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NAS CECIL FIELD, FL
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SITE ASSESSMENT REPORT ADDENDUM FOR NORTH FUEL FARM NAS CECIL FIELD FL
10/10/2003
TETRA TECH NUS INC

Rev. 1
10/10/03

Site Assessment Report Addendum
for
North Fuel Farm

Naval Air Station Cecil Field
Jacksonville, Florida

Southern Division
Naval Facilities Engineering Command
Contract Number N62467-94-D-0888
Contract Task Order 0168

October 2003

The Site Assessment contained in this report was prepared using sound hydrogeologic principles and judgement. This assessment is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned geologist should be notified to evaluate the effects of any additional information on the assessment described in this report. This Site Assessment Report Addendum was developed for the North Fuel Farm at the Naval Air Station Cecil Field, Jacksonville, Florida, and should not be construed to apply to any other site.

October 10, 2003
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Rev. 1
10/10/03

SITE ASSESSMENT REPORT ADDENDUM
FOR
NORTH FUEL FARM

NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

Submitted to:
Southern Division
Naval Facilities Engineering Command
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North Charleston, South Carolina 29406

Submitted by:
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CONTRACT NUMBER N62467-94-D-0888
CONTRACT TASK ORDER 0168

OCTOBER 2003

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ACRONYMS

4DIM	Four-Dimensional Interactive Model
ABB-ES	ABB Environmental Services, Inc.
BEX	Benzene, Ethylbenzene, and Total Xylenes
bls	Below Land Surface
BPs	Boiling Points
BTEX	Benzene, Toluene, Ethylbenzene, and Total Xylenes
btoc	Below Top of Casing
BWGWP	Base-Wide Generic Work Plan
°C	Degrees Celsius
CAR	Contamination Assessment Report
CARA	Contamination Assessment Report Addendum
CCI	CH2M Hill Constructors, Inc.
CD	Compact Disc
COCs	Compounds of Concern
COJ	City of Jacksonville
DPT	Direct Push Technology
DRO	Diesel Range Organics
EBS	Environmental Baseline Survey
EDC	Environmental Detachment Charleston
EMT	Earth-Mounded Tank
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FID	Flame Ionization Detector
ft	Feet or Foot
ft/day	Feet per Day
ft/ft	Feet per Foot
GAG	Gasoline Analytical Group
GCTLs	Groundwater Cleanup Target Levels
GIR	General Information Report
HLA	Harding Lawson Associates
KAG	Kerosene Analytical Group
µg/kg	Micrograms per Kilogram
µg/L	Micrograms per Liter
µV	Microvolts
mg/kg	Milligrams per Kilogram

ACRONYMS (CONTINUED)

MIP/SC	Membrane Interface Probe with Soil Conductivity
msl	Mean Sea Level
mS/M	MilliSiemens per Meter
NADSCs	Natural Attenuation Default Source Concentrations
NAS	Naval Air Station
Navy	United States Navy
NFA	No further action
NFF	North Fuel Farm
NI	Not Installed
NM	Not Measured
NTU	Nephelometric Turbidity Unit
PAHs	Polynuclear Aromatic Hydrocarbons
PID	Photoionization Detector
RAC	Remedial Action Contractor
RAP	Remedial Action Plan
RAPA	Remedial Action Plan Addendum
RIR	Remedial Investigation Report
SA	Site Assessment
SAP	Sampling and Analysis Plan
SARA	Site Assessment Report Addendum
SCTLs	Soil Cleanup Target Levels
sec	Seconds
SOPs	Standard Operating Procedures
SOUTHNAVFACENGCOM	Southern Division, Naval Facilities Engineering Command
SRR	Source Removal Report
TRPH	Total Recoverable Petroleum Hydrocarbon
TtNUS	Tetra Tech NUS, Inc.
VOCs	Volatile Organic Compounds

EXECUTIVE SUMMARY

Tetra Tech NUS, Inc. (TtNUS) has completed additional Site Assessment (SA) activities at North Fuel Farm (NFF), Naval Air Station (NAS) Cecil Field, Jacksonville, Florida for the Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) under the United States Navy (Navy) Comprehensive Long-Term Environmental Action Navy Program Contract Number N62467-94-D-0888. The investigation was conducted in accordance with requirements of Chapter 62-770, Florida Administrative Code (FAC). This Site Assessment Report Addendum (SARA) describes the previous investigations, field investigation and subsequent findings for the site.

The NFF consisted of six earth-mounded tanks (EMTs) that contained jet propellant fuel (JP-5). Several major spills (totaling approximately 938,000 gallons of JP-5) were recorded in the late 1980's and early 1990's. Beginning in 1991, a contamination assessment was conducted by ABB-Environmental Services, Inc. (ABB-ES). A Contamination Assessment Report (CAR) was submitted in 1992, with subsequent addenda between 1996 and 1997. Subsequently, the CAR Addendum (CARA) was approved by the Florida Department of Environmental Protection (FDEP) with the recommendation for a remedial action plan (RAP). A RAP was submitted by ABB-ES in 1997 (ABB-ES, 1997a). Additional RAP addenda were submitted by ABB-ES and TtNUS between 1997 and 1999. Three separate source removals were documented beginning with two performed by the Navy's Environmental Detachment in 1998 and 1999. The last source removal was conducted by CH2M Hill Constructors, Inc. (CCI), the Remedial Action Contractor (RAC), between 2000 and 2001 and included the removal of the six EMTs. The FDEP approved the Source Removal Report (SRR) for this source removal in 2002.

This supplemental assessment was conducted in three phases. The first two steps were designed to provide complementary and supporting data to characterize the source area. The first step utilized a combination of direct push technology (DPT) and membrane interface probe with soil conductivity (MIP/SC). Approximately 66 borings were installed with the DPT-MIP/SC system to an average depth of approximately 90 feet (ft). Several mobilizations during the period from July 2001 to May 2002 were required to overcome difficult site conditions. The second step utilized a traditional combination of DPT and on-site mobile laboratory analyses to correlate the findings of the DPT-MIP/SC technology. The third step involved the installation and sampling of permanent monitoring wells based on the results of the DPT-MIP/SC investigation. From December through June 2003, 6 water table monitoring wells, 13 upper intermediate monitoring wells, 5 lower intermediate monitoring wells, and 12 deep monitoring wells were installed at the site. Groundwater samples were collected from all of the new wells and 26 of the existing wells.

This executive summary provides a brief summary of the geology of the site, describes the nature and extent of contamination at the site, and provides recommendations for additional actions.

ES.1 GEOLOGY AND HYDROGEOLOGY

Previous investigations indicate that the lithology of the upper 50 to 60 ft of the site is silty, fine-grained sands. These deposits are underlain by generally clayey sands with clay stringers from approximately 50 to 90 ft below land surface (bls). Between approximately 80 and 100 ft bls, the typical lithology is a coarse-grained sand with quartz pebbles and black phosphate grains. The last siliciclastic unit reported above the top of the dolomite, identified as the upper zone of the Hawthorn Group in this area, is a sandy clay reported to be generally 10 to 20 ft thick (at about 100 to 120 ft bls), but as little as 2 ft thick in some areas. This investigation encountered similar lithologies with one exception. On the southeastern side of the site from about 118 to 126 ft bls, TtNUS encountered a plastic clay unit. This SARA was limited to the surficial aquifer system.

For the purposes of this report, the surficial aquifer system is separated into four different zones. These zones (from top to bottom of the surficial aquifer system) are as follows: water table (0 to 20 ft bls), upper intermediate zone (approximately 25 to 50 ft bls), lower intermediate zone (approximately 50 to 80 ft bls), and the deep zone (greater than 80 ft bls). The groundwater flow in the water table zone appears to be mostly to the east with a small component on the southwestern side of the site that is diverting to the southwest. The upper intermediate zone appears to flow to the southeast. The lower intermediate zone appears to flow mostly to the south-southeast. The deep zone appears to flow consistently to the southeast.

ES.2 NATURE AND EXTENT OF CONTAMINATION

This SARA investigation at the NFF focused on the groundwater. The previous investigations had delineated the extent of soil contamination and a subsequent source removal at the site removed the soil that exceeded the FDEP's Soil Cleanup Target Levels (SCTLs). An unnamed surface water body and the associated sediments present at the site were also investigated and only one total recoverable petroleum hydrocarbon (TRPH) impact exceeding a regulatory guideline was encountered in one sediment location. No surface water impacts above respective regulatory guidelines were encountered.

The extent of contamination for the water table is as follows:

- Several volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), TRPH, and lead were reported to exceed respective groundwater cleanup target levels (GCTLs) in the water

table zone. Only the VOCs exceeded respective Natural Attenuation Default Source Concentrations (NADSCs).

- The VOC and PAH impact to the water table zone covers the majority of the source area (the former tank farm) and some area to the west of the source area between Aviation Avenue and the former tank farm. The approximate area of contamination is 6 acres.

- TRPH contamination covered a much smaller area (approximately one-half acre) within the same area of the VOC/PAH contamination.

- Lead contamination was reported in monitoring wells CEF-076-12 (a well adjacent to Aviation Avenue) and CEF-076-88S (a well near the northeastern corner of the site). These results appear to be the result of high turbidity during sampling. A filtered sample collected from CEF-076-12 indicated a lead concentration below the GCTL.

The extent of contamination for the upper intermediate zone is as follows:

- Several VOCs, PAHs, TRPH, and lead exceeded respective GCTLs in the upper intermediate zone. Only the VOCs exceeded respective NADSCs.

- The TRPH and PAH impact to the upper intermediate zone covers approximately the same area of the former tank farm and some of the area to the west between Aviation Avenue and the former tank farm. The area of VOC contamination, which includes both the TRPH and PAH areas, covers the entire former tank farm area and most of the area adjacent to Aviation Avenue and is approximately 9 acres. A second separate plume was identified immediately east of the former EMT farm, which is centered over the ditch on the east side of the site. This area measures approximately 3 acres, and it is primarily defined by VOCs with a smaller TRPH component.

- The lead contamination was detected in four wells at the periphery of the site. The concentrations were relatively similar [ranging from 17 to 30 micrograms per liter (µg/L)]. Since two of the wells were upgradient wells, these lead levels are considered natural background levels and not the result of releases from the NFF.

The extent of contamination for the lower intermediate zone is as follows:

- Several VOCs, PAHs, and TRPH exceeded respective GCTLs in the lower intermediate zone. Only the VOCs exceeded their respective NADSCs.

- The footprint of contamination for the PAHs and TRPH is within the bounds of the area of VOC contamination, which generally covers the entire site from Aviation Avenue across the former tank farm and eastward across the creek.

- The area of VOC contamination is approximately 19 acres.

- No lead contamination was encountered in this zone above GCTLs.

The extent of contamination for the deep zone is as follows:

- Several VOCs exceeded respective GCTLs in the deep zone.

- PAHs, TRPH, and lead were detected in this zone at concentrations below the respective GCTLs.

- A smaller area (approximately 3 acres) of VOC contamination is present in the former tank farm area.

- A larger area of higher VOC concentrations is present in the southeastern portion of the site east of the former Truck Stand and mostly south of the creek. This area of higher VOC contamination covers approximately 10 acres.

ES.3 CONCLUSIONS

The following conclusions are made in this SARA:

- The soil contamination was adequately addressed by the previous investigations and source removals.

- One sediment location appears to exceed a regulatory guideline. Concentrations of COCs were below SCTLs in samples collected upstream and downstream from this location.

- The groundwater contamination has been delineated to the surficial aquifer system on site.

- There is no free product and the contamination does not appear to extend deeper than approximately 120 ft bls.

ES.4 RECOMMENDATIONS

The following additional activities are recommended in this SARA:

- Resample the sediment location (SW/SED 2) for TRPH subclassification analyses and evaluate the resulting data in a follow-up addendum to this report.

- Resample for lead in the one water table well (CEF-076-88S) and evaluate the resulting data in a follow-up addendum to this report.

- Prepare a Remedial Action Plan Addendum (RAPA) to address the contaminated groundwater delineated by the 100 µg/L isocontour lines as diagrammed for the VOCs in each of the four zones of the surficial aquifer system in accordance with Chapter 62-770, FAC.

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

TtNUS was authorized by SOUTHNAVFACENGCOM to conduct a SA at the NFF at NAS Cecil Field in Jacksonville, Florida to evaluate the nature and extent of petroleum hydrocarbons in site surface water, ditch sediments, and groundwater in accordance with the requirements of Chapter 62-770, FAC. The SA applied to the source area that included the former refueling area around Building 69, known as the Truck Rack; the former tank farm mound with the six EMTs; the JP-5 Spill area; and those areas immediately downgradient that were affected by the source areas previously mentioned. This SARA provides a characterization of site conditions from which to base future courses of action. The following paragraphs provide available background information for the site.

1.2 SITE LOCATION, LAND USE, AND HISTORY

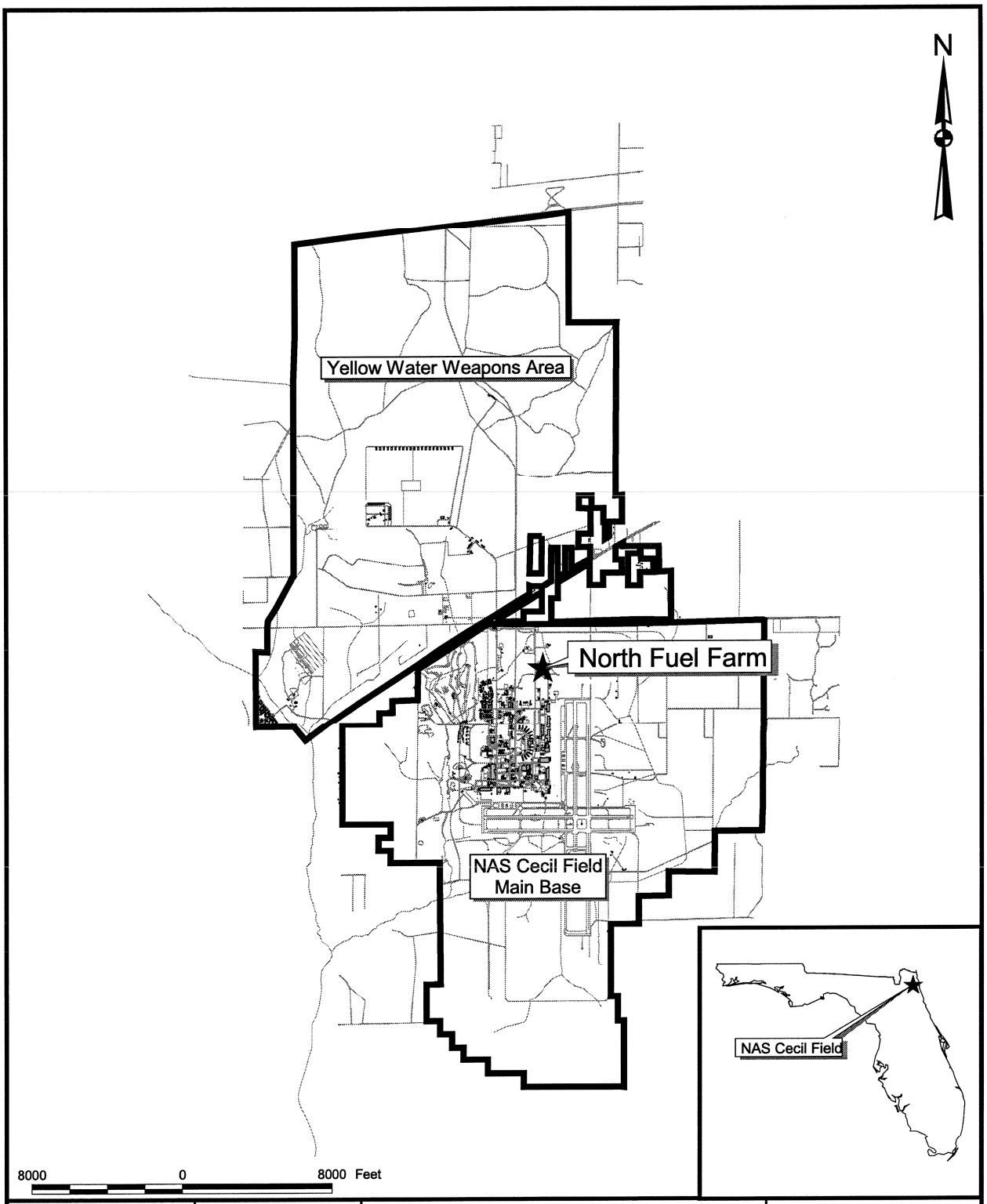
1.2.1 Site Location

A general location map for the site is provided as Figure 1-1, which shows the site is on the north end of the main base area of NAS Cecil Field. Figure 1-2 is provided to show the known utilities that remained after the SRR by CCI and prior to the current infrastructure changes now in progress by the City of Jacksonville (COJ).

1.2.2 Land Use

Review of historical records including the Environmental Baseline Survey (EBS) for NAS Cecil Field (ABB-ES, 1994) and the CARA (ABB-ES, 1996) indicates there are three areas at the NFF where petroleum releases could have or did impact the site's soil and groundwater. The available land use details for those three areas (the NFF, the Truck Rack, and the JP-5 Spill Area) are provided below.

The NFF site consisted of six EMTs numbered 76, 76A, 76B, 76C, 76D and 76E (see Figure 1-3). The capacity of each tank was listed as 595,000 gallons, and they typically contained JP-5 when in operation. Two of the EMTs were installed in 1952 and the remaining four EMTs were installed in 1954. The CAR (ABB-ES, 1994) gave the following additional site background information: "The associated piping is corrosion-resistant, coated steel and is cathodically protected. In 1987, each tank was relined and overfill protection (high level alarms) was installed. Each tank had impressed-current type corrosion protection. In addition, Tank 76 was equipped with an automatic shut-off system. The volume of fuel in each tank was measured daily."



DRAWN BY MJJ	DATE 03Sept03	GENERAL LOCATION MAP NORTH FUEL FARM SITE ASSESSMENT REPORT ADDENDUM NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NUMBER 3996
CHECKED BY	DATE		APPROVED BY DATE
COST/SCHEDULE-AREA			APPROVED BY DATE
SCALE AS NOTED			DRAWING NO. FIGURE 1-1 / REV 0

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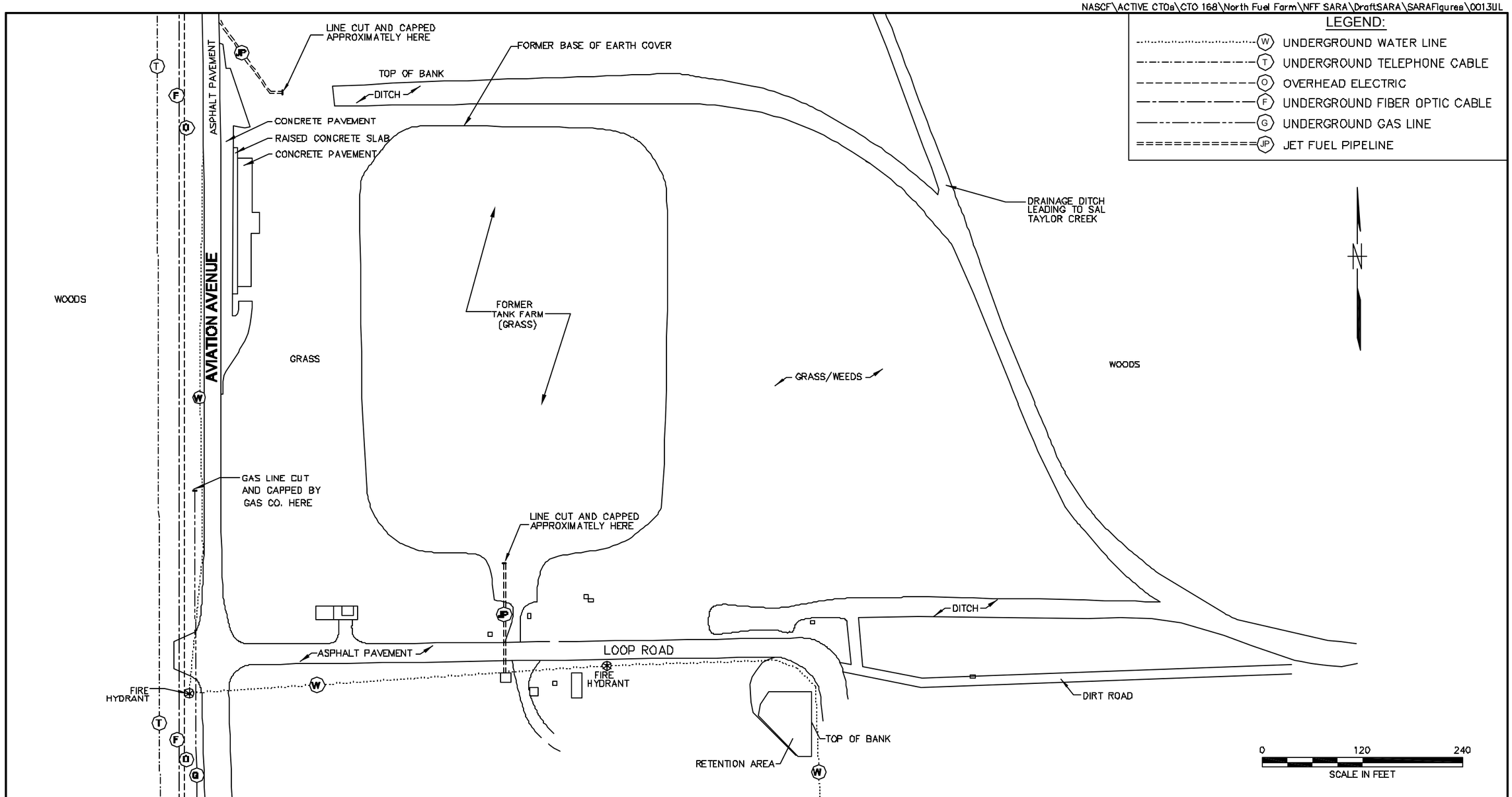

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK DATE 8/1/01
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

UTILITY LOCATIONS
NORTH FUEL FARM
SITE ASSESSMENT REPORT ADDENDUM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NO. 3996
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 1-2
REV. 0

FORM CADD NO. SDIV_BH.DWG - REV 0 - 1/20/98

Rev. 1
10/10/03

N

CEF-076-95S
CEF-076-97D
CEF-076-114D
CEF-076-24
CEF-076-84I
Ditch leading to Sal Taylor Creek
CEF-076-86S
CEF-076-88S
CEF-076-85I
CEF-076-04
CEF-076-11
CEF-076-25D
Truck Rack
CEF-076-113S
Tank 76D
Tank 76E
CEF-076-108S
CEF-076-74D
CEF-076-73I
CEF-076-72S
CEF-076-43S
CEF-076-44I
CEF-076-78I
CEF-076-29D
Ditch leading to Sal Taylor Creek
CEF-076-89I
CEF-076-90S
CEF-076-96D
69
70
CEF-076-109S
CEF-076-106S
CEF-076-112I
Tank 76B
Tank 76C
CEF-076-29
CEF-076-48D
CEF-076-47I
CEF-076-46S
CEF-076-91S
CEF-076-87S
CEF-076-99D
CEF-076-41D
CEF-076-28D
CEF-076-39D
CEF-076-40D
CEF-076-69S
CEF-076-70I
CEF-076-71D
CEF-076-57S
CEF-076-58I
CEF-076-59D
CEF-076-79I
CEF-076-42
CEF-076-93S
CEF-076-94S
Tank 76
CEF-076-21
CEF-076-92S
Tank 76A
CEF-076-X2S
CEF-076-X2D
CEF-076-30
CEF-076-52I
CEF-076-68I
CEF-076-55I
CEF-076-101S
Aviation Avenue (Formerly "A" Avenue)
CEF-076-12
CEF-076-82S
CEF-076-26D
CEF-076-81S
CEF-076-63S
CEF-076-64I
CEF-076-65D
CEF-076-49S
CEF-076-50I
CEF-076-51D
CEF-076-67I
CEF-076-80D
CEF-076-103D
CEF-076-53I
CEF-076-105I
CEF-076-102D
CEF-076-08
CEF-076-07
CEF-076-27D
CEF-076-60S
CEF-076-61I
CEF-076-62D
CEF-076-107S
285
285
CEF-076-111I
CEF-076-20
CEF-076-19
Loop Road
CEF-076-54I
CEF-076-98D
CEF-076-100D
CEF-076-66I
CEF-076-56I
278
360
823
CEF-076-83S
Truck Stand Site
75
825LS
CEF-076-110D
CEF-076-104D
CEF-076-115D
CEF-076-116D
393
CEF-076-117D

LEGEND
- Monitoring Well
- Existing Structures
- Demolished Structures
- Perennial ditch/creek
- Fence

120 0 120 Feet

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03Sept03 MJJ Layout02

DRAWN BY MJJ	DATE 03Sept03	SITE MAP NORTH FUEL FARM SITE ASSESSMENT REPORT ADDENDUM NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA
CHECKED BY	DATE	CONTRACT NO. 3996
	DATE	OWNER NO.
SCALE AS NOTED		APPROVED BY / DATE
		DRAWING NO. FIGURE 1-3 / REV. 0

The Truck Rack consisted of the following three buildings: Building 69, Building 70, and Building 71. Building 69, located along Aviation Avenue (formerly A Avenue) was an aviation fuel pumping facility that was built in 1952. It housed two fuel pumps that were designed to pump fuel from tanker trucks to the NFF. Building 71, immediately adjacent to Building 69, was actually a fuel truck unloading facility. It was built concurrently with Building 69, and it consisted of a concrete driveway approximately 170 ft long and 10 ft wide. This driveway was built with a concrete berm on all sides, and a 1-ft wide spill channel that exited to the northeastern corner of the driveway to a former clay-lined retention pond that once existed between the driveway and the site's ditch. Figure 1-4 shows the former location of that retention pond. Building 70 was the aviation fuel metering station for the NFF. That building was a sheet metal building that housed the filters and metering equipment for fuel that was transferred from Building 69 to the NFF. The general location of the former Truck Rack is shown on Figure 1-3. This area was operated periodically when fuel was brought in by truck, but was not in use (except for the meters in Building 70) during times when the JP-5 Pipeline from NAS Jacksonville was in use.

The JP-5 spill area is an area where approximately 913,000 gallons of JP-5 were released from Tank 76-E. This area is shown on Figure 1-4.

The EMTs and associated piping on site were removed by the RAC between June 2000 and February 2001 (CCI, 2001). CCI also removed most of the Truck Rack except for a portion of the driveway. Figure 1-3 indicates the buildings and tanks that were removed and the remaining buildings on site. The remaining buildings on site were used primarily for administrative purposes and fuels testing when the NFF was in operation.

1.2.3 History

The EBS (ABB-ES, 1994) indicates that the site's primary structures (the EMTs and Truck Rack) were constructed beginning in 1952 and, that by 1954, the building and structure arrangement shown by Figure 1-3 was in place. The following list outlines some key spill events and the related series of investigations and reports in chronological order for the NFF site:

- JP-5 fuel spill; August 3, 1987; 22,772 gallons.
- JP-5 fuel spill; February 10, 1991; 913,000 gallons.
- CAR, NFF; ABB-ES; June 1992.

