112

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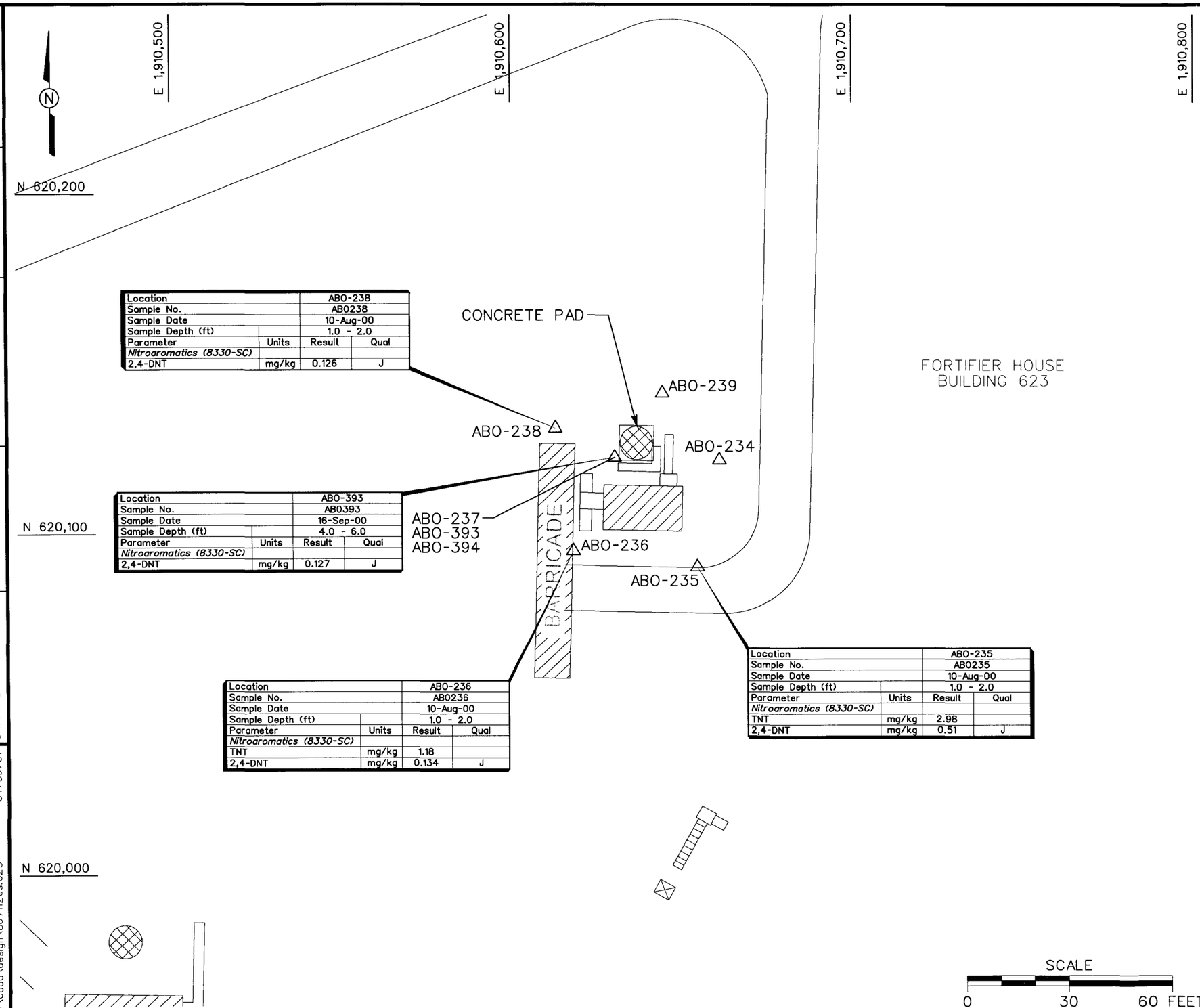

Location		ABO-238	
Sample No.		AB0238	
Sample Date		10-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.126	J

Location		ABO-393	
Sample No.		AB0393	
Sample Date		16-Sep-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.127	J

Location		ABO-236	
Sample No.		AB0236	
Sample Date		10-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	1.18	
2,4-DNT	mg/kg	0.134	J

Location		ABO-235	
Sample No.		AB0235	
Sample Date		10-Aug-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	2.98	
2,4-DNT	mg/kg	0.51	J

LEGEND:

△ ABO-234 SCREENING SOIL SAMPLING LOCATION

TANK

BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0234	1.0 - 2.0
AB0235	1.0 - 2.0
AB0236	1.0 - 2.0
AB0237	1.0 - 2.0
AB0238	1.0 - 2.0
AB0239	1.5 - 2.5
AB0392	1.0 - 2.0
AB0393	4.0 - 6.0
AB0394	8.0 - 10.0

SCALE

0 30 60 FEET

FIGURE 2-28
TNT AREA C
BUILDING 623 FORTIFIER HOUSE
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT *A Member of The IT Group*

DWG. NO.: \807112es.023
PROJ. NO.: 807112
INITIATOR: GUNDERSON
PROJ. MGR.: SPANGBERG
DRAFT. CHCK. BY: C. TUMLIN
ENGR. CHCK. BY: S. MUFFLER
DATE LAST REV.:
DRAWN BY:
STARTING DATE: 08/31/00
DRAWN BY: B.VANDERGRIFF
01:20:59
04/09/01
bvanderg
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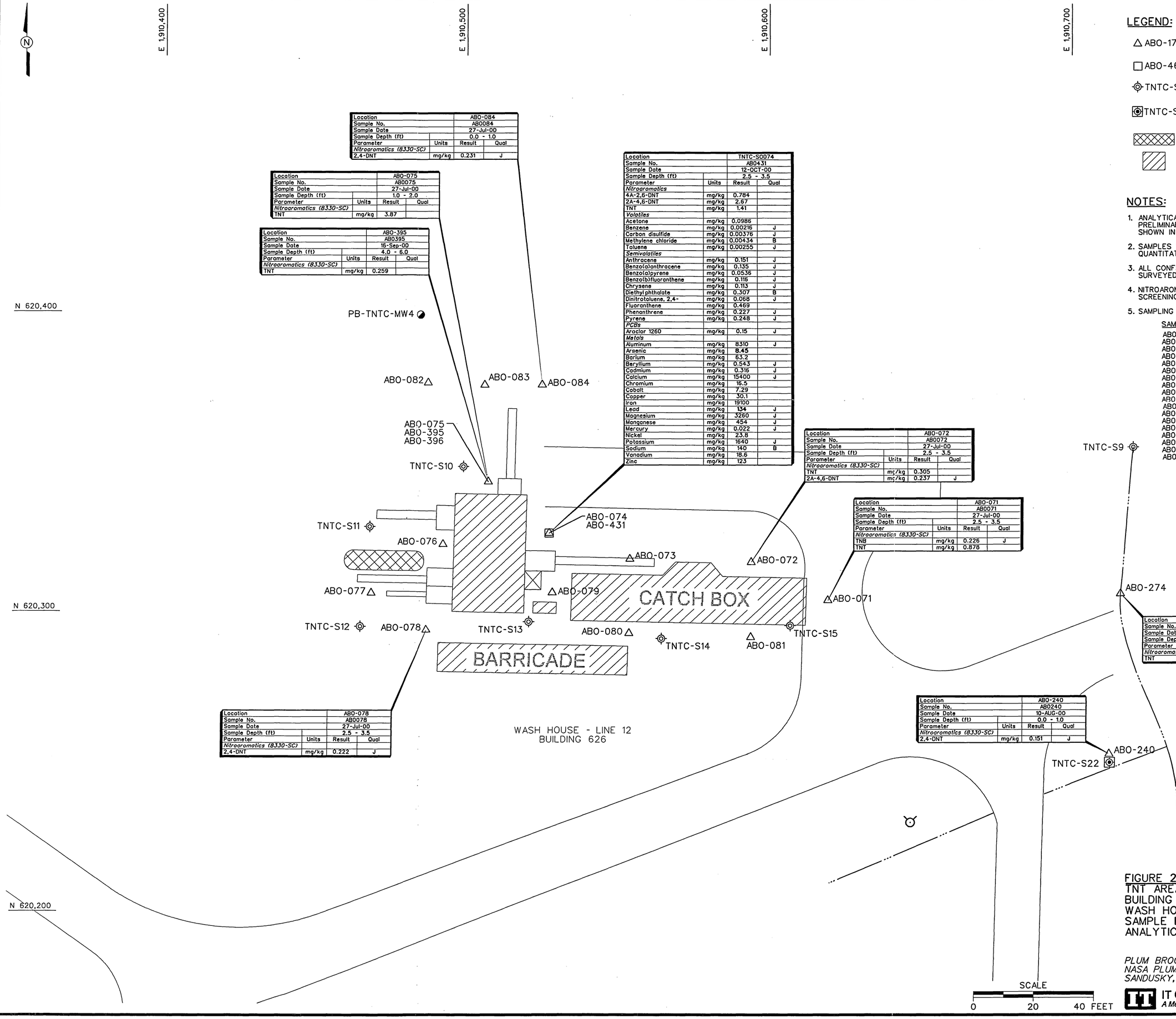


Location		AB0-084	
Sample No.		AB0084	
Sample Date		27-Jul-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.231	J

Location		AB0-075	
Sample No.		AB0075	
Sample Date		27-Jul-00	
Sample Depth (ft)		1.0 - 2.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	3.87	

Location		AB0-395	
Sample No.		AB0395	
Sample Date		16-Sep-00	
Sample Depth (ft)		4.0 - 6.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.259	

Location		TNTC-S0074	
Sample No.		AB0431	
Sample Date		12-OCT-00	
Sample Depth (ft)		2.5 - 3.5	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	0.784	
2A-4,6-DNT	mg/kg	2.67	
TNT	mg/kg	1.41	
Volatiles			
Acetone	mg/kg	0.0986	
Benzene	mg/kg	0.00216	J
Carbon disulfide	mg/kg	0.00376	J
Methylene chloride	mg/kg	0.00434	B
Toluene	mg/kg	0.00255	J
Semivolatiles			
Anthracene	mg/kg	0.151	J
Benzo(a)anthracene	mg/kg	0.135	J
Benzo(a)pyrene	mg/kg	0.0536	J
Benzo(b)fluoranthene	mg/kg	0.116	J
Chrysene	mg/kg	0.113	J
Diethylphthalate	mg/kg	0.307	B
Dinitrotoluene, 2,4-	mg/kg	0.068	J
Fluoranthene	mg/kg	0.469	
Phenanthrene	mg/kg	0.227	J
Pyrene	mg/kg	0.248	J
PCBs			
Aroclor 1260	mg/kg	0.15	J
Metals			
Aluminum	mg/kg	8310	J
Arsenic	mg/kg	**8.45**	
Barium	mg/kg	63.2	
Beryllium	mg/kg	0.543	J
Cadmium	mg/kg	0.316	J
Calcium	mg/kg	15400	J
Chromium	mg/kg	16.5	
Cobalt	mg/kg	7.29	
Copper	mg/kg	30.1	
Iron	mg/kg	19100	
Lead	mg/kg	1.34	J
Magnesium	mg/kg	3280	J
Manganese	mg/kg	454	J
Mercury	mg/kg	0.022	J
Nickel	mg/kg	23.8	
Potassium	mg/kg	1640	J
Sodium	mg/kg	140	B
Vanadium	mg/kg	18.6	
Zinc	mg/kg	12.3	

Location		AB0-072	
Sample No.		AB0072	
Sample Date		27-Jul-00	
Sample Depth (ft)		2.5 - 3.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.305	
2A-4,6-DNT	mg/kg	0.237	J

Location		AB0-071	
Sample No.		AB0071	
Sample Date		27-Jul-00	
Sample Depth (ft)		2.5 - 3.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.226	J
TNT	mg/kg	0.878	

Location		AB0-274	
Sample No.		AB0274	
Sample Date		19-Aug-00	
Sample Depth (ft)		0.0 -0.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.301	

Location		AB0-240	
Sample No.		AB0240	
Sample Date		10-AUG-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.151	J

Location		AB0-078	
Sample No.		AB0078	
Sample Date		27-Jul-00	
Sample Depth (ft)		2.5 - 3.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.222	J

LEGEND:

△ AB0-178	SCREENING SOIL SAMPLING LOCATION
□ AB0-465	CONFIRMATION SOIL SAMPLING LOCATION
TNTC-S10	HISTORICAL SOIL BORING LOCATION
TNTC-S22	HISTORICAL SOIL BORING LOCATION WITH EXPLOSIVES DETECTION
	TANK
	BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

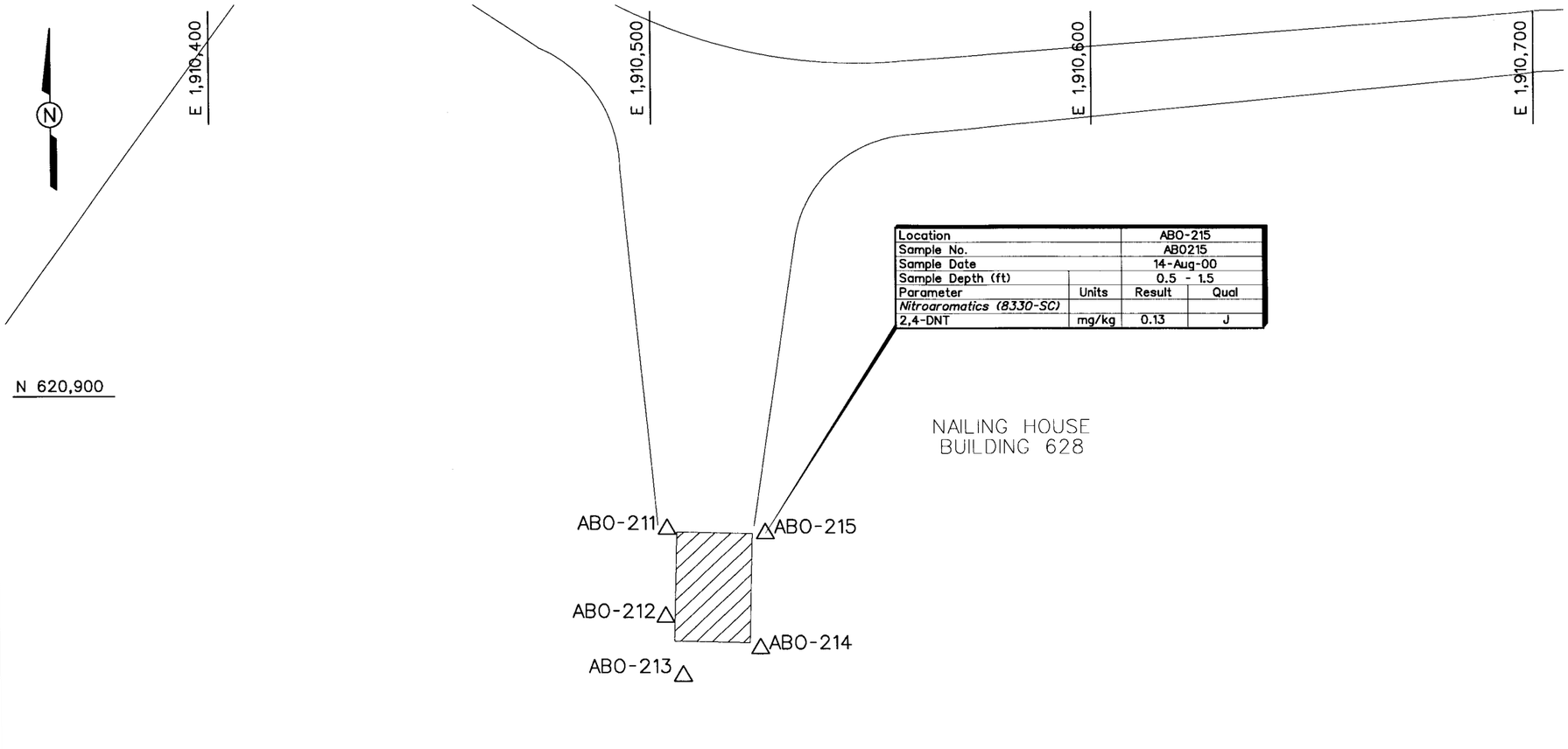
SAMPLE	DEPTH (FT)
AB0071	2.5 - 3.5
AB0072	2.5 - 3.5
AB0073	2.5 - 3.5
AB0074	2.5 - 3.5
AB0075	1.0 - 2.0
AB0076	2.5 - 3.5
AB0077	2.5 - 3.5
AB0078	2.5 - 3.5
AB0079	2.5 - 3.5
AB0080	2.5 - 3.5
AB0081	2.5 - 3.5
AB0082	0.0 - 1.0
AB0083	0.0 - 1.0
AB0084	0.0 - 1.0
AB0240	0.0 - 1.0
AB0395	4.0 - 6.0
AB0396	8.0 - 10.0
AB0431	2.5 - 3.5

FIGURE 2-29
TNT AREA C
BUILDING 626
WASH HOUSE - LINE 12
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
A Member of The IT Group

STARTING DATE: 10/30/00 | DATE LAST REV.: | DRAFT | INITIATOR: GUNDERSON | DWG. NO.: 807112ES 028



Location		AB0-215	
Sample No.		AB0215	
Sample Date		14-Aug-00	
Sample Depth (ft)		0.5 - 1.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.13	J

LEGEND:

△ AB0-211 — SCREENING SOIL SAMPLING LOCATION

TANK

BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0211	0.75 - 1.75
AB0212	0.5 - 1.5
AB0213	1.0 - 2.0
AB0214	1.0 - 2.0
AB0215	0.5 - 1.5

SCALE

0 30 60 FEET

FIGURE 2-30
TNT AREA C
BUILDING 628 NAILING HOUSE
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
A Member of The IT Group

STARTING DATE: 08/28/00 | DATE LAST REV.: | DRAFT. CHCK. BY: C. TUMLIN | INITIATOR: GUNDERSON | DWG. NO.: ...\807112es.012
DRAWN BY: B.VANDERGRIFF | DRAWN BY: | ENGR. CHCK. BY: S. MUFFLER | PROJ. MGR.: SPANGBERG | PROJ. NO.: 807112

02:54:16 03/15/01
bvanderg
c:\cadd\design\807112es.012

STARTING DATE: 08/01/00 | DATE LAST REV.: | INITIATOR: GUNDERSON | DWG. NO.: 807112es.008

DRAWN BY: B.VANDERGRIFF | DRAWN BY: | DRAFT. CHCK. BY: C. TUMLIN | ENGR. CHCK. BY: S. MUFFLER | PROJ. MGR.: SPANGBERG | PROJ. NO.: 807112

E 1,910,000 E 1,910,100 E 1,910,200 E 1,910,300 E 1,910,400

N 619,900 N 619,800 N 619,700 N 619,600

Location		TNTC-S0066	
Sample No.		AB0429	
Sample Date		27-SEP-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics			
4A-2,6-DNT	mg/kg	0.0721	J
2A-4,6-DNT	mg/kg	0.0538	J
DNT	mg/kg	0.451	
TNT	mg/kg	0.164	
Volatiles			
Acetone	mg/kg	0.445	
Butanone, 2-	mg/kg	0.0818	
Carbon disulfide	mg/kg	0.0123	
Methylene chloride	mg/kg	0.0188	B
Semivolatiles			
Dinitrotoluene, 2,4-	mg/kg	0.239	J
Dinitrotoluene, 2,6-	mg/kg	0.0668	J
PCBs			
Aroclor 1260	mg/kg	**5.07**	
Metals			
Aluminum	mg/kg	6560	J
Antimony	mg/kg	8.15	J
Arsenic	mg/kg	**7.55**	
Barium	mg/kg	365	
Beryllium	mg/kg	0.602	
Calcium	mg/kg	18500	J
Chromium	mg/kg	11	
Cobalt	mg/kg	9.63	
Copper	mg/kg	17.1	J
Iron	mg/kg	**35500**	
Lead	mg/kg	**132**	J
Magnesium	mg/kg	5780	J
Manganese	mg/kg	**5160**	
Mercury	mg/kg	0.048	
Nickel	mg/kg	15.8	
Potassium	mg/kg	800	
Sodium	mg/kg	223	J
Vanadium	mg/kg	16	
Zinc	mg/kg	93.1	

Location		ABO-066	
Sample No.		AB0066	
Sample Date		26-Jul-00	
Sample Depth (ft)		2.5 - 3.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.42	
DNB	mg/kg	0.15	J
TNT	mg/kg	**14.5**	
2,4-DNT	mg/kg	**40.5**	
4A-2,6-DNT	mg/kg	5.04	
Tetryl	mg/kg	3.9	
o-Nitrotoluene	mg/kg	0.59	
p-Nitrotoluene	mg/kg	0.33	

Location		ABO-363	
Sample No.		AB0363	
Sample Date		14-Sep-00	
Sample Depth (ft)		5.0 - 7.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	4.06	
DNB	mg/kg	0.176	J
TNT	mg/kg	1.21	
2,4-DNT	mg/kg	**319**	
4A-2,6-DNT	mg/kg	0.908	
m-Nitrotoluene	mg/kg	13.6	
o-Nitrotoluene	mg/kg	88.2	
p-Nitrotoluene	mg/kg	120	