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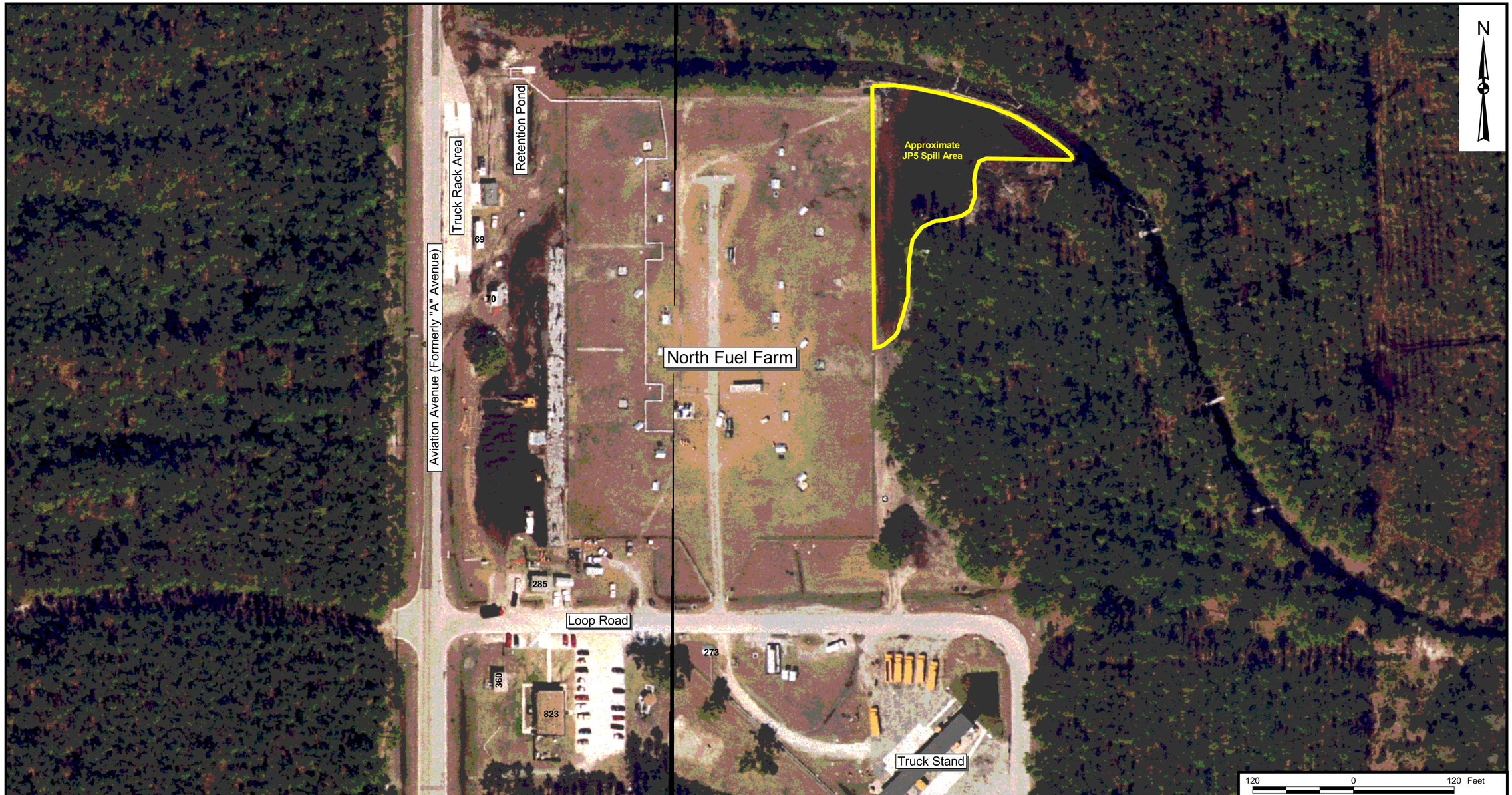


DRAWN BY MJJ	DATE 03Sept03	LAND USE MAP NORTH FUEL FARM SITE ASSESSMENT REPORT ADDENDUM NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NO. 3996
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHED-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 1-4 / REV. 0

- JP-5 fuel spill; November 28, 1993; 1,800 gallons.
- Technical Memorandum, Initial Remedial Action Alternatives for NFF, JP-5 Spill Area' ABB-ES; December 1993.
- CAR, NFF Area Sites; ABB-ES; July 1994.
- Deep Plume Final Technical Memorandum, NFF Area; ABB-ES; January 1995.
- Alternate Procedures and Requirements, Letter of Approval, File No. AP-STTF012, NFF; FDEP; January 1995.
- Contamination Assessment Plan, NFF Area Sites; ABB-ES; January 1995.
- CARA, NFF Site; ABB-ES; April 1996.
- CARA, NFF, Letter of Non-Approval; FDEP; July 1996.
- RAP, NFF Site; ABB-ES; January 1997.
- CARA, Rev. 1, NFF Site; ABB-ES; January 1997.
- CARA, Rev. 1, NFF Site, Letter of Approval; FDEP; February 1997.
- RAP, NFF Site, Memorandum of Non-Approval; FDEP; May 1997.
- Revisions I and II to the RAP, NFF Site; ABB-ES; November 1997.
- Natural Attenuation Monitoring Report, Multiple Sites including the NFF Site; Harding Lawson Associates (HLA); July 1998.
- Source Removal Report (SRR), NFF; Environmental Detachment Charleston (EDC); October 1998.
- Pilot-Test Work Plan for the Recirculating Well Technology at the NFF; HLA; December 1998.
- RAP Addendum (RAPA), NFF Site; TtNUS; August 1999.

- SRR, NFF; EDC; October 1999.
- Response to Comments on the RAPA, NFF; TtNUS; September 1999.
- February-July 1999 Groundwater Monitoring Report, Day Tank 1 and NFF; TtNUS; September 1999.
- July 1999-January 2000 Groundwater Monitoring Report, Day Tank 1 and NFF; TtNUS; April 2000.
- January 2000-July 2000 Groundwater Monitoring Report, NFF; TtNUS; October 2000.
- SRR, Soil and Aboveground Tank Removal, North Tank Fuel Farm; CCI; November 2001.
- Draft Preliminary Groundwater Analytical Information, NFF; TtNUS; January 2002.
- Letter of Approval of CCI's SRR; FDEP; February 2002.

1.3 PREVIOUS INVESTIGATIONS

The following sections highlight details of some of the previous site assessment activities and briefly discuss the results of the three source removals that have been performed at the NFF site.

1.3.1 CARA 1997

The site assessment activities were conducted from 1991 to 1995. The field activities conducted during these investigations were summarized in a table in the CARA (ABB-ES, 1997b) (see Appendix A). The CARA also provides a brief synopsis of the findings, conclusions, and recommendations in an executive summary (see Appendix A).

1.3.2 SRR 1998

A limited-scope source removal was conducted in 1998. The source removal involved the excavation of JP-5 contaminated soil in the JP-5 Spill Area. A SRR was submitted in 1998 (EDC, 1998). The area map showing the soil excavation site is included in Appendix A.

1.3.3 SRR 1999

A second limited-scope source removal was conducted in 1999. This source removal involved two areas that were located between the NFF site and Aviation Avenue. A SRR was submitted in 1999 (EDC, 1999). The site excavation map is included in Appendix A.

1.3.4 SRR 2001

A third source removal was conducted in from June 2000 to February 2001. This source removal included the removal of the six EMTs. A SRR was submitted in 2001 (CCI, 2001). A site map from the SRR is provided in Appendix A. The FDEP's Approval Letter of this last SRR is also provided in Appendix A as evidence of the completion of necessary soil remedial activities at the NFF sites.

1.4 SITE PHYSICAL CHARACTERISTICS

The General Information Report (GIR) prepared by ABB-ES (ABB-ES, 1998) provides information common to all waste sites at NAS Cecil Field in these areas. Principally, the GIR covers the physiography, geology, and hydrogeology data of NAS Cecil Field. Figure 1-2 provides existing information on subsurface manmade structures prior to August 2003.

1.4.1 Site Geology and Hydrogeology

The CARA (ABB-ES, 1997b) provides site-specific details on site geology and hydrogeology including aquifer characteristics data. The highlights of those details are as follows:

- The average hydraulic gradient across the site ranges from 0.001 to 0.0007 ft per foot (ft/ft) in the upper (shallow and intermediate) zones and 0.00076 ft/ft in the deep zone.

- The average hydraulic conductivity for the shallow, intermediate, and deep zones is 5.67 ft per day (ft/day), 6.24 ft/day, and 0.29 ft/day, respectively.

- The average pore water velocity is 0.0227 ft/day in the shallow zone, 0.0177 ft/day in the intermediate zone, and 0.0002 ft/day in the deep zone.

- According to the GIR (ABB-ES, 1998), the groundwater in the surficial aquifer system that is under investigation at this site is classified as Class G-II.

- The Executive Summary in Appendix A gives a brief, concise description of the site stratigraphy. However, as a result of additional vertical delineation requirements, this report will present additional lithologic information in Section 3 of this report.

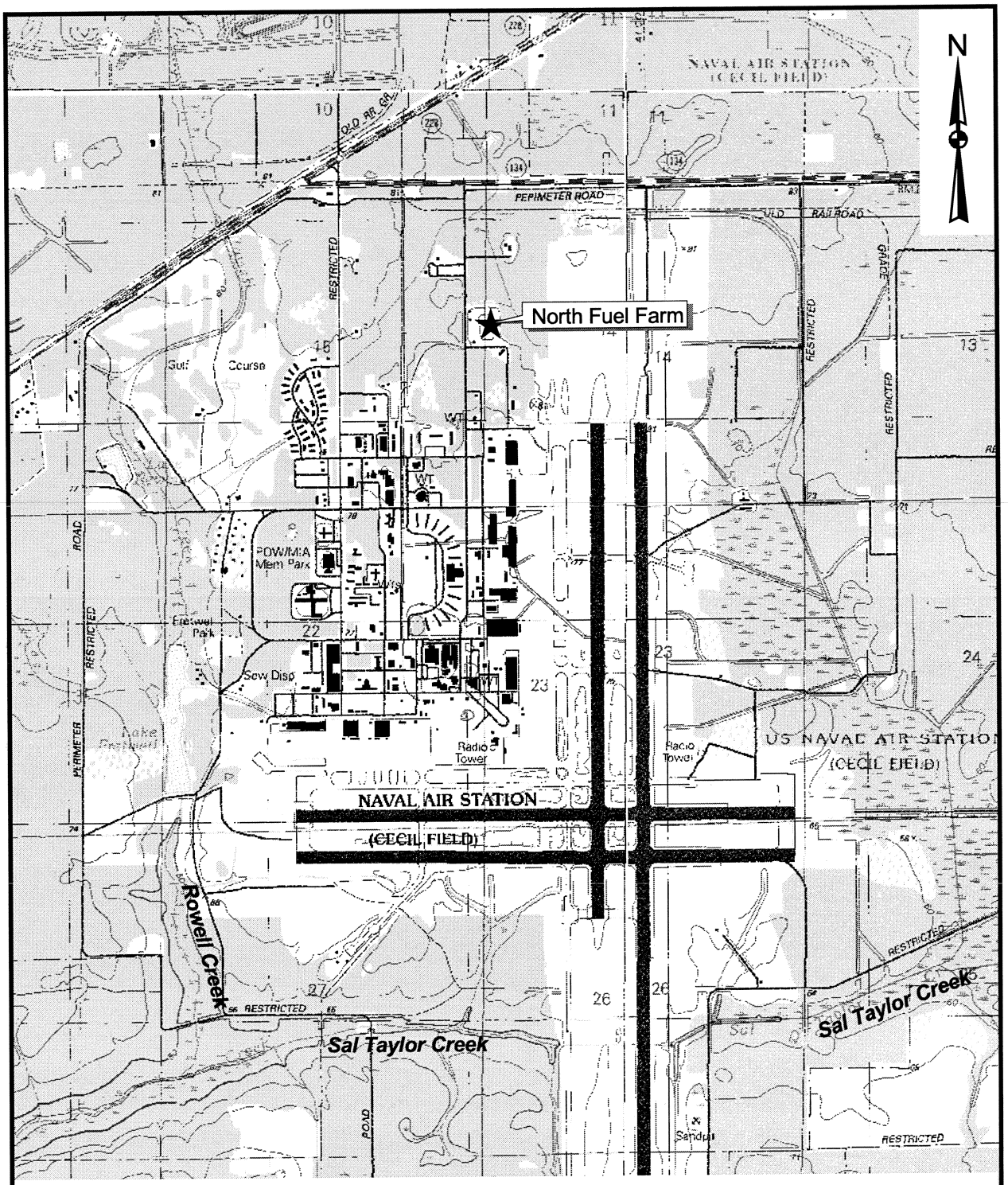
- The Executive Summary in Appendix A also indicates a downward vertical gradient was mapped from site data collected at that time.

1.4.2 SITE PHYSIOGRAPHY

Prior to the soil and tank farm removal conducted in 2000/2001, the tank farm and associated soil cover made an artificial mound with a height of approximately 20 ft above natural grade, which made the top of the mound approximately 100 ft above mean sea level (msl). The tank farm and soil mound have been removed, and the site topography is relatively flat at approximately 80 ft above msl. Though the site topography has changed dramatically as a result of soil source removal activities, the site is still mostly covered in grass with a few small trees left to the east of the former tank farm. The site has been re-graded to slope away from the adjoining roads and slightly to the northeast. The adjoining paved street on the south side of the site, Loop Road (name unchanged), remains; however, the other adjoining street on the west side of the site, Aviation Avenue (formerly A Avenue), has been under construction since August 2003. The COJ has leased the area immediately adjacent to Avenue A for the purpose of widening it and adding new infrastructure. Figure 1-3 is a site map showing the man-made structures pre-August 2003. The NFF area is still bound to the north and east by a ditch that drains the area. The areas to the north and east of the ditch are wooded with low-lying swamp areas. Figure 1-4 illustrates the areas north and east of the ditch as they currently exist. The United States Geological Survey topographic map from the Fiftone, Florida quadrangle (see Figure 1-5) indicates the topography of the site in 1993.

1.4.3 SURFACE HYDROLOGY

Currently, the area of the NFF is relatively flat. As indicated earlier, the average site elevation is approximately 80 ft above msl. According to the SRR (CCI, 2001), the site was regraded following the tank farm mound removal. The SRR stated "that the final grade would include a gradient across the site to allow stormwater to flow toward the drainage ditch to Sal Taylor Creek...With these elevations secured, the resulting surface gradient (and drainage) would be towards the northeast." Surface water runoff from the site, including the former tank farm, is directed to the ditch. Figure 1-3 shows the ditch that crosses the site from the northwest corner of NFF to the southeast side of the NFF where it enters a culvert that run due east under the landing approach area to the runways. On the other side of the landing approach area, the ditch resumes and eventually merges with Sal Taylor Creek. The spatial relationship of the NFF



2500 0 2500 Feet

Source: USGS Fiftone Florida 7.5-Minute Topographic Quadrangle, 1993.

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SCALE AS NOTED			DRAWING NO. FIGURE 1-5 / REV 0

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to Sal Taylor Creek is indicated on Figure 1-5. Sal Taylor Creek is classified by the FDEP as a Class III fresh water body (ABB-ES, 1998).

1.5 WATER WELL INFORMATION

The GIR (ABB-ES, 1998) indicates that there are five potable water supply wells within a 0.5-mile radius of the site. The GIR indicates that the wells are Floridan Aquifer wells ranging in depth from 400 to 800 ft bls. A site map showing the location of the supply wells is provided in the GIR.

2.0 FIELD INVESTIGATION

2.1 QUALITY ASSURANCE

The field procedures and sampling activities described in this SARA were performed in general accordance with the Sampling and Analysis Plan (SAP) (TtNUS, 2001). The guidance documents indicated in the SAP were as follows: the TtNUS Comprehensive Quality Assurance Plan Number 980038, which includes the FDEP's Standard Operating Procedures (SOPs) for laboratory operations and sample collection activities (DEP-QA-001/92), and the Base-wide Generic Work Plan (BWGWP) Volumes I and II (TtNUS, 1998) for NAS Cecil Field. Surface water, sediment, and groundwater samples collected during the investigation for analyses by a fixed-base laboratory were shipped on ice and under chain of custody to Accutest Laboratory, Orlando, Florida. The certification number for the Accutest Laboratory is 940304. The samples were typically analyzed for constituents of the gasoline analytical group (GAG)/Kerosene Analytical Group (KAG) group as specified in Chapter 62-770, Table B, FAC. Quality assurance and quality control samples were collected in general accordance with the SAP (TtNUS, 2001).

2.2 SOIL ASSESSMENT

A soil assessment was not conducted at the NFF because the previous investigations identified the contaminated soil area(s). A map from the RAP, Revision II, indicating the extent of soil contamination at the NFF (ABB-ES, 1997c) is provided as Appendix A. The subsequent removal actions performed at the site appear to have remediated the soil contamination associated with the site. The maps from the three SRRs (EDC, 1998; EDC, 1999; and CCI, 2001) provided in Appendix A indicate the extent of the three source removals conducted at the site. The FDEP Approval Letter (Appendix A) indicates that no further soil assessment or action is necessary at the NFF site.

2.3 SURFACE WATER AND SEDIMENT ASSESSMENT

In accordance with the SAP, on September 6, 2001, four co-located surface water and sediment samples were collected from the ditch that traverses the NFF site. Figure 2-1 indicates those locations as SW/SED 1, SW/SED 2, SW/SED 3, and SW/SED 4. FDEP SOP Section 4.2.3 was generally followed to collect each set of samples with the surface water collection preceding the sediment sampling at each location. Surface water samples were collected with a Teflon® cup, and the sediment samples were collected using a stainless steel hand auger. Decontamination of these sampling tools was performed in general accordance with FDEP SOP Section 4.1.4.

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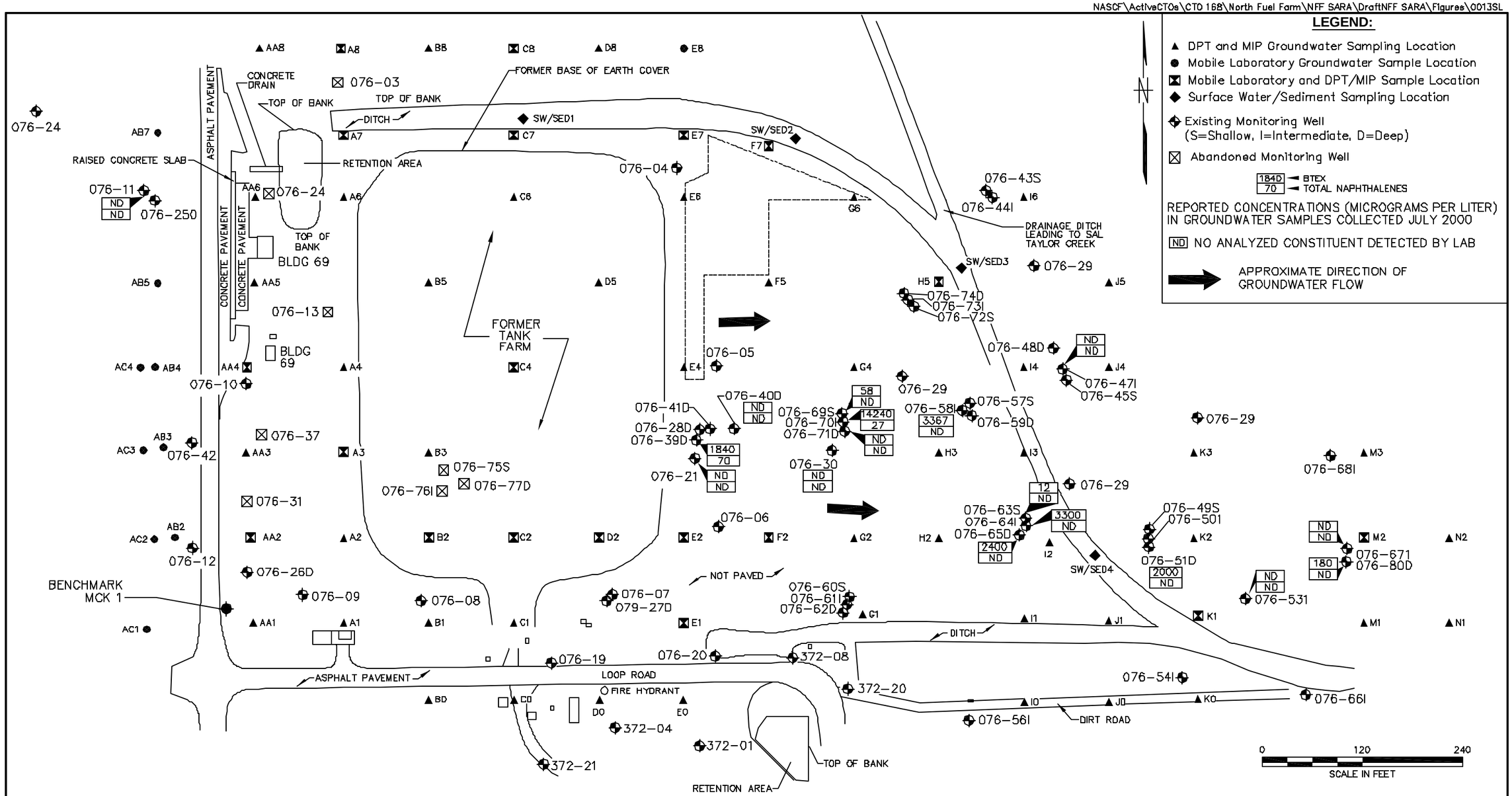

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK DATE 9/8/03
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COST/SCHED-AREA
SCALE AS NOTED

MIP, MOBILE LAB, AND SURFACE WATER/ SEDIMENT SAMPLING LOCATIONS
NORTH FUEL FARM
SITE ASSESSMENT REPORT ADDENDUM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NO. 3996
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 2-1
REV. 0

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A record of each sample collection was maintained on a Surface Water Sample Log Sheet or a Soil and Sediment Sample Log Sheet as specified in the BWGWP. Appendix B contains the log sheets for each surface water and sediment sample that was collected.

2.4 GROUNDWATER ASSESSMENT

2.4.1 Groundwater Flow

Water level measurements were collected to determine the depth to water in each zone of the surficial aquifer, to determine the relative groundwater flow direction in each zone, and to confirm the existence of a vertical gradient between the shallow and deep zones as previously reported in the CARA (ABB-ES, 1997b).

Synoptic groundwater level measurements were collected on three separate dates. An oil-water interface probe was used during each of the three groundwater measurement events. The referenced measuring point for each well was marked on the north side of the top of the polyvinyl chloride well casing. Water level measurements were recorded to the nearest 0.01 ft with the time of measurement. This data was used to generate the water table flow maps in this report. The depth to water measurements were collected on July 2, 2001; February 6, 2002; and June 11, 2002, to satisfy the requirements of the SAR as stated in Chapter 62-770, FAC. The groundwater elevation log sheets are provided in Appendix C.

Topographic surveys were conducted on the DPT and monitoring well locations at the NFF site by ARC Surveying and Mapping. Positions and elevations were measured with respect to the National Geodetic Vertical Datum (1988) and to the State Plane Coordinates for Florida East Zone, North American Datum (1983/1990). The survey dates were as follows: July 3, 2001; July 19, 2001; December 17, 2001; June 9, 2003; and July 14, 2003. The survey data for the new and existing wells are provided in Appendix D. The groundwater elevation was calculated by subtracting the depth to water from the top of casing elevation. Well construction and water table elevation data are provided on Table 2-1.

2.4.2 DPT and MIP/SC Field Screening

The first phase of the SARA investigation involved characterizing the groundwater contamination in the source area. Due to the large horizontal extent and unusually deep vertical extent of petroleum-impacted groundwater, TtNUS utilized a DPT rig equipped with a MIS/SC direct sensing tool to perform the characterization.

TABLE 2-1
GROUNDWATER ELEVATION DATA

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Monitoring Well Identification (CEF-076-)	Screen Interval (ft, bls)	Well Depth (ft, btoc)	Zone	Top-of-Casing Elevation (ft, msl)	July 2, 2001		February 6, 2003		June 11, 2003	
					Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)
4	5 - 15	12.93	WT	80.15	5.93	74.22	6.39	73.76	6.65	73.50
7	5 - 15	15.00	WT	79.46	NM	NM	NM	NM	3.79	75.67
8	5 - 15	14.44	WT	79.33	4.41	74.92	4.85	74.48	3.81	75.52
11	14 - 24	23.20	WT	79.98	3.33	76.65	NM	NM	NM	NM
12	5 - 15	15.23	WT	76.98	2.43	74.55	2.89	74.09	2.00	74.98
21	2 - 12	11.76	WT	78.28	NM	NM	NM	NM	2.98	75.30
30	2 - 12	12.50	WT	75.42	0.90	74.52	1.56	73.86	0.70	74.72
42	2 - 12	12.40	WT	77.09	2.48	74.61	2.71	74.38	1.87	75.22
107S	5 - 15	18.15	WT	82.26	NI	NI	NI	NI	6.83	75.43
108S	5 - 15	18.50	WT	81.47	NI	NI	NI	NI	5.82	75.65
109S	5 - 15	18.10	WT	80.92	NI	NI	NI	NI	5.62	75.30
29	3 - 13	13.00	WT	75.04	0.46	74.58	1.25	73.79	0.50	74.54
81S	3 - 13	13.02	WT	79.35	NI	NI	5.44	73.91	4.48	74.87
82S	2.5 - 12.5	12.62	WT	78.92	NI	NI	4.76	74.16	Damaged	NM
88S	5 - 15	17.99	WT	78.50	NI	NI	5.86	72.64	4.32	74.18
90S	5 - 15	15.00	WT	77.58	NI	NI	3.21	74.37	2.14	75.44
94S	5 - 15	18.22	WT	81.59	NI	NI	7.76	73.83	6.76	74.83
95S	5 - 15	18.01	WT	80.88	NI	NI	6.37	74.51	5.64	75.24

See notes at end of table.

TABLE 2-1
GROUNDWATER ELEVATION DATA

SITE ASSESSMENT REPORT ADDENDUM
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JACKSONVILLE, FLORIDA

Monitoring Well Identification (CEF-076-)	Screen Interval (ft, bls)	Well Depth (ft, btoc)	Zone	Top-of-Casing Elevation (ft, msl)	July 2, 2001		February 6, 2003		June 11, 2003	
					Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)
101S	30 - 35	38.24	UI	77.64	NI	NI	4.37	73.27	3.64	74.00
105I	45 - 50	53.35	UI	78.15	NI	NI	NI	NI	4.22	73.93
106S	25 - 30	33.35	UI	81.85	NI	NI	NI	NI	7.16	74.69
113S	35 - 40	43.22	UI	81.22	NI	NI	NI	NI	6.41	74.81
114S	35 - 40	43.11	UI	80.91	NI	NI	NI	NI	NI	NI
25D	32 - 42	42.00	UI	78.21	3.63	74.58	NM	NM	NM	NM
43S	35 - 40	42.00	UI	77.68	3.27	74.41	3.75	73.93	3.08	74.60
46S	37 - 42	44.81	UI	77.31	3.36	73.95	3.76	73.55	3.10	74.21
57S	30 - 35	37.44	UI	77.74	3.67	74.07	4.21	73.53	3.47	74.27
60S	35 - 40	42.73	UI	80.93	NM	NM	7.35	73.58	6.50	74.43
63S	40 - 45	47.00	UI	78.58	4.25	74.33	4.78	73.80	4.01	74.57
69S	30 - 35	38.00	UI	78.21	4.03	74.18	4.60	73.61	3.75	74.46
72S	30 - 35	37.50	UI	77.20	3.03	74.17	3.60	73.60	2.82	74.38
83S	25 - 30	30.00	UI	79.13	NI	NI	5.25	73.88	4.28	74.85
86S	45 - 50	53.32	UI	78.35	NI	NI	5.60	72.75	3.80	74.55
87S	45 - 50	53.33	UI	81.53	NI	NI	7.74	73.79	6.72	74.81
91S	25 - 30	33.81	UI	83.21	NI	NI	9.49	73.72	8.36	74.85
92S	25 - 30	33.18	UI	81.88	NI	NI	8.19	73.69	7.22	74.66
93S	25 - 30	33.29	UI	81.59	NI	NI	7.09	74.50	5.97	75.62
X2S	45 - 50	51.81	UI	80.00	5.61	74.39	6.25	73.75	5.31	74.69

See notes at end of table.