Location		ABO-364	
Sample No.		AB0364	
Sample Date		14-Sep-00	
Sample Depth (ft)		8.0 - 10.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNB	mg/kg	0.321	
DNB	mg/kg	0.359	
TNT	mg/kg	**84.2**	
2,4-DNT	mg/kg	**456**	
NB	mg/kg	0.382	
m-Nitrotoluene	mg/kg	71.7	
o-Nitrotoluene	mg/kg	**628**	
p-Nitrotoluene	mg/kg	**597**	

Location		ABO-272	
Sample No.		AB0272	
Sample Date		18-Aug-00	
Sample Depth (ft)		0.0 - 1.0	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.44	
2,4-DNT	mg/kg	**1.41**	
2A-4,6-DNT	mg/kg	0.46	
4A-2,6-DNT	mg/kg	0.32	

ABO-065
ABO-271
ABO-475

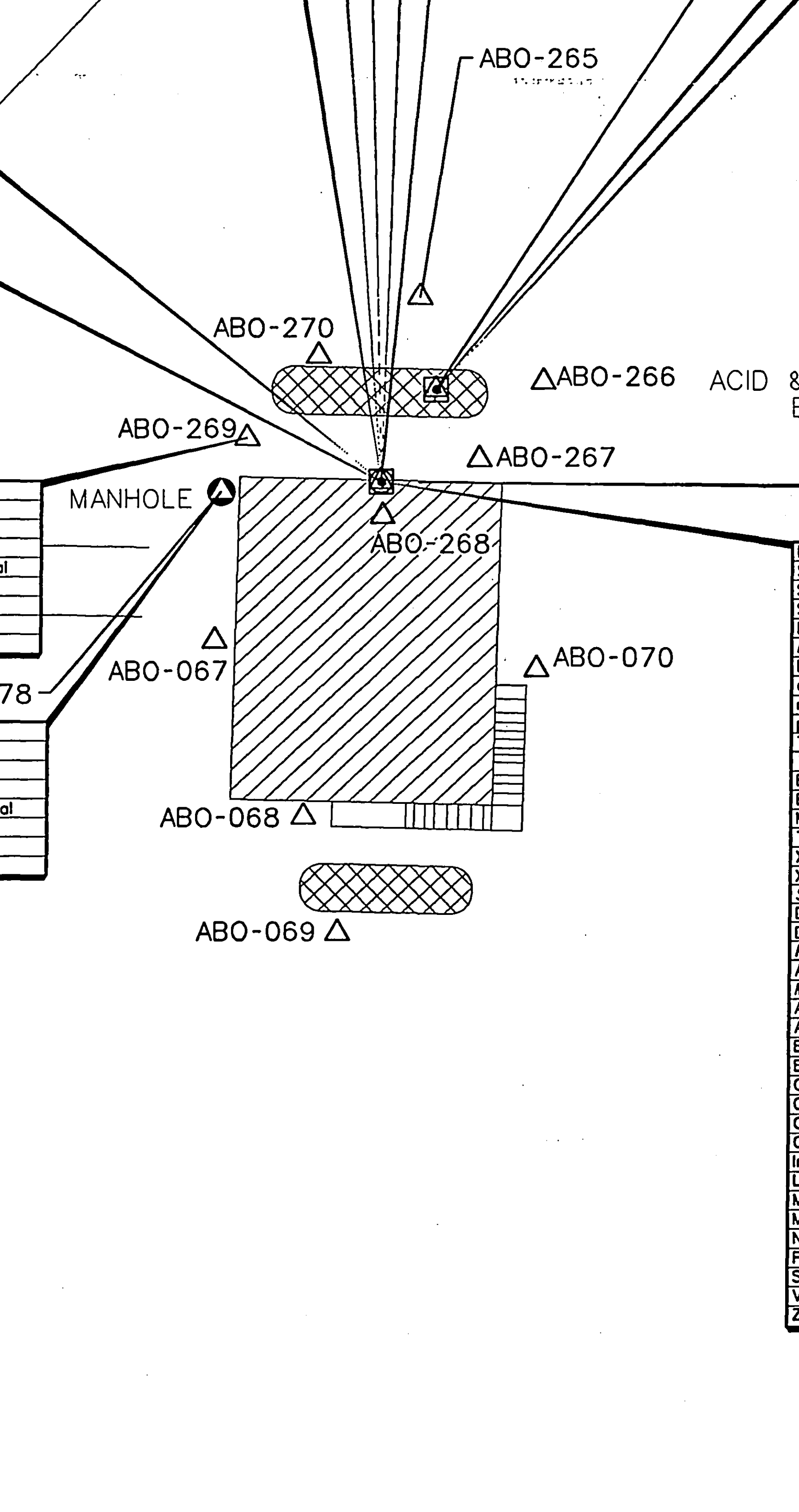
Location		ABO-065	
Sample No.		AB0065	
Sample Date		26-Jul-00	
Sample Depth (ft)		2.5 - 3.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.49	
2,4-DNT	mg/kg	**1.06**	

Location		TNTC-S0065	
Sample No.		AB0475	
Sample Date		12-OCT-00	
Sample Depth (ft)		2.5 - 3.5	
Parameter	Units	Result	Qual
Volatiles			
Acetone	mg/kg	0.112	
Benzene	mg/kg	0.00241	J
Carbon disulfide	mg/kg	0.0109	
Methylene chloride	mg/kg	0.0061	B
Toluene	mg/kg	0.00385	J
Semivolatiles			
Benzo(a)anthracene	mg/kg	0.0454	J
Benzo(a)pyrene	mg/kg	0.043	J
Bis(2-ethylhexyl)phthalate	mg/kg	0.0237	J
Diethyl phthalate	mg/kg	0.585	B
Dinitrotoluene, 2,4-	mg/kg	0.0558	J
PCBs			
Aroclor 1254	mg/kg	**0.969**	
Aroclor 1260	mg/kg	**1.58**	
Metals			
Aluminum	mg/kg	11200	J
Antimony	mg/kg	1.09	B
Arsenic	mg/kg	**6.79**	
Barium	mg/kg	96.6	
Beryllium	mg/kg	0.721	J
Cadmium	mg/kg	0.194	J
Calcium	mg/kg	28700	J
Chromium	mg/kg	14.3	
Cobalt	mg/kg	7.71	
Copper	mg/kg	12.9	
Iron	mg/kg	**30500**	
Lead	mg/kg	41.1	J
Magnesium	mg/kg	3320	J
Manganese	mg/kg	**2120**	J
Mercury	mg/kg	0.068	J
Nickel	mg/kg	21.8	
Potassium	mg/kg	951	J
Sodium	mg/kg	140	B
Vanadium	mg/kg	24.6	
Zinc	mg/kg	96.1	

Location		TNTC-S0066	
Sample No.		AB0461	
Sample Date		28-SEP-00	
Sample Depth (ft)		5.0 - 7.0	
Parameter	Units	Result	Qual
Nitroaromatics			
DNT	mg/kg	**297**	
o-Nitrotoluene	mg/kg	50.8	
m-Nitrotoluene	mg/kg	8.61	
p-Nitrotoluene	mg/kg	67.4	
TNB	mg/kg	3.59	
TNT	mg/kg	5.19	
Volatiles			
Benzene	mg/kg	0.00342	J
Methylene chloride	mg/kg	0.00358	B
Toluene	mg/kg	0.0781	J
Xylene, o-	mg/kg	0.0019	J
Semivolatiles			
Dinitrotoluene, 2,4-	mg/kg	**170**	
Dinitrotoluene, 2,6-	mg/kg	**65.5**	
PCBs			
Aroclor 1260	mg/kg	0.16	J
Metals			
Aluminum	mg/kg	7850	J
Arsenic	mg/kg	**6.06**	
Barium	mg/kg	35.4	
Beryllium	mg/kg	0.595	
Calcium	mg/kg	157000	
Chromium	mg/kg	13.7	
Cobalt	mg/kg	12	
Copper	mg/kg	19.2	
Iron	mg/kg	**32600**	
Lead	mg/kg	9.86	
Magnesium	mg/kg	3670	
Manganese	mg/kg	1130	
Nickel	mg/kg	46.6	
Potassium	mg/kg	2730	
Sodium	mg/kg	292	B
Vanadium	mg/kg	12	
Zinc	mg/kg	44.5	

Location		ABO-269	
Sample No.		AB0269	
Sample Date		18-Aug-00	
Sample Depth (ft)		1.5 - 2.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
2,4-DNT	mg/kg	0.3	
2A-4,6-DNT	mg/kg	0.18	J
4A-2,6-DNT	mg/kg	0.18	J

Location		ABO-278	
Sample No.		AB0278	
Sample Date		19-Aug-00	
Sample Depth (ft)		6.5 - 7.5	
Parameter	Units	Result	Qual
Nitroaromatics (8330-SC)			
TNT	mg/kg	0.55	
2,4-DNT	mg/kg	0.28	



Location		TNTC-S0066	
Sample No.		AB0462	
Sample Date		28-SEP-00	
Sample Depth (ft)		8.0 - 10.0	
Parameter	Units	Result	Qual
Nitroaromatics			
DNT	mg/kg	**36.3**	
o-Nitrotoluene	mg/kg	6.32	
m-Nitrotoluene	mg/kg	1.09	
p-Nitrotoluene	mg/kg	6.59	
TNT	mg/kg	0.167	
Volatiles			
Benzene	mg/kg	0.00492	J
Ethylbenzene	mg/kg	0.00248	J
Methylene chloride	mg/kg	0.00456	B
Toluene	mg/kg	0.0186	J
Xylene, o-	mg/kg	0.00323	J
Xylenes, m,p-	mg/kg	0.00605	J
Semivolatiles			
Dinitrotoluene, 2,4-	mg/kg	**13.2**	
Dinitrotoluene, 2,6-	mg/kg	**6.83**	
PCBs			
Aroclor 1260	mg/kg	0.103	J
Metals			
Aluminum	mg/kg	5180	J
Arsenic	mg/kg	**2.47**	
Barium	mg/kg	22.9	
Beryllium	mg/kg	0.5	
Calcium	mg/kg	225000	
Chromium	mg/kg	9.53	
Cobalt	mg/kg	6.24	
Copper	mg/kg	11	
Iron	mg/kg	11300	
Lead	mg/kg	4.86	B
Magnesium	mg/kg	3390	
Manganese	mg/kg	1620	
Nickel	mg/kg	18.5	
Potassium	mg/kg	2410	
Sodium	mg/kg	387	
Vanadium	mg/kg	8.92	
Zinc	mg/kg	10.9	

Location		TNTC-S0066	
Sample No.		AB0430	
Sample Date		12-OCT-00	
Sample Depth (ft)		2.5 - 3.5	
Parameter	Units	Result	Qual
Nitroaromatics			
DNT	mg/kg	**165**	
o-Nitrotoluene	mg/kg	2.05	
m-Nitrotoluene	mg/kg	4.82	
TNT	mg/kg	**38**	
Volatiles			
Acetone	mg/kg	0.0495	J
Carbon disulfide	mg/kg	0.00365	J
Methylene chloride	mg/kg	0.00902	B
Semivolatiles			
Dinitrotoluene, 2,4-	mg/kg	**43.1**	
Dinitrotoluene, 2,6-	mg/kg	**6.92**	
PCBs			
Aroclor 1260	mg/kg	**2.09**	J
Metals			
Aluminum	mg/kg	2330	J
Arsenic	mg/kg	**7.43**	
Barium	mg/kg	427	
Beryllium	mg/kg	0.219	J
Calcium	mg/kg	28200	J
Chromium	mg/kg	3.71	
Cobalt	mg/kg	0.297	J
Copper	mg/kg	3.56	
Iron	mg/kg	4010	
Lead	mg/kg	**761**	J
Magnesium	mg/kg	422	J
Manganese	mg/kg	105	J
Mercury	mg/kg	0.059	J
Nickel	mg/kg	4.17	
Potassium	mg/kg	1180	J
Sodium	mg/kg	78.2	B
Vanadium	mg/kg	6.68	
Zinc	mg/kg	5.8	

LEGEND:

- △ ABO-065 SCREENING SOIL SAMPLING LOCATION
- • ABO-271 SURFACE SOIL SAMPLE (0 - 1 FT)
- ○ GW-01 GROUNDWATER SAMPLING LOCATION
- □ ABO-475 CONFIRMATION SOIL SAMPLING LOCATION
- TANK
- BUILDING

NOTES:

1. ANALYTICAL RESULTS EXCEEDING REGION 9 PRELIMINARY REMEDIATION GOALS ARE SHOWN IN BOLD TEXT.
2. SAMPLES WITH NO POSTED DATA ARE BELOW QUANTITATION LIMITS FOR ALL NITROAROMATICS.
3. ALL CONFIRMATION SAMPLING LOCATIONS WERE SURVEYED.
4. NITROAROMATICS (8330-SC) INDICATES SCREENING ANALYSES.
5. SAMPLING DEPTHS

SAMPLE	DEPTH (FT)
AB0065	2.5 - 3.5
AB0066	2.5 - 3.5
AB0067	0.0 - 1.0
AB0068	1.0 - 2.0
AB0069	1.0 - 2.0
AB0070	0.0 - 1.0
AB0265	1.0 - 2.0
AB0266	1.0 - 2.0
AB0267	1.0 - 1.75
AB0268	1.0 - 2.0
AB0269	1.5 - 2.5
AB0270	1.0 - 2.0
AB0271	0.0 - 1.0
AB0272	0.0 - 1.0
AB0278	6.5 - 7.0
AB0297	0.0 - 1.0
AB0363	5.0 - 7.0
AB0364	8.0 - 10.0
AB0427	1.0 - 2.0
AB0428	1.0 - 2.0
AB0429	0.0 - 1.0
AB0430	2.5 - 3.5
AB0461	5.0 - 7.0
AB0462	8.0 - 10.0
AB0475	2.5 - 3.5

SCALE
0 30 60 FEET

FIGURE 2-31
TNT AREA C
BUILDING 629
ACID & FUME RECOVERY
SAMPLE LOCATIONS AND
ANALYTICAL RESULTS

PLUM BROOK ORDNANCE WORKS
NASA PLUM BROOK STATION
SANDUSKY, OHIO

IT CORPORATION
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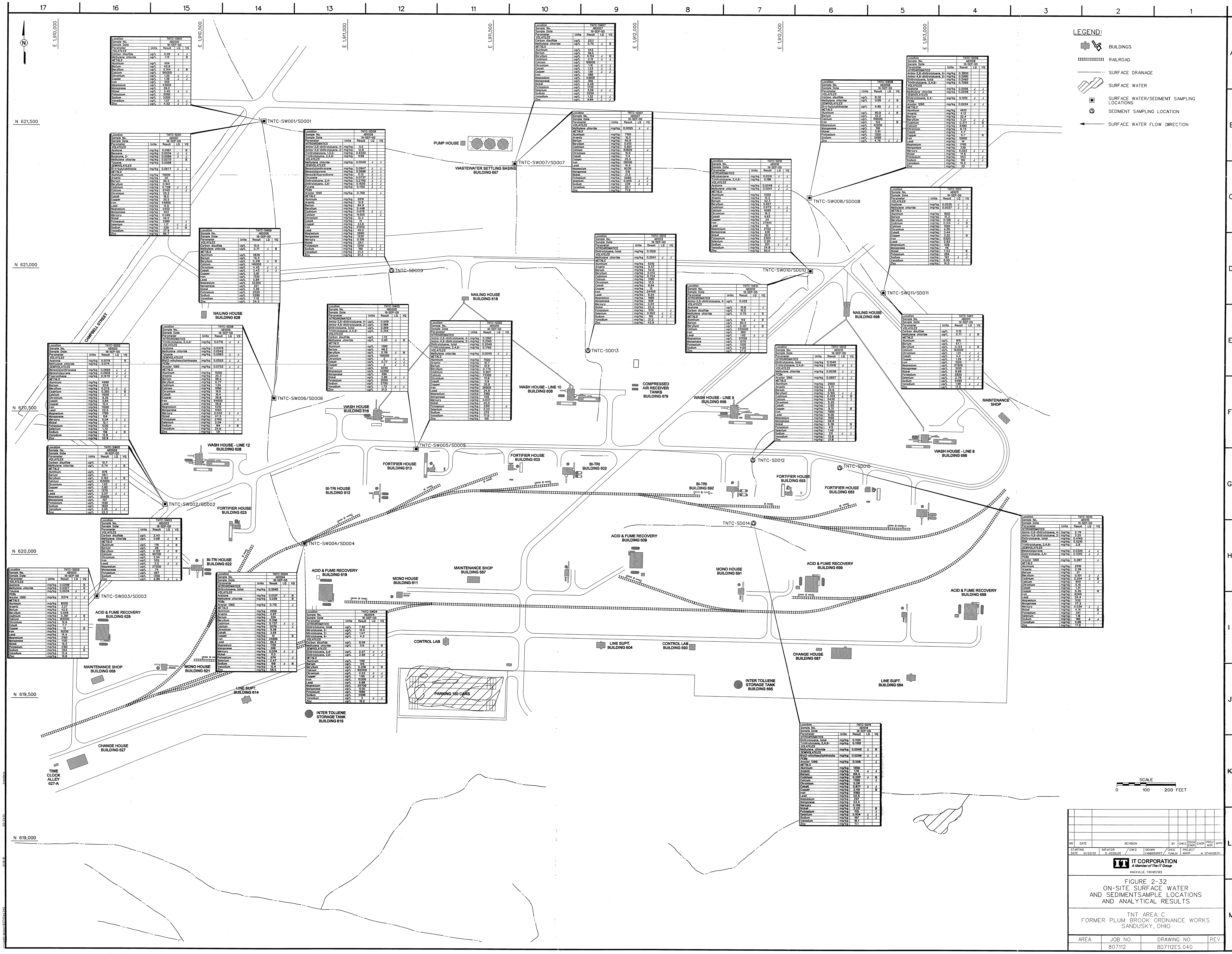


Location		TNTC-SW01		
Sample No.		AB2001		
Sample Date		18-SEP-00		
Parameter	Units	Result	LQ	VQ
VOLATILES				
Carbon disulfide	ug/L	0.59	J	J
Methylene chloride	ug/L	1.13		B
METALS				
Aluminum	ug/L	454		
Barium	ug/L	40.9		
Beryllium	ug/L	0.144	J	B
Calcium	ug/L	195000		
Chromium	ug/L	1.35	J	J
Copper	ug/L	1.36	J	J
Iron	ug/L	455		
Magnesium	ug/L	43900		
Manganese	ug/L	69.2		
Nickel	ug/L	3.49	J	J
Potassium	ug/L	2090		
Sodium	ug/L	5300		
Vanadium	ug/L	1.07	J	J
Zinc	ug/L	4.52	J	J

Location		TNTC-SD01		
Sample No.		AB1001		
Sample Date		18-SEP-00		
Parameter	Units	Result	LQ	VQ
VOLATILES				
Acetone	mg/kg	0.0187		B
Benzene	mg/kg	0.0034	J	J
Butanone, 2-	mg/kg	0.0099	J	J
Methylene chloride	mg/kg	0.0275		B
Toluene	mg/kg	0.0068		
SEMIVOLATILES				
Di-n-butyl phthalate	mg/kg	0.0677	J	J
METALS				
Aluminum	mg/kg	15600		
Arsenic	mg/kg	20		
Barium	mg/kg	94.2		
Beryllium	mg/kg	0.941		
Cadmium	mg/kg	0.728	J	J
Calcium	mg/kg	6740		J
Chromium	mg/kg	25.2		
Cobalt	mg/kg	18.5		
Copper	mg/kg	30.5		
Iron	mg/kg	44800		
Lead	mg/kg	15.9		
Magnesium	mg/kg	5450		
Manganese	mg/kg	943		
Mercury	mg/kg	0.046		
Nickel	mg/kg	46.5		
Potassium	mg/kg	3280		J
Selenium	mg/kg	1.17	J	J
Sodium	mg/kg	229	J	B
Vanadium	mg/kg	37.9		
Zinc	mg/kg	86.7		

Location		TNTC-SW06		
Sample No.		AB2006		
Sample Date		18-SEP-00		
Parameter	Units	Result	LQ	VQ
VOLATILES				
Carbon disulfide	ug/L	10.5		
Methylene chloride	ug/L	0.71	J	B
METALS				
Aluminum	ug/L	3830		
Barium	ug/L	76.3		
Beryllium	ug/L	0.316	J	B
Calcium	ug/L	146000		
Chromium	ug/L	4.45	J	J
Cobalt	ug/L	2.43	J	J
Copper	ug/L	5.81		
Iron	ug/L	7510		
Lead	ug/L	5.84		
Magnesium	ug/L	32300		
Manganese	ug/L	621		
Nickel	ug/L	5.99		
Potassium	ug/L	2520		
Sodium	ug/L	5290		
Vanadium	ug/L	7.12		
Zinc	ug/L	24.3		