TABLE 2-1
GROUNDWATER ELEVATION DATA

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Monitoring Well Identification (CEF-076-)	Screen Interval (ft, bls)	Well Depth (ft, btoc)	Zone	Top-of-Casing Elevation (ft, msl)	July 2, 2001		February 6, 2003		June 11, 2003	
					Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)
111I	65 - 70	73.70	LI	82.23	NI	NI	NI	NI	7.93	74.30
112I	50 - 55	58.00	LI	81.56	NI	NI	NI	NI	6.89	74.67
26D	50 - 60	60.00	LI	79.10	4.60	74.50	5.35	73.75	4.28	74.82
27D	66 - 76	79.50	LI	79.43	NM	NM	6.04	73.39	5.05	74.38
29D	70 - 75	77.00	LI	77.15	3.12	74.03	4.64	72.51	3.57	73.58
39D	55 - 65	60.00	LI	77.82	3.46	74.36	5.09	72.73	3.14	74.68
44I	65 - 70	72.90	LI	77.70	3.34	74.36	3.84	73.86	3.13	74.57
47I	65 - 70	72.70	LI	77.31	3.35	73.96	3.81	73.50	3.10	74.21
49S	45 - 50	52.80	LI	78.14	4.33	73.81	4.77	73.37	4.10	74.04
50I	75 - 80	82.80	LI	78.17	4.36	73.81	4.81	73.36	4.11	74.06
53I	75 - 80	82.80	LI	77.90	3.96	73.94	4.40	73.50	3.69	74.21
56I	70 - 75	38.00	LI	80.91	7.21	73.70	7.60	73.31	6.72	74.19
58I	65 - 70	72.70	LI	77.66	3.65	74.01	4.21	73.45	3.40	74.26
61I	65 - 70	72.70	LI	81.12	7.03	74.09	7.60	73.52	6.73	74.39
64I	70 - 75	77.00	LI	78.39	4.10	74.29	4.64	73.75	3.83	74.56
70I	65 - 70	72.80	LI	78.21	4.11	74.10	4.69	73.52	3.84	74.37
73I	60 - 65	67.40	LI	77.02	2.90	74.12	3.45	73.57	2.66	74.36
84I	55 - 60	63.30	LI	81.62	NI	NI	7.85	73.77	6.83	74.79
85I	55 - 60	63.30	LI	81.50	NI	NI	6.65	74.85	6.79	74.71
89I	50 - 55	55.00	LI	77.60	NI	NI	4.00	73.60	2.86	74.74
X2D	75 - 80	80.60	LI	79.99	5.84	74.15	6.47	73.52	5.57	74.42

See notes at end of table.

TABLE 2-1
GROUNDWATER ELEVATION DATA

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Monitoring Well Identification (CEF-076-)	Screen Interval (ft, bls)	Well Depth (ft, btoc)	Zone	Top-of-Casing Elevation (ft, msl)	July 2, 2001		February 6, 2003		June 11, 2003	
					Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)	Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)
100D	110 - 115	118.25	DP	80.15	NI	NI	8.27	71.88	7.41	72.74
102D	115 - 120	123.35	DP	78.55	NI	NI	6.91	71.64	6.23	72.32
103D	144 - 149	152.39	DP	78.39	NI	NI	6.71	71.68	6.00	72.39
104D	110 - 115	118.78	DP	79.08	NI	NI	NI	NI	7.03	72.05
110D	105 - 110	113.81	DP	82.51	NI	NI	NI	NI	9.25	73.26
115D	105 - 110	112.76	DP	82.46	NI	NI	NI	NI	NI	NI
116D	105 - 110	113.63	DP	82.83	NI	NI	NI	NI	NI	NI
117D	105 - 110	112.58	DP	81.78	NI	NI	NI	NI	NI	NI
28D	80 - 90	89.50	DP	78.05	NM	NM	4.50	73.55	3.65	74.40
~~29B~~ 55I	80 - 85	87.79	DP	77.09	3.31	73.78	4.76	72.33	3.06	74.03
~~29C~~ 52I	75 - 80	82.41	DP	79.01	5.10	73.91	5.59	73.42	4.84	74.17
41D	108.5 - 118.5	115.00	DP	78.12	4.11	74.01	4.67	73.45	3.79	74.33
48D	100 - 110	100.00	DP	77.85	5.89	71.96	4.60	73.25	3.85	74.00
51D	100 - 110	112.79	DP	78.09	4.31	73.78	4.78	73.31	4.03	74.06
54I	80 - 85	87.69	DP	80.09	6.38	73.71	6.78	73.31	6.00	74.09
59D	100 - 110	112.73	DP	77.63	3.87	73.76	4.35	73.28	3.58	74.05
62D	105 - 110	112.58	DP	80.98	7.19	73.79	7.75	73.23	6.86	74.12
65D	115 - 120	112.00	DP	78.50	4.33	74.17	4.85	73.65	4.02	74.48
66I	80 - 85	88.00	DP	80.36	6.25	74.11	6.72	73.64	5.97	74.39
68I	82.6 - 87.6	90.00	DP	77.46	NM	NM	4.10	73.36	3.37	74.09
71D	80 - 85	87.64	DP	78.04	4.04	74.00	4.65	73.39	3.78	74.26
74D	100 - 110	113.00	DP	77.06	3.05	74.01	3.56	73.50	2.78	74.28
80D	115 - 120	112.00	DP	77.81	5.36	72.45	5.78	72.03	4.96	72.85
96D	110 - 115	115.00	DP	77.51	NI	NI	4.30	73.21	3.08	74.43
97D	100 - 105	108.00	DP	80.90	NI	NI	7.25	73.65	6.25	74.65
98D	105 - 110	113.30	DP	81.39	NI	NI	8.45	72.94	7.57	73.82
99D	95 - 100	103.60	DP	81.69	NI	NI	8.33	73.36	7.26	74.43

Notes:
btoc = below top of casing
NI = not installed
NM = not measured

Zone Descriptions:	General Depth (ft bls):
WT = water table	0 to 20
UI = Upper Intermediate	25 to 50
LI = Lower Intermediate	50 to 80
DP = Deep	greater than 80

The MIP/SC data was used to aid in determining the optimum number and location of permanent monitoring wells and aided in selecting the optimum screen intervals for the walls.

The following paragraphs that explain the MIP/SC system were paraphrased and/or excerpted from an article by the subcontractor (Tillman and Sohl, 2001).

The MIP is sensitive to a full range of VOCs, especially those petroleum-related compounds of concern (COCs) that have already been shown to exist at this site. This chemical profiling system is combined with an electrical logging tool for characterizing soil type, thus the additional abbreviation 'SC.' The main parts of the system are the MIP mounted on a DPT tool, an electrical conductivity array (also known as a Wenner Array), and a continuous monitoring detector.

- The MIP is a Teflon®-coated membrane, set within a heating block on the side of a DPT tool. The probe is 1.5 inches in diameter and is approximately 12 inches long. The MIP is driven into the ground at the rate of 1 ft per minute using a DPT rig. The soils and water that come in contact with the heating block are heated to 120 degrees Celsius (°C). Chemicals with lower boiling points (BP) [for example, benzene (BP = 80°C) and toluene (BP = 111°C)] are volatilized and diffuse rapidly across the membrane into a sampling loop that is composed of inert tubing inside a protective casing strung continuously from the MIP itself through the necessary length of hollow DPT rods and back to the detector. A carrier gas, usually nitrogen, sweeps the backside of the membrane to carry the volatiles back to the detector. As an example, it takes approximately 35 seconds for the carrier gas stream to travel 100 ft of inert tubing and reach the detectors. The temperature varies as a function of penetration rate and the thermal properties of the materials through which it passes. A temperature log was used to locate the groundwater table and other water rich units, since they tend to cool the probe down more quickly than soil types.

- The Wenner Array on the MIP system provides an estimate of the electrical conductivity of the soil/water layers that it passes through. The WennerArray utilizes a dipole measuring arrangement. An alternating electrical current is passed from the center, isolated pin of the SC probe to the probe body. The voltage response of the soil to the imposed current is measured across the same two points. The probe is reasonably accurate for measurement of soil conductivities in the range of 5 to 400 milliSiemens per meter (mS/M). In general, at a given location, lower conductivities will indicate sands while higher conductivities are indicative of silts and clays. The COCs in the groundwater can also affect conductivity.

- Two continuous monitoring detectors were in use for this phase of work: a flame ionization detector (FID) and a photoionization detector (PID) mounted on a laboratory grade gas chromatograph. Since

the FID is sensitive to natural gases, such as methane, the output from the PID was used to compare to the FID data and rule out possible input from natural sources. The output signal from the detectors was then captured by a specially designed MIP data logging system which fed data to a laptop computer. The MIP data logging system displayed results continuously in real time during each push of the probe. The data was printed out after each soil boring was completed, and it was saved to a common word processor software.

Between July 10, 2001, and August 31, 2001, TtNUS performed continuous profiling at 47 soil boring locations to an average depth of approximately 90 ft bls. Generally, the borings were terminated when high soil conductivities that indicated a clay-like unit at least 2 to 3 ft thick were encountered. A second round of MIP/SC soil profiling was performed at 19 soil boring locations between February 18, 2002, and April 8, 2002, to fill in gaps in the data set. Figure 2-1 shows the location of the MIP/SC borings. Table 2-2 provides a listing of each MIP boring with the total depths. Note that some of the listings show two depths [see "Total MIP Depth (ft, bls)" in the table]. The two-depth listings occurred at nine of the borings where the DPT/MIP rig was unable to achieve the desired depth on the first attempt. The second boring was able to achieve the desired depth through the use of a secondary, outer casing set to an average depth of 40 ft bls.

2.4.3 DPT with Mobile Laboratory

The second phase of the supplemental site assessment involved the use of a DPT rig to collect discrete groundwater samples for mobile laboratory analysis to correlate the MIP data. This event took place during the period of August 27, 2001, through September 13, 2001. Samples were collected from locations and intervals that represented a variety of low, medium, and high MIP/SC responses. Samples were collected from 19 of the 66 MIP/SC locations. Those locations where both MIP/SC and mobile laboratory samples were collected for comparison are shown on Figure 2-1. A total of 43 co-located samples were collected. Table 2-2 also provides a listing of the traditional DPT sample locations with the discrete sample intervals also indicated.

An additional 10 locations not associated with MIP/SC boring were sampled at various depth intervals for mobile laboratory analyses and are shown on Figure 2-1. The nine locations (listed first on Table 2-2) on the west side of Aviation Avenue were completed to assist the Navy in providing information to the COJ for immediate planning needs. The data was used to determine if groundwater contamination was present west of Aviation Avenue above 55 ft bls that might impact future dewatering activities. The tenth location (E8) north of the NFF site was sampled to compliment the MIP/SC data collected to the south of that location.

TABLE 2-2
MIP AND MOBILE LABORATORY SAMPLING LOCATION DATA

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA
Page 1 of 3

DPT Location Number	Subcontractors	MIP, ML, or Both	Date Conducted (1)	Total MIP Depth (ft, bls) (2)	Discrete Sample Interval (ft, bls) (3)
AC1	GPI/KB	ML	*9/7/2001*	n/a	14, 24
AC2	GPI/KB	ML	*9/6/2001*	n/a	14, 24, 34
AC3	GPI/KB	ML	*9/6/2001*	n/a	14, 24
AC4	GPI/KB	ML	*9/10/2001*	n/a	52
AB2	GPI/KB	ML	*9/4/2001*	n/a	12, 22, 32
AB3	GPI/KB	ML	*9/10/2001*	n/a	52
AB4	GPI/KB	ML	*9/4/2001*	n/a	22, 52
AB5	GPI/KB	ML	*9/10/2001*	n/a	52
AB7	GPI/KB	ML	*9/5/2001*	n/a	12, 52
AA1	CT	MIP	7/25/2001	87.5	n/a
AA2	CT, GPI/KB	Both	7/24/01, *8/27/2001*	94.5	12
AA3	CT	MIP	7/20/2001	75.4	n/a
AA4	CT, GPI/KB	Both	7/25/01, *8/27/2001, 8/28/01*	76.3	19, 50, 60
AA5	CT	MIP	7/26/2001	81.2	n/a
AA6	CT	MIP	7/26/01, 7/27/01	80.3	n/a
AA8	CT	MIP	3/8/02, 4/2/02	63, 112	n/a
A1	CT	MIP	7/31/2001, 8/1/01	91.5	n/a
A2	CT	MIP	7/23/2001	90.5	n/a
A3	CT, GPI/KB	Both	7/19/01, *8/27/2001*	80.6	12, 27, 56
A4	CT	MIP	7/24/2001	75.2	n/a
A6	CT	MIP	8/9/2001	80.3	n/a
A7	CT, GPI/KB	Both	8/21/01, *8/28/2001*	82.9	12, 49
A8	CT, GPI/KB	Both	*9/12/01*, 3/7/02, 4/7/02	50, 112	12, 49
B0	CT	MIP	3/6/2002	69.5	n/a
B1	CT	MIP	8/1/01, 8/2/01	73.4	n/a
B2	CT, GPI/KB	Both	7/18/01, *8/29/2001*	79.5	12
B3	CT	MIP	7/19/2001	84	n/a
B5	CT	MIP	2/19/2002	106.5	n/a
B8	CT	MIP	2/20/02, 4/8/02	67, 110	n/a
C0	CT	MIP	3/5/2002	86.5	n/a

See notes at end of table.

TABLE 2-2
MIP AND MOBILE LABORATORY SAMPLING LOCATION DATA

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA
Page 2 of 3

DPT Location Number	Subcontractors	MIP, ML, or Both	Date Conducted (1)	Total MIP Depth (ft, bls) (2)	Discrete Sample Interval (ft, bls) (3)
C1	CT	MIP	8/2/2001	79.4	n/a
C2	CT, GPI/KB	Both	7/18/01, *8/27/01, 8/29/01*	90.4	12, 17, 24, 42
C4	CT, GPI/KB	Both	8/7/01, 8/8/01, *8/28/2001*	77.2	28, 40, 50, 67
C6	CT	MIP	8/9/2001	82.3	n/a
C7	CT, GPI/KB	Both	8/21/01, *8/29/2001*	104.3	22, 53, 62
C8	CT, GPI/KB	Both	*9/13/01*, 2/20/2002	95.4	22, 53, 62
D0	CT	MIP	3/5/02, 3/10/02	69, 117	n/a
D2	CT, GPI/KB	Both	7/17/01, *8/28/2001*	90	27
D5	CT	MIP	8/29/2001	77.2	n/a
D8	CT	MIP	3/7/02, 3/17/02	66, 117	n/a
E0	CT	MIP	2/18/2002	123	n/a
E1	CT, GPI/KB	Both	8/3/01, *8/29/01, 8/30/01*	87.4	22, 42, 62
E2	CT, GPI/KB	Both	7/17/01, *8/28/01, 8/29/01*	85.5	18, 27
E4	CT	MIP	8/7/2001, 8/8/01	82.7	n/a
E6	CT	MIP	8/10/2001	78.2	n/a
E7	CT, GPI/KB	Both	8/20/01, *8/29/2001*	62.4	14, 19, 53
E8	GPI/KB	ML	*9/13/2001*	n/a	14, 53
F2	CT, GPI/KB	Both	7/16/01, *8/30/2001*	92.1	12, 56, 66
F5	CT	MIP	8/30/2001	87	n/a
F7	CT, GPI/KB	Both	8/20/01, *8/30/2001*	75.4	10
G1	CT	MIP	8/6/2001	101.4	n/a
G2	CT	MIP	7/13/2001	100.5	n/a
G4	CT	MIP	8/6/2001	88.4	n/a
G6	CT	MIP	2/26/02, 4/3/02	97, 114.4	n/a
H2	CT	MIP	7/13/2001	97.5	n/a
H3	CT	MIP	8/30/2001	66.8	n/a
H5	CT, GPI/KB	Both	7/12/01, *8/30/2001*	90.4	32

See notes at end of table.

TABLE 2-2
MIP AND MOBILE LABORATORY SAMPLING LOCATION DATA

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

DPT Location Number	Subcontractors	MIP, ML, or Both	Date Conducted (1)	Total MIP Depth (ft, bls) (2)	Discrete Sample Interval (ft, bls) (3)
I0	CT	MIP	2/26/02, 3/16/02	59, 116	n/a
I1	CT	MIP	7/12/2001	105.1	n/a
I2	CT	MIP	7/10/2001	113.3	n/a
I3	CT	MIP	7/11/2001	100.4	n/a
I4	CT	MIP	7/11/2001	92.4	n/a
I6	CT	MIP	3/20/2002	106.6	n/a
J0	CT	MIP	3/6/02, 3/15/02	118	n/a
J1	CT	MIP	7/30/2001	53.9	n/a
J4	CT	MIP	7/31/2001	57.4	n/a
J5	CT	MIP	7/30/01, 2/21/2002	100.7	n/a
K0	CT	MIP	3/7/02, 3/14/02	57, 118	n/a
K1	CT, GPI/KB	Both	8/28/01, 8/29/01, *9/10/2001*	109	17
K2	CT	MIP	8/27/2001	105	n/a
K3	CT	MIP	3/19/2002	113	n/a
M1	CT	MIP	3/8/02, 3/12/02	119	n/a
M2	CT, GPI/KB	Both	8/23/01, 8/27/01, *9/10/2001*	105	37, 53
M3	CT	MIP	3/9/02, 3/11/02	51, 90	n/a
N1	CT	MIP	8/22/2001	114.1	n/a
N2	CT	MIP	8/23/2001	72.5	n/a

Notes:
(1) Dates in italics apply to DPT/mobile laboratory work.
(2) If two depths shown, first depth is first attempt without outer casing, and second depth was reached with outer casing set to approximately 40 ft bls.
(3) Discrete samples collected by traditional DPT methods for mobile laboratory analyses.
CT = Columbia Technologies (DPT MIP/SC company)
GPI = Groundwater Protection, Inc. (DPT company)
KB = KB Labs, Inc. (Mobile laboratory company)
n/a = not applicable
ML = mobile laboratory

The samples were collected using a detachable drive tip attached to a 24-inch long, retractable, stainless steel well screen encased in the lead probe tube. After the water sampler was advanced into the desired water-bearing zone, the probe was withdrawn approximately 48 inches to allow the retractable screen to open to the formation. For groundwater recovery, a length of polyethylene tubing was inserted into the probe and connected to a peristaltic pump. Several screen volumes were then pumped from the probe in order to reduce the turbidity level and ensure a representative sample. After purging, the groundwater samples were collected by pumping directly into three 40-milliliter vials with Teflon®-coated septa, and one 1-liter amber glass bottle with Teflon® lid. The groundwater samples were analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX); naphthalene; and diesel range organics (DRO) by a mobile laboratory.

The evaluation of the DPT MIP/SC and mobile laboratory work indicated an approximate 70 to 75 percent confidence level in the DPT MIP/SC work. The MIP data was then processed into 3-dimensional animated graphic images, which were used to select locations and screen intervals for additional monitoring wells. These 3-dimensional images are provided on a compact disc (CD) in Appendix E.

2.4.4 Soil Borings

Generally, soil boring logs were prepared for wells installed by the hollow stem auger method. With the exception of monitoring well CEF-076-103D, the wells installed by the mud rotary method were not logged since sufficient lithologic data from the CARA (ABB-ES, 1997b) existed for most of those wells. For monitoring well CDF-076-103D, continuous split spoon samples were collected and logged for the interval from 110 to 118 ft bls and thereafter on 5-ft centers from 120 to 147 ft bls. Soil boring data for the rotasonic drilling was only maintained at the following two soil boring locations: CEF-076-111D and CEF-076-118D. The locations were adjacent to monitoring wells CEF-076-98D and CEF-076-110D, respectively, and the depth interval sampled was approximately 105 to 130 ft bls. Neither location was converted to a monitoring well. The soil boring logs for each applicable newly installed monitoring well are presented in Appendix F. The soil cuttings and other solid wastes from this drilling activity were containerized and were disposed of properly.

2.4.5 Permanent Monitoring Well Installation

TtNUS selected the location for the permanent monitoring wells to confirm and delineate the groundwater impacts indicated by the MIP field screening. Underground utilities were cleared by the appropriate utility departments and also investigated at each boring location by advancing the boring with a post hole digger from 0 to 4 ft bls. A synopsis of the new wells installed for this investigation with construction, development, and sampling dates is presented on Table 2-3, and the locations are mapped on Figure 1-3.

TABLE 2-3
NEW MONITORING WELL CONSTRUCTION AND INTENDED USE DATA

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Monitoring Well Identification (CEF-076-)	Screen Interval (ft, bls)	Well Depth (ft, btoc)	Zone	Top-of-Casing Elevation (ft, msl)	Installation Method	Installation Date	Development Date	Sample Date	Intended Purpose
81S	3 - 13	13.02	WT	79.36	HSA	12/3/2001	12/5/2001	12/10/2001	Perimeter
82S	2.5 - 12.5	12.62	WT	78.94	HSA	12/4/2001	12/5/2001	12/10/2001	Perimeter
88S	5 - 15	17.99	WT	78.50	HSA	12/12/2002	12/19/2002	1/28/2003	Perimeter
90S	5 - 15	15.00	WT	77.58	HSA	12/13/2002	12/15/2002	1/28/2003	Perimeter
94S	5 - 15	18.22	WT	81.59	HSA	12/16/2002	1/16/2003	1/28/2003	Source
95S	5 - 15	18.01	WT	80.88	HSA	12/16/2002	1/16/2003	1/28/2003	Perimeter
107S	5 - 15	18.15	WT	82.26	HSA	5/15/2003	5/20/2003	6/2/2003	Source
108S	5 - 15	18.50	WT	81.47	HSA	5/15/2003	5/20/2003	5/21/2003	Source
109S	5 - 15	18.10	WT	80.92	HSA	5/15/2003	5/20/2003	5/21/2003	Perimeter

Monitoring Well Identification (CEF-076-)	Screen Interval (ft, bls)	Well Depth (ft, btoc)	Zone	Top-of-Casing Elevation (ft, msl)	Installation Method	Installation Date	Development Date	Sample Date	Intended Purpose
83S	25 - 30	30.00	UI	79.13	HSA	12/10/2002	12/19/2002	1/28/2003	Perimeter
86S	45 - 50	53.32	UI	78.35	HSA	12/12/2002	1/15/2003	1/28/2003	Perimeter
87S	45 - 50	53.33	UI	81.53	HSA	12/12/2002	1/10/2003	1/28/2003	Source
91S	25 - 30	33.81	UI	83.21	HSA	12/13/2002	1/16/2003	1/28/2003	Source
92S	25 - 30	33.18	UI	81.88	HSA	12/16/2002	1/15/2003	1/28/2003	Perimeter
93S	25 - 30	33.29	UI	81.59	HSA	12/16/2002	1/16/2003	1/28/2003	Source
101S	30 - 35	38.24	UI	77.64	HSA	1/8/2003	1/24/2003	1/29/2003	Source
105I	45 - 50	53.35	UI	78.15	Rotosonic	5/15/2003	5/20/2003	5/21/2003	Perimeter
106S	25 - 30	33.35	UI	81.85	HSA	5/15/2003	5/21/2003	5/21/2003	Perimeter
113S	35 - 40	43.22	UI	81.22	Rotosonic	5/19/2003	5/20/2003	5/23/2003	Source
114S	35 - 40	43.11	UI	80.91	Rotosonic	7/1/2003	7/7/2003	7/10/2003	Perimeter

See notes at end of table.

TABLE 2-3
NEW MONITORING WELL CONSTRUCTION AND INTENDED USE DATA

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Monitoring Well Identification (CEF-076-)	Screen Interval (ft, bls)	Well Depth (ft, btoc)	Zone	Top-of-Casing Elevation (ft, msl)	Installation Method	Installation Date	Development Date	Sample Date	Intended Purpose
84I	55 - 60	63.30	LI	81.62	H.S.A.	12/11/2002	1/16/2003	1/28/2003	Perimeter
85I	55 - 60	63.30	LI	81.50	H.S.A.	12/11/2002	1/16/2003	1/28/2003	Perimeter
89I	50 - 55	55.00	LI	77.60	H.S.A.	12/13/2002	12/24/2002	1/28/2003	Perimeter
111I	65 - 70	73.70	LI	82.23	Rotosonic	5/18/2003	5/21/2003	5/21/2003	Perimeter
112I	50 - 55	58.00	LI	81.56	Rotosonic	5/18/2003	5/21/2003	5/21/2003	Perimeter

Monitoring Well Identification (CEF-076-)	Screen Interval (ft, bls)	Well Depth (ft, btoc)	Zone	Top-of-Casing Elevation (ft, msl)	Installation Method	Installation Date	Development Date	Sample Date	Intended Purpose
96D	110 - 115	115.00	DP	77.51	Mud Rotary	12/18/2002	12/24/2002	2/11/2003	Perimeter
97D	100 - 105	108.00	DP	80.90	Mud Rotary	12/19/2002	1/30/2003	2/10/2003	Perimeter
98D	105 - 110	113.30	DP	81.39	Mud Rotary	12/19/2002	1/30/2003	2/11/2003	Source
99D	95 - 100	103.60	DP	81.69	Mud Rotary	1/6/2003	1/10/2003	2/10/2003	Source
100D	110 - 115	118.25	DP	80.15	Mud Rotary	1/8/2003	1/28/2003	1/29/2003	Source
102D	115 - 120	123.35	DP	78.55	Mud Rotary	1/9/2003	1/30/2003	2/11/2003	Perimeter
103D	144 - 149	152.39	DP	78.39	Mud Rotary	1/21/2003	1/30/2003	2/10/2003	Vertical Extent
104D	110 - 115	118.78	DP	79.08	Rotosonic	5/14/2003	5/19/2003	5/21/2003	Perimeter
110D	105 - 110	113.81	DP	82.51	Rotosonic	5/15/2003	5/21/2003	5/21/2003	Source
115D	105 - 110	112.76	DP	82.46	Rotosonic	6/30/2003	7/1/2003	7/10/2003	Perimeter
116D	105 - 110	113.63	DP	82.83	Rotosonic	6/27/2003	7/1/2003	7/10/2003	Source
117D	105 - 110	112.58	DP	81.78	Rotosonic	6/29/2003	7/1/2003	7/10/2003	Perimeter

Notes:
HSA = hollow stem auger

Zone Descriptions:
WT = water table
UI = Upper Intermediate
LI = Lower Intermediate
DP = Deep

General Depth (ft bls):
0 to 20
25 to 50
50 to 80
greater than 80

The wells were drilled using several methods including hollow stem auger, mud rotary, and rotasonic. The monitoring well completion logs and certificates of conformance for each newly installed monitoring well are presented in Appendices G and H, respectively. The soil cuttings and other solid wastes from this drilling activity were containerized and disposed of properly.

Each well was developed using either a submersible pump or a bladder pump. During well development, field measurements of pH, temperature, and specific conductance were monitored from the water generated. The wells were developed for approximately one hour or until the field measurements became stable and the development water became clear. Water quality stabilization was determined by comparison of the last three measurements using the following criteria: temperature ±1°C, pH ±0.1 standard unit, and specific conductance ±10 percent. The development water was containerized and disposed of properly. Decontamination of the drilling tools, drilling rigs, and development equipment were performed in general accordance with FDEP SOP Section 4.1.4.

2.4.6 Groundwater Sampling of Monitoring Wells

Prior to sampling, approximately three to five well volumes of groundwater were removed from each well using low flow quiescent purging methods. Temperature, pH, specific conductance measurements, and well purge volumes were recorded at the time of sample collection. The samples were typically analyzed for constituents of the GAG/KAG group (with exceptions noted below). The groundwater samples for each monitoring well were placed on ice and shipped to the Accutest Laboratory in Orlando, Florida.

The following sampling events were conducted at the site (well prefix for the following bullets is CEF-076-):

- On December 10 and 11, 2001, samples were collected from the following wells west of the site that bracketed Aviation Avenue: 12, 42, 81S, and 82S.

- On January 8, 2002, well 12 was resampled for total lead and filtered lead only.

- Between December 11 and 18, 2002, samples were collected from the following existing wells: 7, 8, 39D, 43S, 44I, 49S, 50I, 51D, 56I, 57S, 61I, 62D, 63S, 64I, 65D, 69S, 70I, 71D, 73I, 80D, 81S, and 82S.

- Between January 28 and February 11, 2003, samples were collected from the following wells: 48D, 60S, 83S, 84I, 85I, 86S, 87S, 88S, 89I, 90S, 91S, 92S, 93S, 94S, 95S, 96D, 97D, 98D, 99D, 100D, 101S, 102D, and 103D.

- Between May 21 and 23, 2003, samples were collected from the following wells: 7, 53I, 104D, 105I, 106S, 108S, 109S, 110D, 111I, 112I, and 113S.

- On June 2, 2003, samples were collected from monitoring well CEF-076-107S for total lead and filtered lead only.

- On June 3, 2003, samples were collected from monitoring well CEF-076-21.

- On July 9 and 10, 2003, samples were collected from the following monitoring wells: 114S, 115D, 116D and 117D.

Groundwater field sampling data sheets and low flow purge data sheets are provided in Appendix I.

3.0 SITE ASSESSMENT RESULTS

3.1 SURFACE WATER AND SEDIMENT RESULTS

The surface water sample results indicate that concentrations of VOCs and PAHs were below detectable limits in all four samples. TRPH was detected in all four samples; however, the concentrations were below applicable surface water quality standards for a Class III Fresh Water body and applicable standards provided in Chapter 62-777, FAC. The locations, co-located with sediment sample locations, are shown in the ditch leading to Sal Taylor Creek as SW/SED 1, SW/SED 2, SW/SED 3, and SW/SED 4 on Figure 2-1. Lead was also detected in the sample from one location (shown as SW/SED 3 on Figure 2-1), but the concentration was below the applicable standard. The surface water data is summarized on Table 3-1. The laboratory report with the chain of custody is provided in Appendix J.

The sediment sample results indicate that concentrations of PAHs were below detection limits in all four samples. The TRPH concentrations for three of the four locations were below SCTLs; however, the sample from one location (shown as SW/SED 2 on Figure 2-1) was above the TRPH guideline for SCTL. Toluene was also detected in one sediment sample location (shown as SW/SED 3 on Figure 2-1), but the concentration reported for that sample was below the respective SCTL. The sediment laboratory data is summarized on Table 3-2. The same laboratory report provided in Appendix J for the surface water data also contains the sediment laboratory data.

3.2 DPT GROUNDWATER SCREENING RESULTS

3.2.1 DPT MIP/SC RESULTS

The MIP/SC system provided the following information and results:

- Continuous profiling of VOCs at each of 66 boring locations.
- Continuous soil conductivity data at each of those boring locations.
- A regular, but non-continuous readout of high soil conductivity (above 20 mS/M) was observed at approximately 60 to 65 ft bls, which was equated to a zone with increased clay content as previously indicated by the CARA (ABB-ES, 1997b). Generally, this interval was less than 1 ft thick.

TABLE 3-1
SUMMARY OF SURFACE WATER LABORATORY DATA

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76
Sample Location CEF-076-			SWW001	SWW002	SWW003	SWW004
Sample Location (as shown on Figure 2-1)			SW/SED 1	SW/SED 2	SW/SED 3	SW/SED 4
Sample ID CEF076			SWW00101	SWW00201	SWW00301	SWW00401
Sample Date			09/06/01	09/06/01	09/06/01	09/06/01
	Regulatory Criteria					
	62-777	62-302				
Inorganics (µg/L)						
LEAD	15		1.2 U	1.2 U	2.2 B	3.5 B
Semivolatile Organics (µg/L)						
1-METHYLNAPHTHALENE	95		2.2 U	2.0 U	2.0 U	2.0 U
2-METHYLNAPHTHALENE	30		2.2 U	2.0 U	2.0 U	2.0 U
ACENAPHTHENE	3	< 2.7	**4.4 U**	**4.0 U**	**4.0 U**	**4.0 U**
ACENAPHTHYLENE		< 0.031	**4.4 U**	**4.0 U**	**4.0 U**	**4.0 U**
ANTHRACENE	0.3	110	2.2 U	2.0 U	2.0 U	2.0 U
BENZO(A)ANTHRACENE		< 0.031	**0.22 U**	**0.20 U**	**0.20 U**	**0.20 U**
BENZO(A)PYRENE		< 0.031	**0.22 U**	**0.20 U**	**0.20 U**	**0.20 U**
BENZO(B)FLUORANTHENE		< 0.031	**0.22 U**	**0.20 U**	**0.20 U**	**0.20 U**
BENZO(G,H,I)PERYLENE		< 0.031	**0.22 U**	**0.20 U**	**0.20 U**	**0.20 U**
BENZO(K)FLUORANTHENE		< 0.031	**0.22 U**	**0.20 U**	**0.20 U**	**0.20 U**
CHRYSENE		< 0.031	**2.2 U**	**2.0 U**	**2.0 U**	**2.0 U**
DIBENZO(A,H)ANTHRACENE		< 0.031	**0.22 U**	**0.20 U**	**0.20 U**	**0.20 U**
FLUORANTHENE	0.3	< 0.370	**2.2 U**	**2.0 U**	**2.0 U**	**2.0 U**
FLUORENE	30	14	2.2 U	2.0 U	2.0 U	2.0 U
INDENO(1,2,3-CD)PYRENE		< 0.031	**0.22 U**	**0.20 U**	**0.20 U**	**0.20 U**
NAPHTHALENE	26		2.2 U	2.0 U	2.0 U	2.0 U
PHENANTHRENE		< 0.031	**2.2 U**	**2.0 U**	**2.0 U**	**2.0 U**
PYRENE	0.3	<11	2.2 U	2.0 U	2.0 U	2.0 U
Volatile Organics (µg/L)						
1,1,1-TRICHLOROETHANE	270		2.0 U	2.0 U	2.0 U	2.0 U
1,1,2,2-TETRACHLOROETHANE		< 10.8	2.0 U	2.0 U	2.0 U	2.0 U
1,1,2-TRICHLOROETHANE	28.5		2.0 U	2.0 U	2.0 U	2.0 U
1,1-DICHLOROETHANE	NA		2.0 U	2.0 U	2.0 U	2.0 U
1,1-DICHLOROETHENE		<3.2	2.0 U	2.0 U	2.0 U	2.0 U
1,2-DIBROMOETHANE	13		0.020 U	0.020 U	0.020 U	0.020 U
1,2-DICHLOROETHANE	5		2.0 U	2.0 U	2.0 U	2.0 U
1,2-DICHLOROPROPANE	2600		2.0 U	2.0 U	2.0 U	2.0 U
2-HEXANONE	NA		10 U	10 U	10 U	10 U
4-METHYL-2-PENTANONE			10 U	10 U	10 U	10 U
ACETONE	1692		50 U	50 U	50 U	50 U
BENZENE		<71.28	1.0 U	1.0 U	1.0 U	1.0 U
BROMODICHLOROMETHANE		< 22	2.0 U	2.0 U	2.0 U	2.0 U
BROMOFORM		< 360	2.0 U	2.0 U	2.0 U	2.0 U
BROMOMETHANE	35		5.0 U	5.0 U	5.0 U	5.0 U
CARBON DISULFIDE	105		10 U	10 U	10 U	10 U
CARBON TETRACHLORIDE		< 4.42	2.0 U	2.0 U	2.0 U	2.0 U
CHLOROBENZENE	17		2.0 U	2.0 U	2.0 U	2.0 U
CHLORODIBROMOMETHANE		< 34	2.0 U	2.0 U	2.0 U	2.0 U
CHLOROETHANE	NA		5.0 U	5.0 U	5.0 U	5.0 U
CHLOROFORM		< 470.8	2.0 U	2.0 U	2.0 U	2.0 U
CHLOROMETHANE		< 470.8	5.0 U	5.0 U	5.0 U	5.0 U
CIS-1,2-DICHLOROETHENE	7000		2.0 U	2.0 U	2.0 U	2.0 U
CIS-1,3-DICHLOROPROPENE	12		2.0 U	2.0 U	2.0 U	2.0 U
ETHYLBENZENE	605		2.0 U	2.0 U	2.0 U	2.0 U
METHYLENE CHLORIDE		< 1580	5.0 U	5.0 U	5.0 U	5.0 U
METHYL ETHYL KETONE	120000		10 U	10 U	10 U	10 U
STYRENE	455		2.0 U	2.0 U	2.0 U	2.0 U
TETRACHLOROETHENE		< 8.85	2.0 U	2.0 U	2.0 U	2.0 U
TOLUENE	475		2.0 U	2.0 U	2.0 U	2.0 U
TOTAL XYLENES	370		6.0 U	6.0 U	6.0 U	6.0 U
TRANS-1,2-DICHLOROETHENE	11000		2.0 U	2.0 U	2.0 U	2.0 U
TRANS-1,3-DICHLOROPROPENE	12		2.0 U	2.0 U	2.0 U	2.0 U
TRICHLOROETHENE		< 80.7	2.0 U	2.0 U	2.0 U	2.0 U
VINYL CHLORIDE	NA		1.0 U	1.0 U	1.0 U	1.0 U
Petroleum Hydrocarbons (µg/L)						
TOTAL PETROLEUM HYDROCARBONS	5000		688	715	312	308

Notes:
62-777 - Surface Water Cleanup Target Levels established in Chapter 62-777, FAC.
62-302 - Criteria for Surface Water Quality Classifications Class III Fresh Waters established in Chapter 62-302, FAC.
B (inorganics) - Indicates a result >= IDL, but < RL.
B (organics) - Blank contamination detected during analysis.
U - Concentration less than the detection limit.

NA - Not Available
Values exceeding regulatory criteria are in bold.
Positive detections are shaded.
RL = Reporting Limit
IDL = Instrumentation Detection Limit

TABLE 3-2
SUMMARY OF SEDIMENT LABORATORY DATA

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76
Sample Location CEF-076-			SDC001	SDC002	SDC003	SDC004
Sample Location (as shown on Figure 2-1)			SW/SED 1	SW/SED 2	SW/SED 3	SW/SED 4
Sample ID CEF076SDC			101	201	301	401
Sample Date			09/06/01	09/06/01	09/06/01	09/06/01
Semivolatile Organics (µg/Kg)	Residential	Leaching				
1-METHYLNAPHTHALENE	68000	2200	500 U	420 U	480 U	460 U
2-METHYLNAPHTHALENE	80000	6100	500 U	420 U	480 U	460 U
ACENAPHTHENE	1900000	2100	1000 U	840 U	950 U	920 U
ACENAPHTHYLENE	1100000	27000	1000 U	840 U	950 U	920 U
ANTHRACENE	18000000	2500000	500 U	420 U	480 U	460 U
BENZO(A)ANTHRACENE	1400	3200	500 U	420 U	480 U	460 U
BENZO(A)PYRENE	100	800	100 U	84 U	95 U	92 U
BENZO(B)FLUORANTHENE	1400	10000	100 U	84 U	95 U	92 U
BENZO(G,H,I)PERYLENE	2300000	32000000	100 U	84 U	95 U	92 U
BENZO(K)FLUORANTHENE	15000	25000	100 U	84 U	95 U	92 U
CHRYSENE	140000	77000	500 U	420 U	480 U	460 U
DIBENZO(A,H)ANTHRACENE	100	30000	100 U	84 U	95 U	92 U
FLUORANTHENE	2900000	1200000	500 U	420 U	480 U	460 U
FLUORENE	2200000	160000	500 U	420 U	480 U	460 U
INDENO(1,2,3-CD)PYRENE	1500	28000	100 U	84 U	95 U	92 U
NAPHTHALENE	40000	1700	500 U	420 U	480 U	460 U
PHENANTHRENE	2000000	250000	500 U	420 U	480 U	460 U
PYRENE	2200000	880000	500 U	420 U	480 U	460 U
Volatile Organics (µg/Kg)						
BENZENE	1100	7.0	**7.4 U**	**290 U**	**7.1 U**	**7.1 U**
ETHYLBENZENE	1100000	600	7.4 U	290 U	7.1 U	7.1 U
METHYL TERT-BUTYL ETHER	3200000	200	7.4 U	**290 U**	7.1 U	7.1 U
TOLUENE	380000	500	7.4 U	290 U	5.0 J	7.1 U
TOTAL XYLENES	5900000	200	22 U	**880 U**	21 U	21 U
Petroleum Hydrocarbons (mg/Kg)						
TOTAL PETROLEUM HYDROCARBONS	**340**	**340**	76.0	**427**	93.0	142

Notes:
Positive detections are shaded.
Values exceeding SCTLs are in bold.
SCTLs exceeded in one or more samples are in bold and underlined.
U indicates a concentration less than the detection limit.
J indicates an estimated concentration.
µg/Kg - micrograms per kilogram
mg/Kg - milligrams per kilogram

- A high conductivity layer (above 20 mS/M) at least 2-ft thick was observed at approximately 80 to 85 ft bls on the west side of the site and appears to slope down to the southeast side of the site where it was encountered at depths of approximately 90 to 105 ft bls. This higher conductivity layer was equated to lower units of the surficial aquifer that immediately precede the upper Hawthorn Group sediments. These may include sandy clay and/or clay units.

- Characterization of the source area (also known as the tank farm mound) and adjacent areas that aided in the selection of permanent monitoring well locations and screen intervals.

Appendix E contains a CD with a copy of a computer program called the Four-Dimensional Interactive Model (4DIM) player and animated graphic presentation of the actual data collected with the MIP/SC system. Included with that CD is a brief notepad document labeled "4DIM Notes" on installation and use of the player and the graphic presentation.

3.2.2 MOBILE LABORATORY RESULTS

The groundwater sampling results from the mobile laboratory represented field screening data that was used to correlate the MIP data and to address concerns by the COJ regarding the possibility that groundwater contamination at the NFF might extend west of Aviation Avenue. Generally, a 70 to 75 percent qualitative correlation was determined between the mobile lab and the MIP data. This correlation was accomplished by interpolating the MIP response at those depths and locations where the mobile laboratory reported detectable BTEX. Table 3-3 provides a partial list of the sampling point results for benzene as compared to the MIP response. That table generally indicates how a range of benzene concentrations (from 1 to 10,000 µg/L) from the mobile laboratory correlated to the corresponding MIP response. Various factors affected the correlation between MIP response and detected BTEX concentrations. VOCs boil at different temperatures (BTEX compounds vaporize at temperatures that range from 80°C to 138°C), and the presence of other compounds (both organic and inorganic) can affect how the COCs (like BTEX) are extracted by the probe; and, VOCs other than BTEX can be extracted that might produce a higher MIP response than expected.

BTEX was detected by the mobile laboratory at 18 of 19 MIP locations and at various depths. Naphthalene was detected at 7 of the 19 MIP locations. DRO was not detected at any of the MIP locations. The complete mobile laboratory results are presented in Appendix K.

Of the nine locations west of Aviation Avenue that were sampled by only the mobile laboratory, BTEX compounds were detected in seven of the nine locations. Naphthalene and DRO were not detected in the samples from any of the nine locations east of Aviation Avenue.

TABLE 3-3
MIP TO MOBILE LABORATORY DATA COMPARISON

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Location and Depth	Benzene (µg/L)	MIP Response (µV)
E2-18	1	2.00E+05
A7-49	5.2	5.00E+05
E1-22	5.3	5.00E+04
E2-27	5.6	5.00E+04
B2-12	7.8	1.00E+05
E1-42	10	5.00E+04
AA4-19	10.4	5.00E+05
C7-22	11.8	5.00E+04
A7-12	12.2	7.50E+05
C2-42	52.4	5.00E+04
E7-53	54.4	5.00E+04
A3-27	140	2.00E+05
C7-53	240	2.50E+05
AA4-50	270	2.00E+05
A3-56	340	1.10E+06
A3-12	380	5.00E+05
AA2-12	490	4.75E+06
C4-28	2000	1.50E+06
C2-17	2600	3.50E+06
C2-24	4100	1.50E+06
C4-40	4800	1.00E+06
C4-67	6100	1.00E+06
C4-50	10000	2.75E+06

Notes:
E2-18 (E2 = DPT Location; 18 = 18 ft bls)
µV = microvolts
E = exponent base 10

The mobile laboratory results for the location north of the ditch (E8) indicated no potential water table petroleum contamination; however, the deeper sample at 53 ft bls did detect a low level (less than 10 µg/L) of total BTEX.

3.3 PERMANENT MONITORING WELL ANALYTICAL RESULTS

Groundwater samples from site monitoring wells were submitted to an off-site laboratory for analysis for constituents of the GAG/KAG. The laboratory analytical results for each aquifer zone are summarized as follows:

- Table 3-4 Water Table Zone
- Table 3-5 Upper Intermediate Zone
- Table 3-6 Lower Intermediate Zone
- Table 3-7 Deep Zone

The laboratory analytical reports are included as Appendix L. The results of the groundwater analyses were compared to the GCTLs and the NADSCs.

3.3.1 Water Table Zone

Groundwater samples were collected from nine monitoring wells screened in the water table zone. Six of the monitoring wells sampled from this zone had GCTL exceedances for one or more analytes. VOCs, PAHs, TRPH, and lead were detected in groundwater samples from water table wells at concentrations above GCTLs. Two of the nine wells exceeded NADSC standards, specifically for BTEX. No other COCs exceeded NADSC standards in the water table zone. The GCTL and NADSC exceedances detected in samples from the water table zone are summarized on Table 3-8.

3.3.1.1 Volatile Organics – Water Table Zone

Volatile organic compounds at concentrations exceeding GCTLs were detected in three of the nine water table zone monitoring wells sampled. VOC exceedances in the water table zone were limited to BTEX. The VOC analytical results for the water table zone are shown on Figure 3-1.

Benzene was detected at concentrations exceeding the GCTL of 1 µg/L in three monitoring wells:

- CEF-076-94S 2,560 µg/L (NADSC exceeded)
- CEF-076-108S 16.3 µg/L
- CEF-076-90S 1.5 µg/L

TABLE 3-4
SUMMARY OF GROUNDWATER LABORATORY DATA, WATER TABLE ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76
Sample Location			CEF-076-07	CEF-076-07	CEF-076-08	CEF-076-12
Sample ID CEF-076-GW-			E-7S-01	E-7S-02	E-8S-01	12
Sample Date			12/17/02	5/23/2003	12/17/02	12/10/01
Screen Interval (ft bls)			5 - 15	5 - 15	5 - 15	5-15
Inorganics (µg/L)	GCTL	NADSC				
LEAD	**15**	150	1.4 B	1.2 U	1.8 B	**41.9**
Semivolatile Organics (µg/L)						
1-METHYLNAPHTHALENE	**20**	200	0.27 U	0.26 U	0.28 U	2 U
2-METHYLNAPHTHALENE	**20**	200	0.27 U	0.26 U	0.28 U	2 U
ACENAPHTHENE	20	200	0.53 U	0.52 U	0.56 U	4 U
ACENAPHTHYLENE	210	2100	0.53 U	0.52 U	0.56 U	4 U
ANTHRACENE	2100	21000	0.27 U	0.26 U	0.28 U	2 U
BENZO(A)ANTHRACENE	0.2	20	0.11 U	0.10 U	0.11 U	0.2 U
BENZO(A)PYRENE	0.2	20	0.11 U	0.10 U	0.11 U	0.2 U
BENZO(B)FLUORANTHENE	0.2	20	0.11 U	0.10 U	0.11 U	0.2 U
BENZO(G,H,I)PERYLENE	210	2100	0.11 U	0.10 U	0.11 U	0.2 U
BENZO(K)FLUORANTHENE	0.5	50	0.11 U	0.10 U	0.11 U	0.2 U
CHRYSENE	4.8	480	0.11 U	0.10 U	0.11 U	2 U
DIBENZO(A,H)ANTHRACENE	0.2	20	0.11 U	0.10 U	0.11 U	0.2 U
FLUORANTHENE	280	2800	0.27 U	0.26 U	0.28 U	2 U
FLUORENE	280	2800	0.27 U	0.26 U	0.28 U	2 U
INDENO(1,2,3-CD)PYRENE	0.2	20	0.11 U	0.10 U	0.11 U	0.2 U
NAPHTHALENE	**20**	200	0.27 U	0.26 U	0.28 U	2 U
PHENANTHRENE	210	2100	0.27 U	0.26 U	0.28 U	2 U
PYRENE	210	2100	0.27 U	0.26 U	0.28 U	2 U
Volatile Organics (µg/L)						
1,1,1-TRICHLOROETHANE	200		0.5 U	0.5 U	0.5 U	2 U
1,1,2,2-TETRACHLOROETHANE	0.2		**0.5 U**	**0.30 U**	**0.5 U**	**2 U**
1,1,2-TRICHLOROETHANE	5		0.5 U	0.5 U	0.5 U	2 U
1,1-DICHLOROETHANE	70		0.5 U	0.5 U	0.5 U	2 U
1,1-DICHLOROETHENE	7		0.5 U	0.5 U	0.5 U	2 U
1,2-DIBROMOETHANE	0.02	2	0.0092 U	0.0090 U	0.0092 U	0.02 U
1,2-DICHLOROBENZENE	600		0.5 U	0.5 U	0.5 U	2 U
1,2-DICHLOROETHANE	3	300	0.5 U	0.5 U	0.5 U	2 U
1,2-DICHLOROPROPANE	5		0.5 U	0.5 U	0.5 U	2 U
1,3-DICHLOROBENZENE	10		0.5 U	0.5 U	0.5 U	2 U
1,4-DICHLOROBENZENE	75		0.5 U	0.5 U	0.5 U	2 U
2-CHLOROETHYL VINYL ETHER	175		2.5 U	2.5 U	2.5 U	NA
BENZENE	**1**	**100**	0.5 U	0.5 U	0.5 U	1 U
BROMODICHLOROMETHANE	0.6		0.5 U	0.5 U	0.5 U	**2 U**
BROMOFORM	4.4		0.5 U	0.5 U	0.5 U	2 U
BROMOMETHANE	9.8		1 U	1.0 U	1 U	5 U
CARBON TETRACHLORIDE	3		0.5 U	0.5 U	0.5 U	2 U
CHLOROBENZENE	100		0.5 U	0.5 U	0.5 U	2 U
CHLORODIBROMOMETHANE	0.4		0.4 U	0.40 U	0.4 U	**2 U**
CHLOROETHANE	12		1 U	1.0 U	1 U	5 U
CHLOROFORM	5.7		0.5 U	0.5 U	0.5 U	2 U
CHLOROMETHANE	2.7		1 U	1.0 U	1 U	**5 U**
CIS-1,2-DICHLOROETHENE	70		0.5 U	0.5 U	0.5 U	2 U
CIS-1,3-DICHLOROPROPENE	0.2		**0.5 U**	**0.30 U**	**0.5 U**	**2 U**
ETHYLBENZENE	**30**	**300**	0.7 U	0.5 U	0.7 U	2 U
METHYL TERT-BUTYL ETHER	50	500	0.5 U	0.5 U	0.5 U	2 U
METHYLENE CHLORIDE	5		1 U	1 U	1 U	5 U
TETRACHLOROETHENE	3		0.5 U	0.5 U	0.5 U	2 U
TOLUENE	**40**	**400**	0.5 U	1.0	0.5 U	2 U
TOTAL XYLENES	**20**	**200**	1 U	1 U	1 U	6 U
TRANS-1,2-DICHLOROETHENE	100		0.5 U	0.5 U	0.5 U	2 U
TRANS-1,3-DICHLOROPROPENE	0.2		**0.5 U**	**0.30 U**	**0.5 U**	**2 U**
TRICHLOROETHENE	3		0.5 U	0.5 U	0.5 U	2 U
VINYL CHLORIDE	1		0.5 U	0.5 U	0.5 U	1 U
Petroleum Hydrocarbons (µg/L)						
TOTAL PETROLEUM HYDROCARBONS	**5000**	50000	210 U	180 U	190 U	250 U

See notes at end of table.

TABLE 3-4
SUMMARY OF GROUNDWATER LABORATORY DATA, WATER TABLE ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76
Sample Location			CEF-076-12	CEF-076-12	CEF-076-21	CEF-076-42
Sample ID CEF-076-GW-			E012-01A	E012-01A	E21-01	42
Sample Date			01/08/02	01/08/02	06/03/03	12/11/01
Screen Interval (ft bls)			5-15	5-15	2 - 12	2-12
Inorganics (µg/L)	GCTL	NADSC				
LEAD	**15**	150	**23.4**	4.1 B	1.2 U	3.5 B
Semivolatile Organics (µg/L)						
1-METHYLNAPHTHALENE	**20**	200	This sample was analyzed for lead only.		0.26 U	2 U
2-METHYLNAPHTHALENE	**20**	200			0.26 U	2 U
ACENAPHTHENE	20	200			0.52 U	4 U
ACENAPHTHYLENE	210	2100			0.52 U	4 U
ANTHRACENE	2100	21000			0.26 U	2 U
BENZO(A)ANTHRACENE	0.2	20			0.10 U	0.2 U
BENZO(A)PYRENE	0.2	20			0.10 U	0.2 U
BENZO(B)FLUORANTHENE	0.2	20			0.10 U	0.2 U
BENZO(G,H,I)PERYLENE	210	2100			0.10 U	0.2 U
BENZO(K)FLUORANTHENE	0.5	50			0.10 U	0.2 U
CHRYSENE	4.8	480			0.10 U	2 U
DIBENZO(A,H)ANTHRACENE	0.2	20			0.10 U	0.2 U
FLUORANTHENE	280	2800			0.26 U	2 U
FLUORENE	280	2800			0.26 U	2 U
INDENO(1,2,3-CD)PYRENE	0.2	20			0.10 U	0.2 U
NAPHTHALENE	**20**	200			0.26 U	2 U
PHENANTHRENE	210	2100			0.26 U	2 U
PYRENE	210	2100			0.26 U	2 U
Volatile Organics (µg/L)						
1,1,1-TRICHLOROETHANE	200		This sample was analyzed for lead only.		0.5 U	2 U
1,1,2,2-TETRACHLOROETHANE	0.2				**0.30 U**	**2 U**
1,1,2-TRICHLOROETHANE	5				0.5 U	2 U
1,1-DICHLOROETHANE	70				0.5 U	2 U
1,1-DICHLOROETHENE	7				0.5 U	2 U
1,2-DIBROMOETHANE	0.02	2			0.0092 U	0.020 U
1,2-DICHLOROBENZENE	600				0.5 U	2 U
1,2-DICHLOROETHANE	3	300			0.5 U	2 U
1,2-DICHLOROPROPANE	5				0.5 U	2 U
1,3-DICHLOROBENZENE	10				0.5 U	2 U
1,4-DICHLOROBENZENE	75				0.5 U	2 U
2-CHLOROETHYL VINYL ETHER	175				2.5 U	NA
BENZENE	**1**	**100**			0.5 U	1 U
BROMODICHLOROMETHANE	0.6				0.5 U	**2 U**
BROMOFORM	4.4				0.5 U	2 U
BROMOMETHANE	9.8				1.0 U	5 U
CARBON TETRACHLORIDE	3				0.5 U	2 U
CHLOROBENZENE	100				0.5 U	2 U
CHLORODIBROMOMETHANE	0.4				0.40 U	**2 U**
CHLOROETHANE	12				1.0 U	5 U
CHLOROFORM	5.7				0.5 U	2 U
CHLOROMETHANE	2.7				1.0 U	**5 U**
CIS-1,2-DICHLOROETHENE	70				0.5 U	2 U
CIS-1,3-DICHLOROPROPENE	0.2				**0.30 U**	**2 U**
ETHYLBENZENE	**30**	**300**			0.5 U	2 U
METHYL TERT-BUTYL ETHER	50	500			0.5 U	2 U
METHYLENE CHLORIDE	5				1.0 U	5 U
TETRACHLOROETHENE	3				0.5 U	2 U
TOLUENE	**40**	**400**			0.5 U	2 U
TOTAL XYLENES	**20**	**200**			1.0 U	6 U
TRANS-1,2-DICHLOROETHENE	100				0.5 U	2 U
TRANS-1,3-DICHLOROPROPENE	0.2				**0.30 U**	**2 U**
TRICHLOROETHENE	3				0.5 U	2 U
VINYL CHLORIDE	1				0.5 U	1 U
Petroleum Hydrocarbons (µg/L)						
TOTAL PETROLEUM HYDROCARBONS	**5000**	50000	This sample was analyzed for lead only.		180 U	250 U

See notes at end of table.