Location		TNTC-SD09		
Sample No.		AB1009		
Sample Date		19-SEP-00		
Parameter	Units	Result	LQ	VQ
NITROAROMATICS				
Amino-2,6-dinitrotoluene, 4-	mg/kg	11.2		
Amino-4,6-dinitrotoluene, 2-	mg/kg	12.8		
Trinitrobenzene, 1,3,5-	mg/kg	0.8320		
Trinitrotoluene, 2,4,6-	mg/kg	1496		
VOLATILES				
Methylene chloride	mg/kg	0.0049	J	J
SEMIVOLATILES				
Benzo(a)anthracene	mg/kg	0.0947	J	J
Benzo(a)pyrene	mg/kg	0.0699	J	J
Benzo(b)fluoranthene	mg/kg	0.12	J	J
Chrysene	mg/kg	0.0737	J	J
Dinitrotoluene, 2,4-	mg/kg	0.2760	J	J
Dinitrotoluene, 2,6-	mg/kg	0.1830	J	J
Pyrene	mg/kg	0.1100	J	J
PCBs				
Aroclor 1260	mg/kg	0.769		J
METALS				
Aluminum	mg/kg	9210		
Arsenic	mg/kg	12.6		
Barium	mg/kg	84.9		
Beryllium	mg/kg	0.498		
Cadmium	mg/kg	0.675	J	J
Calcium	mg/kg	14300		J
Chromium	mg/kg	12.3		
Cobalt	mg/kg	14		
Copper	mg/kg	23.8		
Iron	mg/kg	21200		
Lead	mg/kg	46.2		
Magnesium	mg/kg	2660		
Manganese	mg/kg	1230		
Mercury	mg/kg	0.156		
Nickel	mg/kg	29.1		
Potassium	mg/kg	1240		J
Sodium	mg/kg	190	J	J
Vanadium	mg/kg	21.3		
Zinc	mg/kg	61.3		

Location		TNTC-SD06		
Sample No.		AB1006		
Sample Date		18-SEP-00		
Parameter	Units	Result	LQ	VQ
NITROAROMATICS				
Trinitrotoluene, 2,4,6-	mg/kg	0.0715	J	J
VOLATILES				
Acetone	mg/kg	0.0379		
Methylene chloride	mg/kg	0.0542		
Toluene	mg/kg	0.0063	J	J
SEMIVOLATILES				
Bis(2-ethylhexyl)phthalate	mg/kg	0.0553	J	J
PCBs				
Aroclor 1260	mg/kg	0.0733	J	J
METALS				
Aluminum	mg/kg	11000		
Arsenic	mg/kg	25.3		
Barium	mg/kg	98.2		
Beryllium	mg/kg	0.77		
Cadmium	mg/kg	1.24		
Calcium	mg/kg	9160		J
Chromium	mg/kg	19.5		
Cobalt	mg/kg	18.4		
Copper	mg/kg	38.8		
Iron	mg/kg	64600		
Lead	mg/kg	38.9		
Magnesium	mg/kg	4210		
Manganese	mg/kg	1040		
Mercury	mg/kg	0.033	J	J
Nickel	mg/kg	47.3		
Potassium	mg/kg	2760		J
Selenium	mg/kg	2.04		
Sodium	mg/kg	164	J	B
Vanadium	mg/kg	24.6		
Zinc	mg/kg	131		

Location		TNTC-SD02		
Sample No.		AB1002		
Sample Date		18-SEP-00		
Parameter	Units	Result	LQ	VQ
VOLATILES				
Acetone	mg/kg	0.0179		B
Methylene chloride	mg/kg	0.074		
SEMIVOLATILES				
Benzo(a)anthracene	mg/kg	0.0693	J	J
Benzo(a)pyrene	mg/kg	0.0602	J	J
Fluoranthene	mg/kg	0.1470	J	J
METALS				
Aluminum	mg/kg	4990		
Barium	mg/kg	33.6		
Beryllium	mg/kg	0.272	J	J
Cadmium	mg/kg	0.365	J	B
Calcium	mg/kg	11500		J
Chromium	mg/kg	9.35		
Cobalt	mg/kg	3.84		
Copper	mg/kg	15.4		
Iron	mg/kg	11500		
Lead	mg/kg	22.5		
Magnesium	mg/kg	1790		
Manganese	mg/kg	154		
Mercury	mg/kg	0.04	J	J
Nickel	mg/kg	12.1		
Potassium	mg/kg	1230		J
Selenium	mg/kg	1.72		
Sodium	mg/kg	196	J	B
Vanadium	mg/kg	12.9		
Zinc	mg/kg	52.9		

Location		TNTC-SW05		
Sample No.		AB2005		
Sample Date		19-SEP-00		
Parameter	Units	Result	LQ	VQ
NITROAROMATICS				
Amino-2,6-dinitrotoluene, 4-	ug/L	0.549		
Amino-4,6-dinitrotoluene, 2-	ug/L	0.984		
Dinitrotoluene, total	ug/L	0.969		
Trinitrotoluene, 2,4,6-	ug/L	0.344		
VOLATILES				
Carbon disulfide	ug/L	1.72		
Methylene chloride	ug/L	0.93	J	B
METALS				
Aluminum	ug/L	1360		
Barium	ug/L	48.2		
Beryllium	ug/L	0.119	J	B
Calcium	ug/L	156000		
Chromium	ug/L	2	J	J
Cobalt	ug/L	2.77	J	J
Copper	ug/L	3	J	J
Iron	ug/L	5540		
Magnesium	ug/L	33300		
Manganese	ug/L	694		
Nickel	ug/L	2.86	J	J
Potassium	ug/L	2050		
Sodium	ug/L	2750		
Vanadium	ug/L	1.73	J	J
Zinc	ug/L	21.3		

Location		TNTC-SW02		
Sample No.		AB2002		
Sample Date		18-SEP-00		
Parameter	Units	Result	LQ	VQ
VOLATILES				
Carbon disulfide	ug/L	12.7		
Methylene chloride	ug/L	0.74	J	B
METALS				
Aluminum	ug/L	876		
Barium	ug/L	28.1		
Beryllium	ug/L	0.162	J	B
Calcium	ug/L	103000		
Chromium	ug/L	1.93	J	J
Copper	ug/L	3.82	J	J
Iron	ug/L	1370		
Lead	ug/L	2.57	J	J
Magnesium	ug/L	25600		
Manganese	ug/L	167		
Potassium	ug/L	1490		
Sodium	ug/L	1820		
Vanadium	ug/L	2.05	J	J
Zinc	ug/L	22.3		

Location		TNTC-SW03		
Sample No.		AB2003		
Sample Date		18-SEP-00		
Parameter	Units	Result	LQ	VQ
VOLATILES				
Carbon disulfide	ug/L	2.43		
Methylene chloride	ug/L	0.68	J	B
METALS				
Aluminum	ug/L	176	J	B
Barium	ug/L	28		
Beryllium	ug/L	0.122	J	B
Calcium	ug/L	99700		
Chromium	ug/L	2.04	J	J
Iron	ug/L	555		
Lead	ug/L	2.2	J	J
Magnesium	ug/L	27200		
Manganese	ug/L	74		
Potassium	ug/L	967		
Sodium	ug/L	1350		
Zinc	ug/L	6.88	J	J

Location		TNTC-SD03		
Sample No.		AB1003		
Sample Date		18-SEP-00		
Parameter	Units	Result	LQ	VQ
VOLATILES				
Acetone	mg/kg	0.0298		B
Methylene chloride	mg/kg	0.0327		B
Toluene	mg/kg	0.0034	J	J
PCBs				
Aroclor 1260	mg/kg	.0374	J	J
METALS				
Aluminum	mg/kg	8000		
Arsenic	mg/kg	3.27		
Barium	mg/kg	42.6		
Beryllium	mg/kg	0.646		
Cadmium	mg/kg	0.381	J	B
Calcium	mg/kg	182000		J
Chromium	mg/kg	12.6		
Cobalt	mg/kg	7.7		
Copper	mg/kg	13		B
Iron	mg/kg	16200		
Lead	mg/kg	14.4		
Magnesium	mg/kg	3190		
Manganese	mg/kg	1130		
Nickel	mg/kg	19.3		
Potassium	mg/kg	2160		J
Sodium	mg/kg	263		B
Vanadium	mg/kg	13.4		
Zinc	mg/kg	19.8		

Location		TNTC-SD04		
Sample No.		AB1004		
Sample Date		18-SEP-00		
Parameter	Units	Result	LQ	VQ
NITROAROMATICS				
Dinitrotoluene, total	mg/kg	0.3540		
VOLATILES				
Acetone	mg/kg	0.0137	J	B
Methylene chloride	mg/kg	0.039		B
PCBs				
Aroclor 1260	mg/kg	0.712		J
METALS				
Aluminum	mg/kg	3950		
Arsenic	mg/kg	4.97		
Barium	mg/kg	324		
Beryllium	mg/kg	0.356		
Cadmium	mg/kg	0.737	J	J
Calcium	mg/kg	5070		J
Chromium	mg/kg	9.39		
Cobalt	mg/kg	3.93		
Copper	mg/kg	10		B
Iron	mg/kg	34800		
Lead	mg/kg	86.3		
Magnesium	mg/kg	1130		
Manganese	mg/kg	696		
Mercury	mg/kg	0.034	J	J
Nickel	mg/kg	11.5		
Potassium	mg/kg	674		J
Selenium	mg/kg	2.47		
Sodium	mg/kg	169	J	B
Vanadium	mg/kg	15.4		
Zinc	mg/kg	58.5		

Location		TNTC-SW04		
Sample No.		AB2004		
Sample Date		18-SEP-00		
Parameter	Units	Result	LQ	VQ
NITROAROMATICS				
Dinitrotoluene, total	ug/L	7.92		
Nitrotoluene, 2-	ug/L	10.4		
Nitrotoluene, 3-	ug/L	1.47		
Nitrotoluene, 4-	ug/L	4.3		
VOLATILES				
Carbon disulfide	ug/L	8.09		
Methylene chloride	ug/L	0.6	J	B
SEMIVOLATILES				
Dinitrotoluene, 2,4-	ug/L	2.57	J	J
Dinitrotoluene, 2,6-	ug/L	2.95	J	J
METALS				
Aluminum	ug/L	1190		
Barium	ug/L	125		
Beryllium	ug/L	0.206	J	B
Calcium	ug/L	162000		
Chromium	ug/L	2.23	J	J
Copper	ug/L	1.95	J	J
Iron	ug/L	15300		
Lead	ug/L	6.89		
Magnesium	ug/L	25700		
Manganese	ug/L	1230		
Potassium	ug/L	1880		
Sodium	ug/L	2990		
Vanadium	ug/L	3	J	J
Zinc	ug/L	18.2		

Location		TNTC-SW07		
Sample No.		AB2007		
Sample Date		19-SEP-00		
Parameter	Units	Result	LQ	VQ
VOLATILES				
Carbon disulfide	ug/L	23.1		
Methylene chloride	ug/L	0.75	J	B
METALS				
Aluminum	ug/L	543		
Barium	ug/L	39.5		
Beryllium	ug/L	0.154	J	B
Cadmium	ug/L	2.12	J	J
Calcium	ug/L	199000		
Chromium	ug/L	1.16	J	J
Cobalt	ug/L	1.23	J	J
Copper	ug/L	1.81	J	J
Iron	ug/L	1180		
Magnesium	ug/L	43600		
Manganese	ug/L	392		
Nickel	ug/L	5.48		
Potassium	ug/L	1730		
Selenium	ug/L	3.09	J	J
Sodium	ug/L	5250		
Vanadium	ug/L	1.32	J	J
Zinc	ug/L	9.84	J	J

Location		TNTC-SD07		
Sample No.		AB1007		
Sample Date		19-SEP-00		
Parameter	Units	Result	LQ	VQ
VOLATILES				
Methylene chloride	mg/kg	0.0055	J	J
METALS				
Aluminum	mg/kg	7160		
Arsenic	mg/kg	10.3		
Barium	mg/kg	65.9		
Beryllium	mg/kg	0.613		
Cadmium	mg/kg	0.801		
Calcium	mg/kg	83600		J
Chromium	mg/kg	16.6		
Cobalt	mg/kg	11.4		
Copper	mg/kg	25.5		
Iron	mg/kg	26000		
Lead	mg/kg	14.4		
Magnesium	mg/kg	8230		
Manganese	mg/kg	516		
Nickel	mg/kg	31.3		
Potassium	mg/kg	2680		J
Selenium	mg/kg	0.945	J	J
Sodium	mg/kg	239	J	J
Vanadium	mg/kg	20.1		
Zinc	mg/kg	71.9		

Location		TNTC-SD05		
Sample No.		AB1005		
Sample Date		19-SEP-00		
Parameter	Units	Result	LQ	VQ
NITROAROMATICS				
Amino-2,6-dinitrotoluene, 4-	mg/kg	0.1260		
Amino-4,6-dinitrotoluene, 2-	mg/kg	0.2140		
Dinitrotoluene, total	mg/kg	0.2040		
Trinitrotoluene, 2,4,6-	mg/kg	0.1760		
VOLATILES				
Methylene chloride	mg/kg	0.0045	J	J
METALS				
Aluminum	mg/kg	7520		
Arsenic	mg/kg	10.7		
Barium	mg/kg	61.9		
Beryllium	mg/kg	0.774		
Cadmium	mg/kg	0.907		
Calcium	mg/kg	73300		J
Chromium	mg/kg	13.8		
Cobalt	mg/kg	11.9		
Copper	mg/kg	35.9		
Iron	mg/kg	26800		
Lead	mg/kg	24.9		
Magnesium	mg/kg	3180		
Manganese	mg/kg	405		
Mercury	mg/kg	0.037		
Nickel	mg/kg	45.5		
Potassium	mg/kg	3310		J
Selenium	mg/kg	2.23		
Sodium	mg/kg	272		
Vanadium	mg/kg	17.6		
Zinc	mg/kg	105		

Location		TNTC-SD13		
Sample No.		AB1013		
Sample Date		19-SEP-00		
Parameter	Units	Result	LQ	VQ
NITROAROMATICS				
Dinitrotoluene, total	mg/kg	0.1020		
VOLATILES				
Methylene chloride	mg/kg	0.0041	J	J
METALS				
Aluminum	mg/kg	6310		
Arsenic	mg/kg	9.37		
Barium	mg/kg	52.8		
Beryllium	mg/kg	0.413		
Cadmium	mg/kg	0.754		
Calcium	mg/kg	3180		J
Chromium	mg/kg	12.5		
Cobalt	mg/kg	8.64		
Copper	mg/kg	12		
Iron	mg/kg	24400		
Lead	mg/kg	8.24		
Magnesium	mg/kg	1980		
Manganese	mg/kg	656		
Mercury	mg/kg	0.04		
Nickel	mg/kg	22.5		
Potassium	mg/kg	1010		J
Selenium	mg/kg	0.953	J	J
Sodium	mg/kg	195	J	J
Vanadium	mg/kg	21.2		
Zinc	mg/kg	43.9		

Location		TNTC-SD10		
Sample No.		AB1010		
Sample Date		19-SEP-00		
Parameter	Units	Result	LQ	VQ
NITROAROMATICS				
Nitrobenzene	mg/kg	0.0510	J	J
Trinitrotoluene, 2,4,6-	mg/kg	0.198		
VOLATILES				
Acetone	mg/kg	0.0048	J	J
Methylene chloride	mg/kg	0.0041	J	J
METALS				
Aluminum	mg/kg	11300		
Arsenic	mg/kg	12.2		
Barium	mg/kg	52.3		
Beryllium	mg/kg	0.657		
Cadmium	mg/kg	0.673	J	J
Calcium	mg/kg	4090		J
Chromium	mg/kg	18.3		
Cobalt	mg/kg	9.83		
Copper	mg/kg	24		
Iron	mg/kg	27900		
Lead	mg/kg	15		
Magnesium	mg/kg	3700		
Manganese	mg/kg	428		
Nickel	mg/kg	29.9		
Potassium	mg/kg	2300		J
Selenium	mg/kg	2.20		
Sodium	mg/kg	201	J	J
Vanadium	mg/kg	24.8		
Zinc	mg/kg	83.4		

Location		TNTC-SW10		
Sample No.		AB2010		
Sample Date		19-SEP-00		
Parameter	Units	Result	LQ	VQ
NITROAROMATICS				
Amino-2,6-dinitrotoluene, 4-	ug/L	0.332		
VOLATILES				
Acetone	ug/L	10.8		J
Carbon disulfide	ug/L	10.5		
Methylene chloride	ug/L	0.75	J	B
METALS				
Aluminum	ug/L	152	J	B
Barium	ug/L	80.4		
Beryllium	ug/L	0.101	J	B
Calcium	ug/L	235000		
Iron	ug/L	383		
Lead	ug/L	1.62	J	J
Magnesium	ug/L	51700		
Manganese	ug/L	1370		
Potassium	ug/L	3100		
Sodium	ug/L	4120		
Zinc	ug/L	27.9		

Location		TNTC-SW08		
Sample No.		AB2008		
Sample Date		19-SEP-00		
Parameter	Units	Result	LQ	VQ
VOLATILES				
Carbon disulfide	ug/L	8.32		
Methylene chloride	ug/L	0.69	J	B
SEMIVOLATILES				
Di-n-butylphthalate	ug/L	4.95	J	J
METALS				
Aluminum	ug/L	80.9	J	B
Barium	ug/L	32.2		
Calcium	ug/L	199000		
Iron	ug/L	103		B
Magnesium	ug/L	42200		
Manganese	ug/L	156		
Nickel	ug/L	5.61		
Potassium	ug/L	1300		
Sodium	ug/L	5090		
Zinc	ug/L	4.76	J	J

Location		TNTC-SD08		
Sample No.		AB1008		
Sample Date		19-SEP-00		
Parameter	Units	Result	LQ	VQ
NITROAROMATICS				
Amino-2,6-dinitrotoluene, 4-	mg/kg	0.3850		
Amino-4,6-dinitrotoluene, 2-	mg/kg	0.2990		
Dinitrotoluene, total	mg/kg	0.2460		
Trinitrotoluene, 2,4,6-	mg/kg	0.7060		
VOLATILES				
Acetone	mg/kg	0.0056	J	J
Methylene chloride	mg/kg	0.0048	J	J
SEMIVOLATILES				
Dinitrotoluene, 2,4-	mg/kg	0.1010	J	J
PCBs				
Aroclor 1260	mg/kg	0.0224	J	J
METALS				
Aluminum	mg/kg	4610		
Arsenic	mg/kg	4.13		
Barium	mg/kg	32.4		
Beryllium	mg/kg	0.21	J	J
Cadmium	mg/kg	0.371	J	B
Calcium	mg/kg	6480		J
Chromium	mg/kg	8.73		
Cobalt	mg/kg	4.7		
Copper	mg/kg	9.7		B
Iron	mg/kg	12900		
Lead	mg/kg	14		
Magnesium	mg/kg	1790		
Manganese	mg/kg	239		
Mercury	mg/kg	0.023	J	J
Nickel	mg/kg	14.6		
Potassium	mg/kg	943		J
Sodium	mg/kg	160	J	J
Vanadium	mg/kg	14.2		
Zinc	mg/kg	33		

Location		TNTC-SD11		
Sample No.		AB1011		
Sample Date		19-SEP-00		
Parameter	Units	Result	LQ	VQ
VOLATILES				
Acetone	mg/kg	0.0035	J	J
Methylene chloride	mg/kg	0.0037	J	J
METALS				
Aluminum	mg/kg	1600		
Barium	mg/kg	15.3		
Beryllium	mg/kg	0.128	J	J
Cadmium	mg/kg	0.144	J	B
Calcium	mg/kg	1320		J
Chromium	mg/kg	4.05		
Cobalt	mg/kg	3.44		
Copper	mg/kg	3.22		B
Iron	mg/kg	5320		
Lead	mg/kg	2.83		
Magnesium	mg/kg	528		
Manganese	mg/kg	116		
Nickel	mg/kg	7.53		B
Potassium	mg/kg	284		J
Sodium	mg/kg	193	J	J
Vanadium	mg/kg	6.93		
Zinc	mg/kg	14.5		

Location		TNTC-SW11		
Sample No.		AB2011		
Sample Date		19-SEP-00		
Parameter	Units	Result	LQ	VQ
VOLATILES				
Carbon disulfide	ug/L	3.12		
Methylene chloride	ug/L	0.71	J	B
METALS				
Aluminum	ug/L	815		
Barium	ug/L	67.1		
Beryllium	ug/L	0.123	J	B
Calcium	ug/L	193000		
Chromium	ug/L	1.01	J	J
Cobalt	ug/L	4.4	J	J
Copper	ug/L	1.29	J	J
Iron	ug/L	1520		
Magnesium	ug/L	37900		
Manganese	ug/L	3010		
Nickel	ug/L	8.69		
Potassium	ug/L	2820		
Selenium	ug/L	2.78	J	J
Sodium	ug/L	5480		
Vanadium	ug/L	1.98	J	J
Zinc	ug/L	17.5		

Location		TNTC-SD12		
Sample No.		AB1012		
Sample Date		19-SEP-00		
Parameter	Units	Result	LQ	VQ
NITROAROMATICS				
Dinitrotoluene, total	mg/kg	0.1040		
Trinitrotoluene, 2,4,6-	mg/kg	0.0918	J	J
VOLATILES				
Methylene chloride	mg/kg	0.0038	J	J
PCBs				
Aroclor 1260	mg/kg	0.0807	J	J
METALS				
Aluminum	mg/kg	2900		
Arsenic	mg/kg	2.41		
Barium	mg/kg	22.6		
Beryllium	mg/kg	0.165	J	J
Cadmium	mg/kg	0.303	J	B
Calcium	mg/kg	5430		J
Chromium	mg/kg	5.25		
Cobalt	mg/kg	2.65		
Copper	mg/kg	8.31		B
Iron	mg/kg	7890		
Lead	mg/kg	8.66		
Magnesium	mg/kg	1060		
Manganese	mg/kg	58.9		
Nickel	mg/kg	6.36		B
Potassium	mg/kg	413		J
Selenium	mg/kg	1.46		
Sodium	mg/kg	211	J	J
Vanadium	mg/kg	13.8		
Zinc	mg/kg	21.8		