TABLE 3-4
SUMMARY OF GROUNDWATER LABORATORY DATA, WATER TABLE ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76
Sample Location			CEF-076-81S	CEF-076-81S	CEF-076-82S	CEF-076-82S
Sample ID CEF-076-GW-			81S	E81S-01	82S	E-82S-01
Sample Date			12/10/01	12/18/02	12/10/01	12/17/02
Screen Interval (ft bls)			3-13	3 - 13	2.5-12.5	2.5-12.5
Inorganics (µg/L)	GCTL	NADSC				
LEAD	**15**	150	2.9 B	2.8 B	4.3 B	2.8 B
Semivolatile Organics (µg/L)						
1-METHYLNAPHTHALENE	**20**	200	2 U	0.27 U	**21.3**	20
2-METHYLNAPHTHALENE	**20**	200	2 U	0.27 U	12.8	**22.3**
ACENAPHTHENE	20	200	4 U	0.54 U	4 U	0.56 U
ACENAPHTHYLENE	210	2100	4 U	0.54 U	4 U	0.56 U
ANTHRACENE	2100	21000	2 U	0.27 U	2 U	0.28 U
BENZO(A)ANTHRACENE	0.2	20	0.2 U	0.11 U	0.2 U	0.11 U
BENZO(A)PYRENE	0.2	20	0.2 U	0.11 U	0.2 U	0.11 U
BENZO(B)FLUORANTHENE	0.2	20	0.2 U	0.11 U	0.2 U	0.11 U
BENZO(G,H,I)PERYLENE	210	2100	0.2 U	0.11 U	0.2 U	0.11 U
BENZO(K)FLUORANTHENE	0.5	50	0.2 U	0.11 U	0.2 U	0.11 U
CHRYSENE	4.8	480	2 U	0.11 U	2 U	0.11 U
DIBENZO(A,H)ANTHRACENE	0.2	20	0.2 U	0.11 U	0.2 U	0.11 U
FLUORANTHENE	280	2800	2 U	0.27 U	2 U	0.28 U
FLUORENE	280	2800	2 U	0.27 U	2 U	0.28 U
INDENO(1,2,3-CD)PYRENE	0.2	20	0.2 U	0.11 U	0.2 U	0.11 U
NAPHTHALENE	**20**	200	2 U	0.27 U	4.9	10.4
PHENANTHRENE	210	2100	2 U	0.27 U	2 U	0.28 U
PYRENE	210	2100	2 U	0.27 U	2 U	0.28 U
Volatile Organics (µg/L)						
1,1,1-TRICHLOROETHANE	200		2 U	0.5 U	2 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.2		**2 U**	**0.5 U**	**2 U**	**0.5 U**
1,1,2-TRICHLOROETHANE	5		2 U	0.5 U	2 U	0.5 U
1,1-DICHLOROETHANE	70		2 U	0.5 U	2 U	0.5 U
1,1-DICHLOROETHENE	7		2 U	0.5 U	2 U	0.5 U
1,2-DIBROMOETHANE	0.02	2	0.02 U	0.0094 U	0.02 U	0.0092 U
1,2-DICHLOROBENZENE	600		2 U	0.5 U	2 U	0.5 U
1,2-DICHLOROETHANE	3	300	2 U	0.5 U	2 U	0.5 U
1,2-DICHLOROPROPANE	5		2 U	0.5 U	2 U	0.5 U
1,3-DICHLOROBENZENE	10		2 U	0.5 U	2 U	0.5 U
1,4-DICHLOROBENZENE	75		2 U	0.5 U	2 U	0.5 U
2-CHLOROETHYL VINYL ETHER	175		NA	2.5 U	NA	2.5 U
BENZENE	**1**	**100**	1 U	0.5 U	1 U	0.5 U
BROMODICHLOROMETHANE	0.6		**2 U**	0.5 U	**2 U**	0.5 U
BROMOFORM	4.4		**2 U**	0.5 U	2 U	0.5 U
BROMOMETHANE	9.8		5 U	1 U	5 U	1 U
CARBON TETRACHLORIDE	3		2 U	0.5 U	2 U	0.5 U
CHLOROBENZENE	100		2 U	0.5 U	2 U	0.5 U
CHLORODIBROMOMETHANE	0.4		**2 U**	0.4 U	**2 U**	0.4 U
CHLOROETHANE	12		5 U	1 U	5 U	1 U
CHLOROFORM	5.7		2 U	0.5 U	2 U	0.5 U
CHLOROMETHANE	2.7		**5 U**	1 U	**5 U**	1 U
CIS-1,2-DICHLOROETHENE	70		2 U	0.5 U	2 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.2		**2 U**	**0.5 U**	**2 U**	**0.5 U**
ETHYLBENZENE	**30**	**300**	2 U	0.7 U	8.1	2
METHYL TERT-BUTYL ETHER	50	500	2 U	0.5 U	2 U	0.5 U
METHYLENE CHLORIDE	5		5 U	1 U	5 U	1 U
TETRACHLOROETHENE	3		2 U	0.5 U	2 U	0.5 U
TOLUENE	**40**	**400**	2 U	0.5 U	2 U	0.5 U
TOTAL XYLENES	**20**	**200**	6 U	1 U	16.7	3.5
TRANS-1,2-DICHLOROETHENE	100		2 U	0.5 U	2 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.2		**2 U**	**0.5 U**	**2 U**	**0.5 U**
TRICHLOROETHENE	3		2 U	0.5 U	2 U	0.5 U
VINYL CHLORIDE	1		1 U	0.5 U	1 U	0.5 U
Petroleum Hydrocarbons (µg/L)						
TOTAL PETROLEUM HYDROCARBONS	**5000**	50000	250 U	180 U	1350	713

See notes at end of table.

TABLE 3-4
SUMMARY OF GROUNDWATER LABORATORY DATA, WATER TABLE ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76
Sample Location			CEF-076-88S	CEF-076-90S	CEF-076-94S	CEF-076-95S
Sample ID CEF-076-GW-			N88S-01	N90S-01	N94S-01	N95S-01
Sample Date			01/28/03	01/27/03	01/27/03	01/28/03
Screen Interval (ft bls)			5 - 15	5 - 15	5 - 15	5 - 15
Inorganics (µg/L)	GCTL	NADSC				
LEAD	**15**	150	**120**	1.2 U	5.2	6.3
Semivolatile Organics (µg/L)						
1-METHYLNAPHTHALENE	**20**	200	0.53 U	6.4	**61.4**	0.53 U
2-METHYLNAPHTHALENE	**20**	200	0.53 U	7.4	**82.5**	0.53 U
ACENAPHTHENE	20	200	1.1 U	1.1 U	8.2 U	1.1 U
ACENAPHTHYLENE	210	2100	1.1 U	1.1 U	8.2 U	1.1 U
ANTHRACENE	2100	21000	1.1 U	1.1 U	1 U	1.1 U
BENZO(A)ANTHRACENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U
BENZO(A)PYRENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U
BENZO(B)FLUORANTHENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U
BENZO(G,H,I)PERYLENE	210	2100	0.11 U	0.11 U	0.1 U	0.11 U
BENZO(K)FLUORANTHENE	0.5	50	0.11 U	0.11 U	0.1 U	0.11 U
CHRYSENE	4.8	480	1.1 U	1.1 U	**8.2 U**	1.1 U
DIBENZO(A,H)ANTHRACENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U
FLUORANTHENE	280	2800	0.53 U	0.54 U	0.52 U	0.53 U
FLUORENE	280	2800	1.1 U	1.1 U	8.2 U	1.1 U
INDENO(1,2,3-CD)PYRENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U
NAPHTHALENE	**20**	200	2 J	18.9	**165**	0.53 U
PHENANTHRENE	210	2100	1.1 U	1.1 U	1 U	1.1 U
PYRENE	210	2100	0.53 U	0.54 U	0.52 U	0.53 U
Volatile Organics (µg/L)						
1,1,1-TRICHLOROETHANE	200		0.5 U	0.5 U	50 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.2		**0.5 U**	**0.5 U**	**50 U**	**0.5 U**
1,1,2-TRICHLOROETHANE	5		0.5 U	0.5 U	**50 U**	0.5 U
1,1-DICHLOROETHANE	70		0.5 U	0.5 U	50 U	0.5 U
1,1-DICHLOROETHENE	7		0.5 U	0.5 U	**50 U**	0.5 U
1,2-DIBROMOETHANE	0.02	2	0.0093 U	0.0095 U	0.0092 U	0.0095 U
1,2-DICHLOROBENZENE	600		0.5 U	0.5 U	50 U	0.5 U
1,2-DICHLOROETHANE	3	300	0.5 U	0.5 U	**50 U**	0.5 U
1,2-DICHLOROPROPANE	5		0.5 U	0.5 U	**50 U**	0.5 U
1,3-DICHLOROBENZENE	10		0.5 U	0.5 U	**50 U**	0.5 U
1,4-DICHLOROBENZENE	75		0.5 U	0.5 U	50 U	0.5 U
2-CHLOROETHYL VINYL ETHER	175		2.5 U	2.5 U	**250 U**	2.5 U
BENZENE	**1**	**100**	0.5 U	**1.5**	**2560**	0.5 U
BROMODICHLOROMETHANE	0.6		0.5 U	0.5 U	**50 U**	0.5 U
BROMOFORM	4.4		0.5 U	0.5 U	**50 U**	0.5 U
BROMOMETHANE	9.8		1 U	1 U	**100 U**	1 U
CARBON TETRACHLORIDE	3		0.5 U	0.5 U	**50 U**	0.5 U
CHLOROBENZENE	100		0.5 U	0.5 U	50 U	0.5 U
CHLORODIBROMOMETHANE	0.4		0.4 U	0.4 U	**40 U**	0.4 U
CHLOROETHANE	12		1 U	1 U	**100 U**	1 U
CHLOROFORM	5.7		0.5 U	0.5 U	**50 U**	0.5 U
CHLOROMETHANE	2.7		1 U	1 U	**100 U**	1 U
CIS-1,2-DICHLOROETHENE	70		0.5 U	0.5 U	50 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.2		**0.5 U**	**0.5 U**	**50 U**	**0.5 U**
ETHYLBENZENE	**30**	**300**	2.4	4.8	**1030**	0.7 U
METHYL TERT-BUTYL ETHER	50	500	0.5 U	0.5 U	50 U	0.5 U
METHYLENE CHLORIDE	5		1 U	1 U	**100 U**	1 U
TETRACHLOROETHENE	3		0.5 U	0.5 U	**50 U**	0.5 U
TOLUENE	**40**	**400**	1.1	0.5 U	**6470**	0.5 U
TOTAL XYLENES	**20**	**200**	17.9	12.3	**4400**	1 U
TRANS-1,2-DICHLOROETHENE	100		0.5 U	0.5 U	50 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.2		**0.5 U**	**0.5 U**	**50 U**	**0.5 U**
TRICHLOROETHENE	3		0.5 U	0.5 U	**50 U**	0.5 U
VINYL CHLORIDE	1		0.5 U	0.5 U	**50 U**	0.5 U
Petroleum Hydrocarbons (µg/L)						
TOTAL PETROLEUM HYDROCARBONS	**5000**	50000	387	2010	**8680**	180 U

See notes at end of table.

TABLE 3-4
SUMMARY OF GROUNDWATER LABORATORY DATA, WATER TABLE ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76
Sample Location			CEF-076-107S	CEF-076-107S	CEF-076-108S	CEF-076-109S
Sample ID CEF-076-GW-			N107S-01	107S-01F	N108S01	N109S01
Sample Date			06/02/03	06/02/03	5/22/2003	5/22/2003
Screen Interval (ft bls)			5-15	5-15	5 - 15	5 - 15
Inorganics (µg/L)	GCTL	NADSC				
LEAD	**15**	150	2.8 B	1.2 U	1.2 U	1.2 U
Semivolatile Organics (µg/L)						
1-METHYLNAPHTHALENE	**20**	200	This sample was analyzed for lead only.		14.4	0.26 U
2-METHYLNAPHTHALENE	**20**	200			**22.4**	0.26 U
ACENAPHTHENE	20	200			0.53 U	0.52 U
ACENAPHTHYLENE	210	2100			0.53 U	0.52 U
ANTHRACENE	2100	21000			0.26 U	0.26 U
BENZO(A)ANTHRACENE	0.2	20			0.11 U	0.10 U
BENZO(A)PYRENE	0.2	20			0.11 U	0.10 U
BENZO(B)FLUORANTHENE	0.2	20			0.11 U	0.10 U
BENZO(G,H,I)PERYLENE	210	2100			0.11 U	0.10 U
BENZO(K)FLUORANTHENE	0.5	50			0.11 U	0.10 U
CHRYSENE	4.8	480			0.11 U	0.10 U
DIBENZO(A,H)ANTHRACENE	0.2	20			0.11 U	0.10 U
FLUORANTHENE	280	2800			0.26 U	0.26 U
FLUORENE	280	2800			0.26 U	0.26 U
INDENO(1,2,3-CD)PYRENE	0.2	20			0.11 U	0.10 U
NAPHTHALENE	**20**	200			11.4	0.26 U
PHENANTHRENE	210	2100			0.26 U	0.26 U
PYRENE	210	2100			0.26 U	0.26 U
Volatile Organics (µg/L)						
1,1,1-TRICHLOROETHANE	200		This sample was analzyed for lead only.		0.50 U	0.50 U
1,1,2,2-TETRACHLOROETHANE	0.2				**0.30 U**	**0.30 U**
1,1,2-TRICHLOROETHANE	5				0.5 0 U	0.5 0 U
1,1-DICHLOROETHANE	70				0.50 U	0.50 U
1,1-DICHLOROETHENE	7				0.50 U	0.50 U
1,2-DIBROMOETHANE	0.02	2			0.0092 U	0.0091 U
1,2-DICHLOROBENZENE	600				0.50 U	0.50 U
1,2-DICHLOROETHANE	3	300			0.50 U	0.50 U
1,2-DICHLOROPROPANE	5				0.50 U	0.50 U
1,3-DICHLOROBENZENE	10				0.50 U	0.50 U
1,4-DICHLOROBENZENE	75				0.50 U	0.50 U
2-CHLOROETHYL VINYL ETHER	175				2.5 U	2.5 U
BENZENE	**1**	**100**			**16.3**	0.50 U
BROMODICHLOROMETHANE	0.6				0.50 U	0.50 U
BROMOFORM	4.4				0.50 U	0.50 U
BROMOMETHANE	9.8				1.0 U	1.0 U
CARBON TETRACHLORIDE	3				0.50 U	0.50 U
CHLOROBENZENE	100				0.50 U	0.50 U
CHLORODIBROMOMETHANE	0.4				0.40 U	0.40 U
CHLOROETHANE	12				1.0 U	1.0 U
CHLOROFORM	5.7				0.50 U	0.50 U
CHLOROMETHANE	2.7				1.0 U	1.0 U
CIS-1,2-DICHLOROETHENE	70				0.50 U	0.50 U
CIS-1,3-DICHLOROPROPENE	0.2				**0.30 U**	**0.30 U**
ETHYLBENZENE	**30**	**300**			**62.5**	0.50 U
METHYL TERT-BUTYL ETHER	50	500			0.50 U	0.50 U
METHYLENE CHLORIDE	5				1.0 U	1.0 U
TETRACHLOROETHENE	3				0.50 U	0.50 U
TOLUENE	**40**	**400**			3.8	0.50 U
TOTAL XYLENES	**20**	**200**			**693**	1.0 U
TRANS-1,2-DICHLOROETHENE	100				0.50 U	0.50 U
TRANS-1,3-DICHLOROPROPENE	0.2				**0.30 U**	**0.30 U**
TRICHLOROETHENE	3				0.50 U	0.50 U
VINYL CHLORIDE	1				0.50 U	0.50 U
Petroleum Hydrocarbons (µg/L)						
TOTAL PETROLEUM HYDROCARBONS	**5000**	50000	This sample was analyzed for lead only.		2230	180 U

Notes: Positive detections are shaded.
Values exceeding GCTLs are in **bold**.
J = indicates an estimated concentration.

GCTLs exceeded in one or more samples are **bold** and underlined.
U = indicates a concentration less than the detection limit.
B (organics) = indicates blank contamination detected during analysis.

B (inorganics) = indicates a result >= IDL, but < RL.
RL = reporting limit
IDL = instrument detection limit

TABLE 3-5
SUMMARY OF GROUNDWATER LABORATORY DATA, UPPER INTERMEDIATE ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76	SITE-76	SITE-76
Sample Location			CEF-076-43S	CEF-076-49S	CEF-076-57S	CEF-076-60S	CEF-076-63S	CEF-076-69S
Sample ID CEF-076-GW-			E43S-01	E49S-01	E57S-01	E60-01	E63S-01	E69S-01
Sample Date			12/16/02	12/12/02	12/11/02	01/28/03	12/12/02	12/11/02
Screen Interval (ft bls)			35 - 40	45 - 50	30 - 35	35 - 40	40 - 45	30 - 35
Inorganics (µg/L)	GCTL	NADSC						
LEAD	**15**	150	1.8 B	1.2 U	1.2 U	1.8 B	1.3 B	1.2 U
Semivolatile Organics (µg/L)								
1-METHYLNAPHTHALENE	**20**	200	0.27 U	0.27 U	0.25 U	0.54 U	0.28 U	0.26 U
2-METHYLNAPHTHALENE	**20**	200	0.27 U	0.27 U	0.25 U	0.54 U	0.28 U	0.26 U
ACENAPHTHENE	20	200	0.54 U	0.53 U	0.51 U	1.1 U	0.56 U	0.52 U
ACENAPHTHYLENE	210	2100	0.54 U	0.53 U	0.51 U	1.1 U	0.56 U	0.52 U
ANTHRACENE	2100	21000	0.27 U	0.27 U	0.25 U	1.1 U	0.28 U	0.26 U
BENZO(A)ANTHRACENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U
BENZO(A)PYRENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U
BENZO(B)FLUORANTHENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U
BENZO(G,H,I)PERYLENE	210	2100	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U
BENZO(K)FLUORANTHENE	0.5	50	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U
CHRYSENE	4.8	480	0.11 U	0.11 U	0.1 U	1.1 U	0.11 U	0.1 U
DIBENZO(A,H)ANTHRACENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U
FLUORANTHENE	280	2800	0.27 U	0.27 U	0.25 U	0.54 U	0.28 U	0.26 U
FLUORENE	280	2800	0.27 U	0.27 U	0.25 U	1.1 U	0.28 U	0.26 U
INDENO(1,2,3-CD)PYRENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.1 U
NAPHTHALENE	**20**	200	0.27 U	0.27 U	1	0.54 U	0.28 U	2.1
PHENANTHRENE	210	2100	0.27 U	0.27 U	0.25 U	1.1 U	0.28 U	0.26 U
PYRENE	210	2100	0.27 U	0.27 U	0.25 U	0.54 U	0.28 U	0.26 U
Volatile Organics (µg/L)								
1,1,1-TRICHLOROETHANE	200		0.5 U	2.5 U	5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.2		**0.5 U**	**2.5 U**	**5 U**	**0.5 U**	**0.5 U**	**0.5 U**
1,1,2-TRICHLOROETHANE	5		0.5 U	2.5 U	5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	70		0.5 U	2.5 U	5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	7		0.5 U	2.5 U	5 U	0.5 U	0.5 U	0.5 U
1,2-DIBROMOETHANE	0.02	2	0.0094 U	0.0094 U	0.0093 U	0.0092 U	0.0092 U	0.0092 U
1,2-DICHLOROBENZENE	600		0.5 U	2.5 U	5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	3	300	0.5 U	2.5 U	**5 U**	0.5 U	0.5 U	0.5 U
1,2-DICHLOROPROPANE	5		0.5 U	2.5 U	5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	10		0.5 U	2.5 U	5 U	0.5 U	0.5 U	0.5 U
1.4-DICHLOROBENZENE	75		0.5 U	2.5 U	5 U	0.5 U	0.5 U	0.5 U
2-CHLOROETHYL VINYL ETHER	175		2.5 U	13 U	25 U	2.5 U	2.5 U	2.5 U
BENZENE	**1**	**100**	0.5 U	**14.4**	**85.5**	0.5 U	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6		0.5 U	**2.5 U**	**5 U**	0.5 U	0.5 U	0.5 U
BROMOFORM	4.4		0.5 U	2.5 U	**5 U**	0.5 U	0.5 U	0.5 U
BROMOMETHANE	9.8		1 U	5 U	**10 U**	1 U	1 U	1 U
CARBON TETRACHLORIDE	3		0.5 U	2.5 U	**5 U**	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	100		0.5 U	2.5 U	5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	**0.4**		0.4 U	**2 U**	**4 U**	0.4 U	0.4 U	0.4 U
CHLOROETHANE	12		1 U	5 U	10 U	1 U	1 U	1 U
CHLOROFORM	**5.7**		0.5 U	2.5 U	5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	2.7		1 U	**5 U**	**10 U**	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	70		0.5 U	2.5 U	5 U	0.5 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.2		**0.5 U**	**2.5 U**	**5 U**	**0.5 U**	**0.5 U**	**0.5 U**
ETHYLBENZENE	**30**	**300**	0.7 U	3.5 U	**56.8**	0.7 U	0.7 U	0.7 U
METHYL TERT-BUTYL ETHER	50	500	0.5 U	2.5 U	5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5		1 U	5 U	**10 U**	1 U	1 U	1 U
TETRACHLOROETHENE	3		0.5 U	2.5 U	**5 U**	0.5 U	0.5 U	0.5 U
TOLUENE	**40**	400	0.5 U	4.5 J	10.2	0.5 U	0.5 U	0.5 U
TOTAL XYLENES	**20**	**200**	1 U	**545**	**1290**	1 U	14.4	2.8 J
TRANS-1,2-DICHLOROETHENE	100		0.5 U	2.5 U	5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.2		**0.5 U**	**2.5 U**	**5 U**	**0.5 U**	**0.5 U**	**0.5 U**
TRICHLOROETHENE	3		0.5 U	2.5 U	**5 U**	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	1		0.5 U	**2.5 U**	**5 U**	0.5 U	0.5 U	0.5 U
Petroleum Hydrocarbons (µg/L)								
TOTAL PETROLEUM HYDROCARBONS	**5000**	50000	180 U	703	3760	180 U	190 U	190 U

See notes at end of table.

TABLE 3-5
SUMMARY OF GROUNDWATER LABORATORY DATA, UPPER INTERMEDIATE ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76	SITE-76	SITE-76
Sample Location			CEF-076-83S	CEF-076-86S	CEF-076-87S	CEF-076-91S	CEF-076-92S	CEF-076-93S
Sample ID CEF-076-GW-			N83S-01	N86S-01	N87S-01	N91S-01	N92S-01	N93S-01
Sample Date			01/27/03	01/28/03	01/27/03	01/28/03	01/28/03	01/27/03
Screen Interval (ft bls)			25 - 30	45 - 50	45 - 50	25 - 30	25 - 30	25 - 30
Inorganics (µg/L)	GCTL	NADSC						
LEAD	15	150	3.9 B	10.3	6.1	1.3 B	17.8	4.2 B
Semivolatile Organics (µg/L)								
1-METHYLNAPHTHALENE	20	200	0.54 U	0.54 U	41.6	32.3	0.56 U	55.6
2-METHYLNAPHTHALENE	20	200	0.54 U	0.54 U	45.1	25.5	0.56 U	67.1
ACENAPHTHENE	20	200	1.1 U	1.1 U	5 U	5.6 U	1.1 U	5.6 U
ACENAPHTHYLENE	210	2100	1.1 U	1.1 U	5 U	5.6 U	1.1 U	5.6 U
ANTHRACENE	2100	21000	1.1 U	1.1 U	1 U	1.1 U	1.1 U	1.1 U
BENZO(A)ANTHRACENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.11 U
BENZO(A)PYRENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.11 U
BENZO(B)FLUORANTHENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.11 U
BENZO(G,H,I)PERYLENE	210	2100	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.11 U
BENZO(K)FLUORANTHENE	0.5	50	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.11 U
CHRYSENE	4.8	480	1.1 U	1.1 U	1 U	1.1 U	1.1 U	5.6 U
DIBENZO(A,H)ANTHRACENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.11 U
FLUORANTHENE	280	2800	0.54 U	0.54 U	0.5 U	0.56 U	0.56 U	0.56 U
FLUORENE	280	2800	1.1 U	1.1 U	5 U	5.6 U	1.1 U	5.6 U
INDENO(1,2,3-CD)PYRENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U	0.11 U
NAPHTHALENE	20	200	0.54 U	0.54 U	136	113	0.56 U	124
PHENANTHRENE	210	2100	1.1 U	1.1 U	1 U	1.1 U	1.1 U	1.1 U
PYRENE	210	2100	0.54 U	0.54 U	0.5 U	0.56 U	0.56 U	0.56 U
Volatile Organics (µg/L)								
1,1,1-TRICHLOROETHANE	200		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
1,1,2,2-TETRACHLOROETHANE	0.2		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
1,1,2-TRICHLOROETHANE	5		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
1,1-DICHLOROETHANE	70		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
1,1-DICHLOROETHENE	7		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
1,2-DIBROMOETHANE	0.02	2	0.0094 U	0.0095 U	0.0093 U	0.0092 U	0.0093 U	0.0095 U
1,2-DICHLOROBENZENE	600		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
1,2-DICHLOROETHANE	3	300	0.5 U	0.5 U	5 U	59.3	0.5 U	5 U
1,2-DICHLOROPROPANE	5		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
1,3-DICHLOROBENZENE	10		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
1,4-DICHLOROBENZENE	75		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
2-CHLOROETHYL VINYL ETHER	175		2.5 U	2.5 U	25 U	25 U	2.5 U	25 U
BENZENE	1	100	0.5 U	0.5 U	3590	1930	0.5 U	2910
BROMODICHLOROMETHANE	0.6		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
BROMOFORM	4.4		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
BROMOMETHANE	9.8		1 U	1 U	10 U	10 U	1 U	10 U
CARBON TETRACHLORIDE	3		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
CHLOROBENZENE	100		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
CHLORODIBROMOMETHANE	0.4		0.4 U	0.4 U	4 U	4 U	0.4 U	4 U
CHLOROETHANE	12		1 U	1 U	10 U	10 U	1 U	10 U
CHLOROFORM	5.7		0.5 U	0.8 J	5 U	5 U	0.5 U	5 U
CHLOROMETHANE	2.7		1 U	1 U	10 U	10 U	1 U	10 U
CIS-1,2-DICHLOROETHENE	70		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
CIS-1,3-DICHLOROPROPENE	0.2		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
ETHYLBENZENE	30	300	0.7 U	0.7 U	856	1180	0.7 U	1110
METHYL TERT-BUTYL ETHER	50	500	0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
METHYLENE CHLORIDE	5		1 U	1 U	10 U	10 U	1 U	10 U
TETRACHLOROETHENE	3		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
TOLUENE	40	400	0.5 U	0.5 U	147	192	0.5 U	273
TOTAL XYLENES	20	200	1 U	1.4 J	4310	5880	1 U	4980
TRANS-1,2-DICHLOROETHENE	100		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
TRANS-1,3-DICHLOROPROPENE	0.2		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
TRICHLOROETHENE	3		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
VINYL CHLORIDE	1		0.5 U	0.5 U	5 U	5 U	0.5 U	5 U
Petroleum Hydrocarbons (µg/L)								
TOTAL PETROLEUM HYDROCARBONS	5000	50000	190 U	180 U	7330	7950	190 U	8700

See notes at end of table.

TABLE 3-5
SUMMARY OF GROUNDWATER LABORATORY DATA, UPPER INTERMEDIATE ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76	Site 76
Sample Location			CEF-076-101S	CEF-076-105I	CEF-076-106S	CEF-076-113S	CEF-076-114S
Sample ID CEF-076-GW-			N101S-01	N105I-01	N106S-01	N113S-01	114S-01
Sample Date			01/29/03	5/21/2003	5/22/2003	5/23/2003	07/09/03
Screen Interval (ft bls)			30 - 35	45 - 50	25 - 30	35 - 40	35 - 40
Inorganics (µg/L)	GCTL	NADSC					
LEAD	**15**	150	**29.4**	8.2	**27.6**	1.2 U	**23**
Semivolatile Organics (µg/L)							
1-METHYLNAPHTHALENE	**20**	200	0.53 U	0.27 U	0.27 U	8.9	0.52 U
2-METHYLNAPHTHALENE	**20**	200	0.53 U	0.27 U	0.27 U	11.2	0.52 U
ACENAPHTHENE	20	200	1.1 U	0.54 U	0.53 U	0.54 U	1.0 U
ACENAPHTHYLENE	210	2100	1.1 U	0.54 U	0.53 U	0.54 U	1.0 U
ANTHRACENE	2100	21000	1.1 U	0.27 U	0.27 U	0.27 U	1.0 U
BENZO(A)ANTHRACENE	0.2	20	0.11 U	0.11 U	0.11 U	0.11 U	0.10 U
BENZO(A)PYRENE	0.2	20	0.11 U	0.11 U	0.11 U	0.11 U	0.10 U
BENZO(B)FLUORANTHENE	0.2	20	0.11 U	0.11 U	0.11 U	0.11 U	**0.21 U**
BENZO(G,H,I)PERYLENE	210	2100	0.11 U	0.11 U	0.11 U	0.11 U	0.10 U
BENZO(K)FLUORANTHENE	0.5	50	0.11 U	0.11 U	0.11 U	0.11 U	0.10 U
CHRYSENE	4.8	480	1.1 U	0.11 U	0.11 U	0.11 U	1.0 U
DIBENZO(A,H)ANTHRACENE	0.2	20	0.11 U	0.11 U	0.11 U	0.11 U	0.10 U
FLUORANTHENE	280	2800	0.53 U	0.27 U	0.27 U	0.27 U	0.52 U
FLUORENE	280	2800	1.1 U	0.27 U	0.27 U	0.27 U	1.0 U
INDENO(1,2,3-CD)PYRENE	0.2	20	0.11 U	0.11 U	0.11 U	0.11 U	0.10 U
NAPHTHALENE	**20**	200	0.53 U	0.27 U	0.27 U	71.5	0.52 U
PHENANTHRENE	210	2100	1.1 U	0.27 U	0.27 U	0.27 U	1.0 U
PYRENE	210	2100	0.53 U	0.27 U	0.27 U	0.27 U	0.52 U
Volatile Organics (µg/L)							
1,1,1-TRICHLOROETHANE	200		0.5 U	0.5 U	0.5 U	25 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.2		**0.5 U**	**0.3 U**	**0.3 U**	**15 U**	**0.3 U**
1,1,2-TRICHLOROETHANE	5		0.5 U	0.5 U	0.5 U	**25 U**	0.5 U
1,1-DICHLOROETHANE	70		0.5 U	0.5 U	0.5 U	25 U	0.5 U
1,1-DICHLOROETHENE	7		0.5 U	0.5 U	0.5 U	**25 U**	0.5 U
1,2-DIBROMOETHANE	0.02	2	0.0094 U	0.0090 U	0.0093 U	0.0090 U	0.0091 U
1,2-DICHLOROBENZENE	600		0.5 U	0.5 U	0.5 U	25 U	0.5 U
1,2-DICHLOROETHANE	3	300	0.5 U	0.5 U	0.5 U	**25 U**	0.5 U
1,2-DICHLOROPROPANE	5		0.5 U	0.5 U	0.5 U	**25 U**	0.5 U
1,3-DICHLOROBENZENE	10		0.5 U	0.5 U	0.5 U	**25 U**	0.5 U
1,4-DICHLOROBENZENE	75		0.5 U	0.5 U	0.5 U	25 U	0.5 U
2-CHLOROETHYL VINYL ETHER	175		2.5 U	2.5 U	2.5 U	130 U	2.5 U
BENZENE	**1**	**100**	**1.6**	0.5 U	0.5 U	**10600**	0.5 U
BROMODICHLOROMETHANE	0.6		0.5 U	0.5 U	0.5 U	**25 U**	0.5 U
BROMOFORM	4.4		0.5 U	0.5 U	0.5 U	**25 U**	0.5 U
BROMOMETHANE	9.8		1 U	1 U	1 U	**50 U**	1 U
CARBON TETRACHLORIDE	3		0.5 U	0.5 U	0.5 U	**25 U**	0.5 U
CHLOROBENZENE	100		0.5 U	0.5 U	0.5 U	25 U	0.5 U
CHLORODIBROMOMETHANE	**0.4**		0.4 U	0.4 U	0.4 U	**20 U**	0.4 U
CHLOROETHANE	12		1 U	1 U	1 U	**50 U**	1 U
CHLOROFORM	**5.7**		0.5 U	2.5	0.5 U	**27.4 J**	**10.8**
CHLOROMETHANE	2.7		1 U	1 U	1 U	**50 U**	1 U
CIS-1,2-DICHLOROETHENE	70		0.5 U	0.5 U	0.5 U	25 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.2		**0.5 U**	**0.3 U**	**0.3 U**	**15 U**	**0.3 U**
ETHYLBENZENE	**30**	**300**	0.71 J	0.5 U	0.5 U	**883**	0.5 U
METHYL TERT-BUTYL ETHER	50	500	0.5 U	0.5 U	0.5 U	25 U	0.5 U
METHYLENE CHLORIDE	5		1 U	1 U	1 U	**50 U**	1 U
TETRACHLOROETHENE	3		0.5 U	0.5 U	0.5 U	**25 U**	0.5 U
TOLUENE	**40**	400	2.5	0.775 J	0.72 J	**47.6 J**	0.5 U
TOTAL XYLENES	**20**	**200**	3.8	1 U	1 U	**3430**	1 U
TRANS-1,2-DICHLOROETHENE	100		0.5 U	0.5 U	0.5 U	25 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.2		**0.5 U**	**0.3 U**	**0.3 U**	**15 U**	**0.3 U**
TRICHLOROETHENE	3		0.5 U	0.5 U	0.5 U	**25 U**	0.5 U
VINYL CHLORIDE	1		0.5 U	0.5 U	0.5 U	**25 U**	0.5 U
Petroleum Hydrocarbons (µg/L)							
TOTAL PETROLEUM HYDROCARBONS	**5000**	50000	180 U	170 U	180 U	**7220**	180 U

Notes:
Positive detections are shaded.
Values exceeding GCTLs are in **bold**.
GCTLs exceeded in one or more samples are in **bold** and underline.
U = indicates a concentration less than the detection limit.
J = indicates an estimated concentration.
B (organics) = indicates blank contamination detected during analysis.
B (inorganics) = indicates a result >= IDL, but < RL.
IDL = instrument detection limit
RL = reporting limit

TABLE 3-6
SUMMARY OF GROUNDWATER LABORATORY DATA, LOWER INTERMEDIATE ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76	SITE-76
Sample Location			CEF-076-39D	CEF-076-44I	CEF-076-50I	CEF-076-53I	CEF-076-56I
Sample ID CEF-076-GW-E-			39D-01	44I-01	50I-01	53I-01	56I-01
Sample Date			12/17/02	12/17/02	12/12/02	5/23/2003	12/18/02
Screen Interval (ft bls)			55 - 65	65 - 70	75 - 80	75 - 80	70 - 75
Inorganics (µg/L)	GCTL	NADSC					
LEAD	15	150	2.0 B	2.3 B	1.2 U	1.2 U	1.2 U
Semivolatile Organics (µg/L)							
1-METHYLNAPHTHALENE	**20**	200	**39.2**	0.28 U	0.28 U	0.27 U	0.28 U
2-METHYLNAPHTHALENE	**20**	200	**52.0**	0.28 U	0.28 U	0.27 U	0.28 U
ACENAPHTHENE	20	200	0.55 U	0.56 U	0.56 U	0.54 U	0.56 U
ACENAPHTHYLENE	210	2100	0.55 U	0.56 U	0.56 U	0.54 U	0.56 U
ANTHRACENE	2100	21000	0.27 U	0.28 U	0.28 U	0.27 U	0.28 U
BENZO(A)ANTHRACENE	0.2	20	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
BENZO(A)PYRENE	0.2	20	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
BENZO(B)FLUORANTHENE	0.2	20	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
BENZO(G,H,I)PERYLENE	210	2100	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
BENZO(K)FLUORANTHENE	0.5	50	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
CHRYSENE	4.8	480	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
DIBENZO(A,H)ANTHRACENE	0.2	20	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
FLUORANTHENE	280	2800	0.27 U	0.28 U	0.28 U	0.27 U	0.28 U
FLUORENE	280	2800	0.27 U	0.28 U	0.28 U	0.27 U	0.28 U
INDENO(1,2,3-CD)PYRENE	0.2	20	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
NAPHTHALENE	**20**	200	**115**	0.28 U	0.39 J	0.27 U	0.28 U
PHENANTHRENE	210	2100	0.27 U	0.28 U	0.28 U	0.27 U	0.28 U
PYRENE	210	2100	0.27 U	0.28 U	0.28 U	0.27 U	0.28 U
Volatile Organics (µg/L)							
1,1,1-TRICHLOROETHANE	200		50 U	0.5 U	25 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.2		**50 U**	**0.5 U**	**25 U**	**0.3 U**	**0.5 U**
1,1,2-TRICHLOROETHANE	5		**50 U**	0.5 U	**25 U**	0.5 U	0.5 U
1,1-DICHLOROETHANE	70		50 U	0.5 U	25 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	7		**50 U**	0.5 U	**25 U**	0.5 U	0.5 U
1,2-DIBROMOETHANE	0.02	2	0.0094 U	0.0092 U	0.0094 U	0.0092 U	0.0091 U
1,2-DICHLOROBENZENE	600		50 U	0.5 U	25 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	3	300	**50 U**	0.5 U	**25 U**	0.5 U	0.5 U
1,2-DICHLOROPROPANE	5		**50 U**	0.5 U	**25 U**	0.5 U	0.5 U
1,3-DICHLOROBENZENE	10		**50 U**	0.5 U	**25 U**	0.5 U	0.5 U
1,4-DICHLOROBENZENE	75		50 U	0.5 U	25 U	0.5 U	0.5 U
2-CHLOROETHYL VINYL ETHER	175		**250 U**	2.5 U	130 U	2.5 U	2.5 U
BENZENE	**1**	**100**	**7280**	0.5 U	**4410**	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.6		**50 U**	0.5 U	**25 U**	0.5 U	0.5 U
BROMOFORM	4.4		**50 U**	0.5 U	**25 U**	0.5 U	0.5 U
BROMOMETHANE	9.8		**100 U**	1 U	**50 U**	1 U	1 U
CARBON TETRACHLORIDE	3		**50 U**	0.5 U	**25 U**	0.5 U	0.5 U
CHLOROBENZENE	100		50 U	0.5 U	25 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	0.4		**40 U**	0.4 U	**20 U**	0.4 U	0.4 U
CHLOROETHANE	12		**100 U**	1 U	**50 U**	1 U	1 U
CHLOROFORM	5.7		**50 U**	0.5 U	**25 U**	0.5 U	0.5 U
CHLOROMETHANE	2.7		**100 U**	1 U	**50 U**	1 U	1 U
CIS-1,2-DICHLOROETHENE	70		50 U	0.5 U	25 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.2		**50 U**	**0.5 U**	**25 U**	**0.3 U**	**0.5 U**
ETHYLBENZENE	**30**	**300**	**615**	0.7 U	**35 U**	0.5 U	0.7 U
METHYL TERT-BUTYL ETHER	50	500	50 U	0.5 U	25 U	0.5 U	0.83 J
METHYLENE CHLORIDE	5		**100 U**	1 U	**50 U**	1 U	1 U
TETRACHLOROETHENE	3		**50 U**	0.5 U	**25 U**	0.5 U	0.5 U
TOLUENE	**40**	400	**103**	0.5 U	25 U	0.5 U	0.5 U
TOTAL XYLENES	**20**	**200**	**6850**	1 U	**1710**	1 U	1 U
TRANS-1,2-DICHLOROETHENE	100		50 U	0.5 U	25 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.2		**50 U**	**0.5 U**	**25 U**	**0.3 U**	**0.5 U**
TRICHLOROETHENE	3		**50 U**	0.5 U	**25 U**	0.5 U	0.5 U
VINYL CHLORIDE	1		**50 U**	0.5 U	**25 U**	0.5 U	0.5 U
Petroleum Hydrocarbons (µg/L)							
TOTAL PETROLEUM HYDROCARBONS	**5000**	50000	**9740**	190 U	**1780**	190 U	180 U

See notes at end of table.

TABLE 3-6
SUMMARY OF GROUNDWATER LABORATORY DATA, LOWER INTERMEDIATE ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76	SITE-76
Sample Location			CEF-076-61I	CEF-076-64I	CEF-076-70I	CEF-076-73I	CEF-076-84I
Sample ID CEF-076-GW-			E61I-01	E64I-01	E70I-01	E73I-01	N84I-01
Sample Date			12/11/02	12/12/02	12/11/02	12/18/02	01/28/03
Screen Interval (ft bls)			65 - 70	70 - 75	65 - 70	60 - 65	55 - 60
Inorganics (µg/L)	GCTL	NADSC					
LEAD	15	150	1.2 U	1.2 U	1.4 B	1.2 U	2.1 B
Semivolatile Organics (µg/L)							
1-METHYLNAPHTHALENE	**20**	200	11.8	0.27 U	0.26 U	0.26 U	0.53 U
2-METHYLNAPHTHALENE	**20**	200	13.1	0.27 U	0.26 U	0.26 U	0.53 U
ACENAPHTHENE	20	200	0.52 U	0.55 U	0.51 U	0.52 U	1.1 U
ACENAPHTHYLENE	210	2100	0.52 U	0.55 U	0.51 U	0.52 U	1.1 U
ANTHRACENE	2100	21000	0.26 U	0.27 U	0.26 U	0.26 U	1.1 U
BENZO(A)ANTHRACENE	0.2	20	0.1 U	0.11 U	0.1 U	0.1 U	0.11 U
BENZO(A)PYRENE	0.2	20	0.1 U	0.11 U	0.1 U	0.1 U	0.11 U
BENZO(B)FLUORANTHENE	0.2	20	0.1 U	0.11 U	0.1 U	0.1 U	0.11 U
BENZO(G,H,I)PERYLENE	210	2100	0.1 U	0.11 U	0.1 U	0.1 U	0.11 U
BENZO(K)FLUORANTHENE	0.5	50	0.1 U	0.11 U	0.1 U	0.1 U	0.11 U
CHRYSENE	4.8	480	0.1 U	0.11 U	0.1 U	0.1 U	1.1 U
DIBENZO(A,H)ANTHRACENE	0.2	20	0.1 U	0.11 U	0.1 U	0.1 U	0.11 U
FLUORANTHENE	280	2800	0.26 U	0.27 U	0.26 U	0.26 U	0.53 U
FLUORENE	280	2800	0.26 U	0.27 U	0.26 U	0.26 U	1.1 U
INDENO(1,2,3-CD)PYRENE	0.2	20	0.1 U	0.11 U	0.1 U	0.1 U	0.11 U
NAPHTHALENE	**20**	200	**122**	11.7	**28.9**	0.26 U	0.53 U
PHENANTHRENE	210	2100	0.26 U	0.27 U	0.26 U	0.26 U	1.1 U
PYRENE	210	2100	0.26 U	0.27 U	0.26 U	0.26 U	0.53 U
Volatile Organics (µg/L)							
1,1,1-TRICHLOROETHANE	200		5 U	10 U	50 U	2.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.2		**5 U**	**10 U**	**50 U**	**2.5 U**	**0.5 U**
1,1,2-TRICHLOROETHANE	5		5 U	**10 U**	**50 U**	2.5 U	0.5 U
1,1-DICHLOROETHANE	70		5 U	10 U	50 U	2.5 U	0.5 U
1,1-DICHLOROETHENE	7		5 U	**10 U**	**50 U**	2.5 U	0.5 U
1,2-DIBROMOETHANE	0.02	2	0.0092 U	0.0092 U	0.0091 U	0.0094 U	0.0091 U
1,2-DICHLOROBENZENE	600		5 U	10 U	50 U	2.5 U	0.5 U
1,2-DICHLOROETHANE	3	300	**5 U**	**10 U**	**50 U**	2.5 U	0.5 U
1,2-DICHLOROPROPANE	5		5 U	**10 U**	**50 U**	2.5 U	0.5 U
1,3-DICHLOROBENZENE	10		5 U	10 U	**50 U**	2.5 U	0.5 U
1,4-DICHLOROBENZENE	75		5 U	10 U	50 U	2.5 U	0.5 U
2-CHLOROETHYL VINYL ETHER	175		25 U	50 U	**250 U**	13 U	2.5 U
BENZENE	**1**	**100**	**5 U**	**334**	**8490**	**6.7**	0.5 U
BROMODICHLOROMETHANE	0.6		**5 U**	**10 U**	**50 U**	**2.5 U**	0.5 U
BROMOFORM	4.4		**5 U**	**10 U**	**50 U**	2.5 U	0.5 U
BROMOMETHANE	9.8		**10 U**	**20 U**	**100 U**	5 U	1 U
CARBON TETRACHLORIDE	3		**5 U**	**10 U**	**50 U**	2.5 U	0.5 U
CHLOROBENZENE	100		5 U	10 U	50 U	2.5 U	0.5 U
CHLORODIBROMOMETHANE	0.4		**4 U**	**8 U**	**40 U**	**2 U**	0.4 U
CHLOROETHANE	12		10 U	**20 U**	**100 U**	5 U	1 U
CHLOROFORM	5.7		5 U	**10 U**	**50 U**	2.5 U	0.5 U
CHLOROMETHANE	2.7		**10 U**	**20 U**	**100 U**	**5 U**	1 U
CIS-1,2-DICHLOROETHENE	70		5 U	10 U	50 U	2.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.2		**5 U**	**10 U**	**50 U**	**2.5 U**	**0.5 U**
ETHYLBENZENE	**30**	**300**	**97.3**	**125**	**269**	3.5 U	0.7 U
METHYL TERT-BUTYL ETHER	50	500	5 U	10 U	50 U	2.5 U	0.5 U
METHYLENE CHLORIDE	5		**10 U**	**20 U**	**100 U**	5 U	1 U
TETRACHLOROETHENE	3		**5 U**	**10 U**	**50 U**	2.5 U	0.5 U
TOLUENE	**40**	400	5.6 J	15.7 J	**50 U**	4.3 J	0.5 U
TOTAL XYLENES	**20**	**200**	**886**	**3480**	**7130**	**878**	1 U
TRANS-1,2-DICHLOROETHENE	100		5 U	10 U	50 U	2.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.2		**5 U**	**10 U**	**50 U**	**2.5 U**	**0.5 U**
TRICHLOROETHENE	3		**5 U**	**10 U**	**50 U**	2.5 U	0.5 U
VINYL CHLORIDE	1		**5 U**	**10 U**	**50 U**	**2.5 U**	0.5 U
Petroleum Hydrocarbons (µg/L)							
TOTAL PETROLEUM HYDROCARBONS	**5000**	50000	3700	2970	4980	1320	180 U

See notes at end of table.

TABLE 3-6
SUMMARY OF GROUNDWATER LABORATORY DATA, LOWER INTERMEDIATE ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76
Sample Location			CEF-076-85I	CEF-076-89I	CEF-076-111I	CEF-076-112I
Sample ID CEF-076-GW-			N85I-01	N89I-01	N111I-01	N112I-01
Sample Date			01/28/03	01/27/03	5/22/2003	5/22/2003
Screen Interval (ft bls)			55 - 60	50 - 55	65 - 70	50 - 55
Inorganics (µg/L)	GCTL	NADSC				
LEAD	15	150	1.2 U	4.4 B	1.2 U	1.2 U
Semivolatile Organics (µg/L)						
1-METHYLNAPHTHALENE	**20**	200	2.2 U	0.56 U	0.26 U	0.26 U
2-METHYLNAPHTHALENE	**20**	200	0.54 U	0.56 U	0.26 U	0.26 U
ACENAPHTHENE	20	200	1.1 U	1.1 U	0.52 U	0.53 U
ACENAPHTHYLENE	210	2100	1.1 U	1.1 U	0.52 U	0.53 U
ANTHRACENE	2100	21000	1.1 U	1.1 U	0.26 U	0.26 U
BENZO(A)ANTHRACENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U
BENZO(A)PYRENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U
BENZO(B)FLUORANTHENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U
BENZO(G,H,I)PERYLENE	210	2100	0.11 U	0.11 U	0.1 U	0.11 U
BENZO(K)FLUORANTHENE	0.5	50	0.11 U	0.11 U	0.1 U	0.11 U
CHRYSENE	4.8	480	1.1 U	1.1 U	0.1 U	0.11 U
DIBENZO(A,H)ANTHRACENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U
FLUORANTHENE	280	2800	0.54 U	0.56 U	0.26 U	0.26 U
FLUORENE	280	2800	1.1 U	1.1 U	0.26 U	0.26 U
INDENO(1,2,3-CD)PYRENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U
NAPHTHALENE	**20**	200	4.4 U	4.4 U	0.26 U	0.26 U
PHENANTHRENE	210	2100	1.1 U	1.1 U	0.26 U	0.26 U
PYRENE	210	2100	0.54 U	0.56 U	0.26 U	0.26 U
Volatile Organics (µg/L)						
1,1,1-TRICHLOROETHANE	200		5 U	5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.2		**5 U**	**5 U**	**0.3 U**	**0.3 U**
1,1,2-TRICHLOROETHANE	5		5 U	5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	70		5 U	5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	7		5 U	5 U	0.5 U	0.5 U
1,2-DIBROMOETHANE	0.02	2	0.0093 U	0.0094 U	0.0090 U	0.0093 U
1,2-DICHLOROBENZENE	600		5 U	5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	3	300	**5 U**	**5 U**	0.5 U	0.5 U
1,2-DICHLOROPROPANE	5		5 U	5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	10		5 U	5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	75		5 U	5 U	0.5 U	0.5 U
2-CHLOROETHYL VINYL ETHER	175		25 U	25 U	2.5 U	2.5 U
BENZENE	**1**	**100**	**20.7**	**60.7**	**3.0**	0.5 U
BROMODICHLOROMETHANE	0.6		**5 U**	**5 U**	0.5 U	0.5 U
BROMOFORM	4.4		**5 U**	**5 U**	0.5 U	0.5 U
BROMOMETHANE	9.8		**10 U**	**10 U**	1 U	1 U
CARBON TETRACHLORIDE	3		**5 U**	**5 U**	0.5 U	0.5 U
CHLOROBENZENE	100		5 U	5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	0.4		**4 U**	**4 U**	0.4 U	0.4 U
CHLOROETHANE	12		10 U	10 U	1 U	1 U
CHLOROFORM	5.7		5 U	5 U	1.1	2.7
CHLOROMETHANE	2.7		**10 U**	**10 U**	1 U	1 U
CIS-1,2-DICHLOROETHENE	70		5 U	5 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.2		**5 U**	**5 U**	**0.3 U**	**0.3 U**
ETHYLBENZENE	**30**	**300**	10	**220**	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	50	500	5 U	5 U	1.4	0.5 U
METHYLENE CHLORIDE	5		**10 U**	**10 U**	1 U	1 U
TETRACHLOROETHENE	3		**5 U**	**5 U**	0.5 U	0.5 U
TOLUENE	**40**	400	14.8	11.8	0.62 J	1.4
TOTAL XYLENES	**20**	**200**	**3020**	**1560**	1 U	1 U
TRANS-1,2-DICHLOROETHENE	100		5 U	5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.2		**5 U**	**5 U**	**0.3 U**	**0.3 U**
TRICHLOROETHENE	3		**5 U**	**5 U**	0.5 U	0.5 U
VINYL CHLORIDE	1		**5 U**	**5 U**	0.5 U	0.5 U
Petroleum Hydrocarbons (µg/L)						
TOTAL PETROLEUM HYDROCARBONS	**5000**	50000	2780	1290	180 U	180 U

Notes:
Positive detections are shaded.
Values exceeding GCTLs are in **bold**.
GCTLs exceeded in one or more samples are in **bold** and underlined.
U = indicates a concentration less than the detection limit.
J = indicates an estimated concentration.
B (organics) = indicates blank contamination detected during analysis.
B (inorganics) = indicates a result >= IDL, but < RL.
IDL = instrument detection limit
RL = reporting limit