Location		TNTC-SD15		
Sample No.		AB1015		
Sample Date		19-SEP-00		
Parameter	Units	Result	LQ	VQ
NITROAROMATICS				
Amino-2,6-dinitrotoluene, 4-	mg/kg	2.79		
Amino-4,6-dinitrotoluene, 2-	mg/kg	3.25		
Dinitrotoluene, total	mg/kg	0.4140		
RDX	mg/kg	0.5210		
Trinitrotoluene, 2,4,6-	mg/kg	2.9		
SEMIVOLATILES				
Benzo(a)pyrene	mg/kg	0.0324	J	J
Dinitrotoluene, 2,4-	mg/kg	0.1340	J	J
PCBs				
Aroclor 1260	mg/kg	0.287		J
METALS				
Aluminum	mg/kg	2510		
Arsenic	mg/kg	2.39		
Barium	mg/kg	21		
Beryllium	mg/kg	0.101	J	J
Cadmium	mg/kg	0.254	J	B
Calcium	mg/kg	1610		J
Chromium	mg/kg	5.15		
Cobalt	mg/kg	1.31		
Copper	mg/kg	6.35		B
Iron	mg/kg	6240		
Lead	mg/kg	24.4		
Magnesium	mg/kg	532		
Manganese	mg/kg	37.3		
Mercury	mg/kg	0.034	J	J
Nickel	mg/kg	4.14		B
Potassium	mg/kg	341		J
Selenium	mg/kg	1.16		
Sodium	mg/kg	180	J	J
Vanadium	mg/kg	9.86		
Zinc	mg/kg	17.8		

Location		TNTC-SD14		
Sample No.		AB1014		
Sample Date		19-SEP-00		
Parameter	Units	Result	LQ	VQ
NITROAROMATICS				
Dinitrotoluene, total	mg/kg	0.1120		
Trinitrotoluene, 2,4,6-	mg/kg	0.1100		
VOLATILES				
Methylene chloride	mg/kg	0.0040	J	B
SEMIVOLATILES				
Bis(2-ethylhexyl)phthalate	mg/kg	0.0299	J	J
PCBs				
Aroclor 1260	mg/kg	0.506		J
METALS				
Aluminum	mg/kg	1200		
Arsenic	mg/kg	1.14	J	J
Barium	mg/kg	84.3		
Cadmium	mg/kg	0.297	J	B
Calcium	mg/kg	1760		J
Chromium	mg/kg	5.24		
Cobalt	mg/kg	0.871	J	J
Copper	mg/kg	2.49		B
Iron	mg/kg	9180		
Lead	mg/kg	52.5		
Magnesium	mg/kg	297		
Manganese	mg/kg	53.4		
Mercury	mg/kg	0.146		
Nickel	mg/kg	2.23		B
Potassium	mg/kg	155		J
Selenium	mg/kg	0.904	J	J
Sodium	mg/kg	187	J	J
Vanadium	mg/kg	18.1		
Zinc	mg/kg	11.1		

NO	DATE	REVISION	BY	CHKD	DSGN ENGR	ENGR	PROJ MGR	APPR

STARTING DATE 01/23/01 | INITIATOR D. KESSLER | CHKD | DRAWN VANDERGRIFF | CHKD TUMLIN | PROJECT MNGR M. SPANGBERG

IT CORPORATION
A Member of The IT Group
KNOXVILLE, TENNESSEE

FIGURE 2-32
ON-SITE SURFACE WATER AND SEDIMENTSAMPLE LOCATIONS AND ANALYTICAL RESULTS

TNT AREA C
FORMER PLUM BROOK ORDNANCE WORKS
SANDUSKY, OHIO

AREA	JOB NO.	DRAWING NO.	REV
	807112	807112ES.040	

c:\cadd\design\807112es.040 01:16:10 02/21/01 bvandera

APPENDIX A

SITE PHOTOGRAPHS

TNTC, Building 681, Mono House (9/23/00), SW corner of building foundation. Looking north.

TNTC, Building 606 - Wash House (9/24/00). NE corner of foundation; top, right, concrete of SE corner; bottom, left. Looking north.

TNTC, Building 603 - Fortifier House (9/24/00). Blue stake identifying NE corner of foundation. Looking northeast.

TNTC, Building 613 - Fortifier House (9/24/00). SE corner of building foundation. Looking west.

TNTC, Building 613 - Fortifier House (9/24/00). Sign over barricade foundation. Looking south.

TNTC, Building 612, Bi-Tri House (9/24/00). Southern wall and 5 stakes visible. Looking east.

TNTC, Building 612 - Bi-Tri House (9/24/00). SE corner of foundation. Looking north.

TNTC, Building 616 - Wash House (9/24/00). NW corner of foundation (blue stake), catch box; right, top. Looking east.

13/PB3

TNTC, Building 616 - Wash House (9/24/00). Catch box area with stakes CSO-100/253, CSO-252 on left, CSO-254 (front right), and CSO-317 (back right). Looking east.

TNTC, Building 623 - Fortifier House (9/24/00). Sign on drowning tank pad (actual concrete).
3 stakes visible. Looking north.

APPENDIX B

HTRW DRILL LOGS
TEMPORARY PIEZOMETER CONSTRUCTION DIAGRAMS

HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-375/376	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 601	
5. NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GEOPROBE w/ 2" MACROCORE BARREL	8. HOLE LOCATION: Midpoint of CSO-031,032,033	
	9. SURFACE ELEVATION: NS	
	10. DATE STARTED: 9-16-00	11. DATE COMPLETED: 9-16-00
12. OVERBURDEN THICKNESS: —	15. DEPTH GROUNDWATER ENCOUNTERED: 5'	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS: see sample log SCALE: —

Screening

PROJECT: PBOW	HOLE NO. C-375/376

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-375/376

PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1		PID	BZ			
	2		↓	CO 0% / H_2S 0%			
	3			LEL 0% / O_2 20.7			
	4	Reddish Yellow (7.5 YR 7/8) silty SAND, very fine moist/wet			CSO 375	SP	Water @ 5'
	5		1.8				
	6				4-6'		
	7						
	8	as above			CSO 376		
	9	wet	0.0			SP	
	10				8-10'		

END BORING = TOTAL DEPTH 10'

PROJECT PBOW | HOLE NO. C-375/376

HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-377/378	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 602	
5. NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GeoProbe w/ 2" MACROCORE BARREL	8. HOLE LOCATION: @ Stake CSO-134	
	9. SURFACE ELEVATION: 668.23 Ft N: 620311.15 E: 1911784.86	
	10. DATE STARTED: 9-15-00	11. DATE COMPLETED: 9-15-00
12. OVERBURDEN THICKNESS: —	15. DEPTH GROUNDWATER ENCOUNTERED: 6'	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS: see sample log SCALE: —

Screening

PROJECT: PBOW	HOLE NO. C-377/378

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-377/378

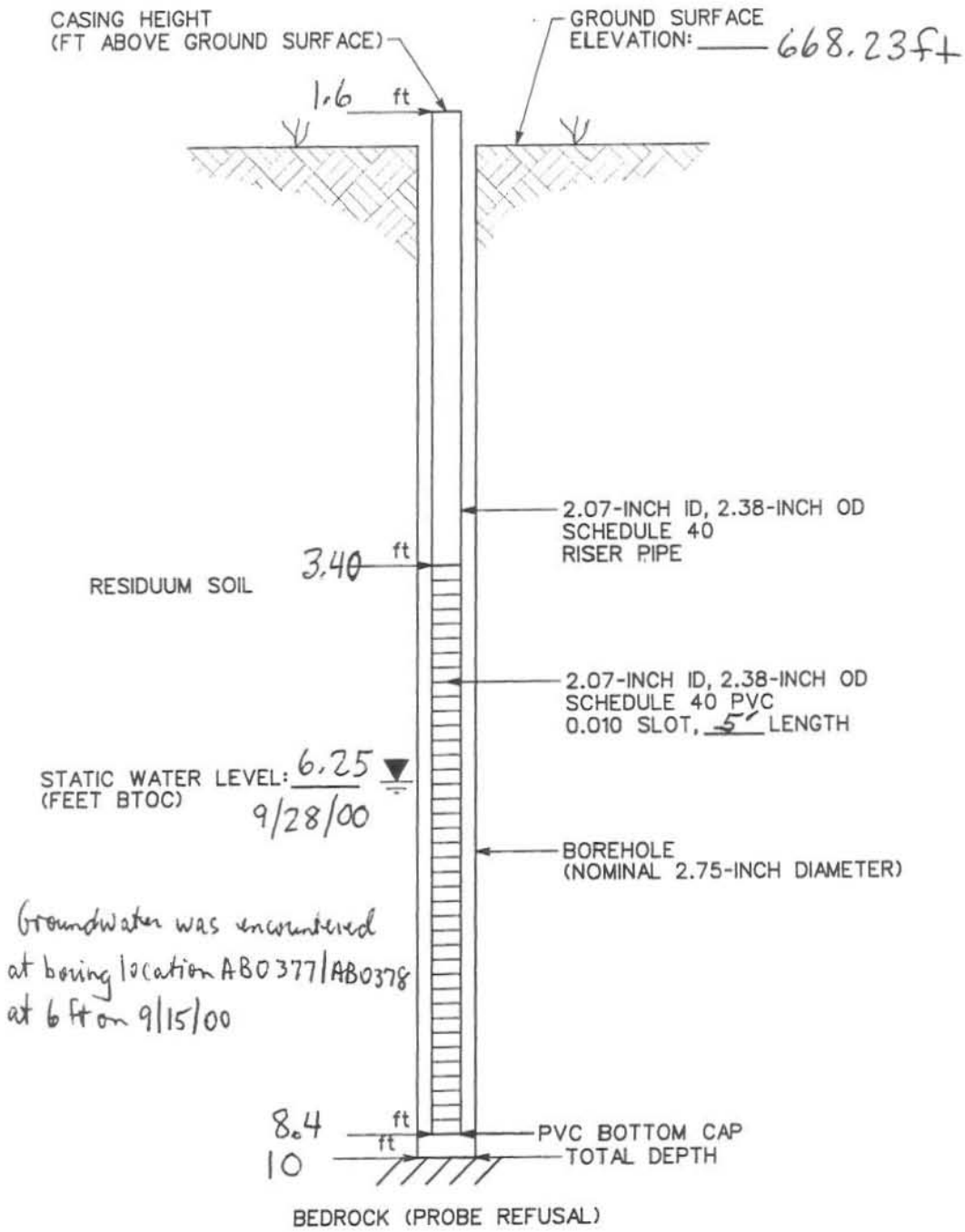
PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
		Topsoil, grass, roots	PID	BZ			
	1		0.0	CO 0% / H_2S 0%			
	2			LEL 0% / O_2 20.7			
	3						
	4						
	5	Yellow to Gray mottled			CSO 377	ml	
	6	(2.5Y7/6 to 2.5Y7/1) clayey silt, sl. moist.	4.0 ppm				water @ 6'
	7	(wet @ 6')			5'-7'		
	8						
		Gray (5Y 5/1) crumbly/			CSO 378		
	9	friable dry SILT	1.8 ppm			ml	
		w/ rock frags.			8'-10'		
	10						
		Total Depth = 10.0 Ft	END of BORING				

PROJECT PBOW | HOLE NO. C-377/378

TEMPORARY SHALLOW PIEZOMETER CONSTRUCTION DIAGRAM

LOCATION: TNT C / Bldg 602



Groundwater was encountered at boring location AB0377/AB0378 at 6 ft on 9/15/00

NOTES:

PIEZOMETER NO.: GW 03

DATE INSTALLED: 9-27-00

DATE REMOVED: 9-29-00

PIEZOMETER CONSTRUCTION DIAGRAM

prepared for:
USACE - NASHVILLE
PLUM BROOK ORDNANCE WORKS

NOT TO SCALE

IT CORPORATION
A Member of The IT Group

STARTING DATE: 07/23/01	DATE LAST REV.:
DRAWN BY: B. VANDERGRIFF	DRAWN BY:
DRAFT. CHCK. BY: C. TUMLIN	INITIATOR: C. WILLIAMS
ENGR. CHCK. BY: C. WILLIAMS	PROJ. MGR.: SPANGBERG
DWG. NO.: \825635ES.018	
PROJ. NO.: 825635	

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HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-379/380	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 603	
5. NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GeoProbe w/ 2" MACROCORE BARREL	8. HOLE LOCATION: Stake CSO-123	
	9. SURFACE ELEVATION: 666.85 Ft N: 620308.33 E: 1911597.37	
	10. DATE STARTED: 9-15-00	11. DATE COMPLETED: 9-15-00
12. OVERBURDEN THICKNESS: —	15. DEPTH GROUNDWATER ENCOUNTERED: 8'	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS: see sample log SCALE: —

Screening

PROJECT: PBOW HOLE NO. C-379/380

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER: C-379/380

PROJECT: PBOW

INSPECTOR: T. Nolen

SHEET 2 OF 2 SHEETS

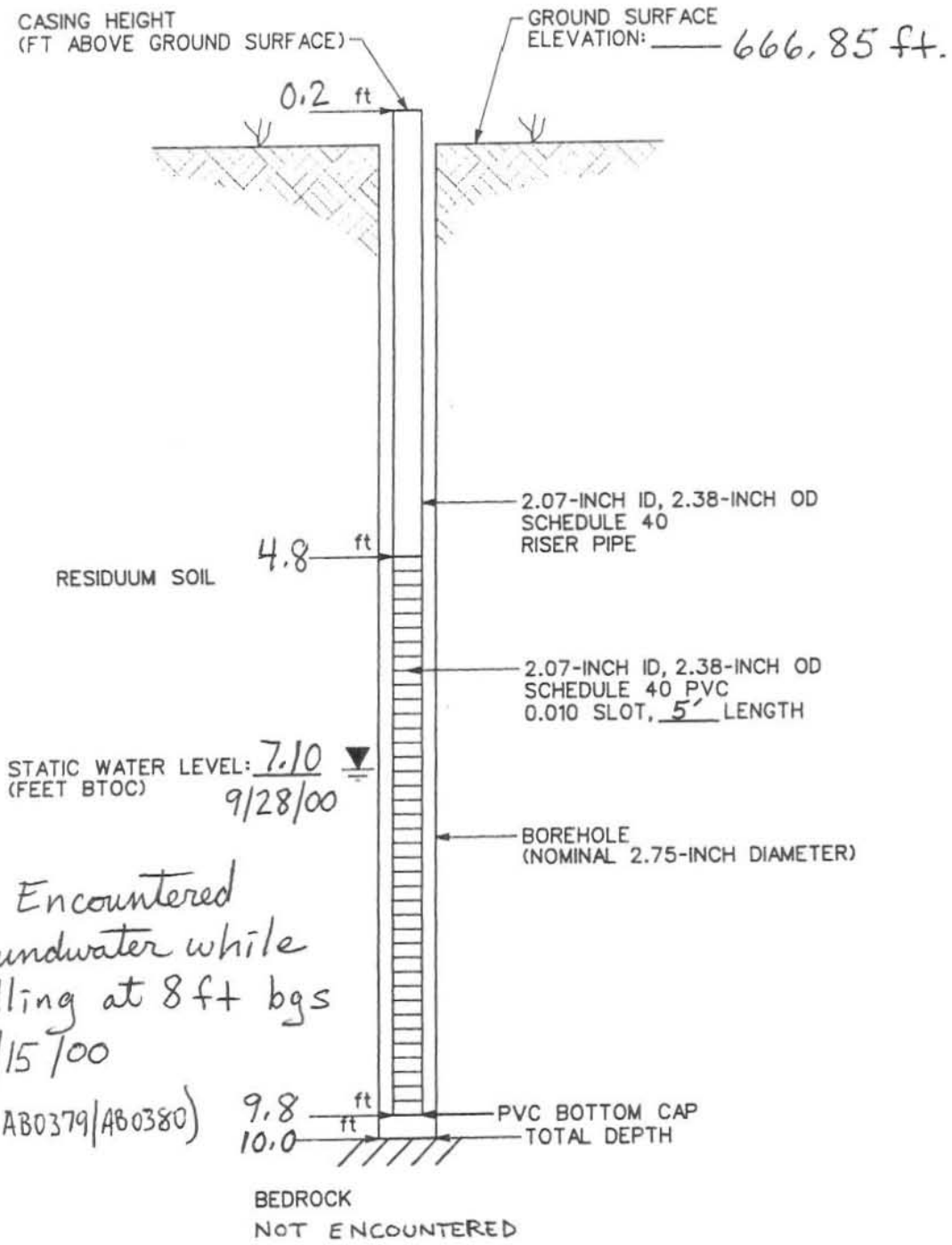
ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Topsoil, grass, roots	PID	BZ			
	2		↓	CO 0% / H_2S 0%			
	3		0.0	LEL 0 / O_2 21.0			
	4						
	5	Tan/Lt Yellow-Brown (10YR 6/4) clayey SILT sl. moist.			CSO 379 5'-7'	ml	
	6		3.7 ppm				
	7	↓less CLAY↓	↓				
	8	Lt. gray to yellow (10YR 7/1) clayey SILT (less CLAY) crumbly (friable)					water @ 8' ↓
	9		1.2 ppm		CSO 380 8'-10'	ml	
	10	END BORING Total Depth = 10.0 ft					

PROJECT: PBOW

HOLE NO. C-379/380

TEMPORARY SHALLOW PIEZOMETER CONSTRUCTION DIAGRAM

LOCATION: INTC - Bldg 603



NOTES:

PIEZOMETER NO.: GW04
DATE INSTALLED: 9/27/00
DATE REMOVED: 9/28/00

PIEZOMETER CONSTRUCTION DIAGRAM

prepared for:
USACE - NASHVILLE
PLUM BROOK ORDNANCE WORKS

NOT TO SCALE

IT CORPORATION
A Member of The IT Group

STARTING DATE: 07/23/01	DATE LAST REV.:	DRAFT. CHCK. BY: C. TUMLIN	INITIATOR: C. WILLIAMS	DWG. NO.: \825635ES.018
DRAWN BY: B. VANDERGRIFF	DRAWN BY:	ENGR. CHCK. BY: C. WILLIAMS	PROJ. MGR.: SPANGBERG	PROJ. NO.: 825635

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HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-381/382	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 606	
NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GEOPROBE w/ 2" MACROCORE BARREL	8. HOLE LOCATION: @ Stake CSO-202	
	9. SURFACE ELEVATION: NS	
	10. DATE STARTED: 9-15-00	11. DATE COMPLETED: 9-15-00
12. OVERBURDEN THICKNESS: —	15. DEPTH GROUNDWATER ENCOUNTERED: 6'	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS see sample log SCALE: —

Screening

PROJECT: PBOW	HOLE NO. C-381/382

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C- 381/382

PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
			PID	BZ			
	1		0.0	CO 0% / H_2S 0%			
	2			LEL 0 / O_2 20.8			
	3						
	4	(7.5YR 6/6) reddish yellow to Stiff reddish gray (5YR 5/2) silty CLAY sl. moist.			CSO 381 4'-6'	CL	
	5		3.7 ppm				
	6						WATER @ 6'
	7	as above but moist to wet					
	8						
	9	as above but moist to wet (7.5YR 6/6 to 5YR 5/2)	1.6 ppm		CSO 382 8'-10'	CL	
	10	Total Depth = 10.0 ft	END	BORING			

PROJECT PBOW | HOLE NO. C-381/382

HTRW DRILLING LOG

DISTRICT: Nashville, TN		HOLE NUMBER: C-383/384
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 611	
NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GEOPROBE w/ 2" MACROCORE BARREL	8. HOLE LOCATION: Midpoint of CSO-038, 039, 040	
	9. SURFACE ELEVATION: 678.66 Ft	N: 619869.44 E: 1911169.52
	10. DATE STARTED: 9-16-00	11. DATE COMPLETED: 9-16-00
12. OVERBURDEN THICKNESS: —	15. DEPTH GROUNDWATER ENCOUNTERED: 4'	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS: see sample log SCALE: —