TABLE 3-7
SUMMARY OF GROUNDWATER LABORATORY DATA, DEEP ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76	SITE-76
Sample Location			CEF-076-48D	CEF-076-51D	CEF-076-62D	CEF-076-65D	CEF-076-71D
Sample ID CEF-076-GW-			N48D-01	E51D-01	E62D-01	E65D-01	E71D-01
Sample Date			02/10/03	12/12/02	12/11/02	12/12/02	12/11/02
Screen Interval (ft bls)			100 - 110	100 - 110	100 - 110	100 - 110	100 - 110
Inorganics (µg/L)	GCTL	NADSC					
LEAD	15	150	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
Semivolatile Organics (µg/L)							
1-METHYLNAPHTHALENE	20	200	0.53 U	0.27 U	0.26 U	0.27 U	0.28 U
2-METHYLNAPHTHALENE	20	200	0.53 U	0.27 U	0.26 U	0.27 U	0.28 U
ACENAPHTHENE	20	200	1.1 U	0.55 U	0.52 U	0.55 U	0.57 U
ACENAPHTHYLENE	210	2100	1.1 U	0.55 U	0.52 U	0.55 U	0.57 U
ANTHRACENE	2100	21000	1.1 U	0.27 U	0.26 U	0.27 U	0.28 U
BENZO(A)ANTHRACENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U
BENZO(A)PYRENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U
BENZO(B)FLUORANTHENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U
BENZO(G,H,I)PERYLENE	210	2100	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U
BENZO(K)FLUORANTHENE	0.5	50	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U
CHRYSENE	4.8	480	1.1 U	0.11 U	0.1 U	0.11 U	0.11 U
DIBENZO(A,H)ANTHRACENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U
FLUORANTHENE	280	2800	0.53 U	0.27 U	0.26 U	0.27 U	0.28 U
FLUORENE	280	2800	1.1 U	0.27 U	0.26 U	0.27 U	0.28 U
INDENO(1,2,3-CD)PYRENE	0.2	20	0.11 U	0.11 U	0.1 U	0.11 U	0.11 U
NAPHTHALENE	20	200	0.53 U	0.27 U	0.96 J	0.27 U	0.28 U
PHENANTHRENE	210	2100	1.1 U	0.27 U	0.26 U	0.27 U	0.28 U
PYRENE	210	2100	0.53 U	0.27 U	0.26 U	0.27 U	0.28 U
Volatile Organics (µg/L)							
1,1,1-TRICHLOROETHANE	200		0.5 U	10 U	0.5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.2		**0.5 U**	**10 U**	**0.5 U**	**0.5 U**	**0.5 U**
1,1,2-TRICHLOROETHANE	5		0.5 U	**10 U**	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	70		0.5 U	10 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	7		0.5 U	**10 U**	0.5 U	0.5 U	0.5 U
1,2-DIBROMOETHANE	0.02	2	0.0095 U	0.0091 U	0.0093 U	0.0094 U	0.0092 U
1,2-DICHLOROBENZENE	600		0.5 U	10 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	3	300	0.5 U	**10 U**	0.5 U	0.5 U	0.5 U
1,2-DICHLOROPROPANE	5		0.5 U	**10 U**	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	10		0.5 U	10 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	75		0.5 U	10 U	0.5 U	0.5 U	0.5 U
2-CHLOROETHYL VINYL ETHER	175		2.5 U	50 U	2.5 U	2.5 U	2.5 U
BENZENE	**1**	**100**	0.5 U	**1340**	0.5 U	**6.6**	0.5 U
BROMODICHLOROMETHANE	0.6		0.5 U	**10 U**	0.5 U	0.5 U	0.5 U
BROMOFORM	4.4		0.5 U	**10 U**	0.5 U	0.5 U	0.5 U
BROMOMETHANE	9.8		1 U	**20 U**	1 U	1 U	1 U
CARBON TETRACHLORIDE	3		0.5 U	**10 U**	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	100		0.5 U	10 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	0.4		0.4 U	**8 U**	0.4 U	0.4 U	0.4 U
CHLOROETHANE	12		1 U	**20 U**	1 U	1 U	1 U
CHLOROFORM	5.7		0.5 U	**10 U**	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	2.7		1 U	**20 U**	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	70		0.5 U	10 U	0.5 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.2		**0.5 U**	**10 U**	**0.5 U**	**0.5 U**	**0.5 U**
ETHYLBENZENE	30	300	0.7 U	14 U	0.7 U	0.7 U	0.7 U
METHYL TERT-BUTYL ETHER	50	500	0.5 U	10 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5		1 U	**20 U**	1 U	1 U	1 U
TETRACHLOROETHENE	3		0.5 U	**10 U**	0.5 U	0.5 U	0.5 U
TOLUENE	40	400	0.5 U	10 U	0.5 U	0.96 J	0.5 U
TOTAL XYLENES	**20**	200	1 U	**33.2 J**	1 U	**97.4**	1 U
TRANS-1,2-DICHLOROETHENE	100		0.5 U	10 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.2		**0.5 U**	**10 U**	**0.5 U**	**0.5 U**	**0.5 U**
TRICHLOROETHENE	3		0.5 U	**10 U**	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	1		0.5 U	**10 U**	0.5 U	0.5 U	0.5 U
Petroleum Hydrocarbons (µg/L)							
TOTAL PETROLEUM HYDROCARBONS	5000	50000	180 U	170 U	190 U	180 U	180 U

See notes at end of table.

TABLE 3-7
SUMMARY OF GROUNDWATER LABORATORY DATA, DEEP ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76	SITE-76
Sample Location			CEF-076-80D	CEF-076-96D	CEF-076-97D	CEF-076-98D	CEF-076-99D
Sample ID CEF-076-GW-			E-80D-01	N96D-01	N97D-01	N98D-01	N99D-01
Sample Date			12/16/02	02/11/03	02/10/03	02/11/03	02/10/03
Screen Interval (ft bls)			110 - 120	110 - 115	100 - 105	105 - 110	95 - 100
Inorganics (µg/L)	GCTL	NADSC					
LEAD	15	150	1.2 U	2.1 B	2.2 B	2.8 B	2.6 B
Semivolatile Organics (µg/L)							
1-METHYLNAPHTHALENE	20	200	0.27 U	0.55 U	0.54 U	0.52 U	0.5 U
2-METHYLNAPHTHALENE	20	200	0.27 U	0.55 U	0.54 U	0.52 U	0.5 U
ACENAPHTHENE	20	200	0.55 U	1.1 U	1.1 U	1 U	1 U
ACENAPHTHYLENE	210	2100	0.55 U	1.1 U	1.1 U	1 U	1 U
ANTHRACENE	2100	21000	0.27 U	1.1 U	1.1 U	1 U	1 U
BENZO(A)ANTHRACENE	0.2	20	0.11 U	0.11 U	0.11 U	0.1 U	0.1 U
BENZO(A)PYRENE	0.2	20	0.11 U	0.11 U	0.11 U	0.1 U	0.1 U
BENZO(B)FLUORANTHENE	0.2	20	0.11 U	0.11 U	0.11 U	0.1 U	0.1 U
BENZO(G,H,I)PERYLENE	210	2100	0.11 U	0.11 U	0.11 U	0.1 U	0.1 U
BENZO(K)FLUORANTHENE	0.5	50	0.11 U	0.11 U	0.11 U	0.1 U	0.1 U
CHRYSENE	4.8	480	0.11 U	1.1 U	1.1 U	1 U	1 U
DIBENZO(A,H)ANTHRACENE	0.2	20	0.11 U	0.11 U	0.11 U	0.1 U	0.1 U
FLUORANTHENE	280	2800	0.27 U	0.55 U	0.54 U	0.52 U	0.5 U
FLUORENE	280	2800	0.27 U	1.1 U	1.1 U	1 U	1 U
INDENO(1,2,3-CD)PYRENE	0.2	20	0.11 U	0.11 U	0.11 U	0.1 U	0.1 U
NAPHTHALENE	20	200	0.27 U	0.55 U	0.54 U	5	0.5 U
PHENANTHRENE	210	2100	0.27 U	1.1 U	1.1 U	1 U	1 U
PYRENE	210	2100	0.27 U	0.55 U	0.54 U	0.52 U	0.5 U
Volatile Organics (µg/L)							
1,1,1-TRICHLOROETHANE	200		5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.2		**5 U**	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**
1,1,2-TRICHLOROETHANE	5		5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	70		5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	7		5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DIBROMOETHANE	0.02	2	0.0091 U	0.0092 U	0.0092 U	0.0094 U	0.0091 U
1,2-DICHLOROBENZENE	600		5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	3	300	**5 U**	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROPROPANE	5		5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	10		5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	75		5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-CHLOROETHYL VINYL ETHER	175		25 U	2.5 U	2.5 U	2.5 U	2.5 U
BENZENE	**1**	**100**	**390**	0.5 U	0.5 U	**1040**	**5.8**
BROMODICHLOROMETHANE	0.6		**5 U**	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	4.4		**5 U**	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	9.8		**10 U**	1 U	1 U	1 U	1 U
CARBON TETRACHLORIDE	3		**5 U**	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	100		5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	0.4		**4 U**	0.4 U	0.4 U	0.4 U	0.4 U
CHLOROETHANE	12		10 U	1 U	1 U	1 U	1 U
CHLOROFORM	5.7		5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	2.7		**10 U**	1 U	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	70		5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.2		**5 U**	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**
ETHYLBENZENE	30	300	7 U	0.7 U	0.7 U	19.4	1
METHYL TERT-BUTYL ETHER	50	500	5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5		**10 U**	1 U	1 U	1 U	1 U
TETRACHLOROETHENE	3		**5 U**	0.5 U	0.5 U	0.5 U	0.5 U
TOLUENE	40	400	5 U	0.5 U	0.5 U	0.6 J	0.5 U
TOTAL XYLENES	**20**	200	10 U	1 U	1 U	**95.6**	2.4 J
TRANS-1,2-DICHLOROETHENE	100		5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.2		**5 U**	**0.5 U**	**0.5 U**	**0.5 U**	**0.5 U**
TRICHLOROETHENE	3		**5 U**	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	1		**5 U**	0.5 U	0.5 U	0.5 U	0.5 U
Petroleum Hydrocarbons (µg/L)							
TOTAL PETROLEUM HYDROCARBONS	5000	50000	180 U	202 J	170 U	398	170 U

See notes at end of table.

TABLE 3-7
SUMMARY OF GROUNDWATER LABORATORY DATA, DEEP ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76	SITE-76
Sample Location			CEF-076-100D	CEF-076-102D	CEF-076-103D	CEF-076-104D	CEF-076-110D
Sample ID CEF-076-GW-			N100D-01	N102D-01	N103D-01	N104D-01	N110D-01
Sample Date			01/29/03	02/11/03	02/10/03	5/22/2003	5/22/2003
Screen Interval (ft bls)			110 - 115	115 - 120	144 - 149	110 - 115	105 - 110
Inorganics (µg/L)	GCTL	NADSC					
LEAD	15	150	1.2 U	1.3 B	1.5 B	1.2 U	5.4
Semivolatile Organics (µg/L)							
1-METHYLNAPHTHALENE	20	200	0.52 U	0.53 U	0.54 U	0.25 U	0.27 U
2-METHYLNAPHTHALENE	20	200	0.52 U	0.53 U	0.54 U	0.25 U	0.27 U
ACENAPHTHENE	20	200	1 U	1.1 U	1.1 U	0.51 U	0.53 U
ACENAPHTHYLENE	210	2100	1 U	1.1 U	1.1 U	0.51 U	0.53 U
ANTHRACENE	2100	21000	1 U	1.1 U	1.1 U	0.25 U	0.27 U
BENZO(A)ANTHRACENE	0.2	20	0.1 U	0.11 U	0.11 U	0.10 U	0.11 U
BENZO(A)PYRENE	0.2	20	0.1 U	0.11 U	0.11 U	0.10 U	0.11 U
BENZO(B)FLUORANTHENE	0.2	20	0.1 U	0.11 U	0.11 U	0.10 U	0.11 U
BENZO(G,H,I)PERYLENE	210	2100	0.1 U	0.11 U	0.11 U	0.10 U	0.11 U
BENZO(K)FLUORANTHENE	0.5	50	0.1 U	0.11 U	0.11 U	0.10 U	0.11 U
CHRYSENE	4.8	480	1 U	1.1 U	1.1 U	0.10 U	0.11 U
DIBENZO(A,H)ANTHRACENE	0.2	20	0.1 U	0.11 U	0.11 U	0.10 U	0.11 U
FLUORANTHENE	280	2800	0.52 U	0.53 U	0.54 U	0.25 U	0.27 U
FLUORENE	280	2800	1 U	1.1 U	1.1 U	0.25 U	0.27 U
INDENO(1,2,3-CD)PYRENE	0.2	20	0.1 U	0.11 U	0.11 U	0.10 U	0.11 U
NAPHTHALENE	20	200	0.52 U	0.53 U	0.54 U	0.25 U	1.4
PHENANTHRENE	210	2100	1 U	1.1 U	1.1 U	0.25 U	0.27 U
PYRENE	210	2100	0.52 U	0.53 U	0.54 U	0.25 U	0.27 U
Volatile Organics (µg/L)							
1,1,1-TRICHLOROETHANE	200		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.2		**0.5 U**	**0.5 U**	**0.5 U**	**0.3 U**	**0.3 U**
1,1,2-TRICHLOROETHANE	5		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	70		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	7		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DIBROMOETHANE	0.02	2	0.0093 U	0.0093 U	0.0092 U	0.0092 U	0.0093 U
1,2-DICHLOROBENZENE	600		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	3	300	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-DICHLOROPROPANE	5		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	10		0.5 U	0.5 U	0.5 U	5.0 U	0.5 U
1,4-DICHLOROBENZENE	75		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-CHLOROETHYL VINYL ETHER	175		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
BENZENE	**1**	**100**	**5.2**	0.5 U	0.5 U	0.5 U	**842**
BROMODICHLOROMETHANE	0.6		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMOFORM	4.4		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
BROMOMETHANE	9.8		1 U	1 U	1 U	1 U	1 U
CARBON TETRACHLORIDE	3		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	100		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	0.4		0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
CHLOROETHANE	12		1 U	1 U	1 U	1 U	1 U
CHLOROFORM	5.7		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROMETHANE	2.7		1 U	1 U	1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	70		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.2		**0.5 U**	**0.5 U**	**0.5 U**	**0.3 U**	**0.3 U**
ETHYLBENZENE	30	300	0.7 U	0.7 U	0.7 U	0.5 U	1.7
METHYL TERT-BUTYL ETHER	50	500	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5		1 U	1 U	1 U	1 U	1 U
TETRACHLOROETHENE	3		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TOLUENE	40	400	0.58 J	0.5 U	0.5 U	0.5 U	0.78 J
TOTAL XYLENES	**20**	200	1 U	1 U	1 U	1 U	**21.0**
TRANS-1,2-DICHLOROETHENE	100		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.2		**0.5 U**	**0.5 U**	**0.5 U**	**0.3 U**	**0.30 U**
TRICHLOROETHENE	3		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	1		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Petroleum Hydrocarbons (µg/L)							
TOTAL PETROLEUM HYDROCARBONS	5000	50000	180 U	180 U	219 J	180 U	264 J

See notes at end of table.

TABLE 3-7
SUMMARY OF GROUNDWATER LABORATORY DATA, DEEP ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			Site 76	Site 76	Site 76
Sample Location			CEF-076-115D	CEF-076-116D	CEF-076-117D
Sample ID CEF-076-GW-			N115D-01	N116D-01	N117D-01
Sample Date			07/10/03	07/10/03	07/10/03
Screen Interval (ft bls)			105 - 110	105 - 110	105 - 110
Inorganics (µg/L)	GCTL	NADSC			
LEAD	15	150	1.2 U	3.8 B	4.0 B
Semivolatile Organics (µg/L)					
1-METHYLNAPHTHALENE	20	200	0.5 U	0.5 U	0.51 U
2-METHYLNAPHTHALENE	20	200	0.5 U	0.5 U	0.51 U
ACENAPHTHENE	20	200	1 U	1 U	1 U
ACENAPHTHYLENE	210	2100	1 U	1 U	1 U
ANTHRACENE	2100	21000	1 U	1 U	1 U
BENZO(A)ANTHRACENE	0.2	20	0.1 U	0.1 U	0.1 U
BENZO(A)PYRENE	0.2	20	0.1 U	0.1 U	0.1 U
BENZO(B)FLUORANTHENE	0.2	20	0.1 U	0.1 U	0.1 U
BENZO(G,H,I)PERYLENE	210	2100	0.1 U	0.1 U	0.1 U
BENZO(K)FLUORANTHENE	0.5	50	0.1 U	0.1 U	0.1 U
CHRYSENE	4.8	480	1 U	1 U	1 U
DIBENZO(A,H)ANTHRACENE	0.2	20	0.1 U	0.1 U	0.1 U
FLUORANTHENE	280	2800	0.5 U	0.5 U	0.51 U
FLUORENE	280	2800	1 U	1 U	1 U
INDENO(1,2,3-CD)PYRENE	0.2	20	0.1 U	0.1 U	0.1 U
NAPHTHALENE	20	200	0.5 U	0.5 U	0.51 U
PHENANTHRENE	210	2100	1 U	1 U	1 U
PYRENE	210	2100	0.5 U	0.5 U	0.51 U
Volatile Organics (µg/L)					
1,1,1-TRICHLOROETHANE	200		0.5 U	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.2		**0.3 U**	**0.3 U**	**0.3 U**
1,1,2-TRICHLOROETHANE	5		0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHANE	70		0.5 U	0.5 U	0.5 U
1,1-DICHLOROETHENE	7		0.5 U	0.5 U	0.5 U
1,2-DIBROMOETHANE	0.02	2	0.0090 U	0.0091 U	0.0090 U
1,2-DICHLOROBENZENE	600		0.5 U	0.5 U	0.5 U
1,2-DICHLOROETHANE	3	300	0.5 U	0.5 U	0.5 U
1,2-DICHLOROPROPANE	5		0.5 U	0.5 U	0.5 U
1,3-DICHLOROBENZENE	10		0.5 U	0.5 U	0.5 U
1,4-DICHLOROBENZENE	75		0.5 U	0.5 U	0.5 U
2-CHLOROETHYL VINYL ETHER	175		2.5 U	2.5 U	2.5 U
BENZENE	**1**	**100**	**2.1**	**75.7**	0.5 U
BROMODICHLOROMETHANE	0.6		0.5 U	**0.67 J**	**1.0 U**
BROMOFORM	4.4		0.5 U	0.5 U	0.5 U
BROMOMETHANE	9.8		1 U	1 U	1 U
CARBON TETRACHLORIDE	3		0.5 U	0.5 U	0.5 U
CHLOROBENZENE	100		0.5 U	0.5 U	0.5 U
CHLORODIBROMOMETHANE	0.4		0.4 U	0.4 U	0.4 U
CHLOROETHANE	12		1 U	1 U	1 U
CHLOROFORM	5.7		0.5 U	3.7	1.9
CHLOROMETHANE	2.7		1 U	1 U	1 U
CIS-1,2-DICHLOROETHENE	70		0.5 U	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.2		**0.3 U**	**0.3 U**	**0.3 U**
ETHYLBENZENE	30	300	0.5 U	0.5 U	0.5 U
METHYL TERT-BUTYL ETHER	50	500	0.5 U	0.5 U	0.5 U
METHYLENE CHLORIDE	5		1 U	1 U	1 U
TETRACHLOROETHENE	3		0.5 U	0.5 U	0.5 U
TOLUENE	40	400	0.5 U	0.5 U	0.5 U
TOTAL XYLENES	**20**	200	1 U	1 U	1 U
TRANS-1,2-DICHLOROETHENE	100		0.5 U	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.2		**0.3 U**	**0.3 U**	**0.3 U**
TRICHLOROETHENE	3		0.5 U	0.5 U	0.5 U
VINYL CHLORIDE	1		0.5 U	0.5 U	0.5 U
Petroleum Hydrocarbons (µg/L)					
TOTAL PETROLEUM HYDROCARBONS	5000	50000	170 U	170 U	180 U

Notes:
Positive detections are shaded.
Values exceeding GCTLs are in **bold**.
GCTLs exceeded in one or more samples are in **bold** and underlined.
U = indicates a concentration less than the detection limit.
J = indicates an estimated concentration.
B (organics) = indicates blank contamination detected during analysis.
B (inorganics) = indicates a result >= IDL, but < RL.
IDL = instrument detection limit
RL = reporting limit

TABLE 3-8
GROUNDWATER EXCEEDANCES, WATER TABLE ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76
Sample Location			CEF-076-12	CEF-076-12	CEF-076-82S	CEF-076-82S
Sample ID CEF-076-GW-			12	E012-01A	82S	E-82S-01
Sample Date			12/10/01	01/09/02	12/10/01	12/17/02
Screen Interval (ft bls)			5-15	5-15	3-13	2.5-12.5
Inorganics (µg/L)	GCTL	NADSC				
LEAD	15	150	**41.9**	**23.4**	4.3 B	2.8 B
Semivolatile Organics (µg/L)						
1-METHYLNAPHTHALENE	20	200	2 U	This sample analyzed for lead only.	**21.3**	20
2-METHYLNAPHTHALENE	20	200	2 U		12.8	**22.3**
NAPHTHALENE	20	200	2 U		4.9	10.4
Volatile Organics (µg/L)						
1,2-DICHLOROETHANE	3	300	2 U	This sample analyzed for lead only.	2 U	0.5 U
BENZENE	1	100	1 U		1 U	0.5 U
BROMODICHLOROMETHANE	0.6		**2 U**		**2 U**	0.5 U
CHLOROFORM	5.7		2 U		2 U	0.5 U
ETHYLBENZENE	30	300	2 U		8.1	2
TOLUENE	40	400	2 U		2 U	0.5 U
TOTAL XYLENES	20	200	6 U		16.7	3.5
Petroleum Hydrocarbons (µg/L)						
TOTAL PETROLEUM HYDROCARBONS	5000	50000	250 U	Lead only.	1350	713

Site			SITE-76	SITE-76	SITE-76	SITE-76
Sample Location			CEF-076-88S	CEF-076-90S	CEF-076-94S	CEF-076-108S
Sample ID CEF-076-GW-			N88S-01	N90S-01	N94S-01	N108S-01
Sample Date			01/28/03	01/27/03	01/27/03	5/22/2003
Screen Interval (ft bls)			5 - 15	5 - 15	5 - 15	5 - 15
Inorganics (µg/L)	GCTL	NADSC				
LEAD	15	150	**128**	1.2 U	5.2	1.2 U
Semivolatile Organics (µg/L)						
1-METHYLNAPHTHALENE	20	200	0.53 U	6.4	**61.4**	14.4
2-METHYLNAPHTHALENE	20	200	0.53 U	7.4	**82.5**	**22.4**
NAPHTHALENE	20	200	2 J	18.9	**165**	11.4
Volatile Organics (µg/L)						
1,2-DICHLOROETHANE	3	300	0.5 U	0.5 U	**50 U**	0.50 U
BENZENE	1	100	0.5 U	**1.5**	**2560**	**16.3**
BROMODICHLOROMETHANE	0.6		0.5 U	0.5 U	**50 U**	0.50 U
CHLOROFORM	5.7		0.5 U	0.5 U	**50 U**	0.50 U
ETHYLBENZENE	30	300	2.4	4.8	**1030**	**62.5**
TOLUENE	40	400	1.1	0.5 U	**6470**	3.8
TOTAL XYLENES	20	200	17.9	12.3	**4400**	**693**
Petroleum Hydrocarbons (µg/L)						
TOTAL PETROLEUM HYDROCARBONS	5000	50000	387	2010	**8680**	2230

Notes:
Positive detections are shaded.
Values exceeding GCTLs are in **bold**.
U = indicates a concentration less than the detection limit.
J = indicates an estimated concentration.
B (organic) = indicates blank contamination detected during analysis.
B (inorganic) = indicates a result >= IDL, but < RL.
IDL = instrument detection limit
RL = reporting limit

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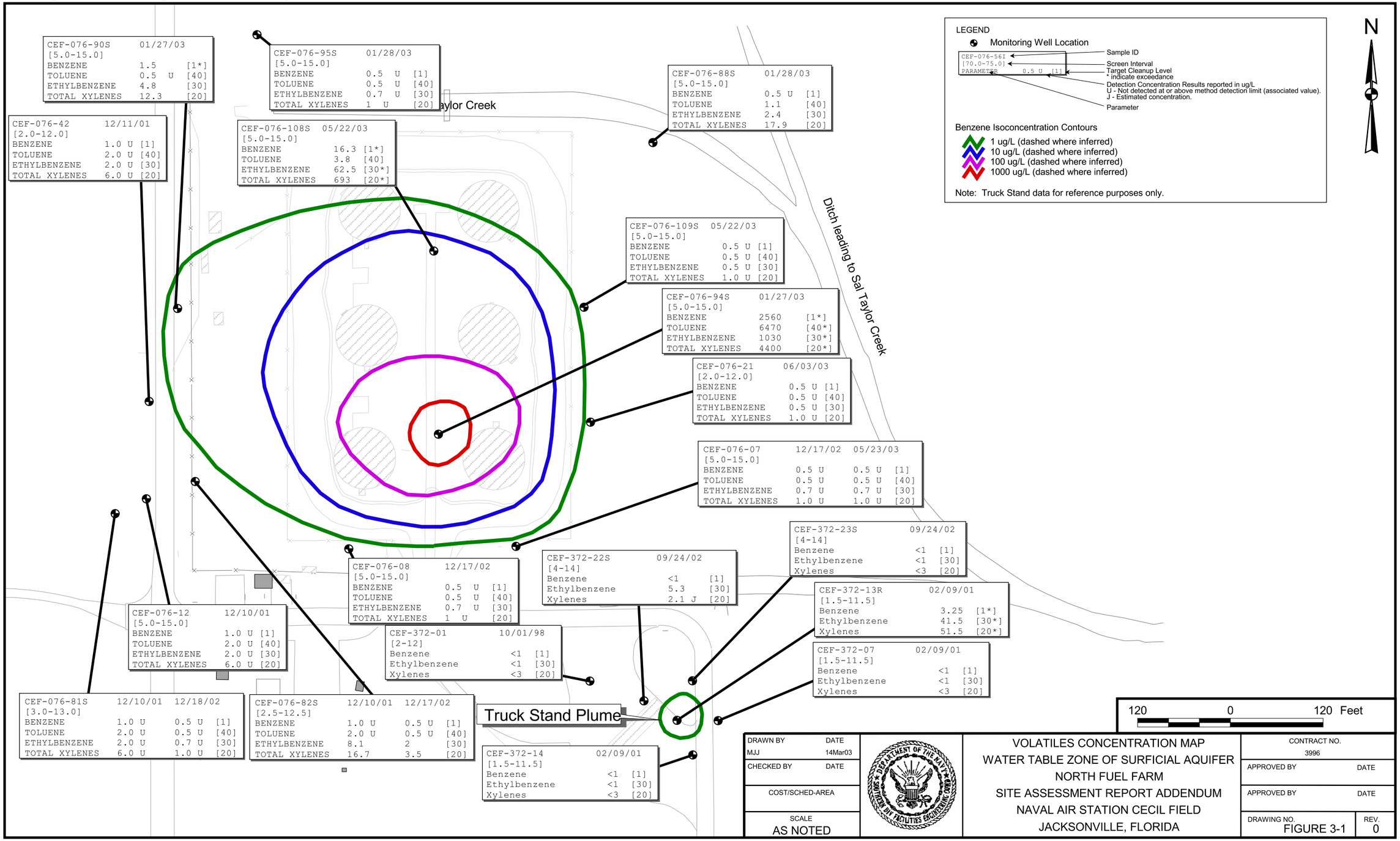

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MJJ	14Mar03
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COST/SCHED-AREA	
SCALE	AS NOTED

VOLATILES CONCENTRATION MAP
WATER TABLE ZONE OF SURFICIAL AQUIFER
NORTH FUEL FARM
SITE ASSESSMENT REPORT ADDENDUM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NO.	
3996	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 3-1	REV. 0

Toluene was detected at a concentration exceeding the GCTL of 40 µg/L in CEF-076-94S. The reported toluene concentration for this well was 6,470 µg/L (NADSC exceeded).