Screening

PROJECT: PBOW HOLE NO. C-383/384

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-383/384

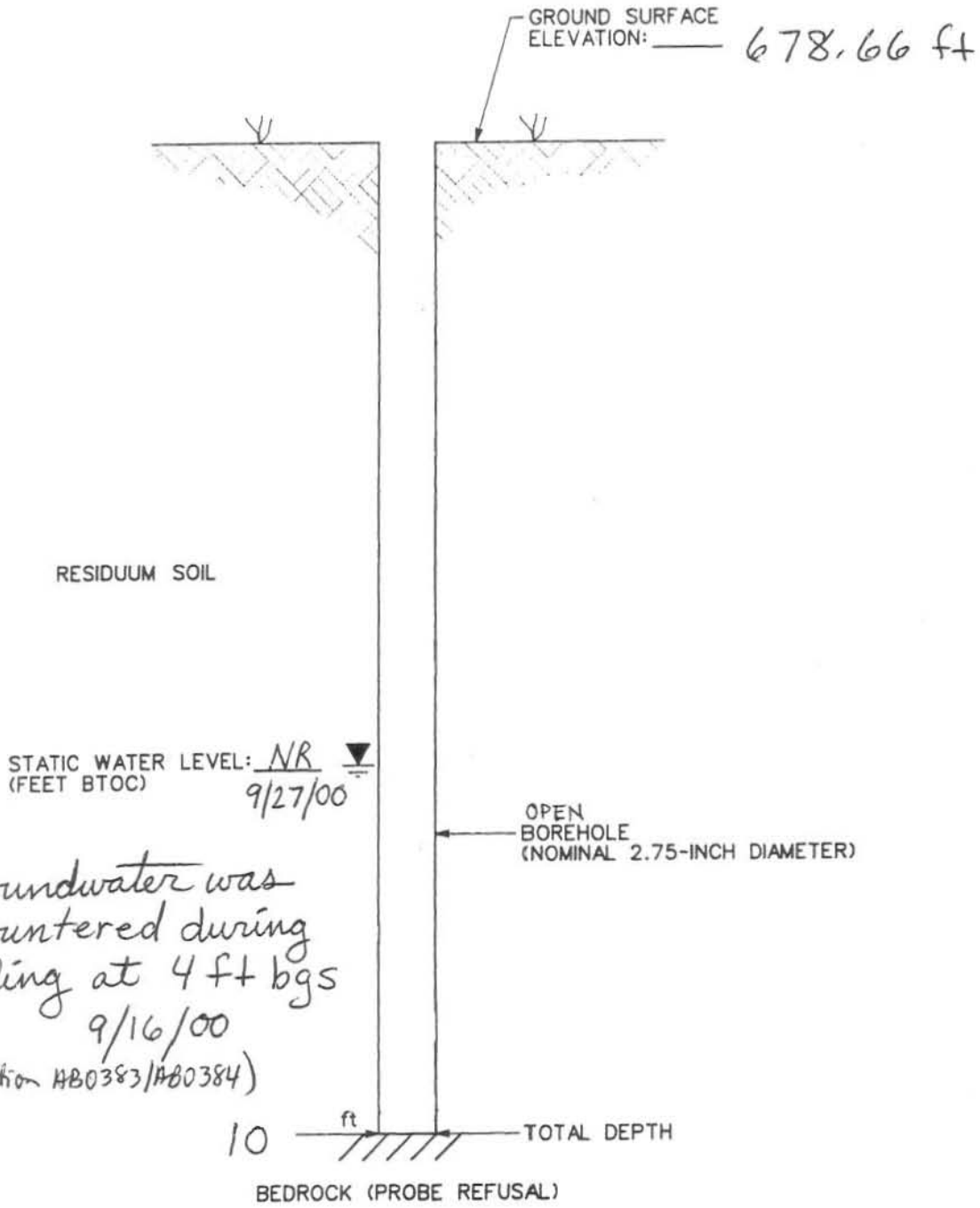
PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Topsoil, grass, roots.	PID	BZ			
	2			CO / H_2S			
	3			LEL / O_2 20.7			
	4	Dark Brown (7.5YR 4/4) ~~sandy SILT~~/silty SAND, wet			CSO 383 4'-6'		water @ 4'
	5		3.0 ppm			SP	
	6						
	7						
	8	as above wet 4'-10'			CSO 384 8-10'		
	9		0.2 ppm			SP	
	10	END BORING TOTAL DEPTH 10'					

PROJECT PBOW | HOLE NO. C-383/384

TEMPORARY SHALLOW PIEZOMETER CONSTRUCTION DIAGRAM

LOCATION: INT C - Bldg 611



Groundwater was encountered during drilling at 4 ft bgs 9/16/00 (At location HB0383/HB0384)

NOTES:

PIEZOMETER NO.: GW10
DATE INSTALLED: 9/27/00
DATE REMOVED: 9/27/00

NOT TO SCALE

PIEZOMETER CONSTRUCTION DIAGRAM

prepared for:
USACE - NASHVILLE
PLUM BROOK ORDNANCE WORKS

IT CORPORATION
A Member of The IT Group

STARTING DATE: 07/23/01	DATE LAST REV.:	DRAFT. CHCK. BY: C. TUMLIN	INITIATOR: C. WILLIAMS	DWG. NO.:\825635ES.018
DRAWN BY: B. VANDERGRIFF	DRAWN BY:	ENGR. CHCK. BY: C. WILLIAMS	PROJ. MGR.: SPANGBERG	PROJ. NO.: 825635

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HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-385/386	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 612	
5. NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GeoProbe w/ 2" MACROCORE BARREL	8. HOLE LOCATION: Midpoint of stakes CSO-093 094 095	
	9. SURFACE ELEVATION: NS	
	10. DATE STARTED: 9-16-00	11. DATE COMPLETED: 9-16-00
12. OVERBURDEN THICKNESS: —	15. DEPTH GROUNDWATER ENCOUNTERED: 4'	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroAroms	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS see sample log SCALE: —

Screening

PROJECT PBOW	HOLE NO. C-385/386

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-385/386

PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Topsoil/ grass, roots	PID	BZ			
	2			CO / H_2S			
	3			0 / 0			
	4			LEL / O_2			
		Reddish Yellow (5YR 6/8) Sandy CLAY, stiff		0 / 21.0			
	5	wet	3.1 ppm		CSO 385		WATER @ 4'
	6				4-6'	cl	
	7						
	8	Gray ~~2.5Y~~ (2.5Y 6/1)			CSO 386		
	9	Stiff clayey SILT, dry	0.0 ppm		8-10'	ml	
	10	end boring total depth 10'					

PROJECT PBOW | HOLE NO. C-385/386

HTRW DRILLING LOG

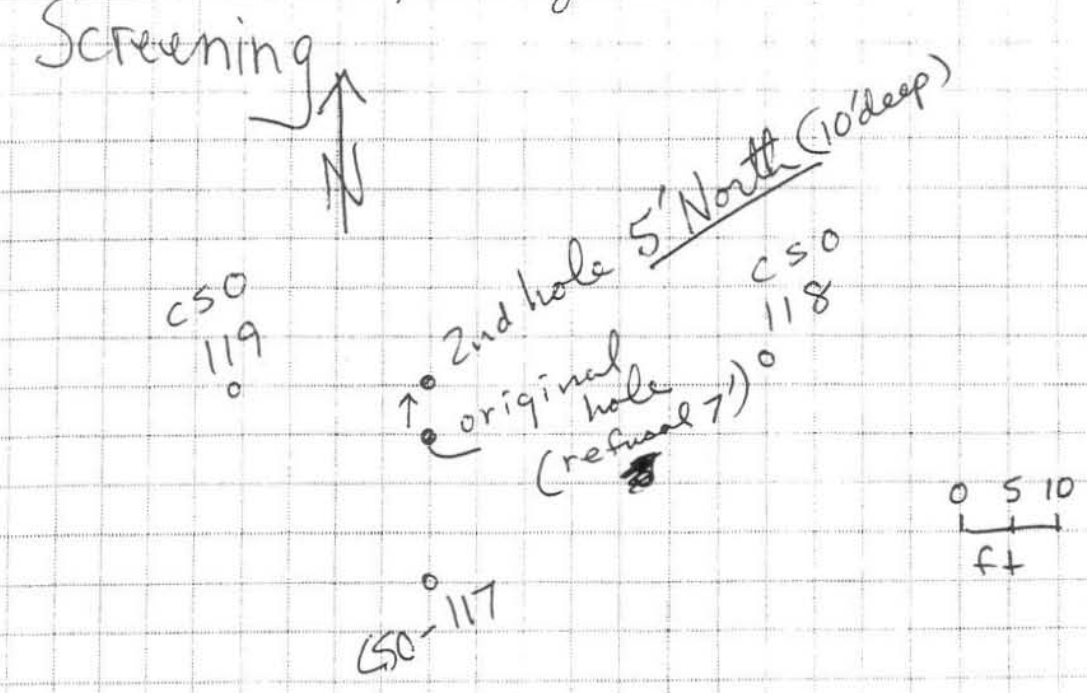
DISTRICT: Nashville, TN	HOLE NUMBER: C-387/388	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2
3. PROJECT: PBOW	4. LOCATION: Bldg 613	
NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GeoProbe w/ 2" MACROCORE	8. HOLE LOCATION: Midpoint of Stakes CSO 117, 118, 119	
	9. SURFACE ELEVATION: NS	
	10. DATE STARTED: 9-16-00	11. DATE COMPLETED: 9-16-00
12. OVERBURDEN THICKNESS: ~~8~~ 8 (1st hole) / 10' 2nd	15. DEPTH GROUNDWATER ENCOUNTERED: 4'	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	Nitroarom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS: see sample log SCALE: —



PROJECT: PBOW HOLE NO. C-387/388

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-387/388

PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Topsoil, grass, roots	PID	BZ			
	2		0.0	CO 0 / H_2S 0			
	3			LEL 0 / O_2 20.7			
	4	pale brown (10YR 6/3) silty CLAY, trace sand, wet.			CSO 387 4'-6'		water @ 4'
	5		0.0			cl	
	6						
	7		Refusal	1st hole	~~CSO 388~~		
	8						
	9	Very light gray (2.5Y 7/1) super dry crumbly CLAY, v. fine	0.0		CSO 388 8'-10'	cl	
	10	END BORING (2nd try)	TOTAL DEPTH = 10'				

PROJECT PBOW | HOLE NO. C-387/388

HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-361/362	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 616	
5. NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GeoPROBE w/ 2" MACROCORE BARREL	8. HOLE LOCATION: CS0252	
	9. SURFACE ELEVATION: 653.52 Ft N: 620499.50 E: 1911127.18	
	10. DATE STARTED: 9-14-00	11. DATE COMPLETED: 9-14-00
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 8'	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS: see sample log SCALE: —

Screening

PROJECT: PBOW HOLE NO. C-361/362

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-361/362

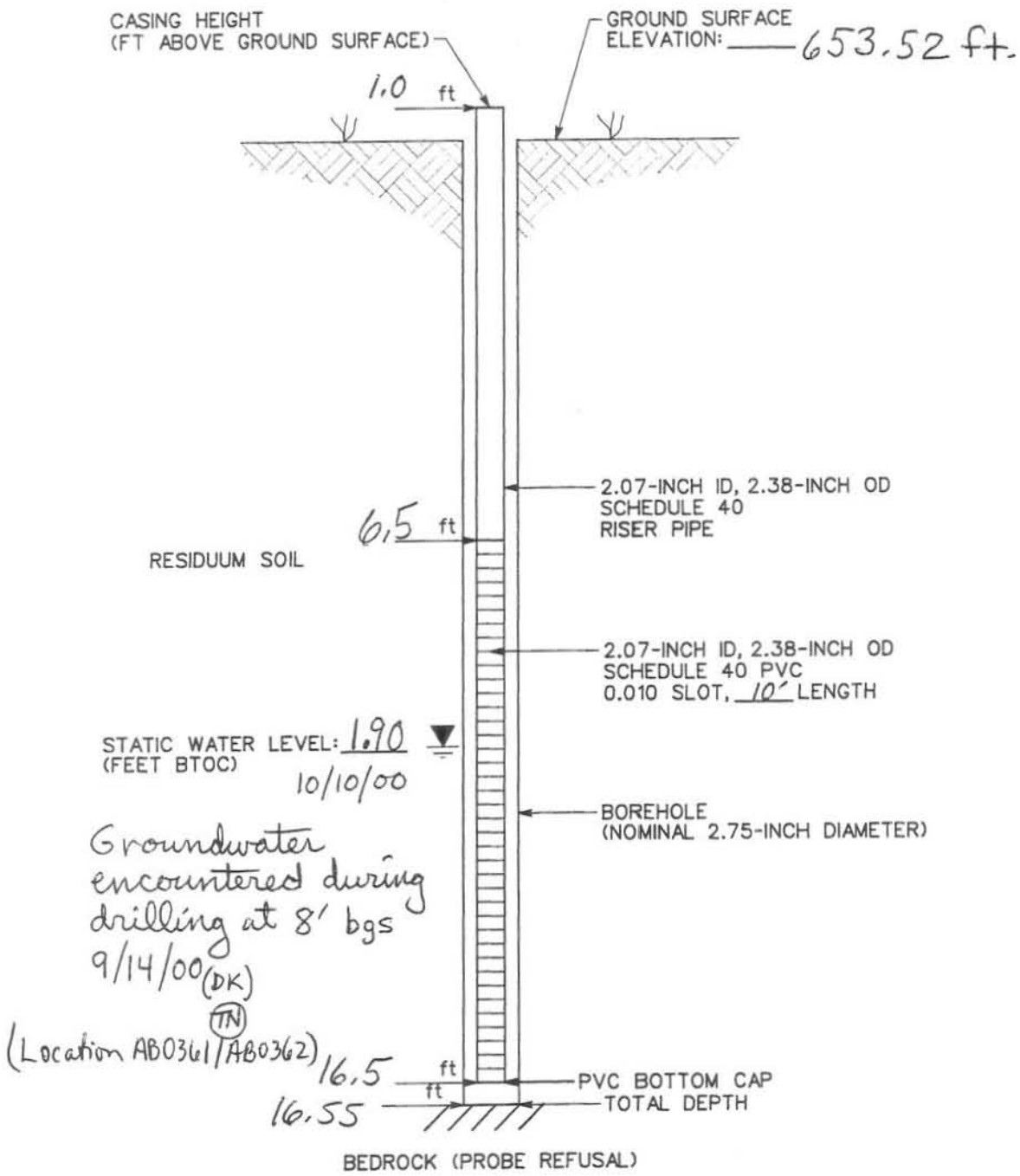
PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	topsoil, wet	PID 0.0	BZ			
	2	Brown (7.5YR 5/4) silty CLAY, trace sand, moist.		CO 0% / H_2S 0%			
	3			LEL 0 / O_2 20.9%			
	4						
	5	cl			CSO-361 4'-6'	cl	
	6		0.0				
	7						
	8	water @ 8' 8					
	9	Brown (7.5YR 5/4) clayey SILT, gravelly wet ml			CSO-362 8'-10'	ml	
	10	END BORING Total Depth = 10 ft	0.0				

PROJECT PBOW | HOLE NO. C-361/362

TEMPORARY SHALLOW PIEZOMETER CONSTRUCTION DIAGRAM

LOCATION: TNT C / Bldg 616



NOTES:

PIEZOMETER NO.: GW 05

DATE INSTALLED: 9/29/00

DATE REMOVED: 10/10/00

NOT TO SCALE

PIEZOMETER CONSTRUCTION DIAGRAM

prepared for:
USACE - NASHVILLE
PLUM BROOK ORDNANCE WORKS

IT CORPORATION
A Member of The IT Group

STARTING DATE: 07/23/01	DATE LAST REV.:	DRAFT. CHCK. BY: C. TUMLIN	INITIATOR: C. WILLIAMS	DWG. NO.: \825635ES.018
DRAWN BY: B. VANDERGRIFF	DRAWN BY:	ENGR. CHCK. BY: C. WILLIAMS	PROJ. MGR.: SPANGBERG	PROJ. NO.: 825635

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HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-411/412	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 619	
NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GEOPROBE w/ 2" MACROCORE BARREL	8. HOLE LOCATION: CSO-046	
	9. SURFACE ELEVATION: NS	
	10. DATE STARTED: 9-16-00	11. DATE COMPLETED: 9-16-00
12. OVERBURDEN THICKNESS: 6' (1st, 2nd) (7', 3rd try)	15. DEPTH GROUNDWATER ENCOUNTERED: —	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: ~~10~~ (TN) 7'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

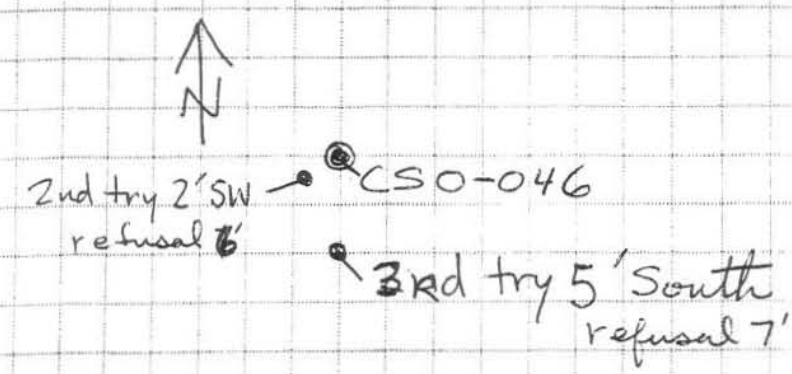
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS see sample log SCALE: —

Screening



PROJECT PBOW HOLE NO. C-411/412

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-411/412

SHEET 2 OF 2 SHEETS

PROJECT PBOW

INSPECTOR T. Nolen

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Topsoil, Grass, Roots	0.0	BZ			
	2			CO 0 / H_2S 0			
	3			LEL 0 / O_2 20.7			
	4	Reddish Yellow (7.5YR 6/6) gravelly sandy SILT, moist.	0.0		CSO 411 4'-6'	ml	
	5						
	6	Reddish Yellow (7.5YR 6/6) sandy SILT in a rubble zone, v. moist.	0.5ppm		CSO 412 6'-7'	ml	REFUSAL #1, #2 (6')
	7	REFUSAL @ 7' = END OF BORING					
	8	(3rd hole) TOTAL DEPTH = 7'					
	9						
	10						

PROJECT PBOW

HOLE NO. C-411/412

HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-389/390	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 621	
NAME OF DRILLER: Harry Huntoon	5. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GeoPROBE W/ 2" MACROCORE BARREL	8. HOLE LOCATION: Middle of CSO-052,053,054	
	9. SURFACE ELEVATION: NS	
	10. DATE STARTED: 9-16-00	11. DATE COMPLETED: 9-16-00
12. OVERBURDEN THICKNESS: Refusal at 6, 7, 4 (3 tries)	15. DEPTH GROUNDWATER ENCOUNTERED: —	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 4', 6', 7' 3 tries	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

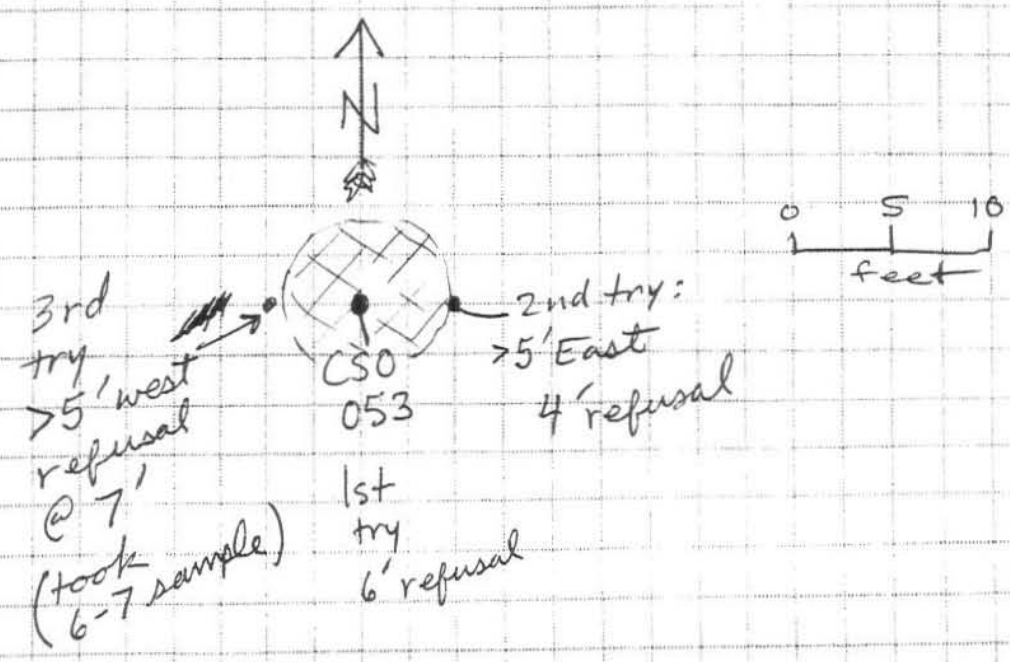
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS: see sample log SCALE: —

Screening



PROJECT: PBOW HOLE NO. C-389/390

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-389/390

SHEET 2 OF 2 SHEETS

PROJECT PBOW

INSPECTOR T. Nolen

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Topsoil, grass, roots	PID	BZ			
				CO / H_2S			
	2	- - - - -	0.0	0 / 0			
				LEL / O_2			
	3			0 / 20.7			
	4	Reddish yellow (7.5YR 7/6) Clayey Sandy SILT, moist.			CSO-389		refusal #2
	5		0.0		4'-6'	ML	refusal #1
	6	as above but some rock fragments	0.0		CSO-390 6-7'	ML	
	7	REFUSAL #3 AT 7'					
	8	TOTAL Depth 7'					
	9						
	10						

PROJECT PBOW

HOLE NO. C-389/390

HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-391/392	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 622	
5. NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GEOPROBE w/ 2" MACROCORE BARREL	8. HOLE LOCATION: midpoint of stakes CSO-062,063, & 064	
	9. SURFACE ELEVATION: NS	
	10. DATE STARTED: 9-16-00	11. DATE COMPLETED: 9-16-00
12. OVERBURDEN THICKNESS: 7' 1st hole / 6' 2nd hole / 4' 3rd try	15. DEPTH GROUNDWATER ENCOUNTERED: —	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE:	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

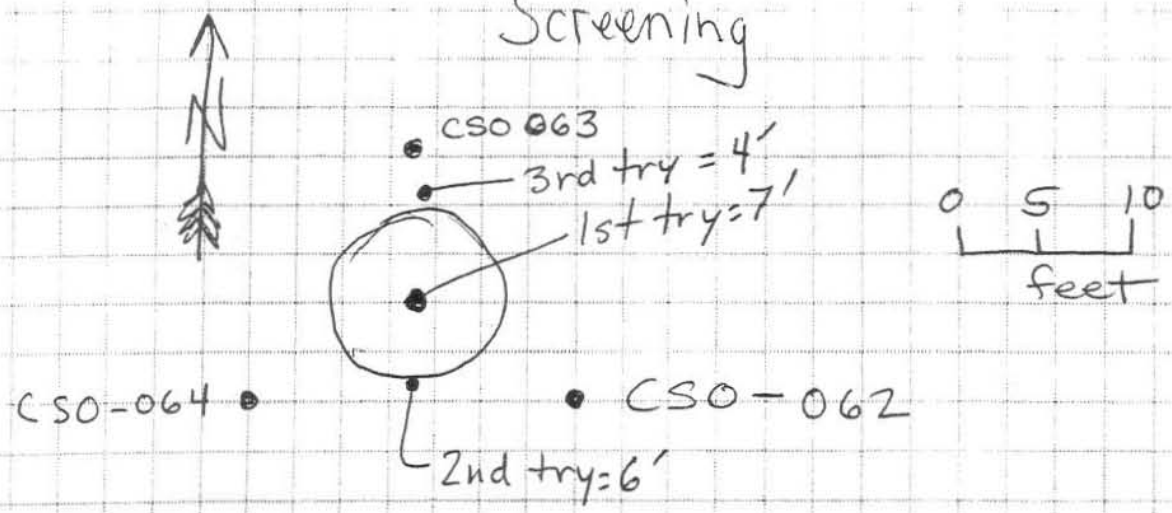
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroAroms	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS see sample log SCALE: —

Screening



sample 392 (8-10') not collected

PROJECT PBOW HOLE NO. C-391/392

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-391/392

PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Topsoil, Grass Roots	PID	BZ			
	2	— — — —	↓	CO | H_2S			
	3			0% | 0%			
				LEL | O_2			
	4	Lt. Brown (10YR 6/3)	↓	0 | 20.8	CSO 391		4' Refusal #3
	5	silt w/rock frags dry	2.7			ML	
	6				4-6'		6' refusal #2,
	7	END BORING	↓	TOTAL DEPTH = 7'			refusal #1
	8	X	X		CSO-392		
	9				NOT COLLECTED		
	10				8-10'		

PROJECT PBOW | HOLE NO. C-391/392

HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-393/394	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 623	
NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GeoPROBE w/ 2" MACROCORE BARREL	8. HOLE LOCATION: CSO-237	
	9. SURFACE ELEVATION: NS	
	10. DATE STARTED: 9-16-00	11. DATE COMPLETED: 9-16-00
12. OVERBURDEN THICKNESS: —	15. DEPTH GROUNDWATER ENCOUNTERED: 7'	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS see sample log SCALE: —

Screening

PROJECT PBOW HOLE NO. C-393/394

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-393/394

PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Topsoil, Grass, Roots	PID	BZ			
	2			CO 0 / H_2S 0			
	3			LEL 0 / O_2 20.7			
	4	Brownish Yellow (10YR 6/6) Silty CLAY dry/soft	2.8 ppm		~~CS~~ CSO-393 4-6'	CL	
	5						
	6						
	7	thin wet layer				water @ 7'	
	8	Gray (10YR 6/1) super dry CLAY, friable.	0.0 ppm		CSO 394 8-10'	CL	
	9						
	10	END of BORING TOTAL DEPTH 10'					

PROJECT PBOW | HOLE NO. C-393/394

HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-395/396	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF SHEETS 2
3. PROJECT: PBOW	4. LOCATION: Bldg 626	
NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GeoProbe w/ 2" MACROCORE BARREL	8. HOLE LOCATION: Stake CSO-075	
	9. SURFACE ELEVATION: NS	
	10. DATE STARTED: 9-16-00	11. DATE COMPLETED: 9-16-00
12. OVERBURDEN THICKNESS: 3' (1st hole) / 10' 2nd try	15. DEPTH GROUNDWATER ENCOUNTERED: 8'	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

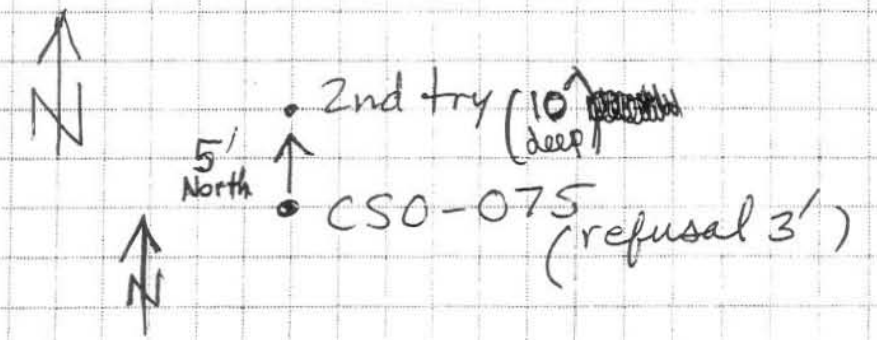
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	Nitroarom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Doug E. Nolen

LOCATION SKETCH/COMMENTS see sample log SCALE: —

Screening



PROJECT PBOW HOLE NO. C-395/396

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-395/396

PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Topsoil, grass, roots	PID	BZ			
	2			CO 0 / H_2S 0			
	3	— refusal (1st try)		LEL 0 / O_2 20.7			refusal #1
	4				CSO 395		
	5	Brownish yellow (10YR 6/8) silty CLAY, stiff, sl. moist	0.4		4-6'	cl	
	6						
	7						
	8						water @ 8'
	9	BROWN (10YR 5/3) silty CLAY, stiff, sl. moist.	0.0		CSO 396 8-10'	cl	
	10	END of Boring TOTAL DEPTH = 10'					

PROJECT PBOW | HOLE NO. C-395/396

HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-363/364	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 629	
5. NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GEOPROBE w/ 2" MACROCORE BARREL	8. HOLE LOCATION: Stake CSO-066	
	9. SURFACE ELEVATION: 669.31 Ft	N: 619768.03 E: 1910167.01
	10. DATE STARTED: 9-14-00	11. DATE COMPLETED: 9-14-00
12. OVERBURDEN THICKNESS: —	15. DEPTH GROUNDWATER ENCOUNTERED: — Not encountered	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS: see sample log SCALE: —

Screening

PROJECT: PBOW	HOLE NO. C-363/364

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-363/364

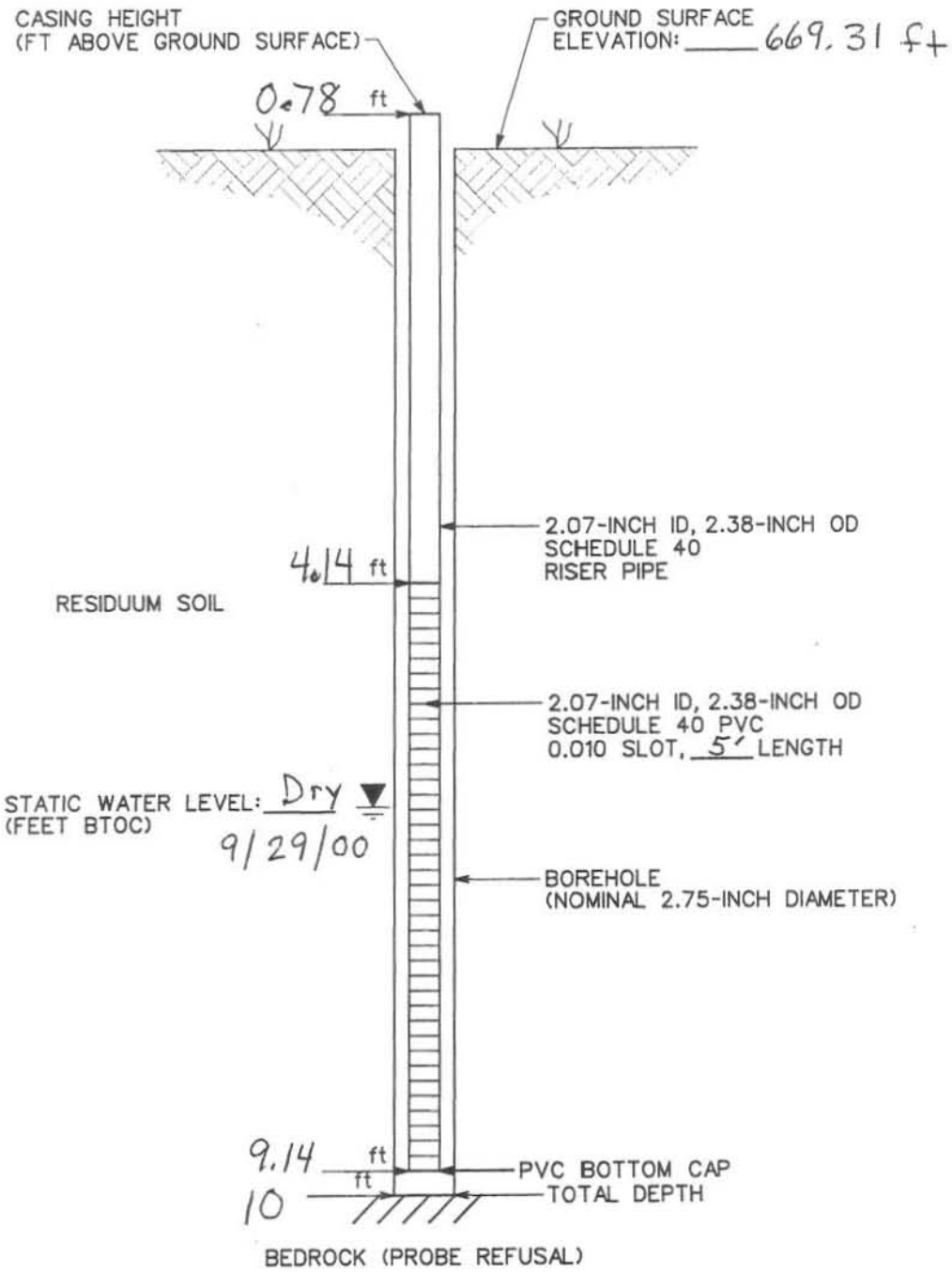
PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Topsoil, roots grass	0.0				
	2	Stiff, gray to yellow					
	3	(10YR 7/1 to 7/8) silty CLAY,		CO 0% / H_2S 0%			
		sl. moist.		LEL 0 / O_2 21.0%			
	4						
		cl	8.8				
	5		6'		CSO 363 5		
	6				~~4'-6'~~ 5-7'	cl	
	7				7		
	8	~~Friable~~ ~~Crumbly~~, dry, clayey 8'	18.0 8'		CSO 364 8		
	9	SILT, gray (10YR 7/1)			8'-10'	ml	
		ml	18.0 10'				
	10	END BORING			10		
		Total Depth = 10.0 ft					

PROJECT PBOW | HOLE NO. C-363/364

TEMPORARY SHALLOW PIEZOMETER CONSTRUCTION DIAGRAM

LOCATION: INT C / Bldg 629



NOTES:

PIEZOMETER NO.: GW 01

DATE INSTALLED: 9-28-00

DATE REMOVED: 9-29-00

NOT TO SCALE

PIEZOMETER CONSTRUCTION DIAGRAM

prepared for:
USACE - NASHVILLE
PLUM BROOK ORDNANCE WORKS

IT CORPORATION
A Member of The IT Group

STARTING DATE: 07/23/01	DATE LAST REV.:	DRAFT. CHCK. BY: C. TUMLIN	INITIATOR: C. WILLIAMS	DWG. NO.:\825635ES.018
DRAWN BY: B. VANDERGRIFF	DRAWN BY:	ENGR. CHCK. BY: C. WILLIAMS	PROJ. MGR.: SPANGBERG	PROJ. NO.: 825635

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HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-365/366	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 657	
NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GEOPROBE w/ 2" MACROCORE BARREL	8. HOLE LOCATION: Stake CSO-222	
	9. SURFACE ELEVATION: 642.93 Ft N: 621447.59 E: 1911521.91	
	10. DATE STARTED: 9-14-00	11. DATE COMPLETED: 9-14-00
12. OVERBURDEN THICKNESS: bottom of settling ~~tank~~ tank 7'	15. DEPTH GROUNDWATER ENCOUNTERED: N/A	
13. DEPTH DRILLED INTO ROCK: — N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 7'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS: see sample log SCALE: —

Screening

PROJECT: PBOW	HOLE NO. C-365/366

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-365/366

PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Organic Topsoil	PID	BZ			
		1.4	0.0	CO 0% / H_2S 0%			
	2	~~[illegible]~~	↓	LEL 0 / O_2 21%			
	3	Brownish gray (10YR 6/2) gravelly SAND, dry, (fine sand).	↓		3 CS0 365	SP	
	4		0.0				
	5		↓		3-5' 5 CS0 366 5'-6' 6	SP	
	6		0.0				
			↓		DRIVE BARREL SUB BROKEN IN BARREL		
	7		0.0				
		Refusal @ 7'			UNABLE to obtain samples beyond 6', but OK.		
	8	Total Depth = 7.0 ft					
	9						
	10						

PROJECT PBOW | HOLE NO. C-365/366

HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-397/398	SHEET 1 OF 2 SHEETS
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	
3. PROJECT: PBOW	4. LOCATION: Bldg 681	
NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GeoProbe w/ 2" MACROCORE BARREL	8. HOLE LOCATION: midpoint of CSO-008, 011, 012.	
	9. SURFACE ELEVATION: 681.05 Ft	N: 619810.12 E: 1912922.03
	10. DATE STARTED: 9-16-00	11. DATE COMPLETED: 9-16-00
12. OVERBURDEN THICKNESS: 6' 1st try / 10' 2nd	15. DEPTH GROUNDWATER ENCOUNTERED: — Not encountered	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

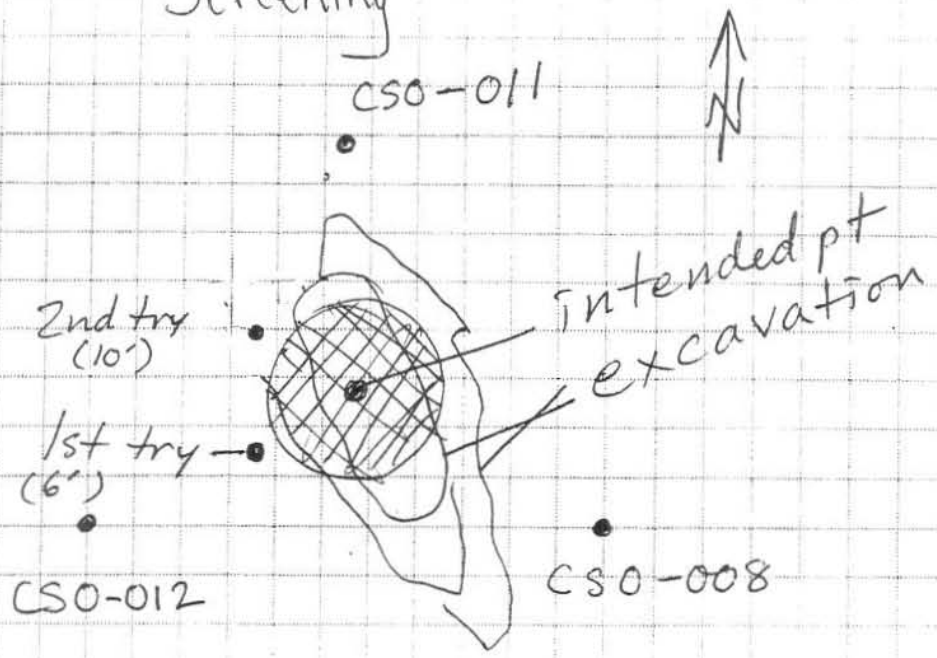
18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS see sample log SCALE: —

Screening



N.T.S.

PROJECT PBOW | HOLE NO. C-397 | 398

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-397/398

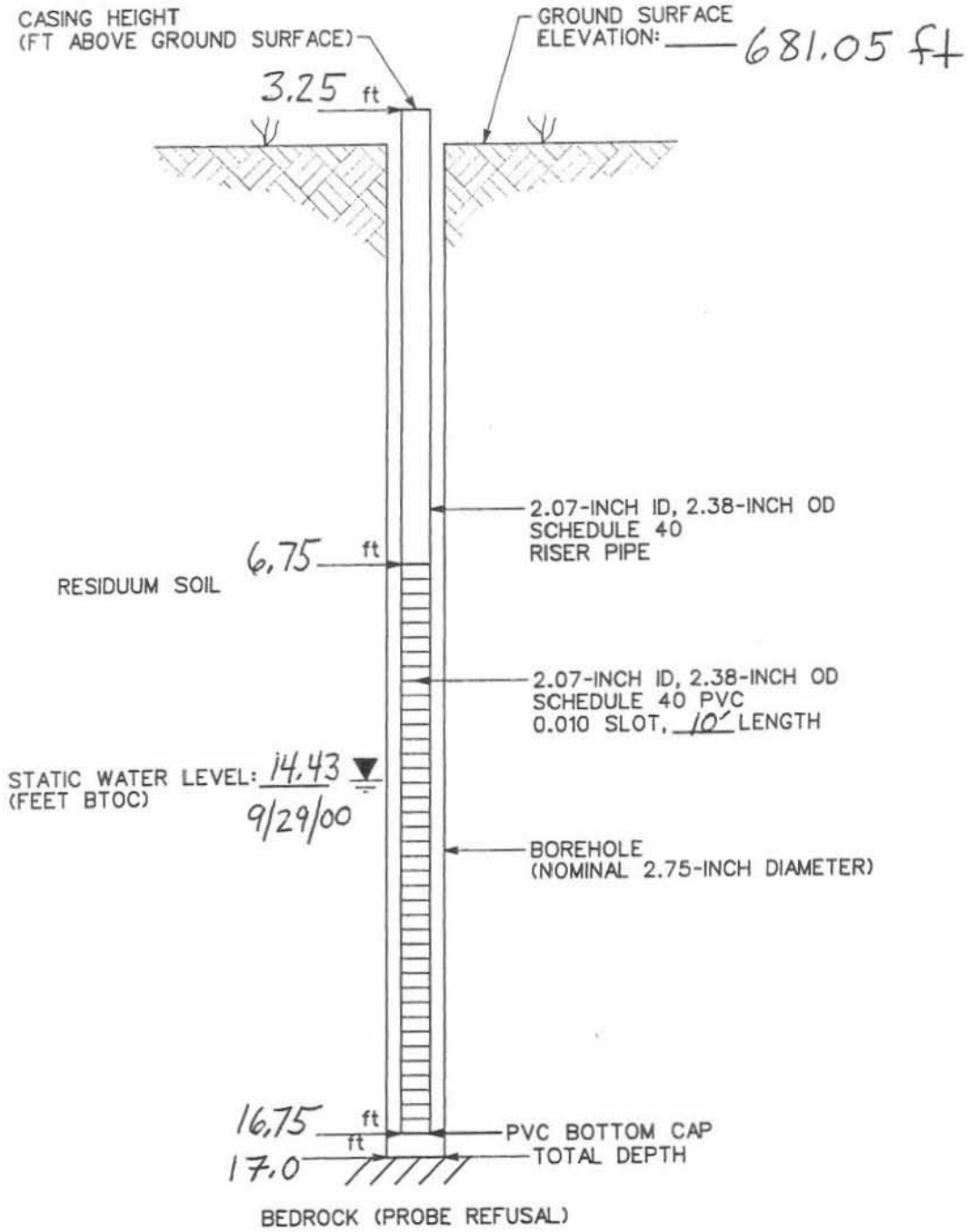
PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Topsoil grass	PID	BZ			
	2		↓	CO | H_2S			
	3			LEL | O_2			
	4	Reddish Yellow (5YR6/6) SILT, trace sand, sl. moist	3.7 ppm		CSO 397 4-6'	4 ml 6	
	5						
	6						refusal (1st hole)
	7	↓	↓				
	8	as above but in a rubble zone			CSO 398 8-10'	8 ml 10	
	9		0.6 ppm				
	10	END BORING TOTAL DEPTH 10'					↓ 2nd hole 10'

PROJECT PBOW | HOLE NO. C-397/398

TEMPORARY SHALLOW PIEZOMETER CONSTRUCTION DIAGRAM

LOCATION: TNT C-Bldg 681



NOTES:

PIEZOMETER NO.: GW09

DATE INSTALLED: 9/28/00

DATE REMOVED: 9/29/00

NOT TO SCALE

PIEZOMETER CONSTRUCTION DIAGRAM

prepared for:
USACE - NASHVILLE
PLUM BROOK ORDNANCE WORKS

IT CORPORATION
A Member of The IT Group

STARTING DATE: 07/23/01	DATE LAST REV.:	DRAFT. CHCK. BY: C. TUMLIN	INITIATOR: C. WILLIAMS	DWG. NO.:\825635ES.018
DRAWN BY: B. VANDERGRIFF	DRAWN BY:	ENGR. CHCK. BY: C. WILLIAMS	PROJ. MGR.: SPANGBERG	PROJ. NO.: 825635

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HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-367/368	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 682	
5. NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GEOPROBE w/ 2" MACROCORE BARREL	8. HOLE LOCATION: Stake CS0-165	
	9. SURFACE ELEVATION: 668.55 Ft N: 620182.46 E: 1913007.90	
	10. DATE STARTED: 9-14-00	11. DATE COMPLETED: 9-14-00
12. OVERBURDEN THICKNESS: —	15. DEPTH GROUNDWATER ENCOUNTERED: — Not encountered	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Gary E. Nolen

LOCATION SKETCH/COMMENTS: see sample log SCALE: —

Screening

PROJECT: PBOW HOLE NO. C-367/368

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-367/368

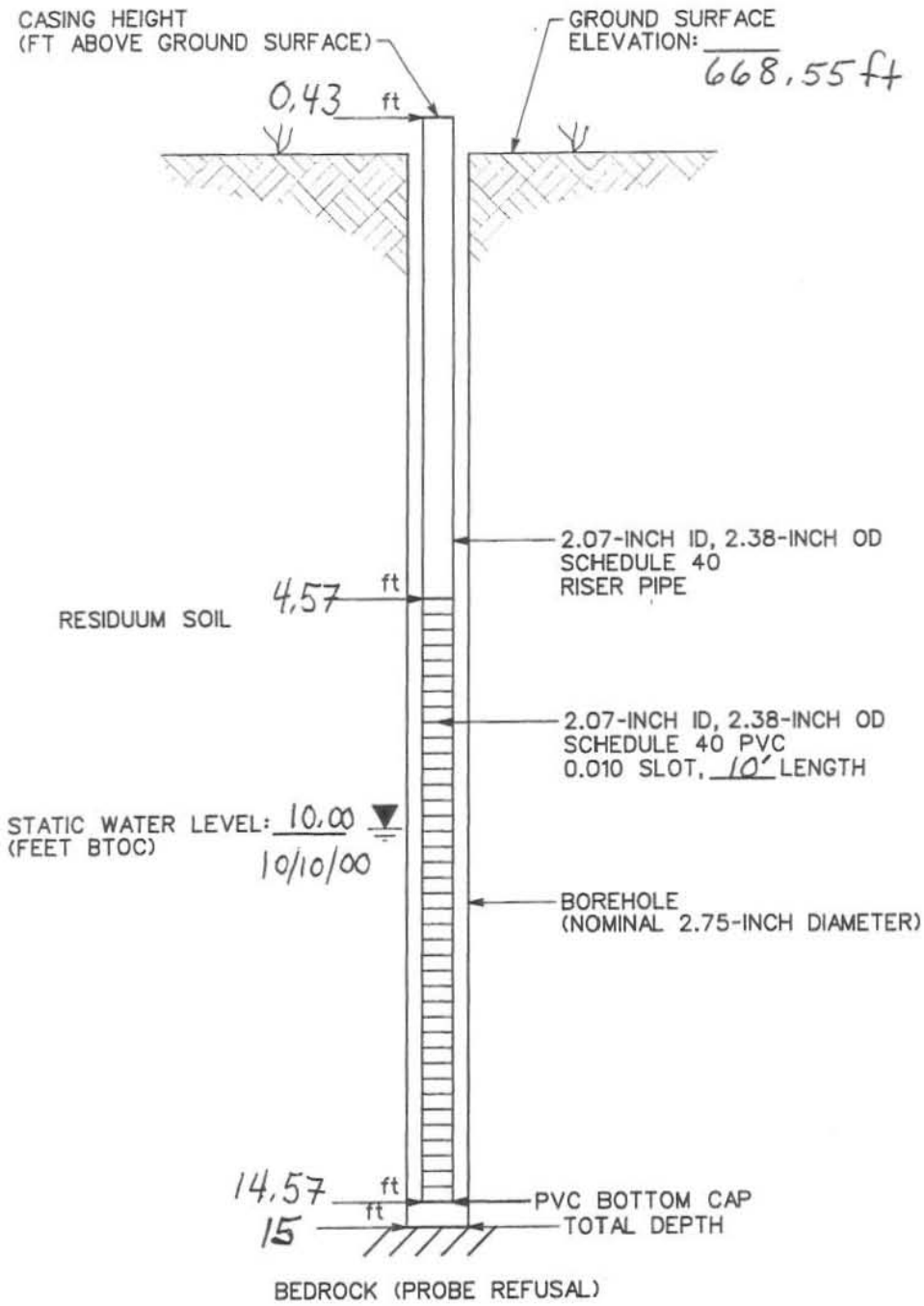
PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
		grass	PID				
	1		0,0	BZ			
	2	Yellowish Red (5YR 5/8) sandy silt, moist.		CO 0 / H_2S 0			
	3			LEL 0 / O_2 21.0			
	4				4 CSO 367 4'-6'	ml	
	5		0,0				
	6				6		
	7						
	8				8		
	9		0,0		CSO 368 8'-10'	ml	
	10	END BORING Total Depth = 10.0 ft			10		

PROJECT PBOW | HOLE NO. C-367/368

TEMPORARY SHALLOW PIEZOMETER CONSTRUCTION DIAGRAM

LOCATION: TNTC / Bldg 682



NOTES:

PIEZOMETER NO.: GW 02

DATE INSTALLED: 9-29-00

DATE REMOVED: 10/10/00

NOT TO SCALE

PIEZOMETER CONSTRUCTION DIAGRAM

prepared for:
USACE - NASHVILLE
PLUM BROOK ORDNANCE WORKS

IT CORPORATION
A Member of The IT Group

STARTING DATE: 07/23/01	DATE LAST REV.:	DRAFT. CHCK. BY: C. TUMLIN	INITIATOR: C. WILLIAMS	DWG. NO.:\825635ES.018
DRAWN BY: B. VANDERGRIFF	DRAWN BY:	ENGR. CHCK. BY: C. WILLIAMS	PROJ. MGR.: SPANGBERG	PROJ. NO.: 825635

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HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-369/370	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 682	
5. NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GEOPROBE w/ 2" MACROCORE BARREL	8. HOLE LOCATION: Stake CSO-311	
	9. SURFACE ELEVATION: 685.24 Ft N: 620163.88 E: 1912978.32	
	10. DATE STARTED: 9-14-00	11. DATE COMPLETED: 9-14-00
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 8'	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS: see sample log SCALE: —

Screening

PROJECT: PBOW	HOLE NO. C-369/370

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C- 369/370

PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Reddish Yellow (7.5YR 6/8), sandy SILT, moist.	PID 0.0	BZ CO 0 / H_2S 0			
	2						
	3						
	4			LEL 0 / O_2 20.9	CSO 369 4'-6'	ml	
	5		0.0				
	6						
	7						
	8	water table @ 8'					
	9	as above (but wet)	0.0		CSO 370 8'-10'	ml	
	10	Total Depth = 10.0 ft	END of Borehole				

ROJECT PBOW | HOLE NO. C- 369/370

HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-399/400	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 683	
NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GEOPROBE w/ 2" MACROCORE BARREL	8. HOLE LOCATION: @ Stake CSO-171	
	9. SURFACE ELEVATION: 666.02 Ft	N: 620230.93 E: 1912827.40
	10. DATE STARTED: 9-16-00	11. DATE COMPLETED: 9-16-00
12. OVERBURDEN THICKNESS: —	15. DEPTH GROUNDWATER ENCOUNTERED: 9'	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS: see sample log SCALE: —

Screening

PROJECT: PBOW HOLE NO. C-399/400

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-399/400

PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

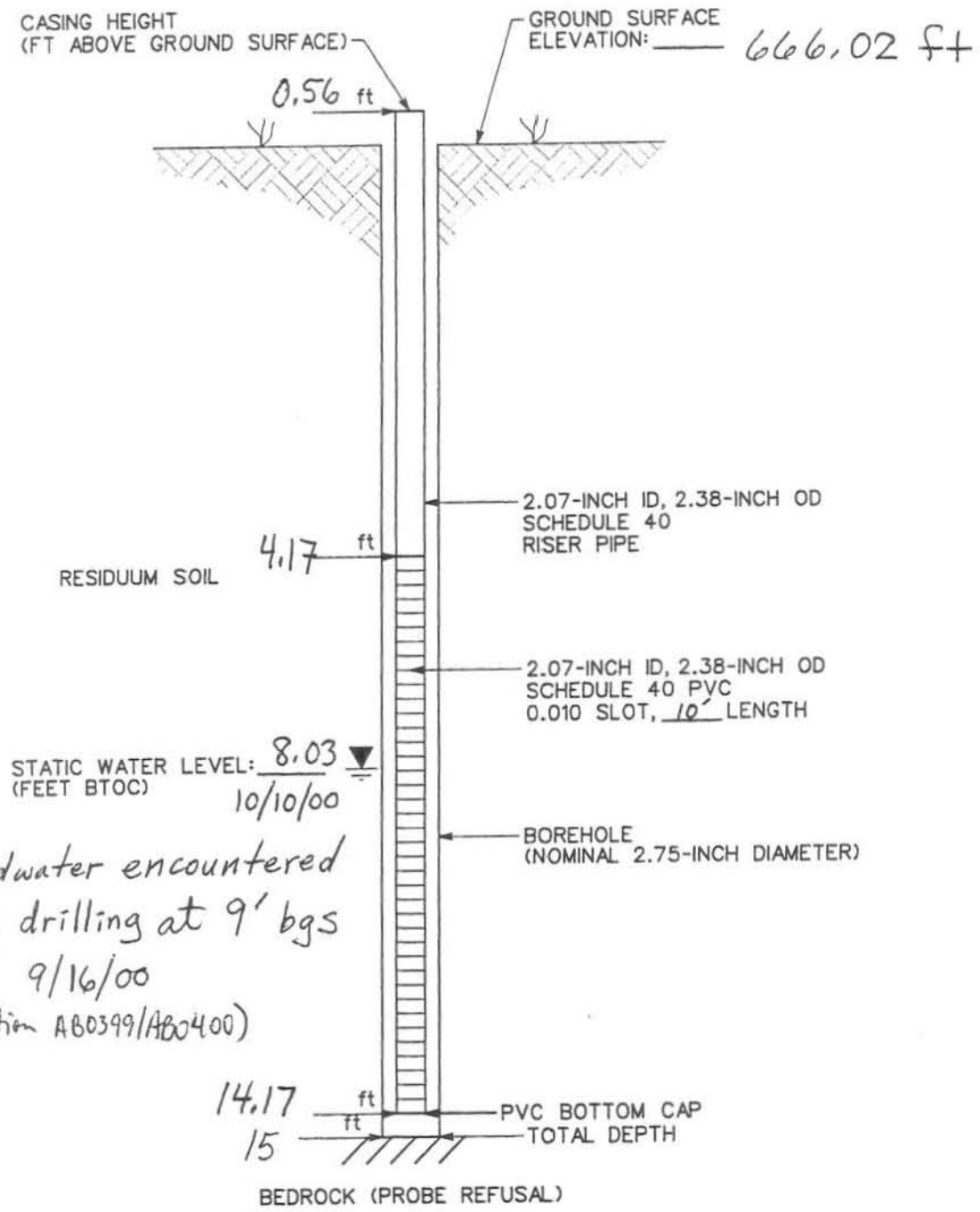
ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Topsoil, Grass	PID	BZ			
	2			CO: 0, H_2S: 0			
	3			LEL: 0, O_2: 20.8			
	4	Reddish Yellow (7.5YR 6/6)			CSO-399		
	5	sandy SILT	0.7			ml	
	6	soft sl. moist			4-6'		
	7						
	8	Brown (7.5YR 5/4)			CSO-400		
	9	Sandy SILT,	0.0 ppm			ml	water @ 9'
	10	moist/wet			8-10'		

END OF BORING
TOTAL DEPTH 10'

OJECT PBOW | HOLE NO. C-399/400

TEMPORARY SHALLOW PIEZOMETER CONSTRUCTION DIAGRAM

LOCATION: INT C - Bldg 683



Groundwater encountered during drilling at 9' bgs
9/16/00
(Location AB0399/AB0400)

NOTES:

PIEZOMETER NO.: GW08
DATE INSTALLED: 9/28/00
DATE REMOVED: 10/10/00

NOT TO SCALE

PIEZOMETER CONSTRUCTION DIAGRAM

prepared for:
USACE - NASHVILLE
PLUM BROOK ORDNANCE WORKS

IT CORPORATION
A Member of The IT Group

STARTING DATE: 07/23/01	DATE LAST REV.:	DRAFT. CHCK. BY: C. TUMLIN	INITIATOR: C. WILLIAMS	DWG. NO.:\825635ES.018
DRAWN BY: B. VANDERGRIFF	DRAWN BY:	ENGR. CHCK. BY: C. WILLIAMS	PROJ. MGR.: SPANGBERG	PROJ. NO.: 825635

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HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-371/372	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 686	
5. NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GeoProbe w/2" MACROCORE BARREL	8. HOLE LOCATION: Stake CSO 302	
	9. SURFACE ELEVATION: NS	
	10. DATE STARTED: 9-14-00	11. DATE COMPLETED: 9-14-00
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: 3'	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS: see sample log SCALE: —

~~Nitro~~ Screening

PROJECT: PBOW HOLE NO. C-371/372

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-371/372

PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Dark gray (10YR 7/1) sandy SILT	PID	BZ			
	2		0.0	CO 0% / H_2S 0%			
	3	water table		LEL 0 / O_2 21.0			Encountered water at 3 ft
	4	as above but wet			4 CSO 371 4-6' 6	ml	
	5		0.0				
	6						
	7						
	8				8 CSO 372 8-10' 10	ml	
	9		0.0				
	10	Total Depth = 10.0 ft	END of BORING				

PROJECT PBOW | HOLE NO. C-371/372

HTRW DRILLING LOG

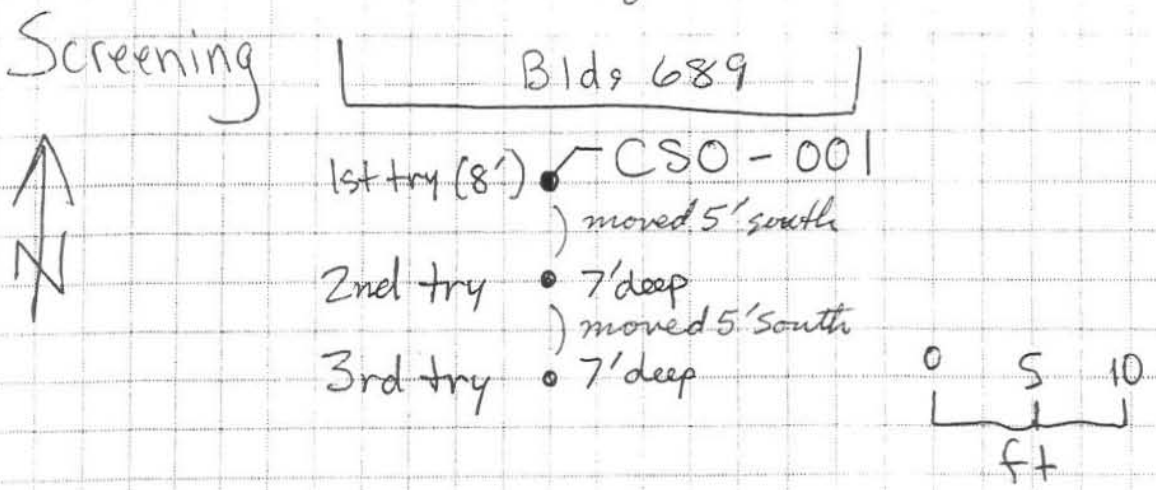
DISTRICT: Nashville, TN	HOLE NUMBER: C-401/402	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 689	
NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GEOPROBE w/2" MACROCORE BARREL	8. HOLE LOCATION: Stake CSO-001	
	9. SURFACE ELEVATION: 673.91 Ft N: 619782.41 E: 1913167.75	
	10. DATE STARTED: 9-16-00	11. DATE COMPLETED: 9-16-00
12. OVERBURDEN THICKNESS: 8' (1st hole) / 7' 2nd/3rd tries	15. DEPTH GROUNDWATER ENCOUNTERED: 8'	
13. DEPTH DRILLED INTO ROCK: N/A	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE:	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Miller

LOCATION SKETCH/COMMENTS: see sample log SCALE: —



PROJECT: PBOW HOLE NO. C-401/402

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-401/402

PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Topsoil, roots grass	PID	BZ			
	2			CO / H_2S			
	3		0.0	0 / 0			
	4			LEL / O_2 0 / 20.7			
	5	Reddish Yellow (7.5YR 6/6) very gravelly silty Sandy CLAY, moist	1.9 ppm		CSO 401 4-6'	CL	water @ 6'
	6						
	7	rubble zone	0.0		CSO 402		refusal @ 7' tries 2&3
	8	silty CLAY. wet			CSO 402 is 6-7' in lieu of 8-10 per USACE	CL	
	9	REFUSAL @ 8' (1st hole)		END of BORING			
	10			TOTAL DEPTH = 8'			

PROJECT PBOW | HOLE NO. C-401/402

HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-403/404	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 691.	
NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GeoProbe w/ 2" MACROCORE BARREL	8. HOLE LOCATION: midpoint of stakes CSO-21,22,23	
	9. SURFACE ELEVATION: NS	
	10. DATE STARTED: 9-16-00	11. DATE COMPLETED: 9-16-00
12. OVERBURDEN THICKNESS: —	15. DEPTH GROUNDWATER ENCOUNTERED: 7'	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS see sample log SCALE: —

Screening

PROJECT PBOW HOLE NO. C-403/404

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-403/404

PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Topsoil/Grass Roots	PID	BZ			
	2	slightly clayey SILT		CO 0 / H_2S 0			
	3			LEL 0 / O_2 20.7			
	4	Dark Red Brown	0.0		CSO-403		
	5	(2.5YR 3/6) slightly				ml	
	6	clayey SILT, moist			4'-6'		
	7	as above					water @ 7'
	8	(2.5YR 5/6) ~~as above~~ TN					
	9	Red clayey SILT,	0.0		CSO 404	ml	
	10	moist to wet			8'-10'		
		END of Boring total depth 10'					

PROJECT PBOW | HOLE NO. C-403/404

HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-405/406	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF SHEETS 2
3. PROJECT: PBOW	4. LOCATION: Bldg 692	
NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GEOPROBE w/2" MACROCORE BARREL	8. HOLE LOCATION: Stake CSO-241	
	9. SURFACE ELEVATION: 669.42 Ft. N: 620252.62 E: 1912339.08	
	10. DATE STARTED: 9-16-00	11. DATE COMPLETED: 9-16-00
12. OVERBURDEN THICKNESS: —	15. DEPTH GROUNDWATER ENCOUNTERED: 8'	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS see sample log SCALE: —

Screening

PROJECT PBOW HOLE NO. C-405/406

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-405/406

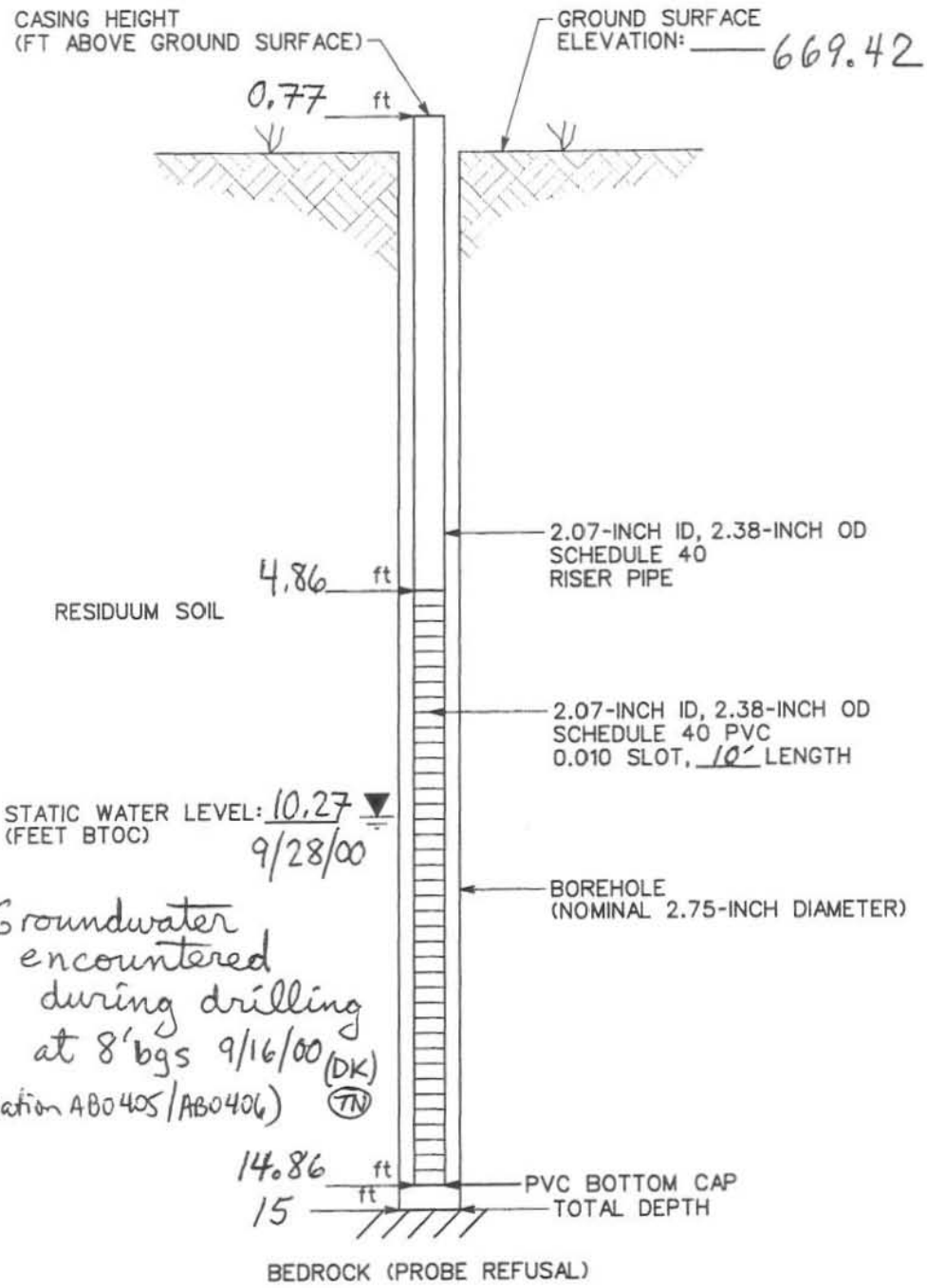
PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Roots Grass	PID	BZ			
		Topsoil					
	2			CO 0 / H_2S 0			
	3			LEL 0 / O_2 20.9			
	4	Reddish Brown (5YR 5/4)					
	5	sandy SILT, fine, moist.	0.0		CSO 405	ML	
	6				4-6'		
	7						
	8	Reddish yellow (5YR 6/6)					water @ 8'
	9	sandy SILT, fine, wet	0.0		CSO 406	ML	
	10				8-10'		
		end of boring 10' total depth 10'					

PROJECT PBOW | HOLE NO. C-405/406

TEMPORARY SHALLOW PIEZOMETER CONSTRUCTION DIAGRAM

LOCATION: TNT C / Bldg 692



NOTES:

PIEZOMETER NO.: GW 06

DATE INSTALLED: 9-27-00

DATE REMOVED: 9-28-00

PIEZOMETER CONSTRUCTION DIAGRAM

prepared for:
USACE - NASHVILLE
PLUM BROOK ORDNANCE WORKS

NOT TO SCALE

IT CORPORATION
A Member of The IT Group

STARTING DATE: 07/23/01	DATE LAST REV.:	DRAFT. CHCK. BY: C. TUMLIN	INITIATOR: C. WILLIAMS	DWG. NO.: \825635ES.018
DRAWN BY: B. VANDERGRIFF	DRAWN BY:	ENGR. CHCK. BY: C. WILLIAMS	PROJ. MGR.: SPANGBERG	PROJ. NO.: 825635

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HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-407/408	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 693	
5. NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GEOPROBE w/ 2" MACROCORE BARREL	8. HOLE LOCATION: Midpoint of Stakes CSO-173,175,176	
	9. SURFACE ELEVATION: 663.35 Ft. N: 620257.64 E: 1912531.94	
	10. DATE STARTED: 9-16-00	11. DATE COMPLETED: 9-16-00
12. OVERBURDEN THICKNESS: —	15. DEPTH GROUNDWATER ENCOUNTERED: 7'	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	Nitroarom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolan

LOCATION SKETCH/COMMENTS: see sample log SCALE: —

Screening

PROJECT: PBOW HOLE NO. C-407/408

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-407/408

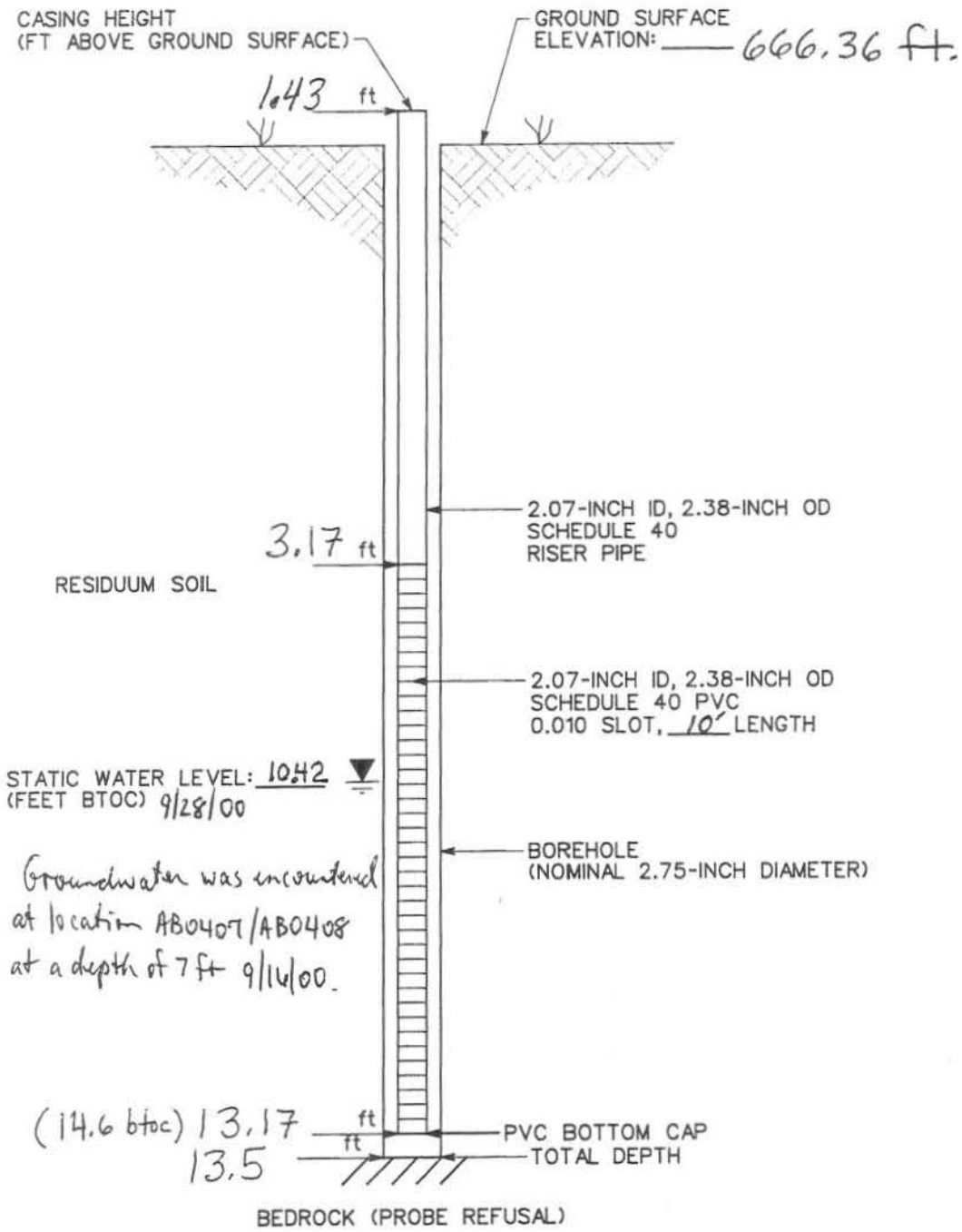
PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Topsoil/Grass	PID	BZ			
	2	— — — —		CO / H_2S			
	3			0 / 0			
	4			LEL / O_2			
		Yellowish Red (5YR 6/6)		0 / 20.8	CSO 407		
	5	sandy SILT, moist	1.0			ML	
	6	v. fine.	ppm		4-6'		
	7						water @ 7'
	8						
		Brown (7.5YR 5/4)			CSO 408		
	9	sandy SILT, v. fine	0.0			ML	
	10	moist.			8-10'		
		END BORING					
		TOTAL DEPTH 10'					

PROJECT PBOW | HOLE NO. C-407/408

TEMPORARY SHALLOW PIEZOMETER CONSTRUCTION DIAGRAM

LOCATION: TNT C / Bldg 693



Groundwater was encountered at location AB0407/AB0408 at a depth of 7 ft 9/14/00.

NOTES:

PIEZOMETER NO.: GW07

DATE INSTALLED: 9/28/00

DATE REMOVED: 9/28/00

NOT TO SCALE

PIEZOMETER CONSTRUCTION DIAGRAM

prepared for:
USACE - NASHVILLE
PLUM BROOK ORDNANCE WORKS

IT CORPORATION
A Member of The IT Group

STARTING DATE: 07/23/01	DATE LAST REV.:	DRAFT. CHCK. BY: C. TUMLIN	INITIATOR: C. WILLIAMS	DWG. NO.: \825635ES.018
DRAWN BY: B. VANDERGRIFF	DRAWN BY:	ENGR. CHCK. BY: C. WILLIAMS	PROJ. MGR.: SPANGBERG	PROJ. NO.: 825635

02:26:24 10/23/01

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HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-373/374	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 696	
NAME OF DRILLER: Harry Huntoon	5. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GeoProbe w/2" MACROCORE BARREL	8. HOLE LOCATION: CSO-291	
	9. SURFACE ELEVATION: NS	
	10. DATE STARTED: 9-14-00	11. DATE COMPLETED: 9-14-00
12. OVERBURDEN THICKNESS: N/A	15. DEPTH GROUNDWATER ENCOUNTERED: —	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroArom.	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS see sample log SCALE: —

Screening

PROJECT PBOW HOLE NO. C-373/374

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-373/374

PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Organic Topsoil	PID	BZ			
		1ft	↓				
	2	Yellowish Red	0.0	CO 0% / H_2S 0%			
	3	(5YR 5/8) sandy	↓	LEL 0% / O_2 21.0			
	4	silty CLAY			4		
	5		0.0		CSO 373 4'-6'	cl	
	6		↓		6		
	7	7ft					
	8	(Very Stiff) silty CLAY	0.0		8		
	9	gray (5YR 4/1) sl. moist	↓		CSO 374 8'-10'	cl	
	10	Total Depth = 10.0 ft	END	BORING	10		

PROJECT PBOW | HOLE NO. C-373/374

HTRW DRILLING LOG

DISTRICT: Nashville, TN	HOLE NUMBER: C-409/410	
1. COMPANY NAME: IT Corp	2. DRILL SUBCONTRACTOR: Miller Drilling	SHEET 1 OF 2 SHEETS
3. PROJECT: PBOW	4. LOCATION: Bldg 699	
5. NAME OF DRILLER: Harry Huntoon	6. MANUFACTURER'S DESIGNATION OF DRILL: GeoProbe	
7. SIZES AND TYPES OF DRILLING AND SAMPLING EQUIPMENT: GeoProbe w/ 2" MACROCORE BARREL	8. HOLE LOCATION: CSO-017 stake	
	9. SURFACE ELEVATION: NS	
	10. DATE STARTED: 9-16-00	11. DATE COMPLETED: 9-16-00
12. OVERBURDEN THICKNESS: 10'	15. DEPTH GROUNDWATER ENCOUNTERED: 7	
13. DEPTH DRILLED INTO ROCK: —	16. DEPTH TO WATER AND ELAPSED TIME AFTER DRILLING COMPLETED: —	
14. TOTAL DEPTH OF HOLE: 10'	17. OTHER WATER LEVEL MEASUREMENTS (SPECIFY): —	

18. GEOTECHNICAL SAMPLES	DISTURBED	UNDISTURBED	19. TOTAL NUMBER OF CORE BOXES
—	—	—	—

20. SAMPLES FOR CHEMICAL ANALYSIS	VOC	METALS	OTHER (SPECIFY)	OTHER (SPECIFY)	OTHER (SPECIFY)	21. TOTAL CORE RECOVERY
—	—	—	NitroAroma	—	—	— %

22. DISPOSITION OF HOLE	BACKFILLED	MONITORING WELL	OTHER (SPECIFY)	23. SIGNATURE OF INSPECTOR
—	✓	—	—	Tony E. Nolen

LOCATION SKETCH/COMMENTS see sample log SCALE: —

Screening

PROJECT PBOW HOLE NO. C-409/410

HTRW DRILLING LOG (CONTINUATION SHEET)

HOLE NUMBER C-409/410

PROJECT PBOW | INSPECTOR T. Nolen | SHEET 2 OF 2 SHEETS

ELEV (a)	DEPTH (b)	DESCRIPTION OF MATERIALS (c)	HNU SCREENING RESULTS (d)	PUSH / SAMPLE INTERVAL (e)	ANALYTICAL SAMPLE NO (f)	USCS (g)	REMARKS (h)
	1	Topsoil grass roots	PID	BZ			
	2		0.0	CO 0 / H_2S 0			
	3			LEL 0 / O_2 20.7			
	4	Yellowish Red (5YR 5/8) gravelly clayey SILT, moist	0.9 ppm		CSO 409 4'-6'	ml	
	5						
	6						
	7						water @ 7'
	8	Brownish gray (10YR 5/2) silt & shale frags, wet.	1.8 ppm		CSO 410 8'-10'	ml	
	9						
	10	END of Boring Total Depth 10'					

PROJECT PBOW | HOLE NO. C-409/410

APPENDIX C

LAND SURVEY DATA

PBOW Survey Data - TNTC

PLUM BROOK ORDNANCE WORKS (OCTOBER 2000):
THESE VALUES WERE SCALED TO THE OHIO STATE PLANE COORDINATE SYSTEM (NORTH ZONE). A COMBINED FACTOR OF 0.999927034 WAS USED IN THIS DETERMINATION. THESE COORDINATES ARE NAD 1983 DATUM EXPRESSED IN FEET. VERTICAL DATUM IS NGVD 1929.

TNT AREA "C" CONFIRMATION BORINGS

MHS PT #	N(y)	E(x)	ELEV	I.T. #
1294	619782.412	1913167.746	673.91	TNTC-SO001
1379	619783.617	1910176.118	668.65	TNTC-SO065
1378	619768.034	1910167.007	669.31	TNTC-SO066
1372	620325.969	1910527.022	654.06	TNTC-SO074
1362	620499.805	1911118.266	653.81	TNTC-SO100
1364	620480.090	1911093.921	653.62	TNTC-SO107
1351	620308.325	1911597.365	666.85	TNTC-SO123
1392	620311.151	1911784.860	668.23	TNTC-SO134
1344	620416.138	1913057.162	655.01	TNTC-SO150
1347	620414.851	1913022.408	655.93	TNTC-SO151
1341	620182.459	1913007.903	668.55	TNTC-SO165
1338	620230.934	1912827.404	666.02	TNTC-SO171
1336	620255.997	1912537.081	666.35	TNTC-SO173
1319	620542.740	1912360.820	653.62	TNTC-SO190
1318	620500.502	1912333.982	655.44	TNTC-SO192
1350	620599.935	1911784.766	653.82	TNTC-SO206
1293	620946.735	1911380.615	646.68	TNTC-SO207
1289	620868.672	1910525.412	645.71	TNTC-SO215
1287	621447.591	1911521.908	642.93	TNTC-SO222
1330	620252.620	1912339.079	669.42	TNTC-SO241
1363	620499.498	1911127.180	653.52	TNTC-SO252
1340	620244.170	1912991.286	660.92	TNTC-SO280
1317	620500.342	1912333.940	655.49	TNTC-SO293
1346	620414.844	1913022.368	655.93	TNTC-SO301
1342	620163.878	1912978.319	685.24	TNTC-SO311
1331	620265.482	1912349.265	669.22	TNTC-SO320
1345	620421.544	1913039.171	655.45	TNTC-SO325
1315	620520.115	1912333.292	655.10	TNTC-SO327
1299	619869.435	1911169.524	678.66	TNTC-SO383
1295	619810.118	1912922.029	681.05	TNTC-SO397
1337	620257.638	1912531.936	666.36	TNTC-SO407

PBOW Survey Data - TNTC

PLUM BROOK ORDNANCE WORKS (OCTOBER 2000): PAGE 2 OF 3
THESE VALUES WERE SCALED TO THE OHIO STATE PLANE COORDINATE SYSTEM (NORTH ZONE). A COMBINED FACTOR OF 0.999927034 WAS USED IN THIS DETERMINATION. THESE COORDINATES ARE NAD 1983 DATUM EXPRESSED IN FEET. VERTICAL DATUM IS NGVD 1929.

TNT AREA "C" SURVEY REFERENCE STAKES

MHS PT #	N(y)	E(x)	ELEV	I.T. #
1290	620835.167	1910514.497	645.31	SW CORNER BLDG 628
1298	619877.921	1911203.393	678.47	NE CORNER BLDG 611
1300	619932.953	1911763.529	681.39	SW CORNER BLDG 601
1301	619953.698	1911776.827	681.56	NE CORNER BLDG 601
1302	619957.614	1911986.203	677.35	SW CORNER BLDG 609
1304	620017.684	1912026.555	677.20	NE CORNER BLDG 609
1321	620818.172	1912723.413	646.29	NORTH SIDE BLDG 698
1322	620871.377	1912727.862	645.60	SOUTH SIDE BLDG 698
1339	620242.065	1912836.596	666.00	NW BARRICADE AT 683
1349	620588.849	1911795.983	654.36	NE CORNER BLDG 606
1352	620323.375	1911588.199	665.97	NE CORNER BLDG 603
1354	620328.099	1911301.856	662.58	EAST SIDE BLDG 613
1355	620328.154	1911288.031	664.36	SW CORNER BLDG 613
1360	620239.505	1911078.543	668.40	NW CORNER BLDG 612
1361	620229.079	1911092.515	667.30	SE CORNER BLDG 612
1370	620114.240	1910650.430	663.83	NE CORNER BLDG 623
1371	620101.542	1910626.749	663.75	SW CORNER BLDG 623
1373	620316.402	1910536.260	654.51	NW BARRICADE AT 626
1380	619768.735	1910143.241	667.57	NW CORNER BLDG 629
1381	619630.572	1910369.985	678.38	NW CORNER BLDG 621
1382	619601.955	1910389.729	677.93	SE CORNER BLDG 621
1384	619975.448	1910509.193	669.58	NW CORNER BLDG 622
1385	619927.501	1910500.559	670.96	SE CORNER BLDG 622
1388	619842.912	1910917.353	674.89	NE CORNER BLDG 619
1389	619910.337	1910935.967	675.20	SW CORNER BLDG 619
1393	620301.301	1911764.989	668.33	NW CORNER BLDG 602

PBOW Survey Data - TNTC

PLUM BROOK ORDNANCE WORKS (OCTOBER 2000): Page 3 of 3
THESE VALUES WERE SCALED TO THE OHIO STATE PLANE COORDINATE SYSTEM (NORTH ZONE). A COMBINED FACTOR OF 0.999927034 WAS USED IN THIS DETERMINATION. THESE COORDINATES ARE NAD 1983 DATUM EXPRESSED IN FEET. VERTICAL DATUM IS NGVD 1929.

TNT AREA "C" COLLOCATED SURFACE WATER / SEDIM ENT SAMPLES

MHS PT #	N(y)	E(x)	ELEV	I.T. #
1286	621515.047	1910710.695	632.59	TNTC-SW001/SD001
SURFACE WATER ELEVATION @ 1286 632.99				
1369	620176.400	1910377.326	652.72	TNTC-SW002/SD002
SURFACE WATER ELEVATION @ 1369 653.02				
1375	619854.779	1910139.803	659.95	TNTC-SW003/SD003
SURFACE WATER ELEVATION @ 1375 660.35				
1390	620040.663	1910858.820	667.25	TNTC-SW004/SD004
SURFACE WATER ELEVATION @ 1390 667.35				
1356	620370.545	1911243.815	657.26	TNTC-SW005/SD005
SURFACE WATER ELEVATION @ 1356 657.46				
1366	620546.883	1910750.081	645.93	TNTC-SW006/SD006
SURFACE WATER ELEVATION @ 1366 645.53				
1288	621368.483	1911575.642	636.85	TNTC-SW007/SD007
SURFACE WATER ELEVATION @ 1288 637.45				
1327	621252.703	1912596.227	639.39	TNTC-SW008/SD008
SURFACE WATER ELEVATION @ 1327 640.19				
1292	620994.506	1911154.417	643.34	TNTC-SW009/SD009
NO SURFACE WATER @ 1292				
1324	620996.419	1912600.797	640.62	TNTC-SW010/SD010
SURFACE WATER ELEVATION @ 1324 640.92				
1323	620921.753	1912850.770	642.57	TNTC-SW011/SD011
SURFACE WATER ELEVATION @ 1323 642.87				
1329	620336.121	1912405.372	658.66	TNTC-SW012/SD012
NO SURFACE WATER @ 1329				
1320	620716.908	1911834.375	645.63	TNTC-SW013/SD013
SURFACE WATER ELEVATION @ 1320 646.13				
1332	620116.620	1912408.603	665.68	TNTC-SW014/SD014
NO SURFACE WATER @ 1332				
1335	620310.285	1912705.025	660.48	TNTC-SW015/SD015
NO SURFACE WATER @ 1335				