Ethylbenzene was detected at concentrations exceeding the GCTL of 30 µg/L in two monitoring wells:

- CEF-076-94S 1,030 µg/L (NADSC exceeded)
- CEF-076-108S 62.5 µg/L

Total xylenes were detected at concentrations exceeding the GCTL of 20 µg/L in two monitoring wells:

- CEF-076-94S 4,400 µg/L (NADSC exceeded)
- CEF-076-108S 693µg/L (NADSC exceeded)

3.3.1.2 PAHs – Water Table Zone

PAH compounds at concentrations exceeding GCTLs were detected in three of the nine water table zone monitoring wells sampled. PAH exceedances were limited to naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene. The PAH analytical results for the water table zone are shown on Figure 3-2.

Naphthalene was detected at a concentration exceeding the GCTL of 20 µg/L in CEF-076-94S. The reported naphthalene concentration for this well was 165 µg/L.

1-Methylnaphthalene was detected exceeding the GCTL of 20 µg/L in two monitoring wells:

- CEF-076-94S 61.4 µg/L
- CEF-076-82S 21.3 µg/L

2-Methylnaphthalene was detected exceeding the GCTL of 20 µg/L in three monitoring wells:

- CEF-076-94S 82.5 µg/L
- CEF-076-108S 22.4 µg/L
- CEF-076-82S 22.3 µg/L

3.3.1.3 TRPH – Water Table Zone

TRPH was detected at a concentration exceeding the GCTL of 5,000 µg/L in CEF-076-94S. The reported TRPH concentration for this well was 8,680 µg/L. The TRPH analytical results for the water table zone are shown on Figure 3-3.

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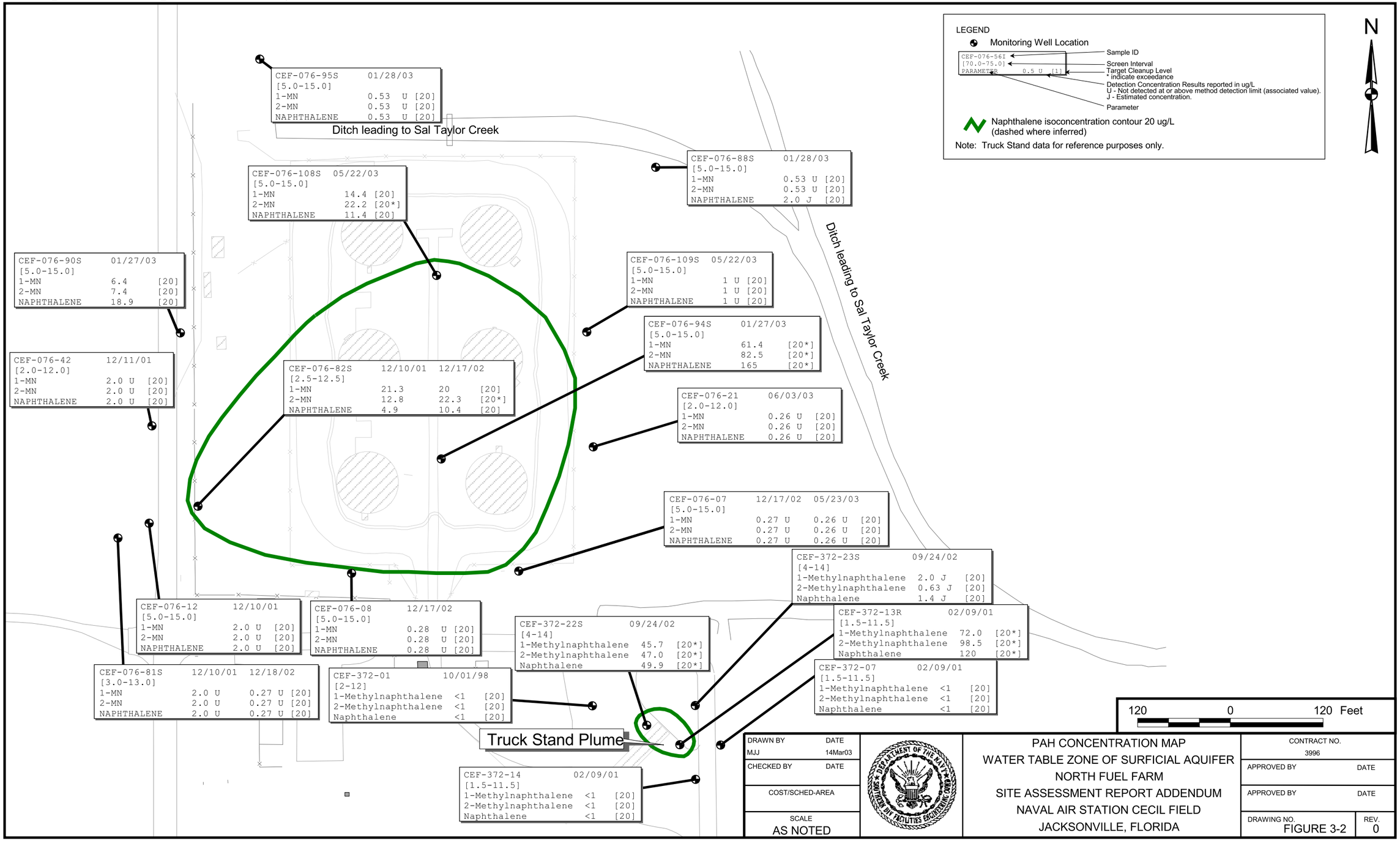

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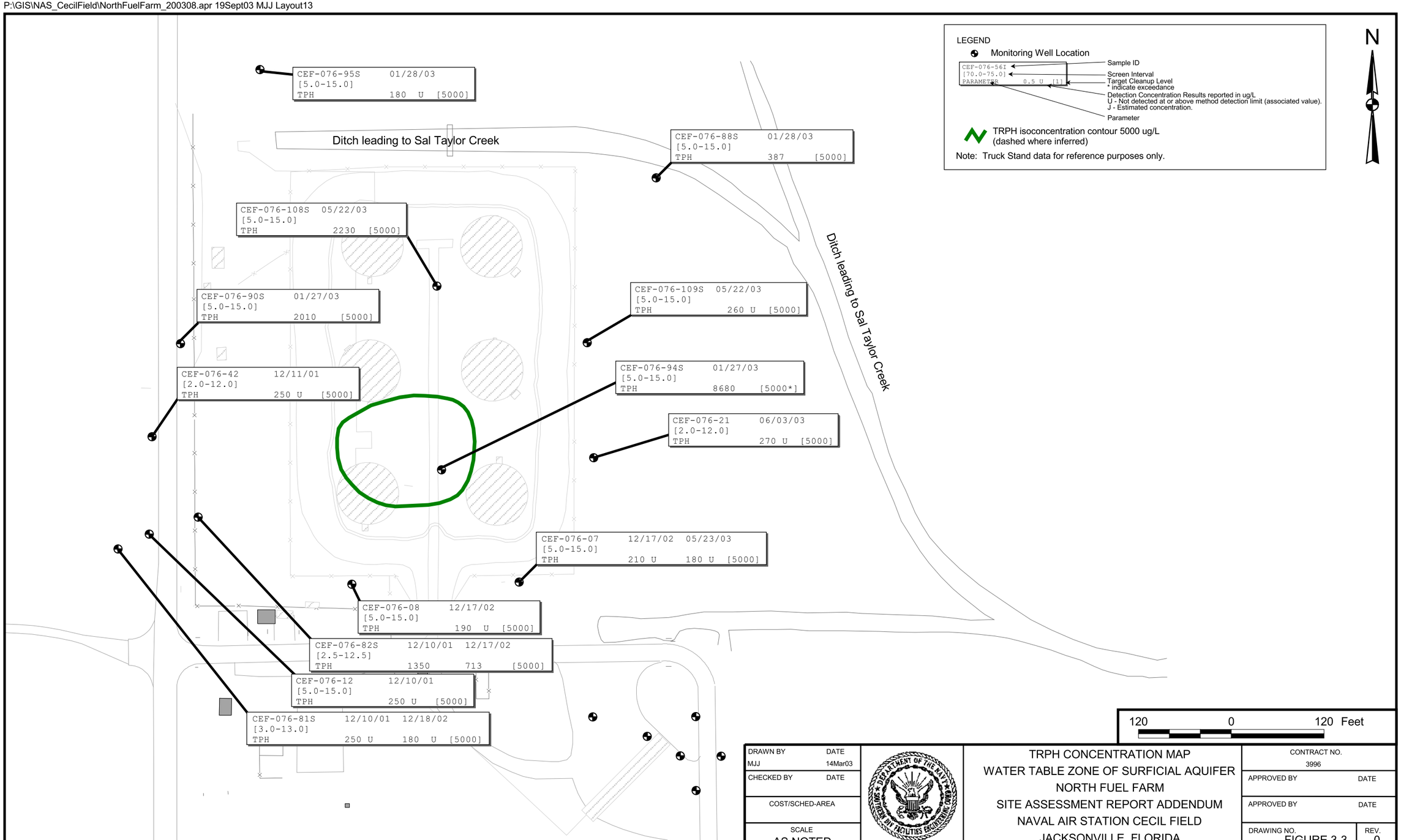

DRAWN BY MJJ	DATE 14Mar03	TRPH CONCENTRATION MAP WATER TABLE ZONE OF SURFICIAL AQUIFER NORTH FUEL FARM SITE ASSESSMENT REPORT ADDENDUM NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NO. 3996
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHED-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3-3 / REV. 0

3.3.1.4 Lead – Water Table Zone

Lead was detected at concentrations exceeding the GCTL of 15 µg/L in two monitoring wells:

- CEF-076-88S 128 µg/L
- CEF-076-12 41.9 µg/L and 23.4 µg/L

Both wells exhibited turbidity levels during purging that may have contributed to the results. The turbidity for CEF-076-12 was consistently between 33 and 70 Nephelometric Turbidity Units (NTUs), and the turbidity for CEF-076-88S was 999 NTUs. The lead analytical result for a filtered sample collected from CEF-076-12 was below the GCTL. Lead analytical results for the water table zone are on Figure 3-4.

3.3.2 Upper Intermediate Zone

Groundwater samples were collected from 17 monitoring wells screened in the upper intermediate zone. Ten of the monitoring wells sampled from this zone had GCTL exceedances for one or more analytes. VOCs, PAHs, TRPH, and lead were detected in groundwater samples from the upper intermediate zone at concentrations above GCTLs. Benzene, ethylbenzene, and total xylene (BEX) concentrations exceeded NADSC in 6 of 17 monitoring wells. No other COCs exceeded NADSC standards in the upper intermediate zone. The GCTL and NADSC exceedances detected in samples from the upper intermediate zone are summarized on Table 3-9.

3.3.2.1 Volatile Organics – Upper Intermediate Zone

Volatile organic compounds at concentrations exceeding GCTLs were detected in seven of the 17 upper intermediate zone monitoring wells sampled. VOC exceedances in the upper intermediate zone included BTEX; 1,2-dichloroethane; and chloroform. The VOC analytical results for the upper intermediate zone are shown on Figure 3-5.

Benzene was detected at concentrations exceeding the GCTL of 1 µg/L in seven monitoring wells:

- CEF-076-113S 10,600 µg/L (NADSC exceeded)
- CEF-076-87S 3,590 µg/L (NADSC exceeded)
- CEF-076-93S 2,910 µg/L (NADSC exceeded)
- CEF-076-91S 1,930 µg/L (NADSC exceeded)
- CEF-076-57S 85.5 µg/L
- CEF-076-49S 14.4 µg/L
- CEF-076-101S 1.6 µg/L

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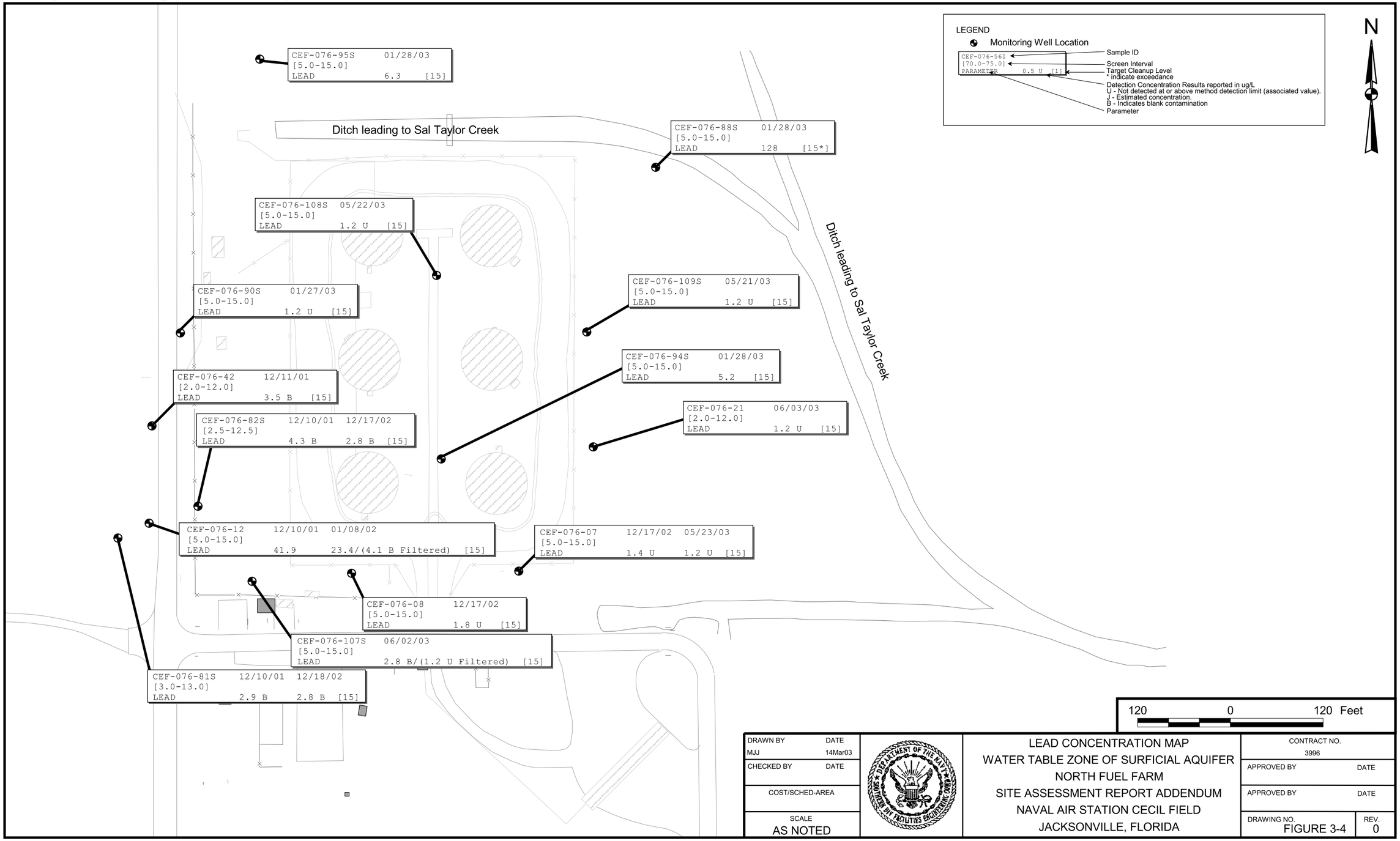

DRAWN BY MJJ	DATE 14Mar03	LEAD CONCENTRATION MAP WATER TABLE ZONE OF SURFICIAL AQUIFER NORTH FUEL FARM SITE ASSESSMENT REPORT ADDENDUM NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NO. 3996
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHED-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3-4 / REV. 0

TABLE 3-9
GROUNDWATER EXCEEDANCES, UPPER INTERMEDIATE ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76	SITE-76
Sample Location CEF-076-			49S	57S	87S	91S	92S
Sample ID CEF-76-GW-			E49S-01	E57S-01	N87S-01	N91S-01	N92S-01
Sample Date			12/12/02	12/11/02	01/27/03	01/28/03	01/28/03
Screen Interval (ft bls)			45 - 50	30 - 35	45 - 50	25 - 30	25 - 30
Inorganics (µg/L)	GCTL	NADSC					
LEAD	15	150	1.2 U	1.2 U	6.1	1.3 B	**17.8**
Semivolatile Organics (µg/L)							
1-METHYLNAPHTHALENE	20	200	0.27 U	0.25 U	**41.6**	**32.3**	0.56 U
2-METHYLNAPHTHALENE	20	200	0.27 U	0.25 U	**45.1**	**25.5**	0.56 U
NAPHTHALENE	20	200	0.27 U	1	**136**	**113**	0.56 U
Volatile Organics (µg/L)							
1,2-DICHLOROETHANE	3	300	2.5 U	**5 U**	**5 U**	**59.3**	0.5 U
BENZENE	1	100	**14.4**	**85.5**	**3590**	**1930**	0.5 U
BROMODICHLOROMETHANE	0.6		**2.5 U**	**5 U**	**5 U**	**5 U**	0.5 U
CHLOROFORM	5.7		2.5 U	5 U	5 U	5 U	0.5 U
ETHYLBENZENE	30	300	3.5 U	**56.8**	**856**	**1180**	0.7 U
TOLUENE	40	400	4.5 J	10.2	**147**	**192**	0.5 U
TOTAL XYLENES	20	200	**545**	**1290**	**4310**	**5880**	1 U
Petroleum Hydrocarbons (µg/L)							
TOTAL PETROLEUM HYDROCARBONS	5000	50000	703	3760	**7330**	**7950**	190 U

Site			SITE-76	SITE-76	SITE-76	SITE-76	Site 76
Sample Location cef-076-			93S	101S	106S	113S	114S
Sample ID CEF-76-GW-			N93S-01	N101S-01	N106S-01	N113S-01	114S-01
Sample Date			01/27/03	01/29/03	5/22/2003	5/23/2003	07/09/03
Screen Interval (ft bls)			25 - 30	30 - 35	25 - 30	35 - 40	35 - 40
Inorganics (µg/L)	GCTL	NADSC					
LEAD	15	150	4.2 B	**29.4**	**27.6**	1.2 U	**23**
Semivolatile Organics (µg/L)							
1-METHYLNAPHTHALENE	20	200	**55.6**	0.53 U	0.27 U	8.9	0.52 U
2-METHYLNAPHTHALENE	20	200	**67.1**	0.53 U	0.27 U	11.2	0.52 U
NAPHTHALENE	20	200	**124**	0.53 U	0.27 U	**71.5**	0.52 U
Volatile Organics (µg/L)							
1,2-DICHLOROETHANE	3	300	**5 U**	0.5 U	0.5 U	**25 U**	0.5 U
BENZENE	1	100	**2910**	**1.6**	0.5 U	**10600**	0.5 U
BROMODICHLOROMETHANE	0.6		**5 U**	0.5 U	0.5 U	**25 U**	0.5 U
CHLOROFORM	5.7		5 U	0.5 U	0.5 U	**27.4 J**	0.5 U
ETHYLBENZENE	30	300	**1110**	0.71 J	0.5 U	**883**	0.5 U
TOLUENE	40	400	**273**	2.5	0.72 J	**47.6**	0.5 U
TOTAL XYLENES	20	200	**4980**	3.8	1 U	**3430**	1 U
Petroleum Hydrocarbons (µg/L)							
TOTAL PETROLEUM HYDROCARBONS	5000	50000	**8700**	180 U	180 U	**7220**	180 U

Notes:
Positive detections are shaded.
Values exceeding GCTLS are **bold**.
U = indicates a concentration less than the detection limit.
J = indicates an estimated concentration.
B (organic) = indicates blank contamintion detected during analysis.
B (inorganic) = indicates a result > = IDL, but < RL.
IDL = instrument detection limit
RL = reporting limit

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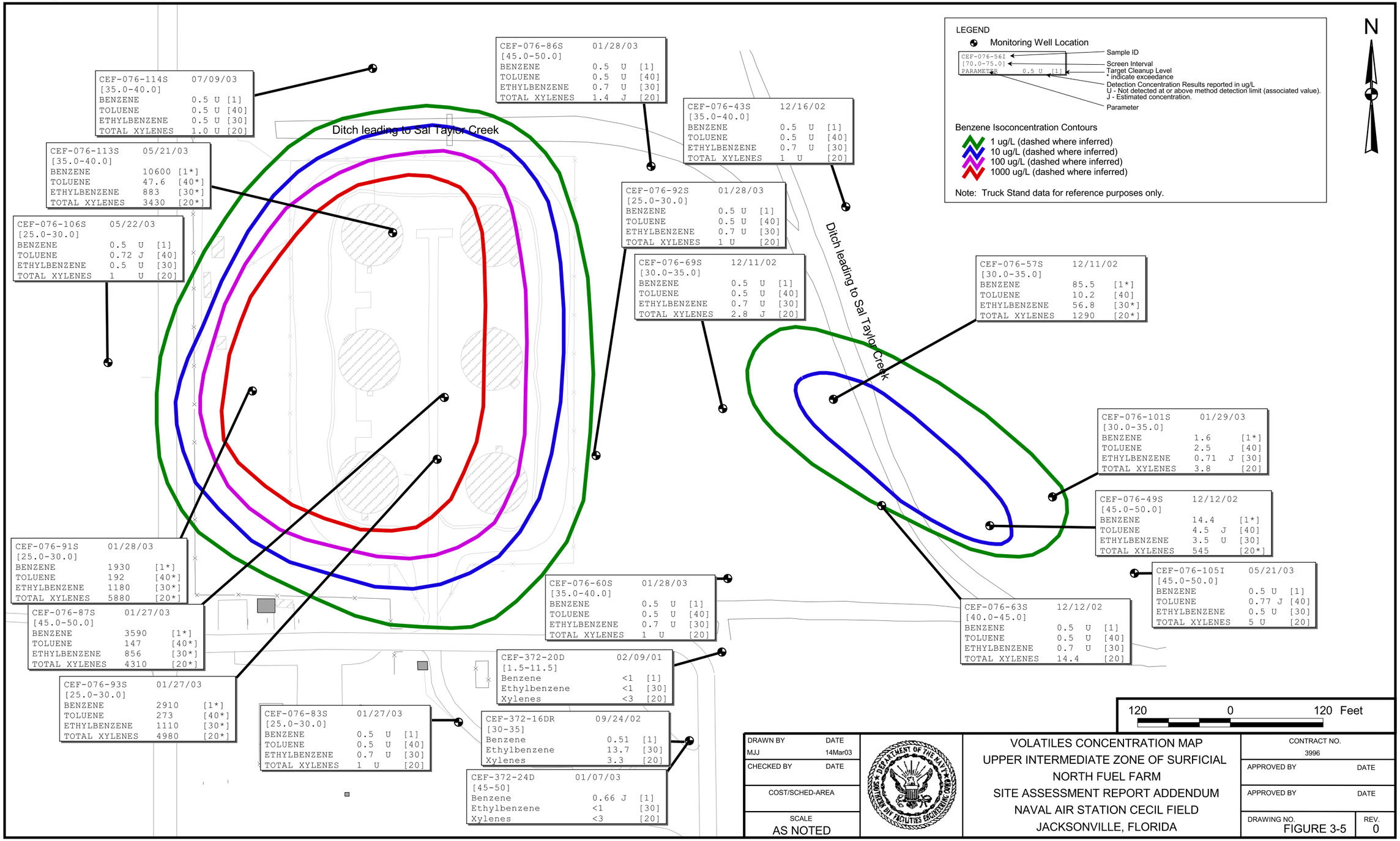

DRAWN BY MJJ	DATE 14Mar03	VOLATILES CONCENTRATION MAP UPPER INTERMEDIATE ZONE OF SURFICIAL NORTH FUEL FARM SITE ASSESSMENT REPORT ADDENDUM NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NO. 3996
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHED-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3-5 / REV. 0

Toluene was detected at a concentration exceeding the GCTL of 40 µg/L in four monitoring wells:

- CEF-076-93S 273 µg/L
- CEF-076-91S 192 µg/L
- CEF-076-87S 147 µg/L
- CEF-076-113S 47.6 µg/L

Ethylbenzene was detected at concentrations exceeding the GCTL of 30 µg/L in five monitoring wells:

- CEF-076-91S 1,180 µg/L (NADSC exceeded)
- CEF-076-93S 1,110 µg/L (NADSC exceeded)
- CEF-076-113S 883 µg/L (NADSC exceeded)
- CEF-076-87S 856 µg/L (NADSC exceeded)
- CEF-076-57S 56.8 µg/L

Total xylenes were detected at concentrations exceeding the GCTL of 20 µg/L in six monitoring wells:

- CEF-076-91S 5,880 µg/L (NADSC exceeded)
- CEF-076-93S 4,980 µg/L (NADSC exceeded)
- CEF-076-87S 4,310 µg/L (NADSC exceeded)
- CEF-076-113S 3,430 µg/L (NADSC exceeded)
- CEF-076-57S 1,290 µg/L (NADSC exceeded)
- CEF-076-49S 545 µg/L (NADSC exceeded)

The volatile organic compound 1,2-dichloroethane was detected at a concentration exceeding the GCTL of 3 µg/L in CEF-076-91S. The reported 1,2-dichloroethane concentration for this well was 59.3 µg/L.

Chloroform was detected at a concentration exceeding the GCTL of 5.7 µg/L in CEF-076-113S and CEF-076-114S. The reported chloroform concentrations for the wells were 27.4 J µg/L and 10.8 µg/L, respectively. This compound was also present at 16.7 µg/L in a source blank (CEF-076-WB-001) that was collected on June 2, 2003. The lab report for this sample is provided in Appendix L. This compound is a typical byproduct of the chlorination process used to make water potable for the public. Because this well was installed using the same potable water source as the source blank, this sample result is attributed to the local water treatment process rather than the site conditions.

3.3.2.2 PAHs – Upper Intermediate Zone

PAH compounds at concentrations exceeding GCTLs were detected in four of the 17 upper intermediate zone monitoring wells sampled. PAH exceedances were limited to naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene. The PAH analytical results for the upper intermediate zone are shown on Figure 3-6.

Naphthalene was detected at a concentration exceeding the GCTL of 20 µg/L in four monitoring wells:

- CEF-076-87S 136 µg/L
- CEF-076-93S 124 µg/L
- CEF-076-91S 113 µg/L
- CEF-076-113S 71.5µg/L

1-Methylnaphthalene was detected exceeding the GCTL of 20 µg/L in three monitoring wells:

- CEF-076-93S 55.6 µg/L
- CEF-076-87S 41.6 µg/L
- CEF-076-91S 32.3 µg/L

2-Methylnaphthalene was detected exceeding the GCTL of 20 µg/L in three monitoring wells:

- CEF-076-93S 67.1 µg/L
- CEF-076-87S 45.1 µg/L
- CEF-076-91S 25.5 µg/L

3.3.2.3 TRPH – Upper Intermediate Zone

TRPH was detected at a concentration exceeding the GCTL of 5,000 µg/L in four upper intermediate zone monitoring wells:

- CEF-076-93S 8,700 µg/L
- CEF-076-91S 7,950 µg/L
- CEF-076-87S 7,330 µg/L
- CEF-076-113S 7,220 µg/L

The TRPH analytical results for the upper intermediate zone are shown on Figure 3-7.

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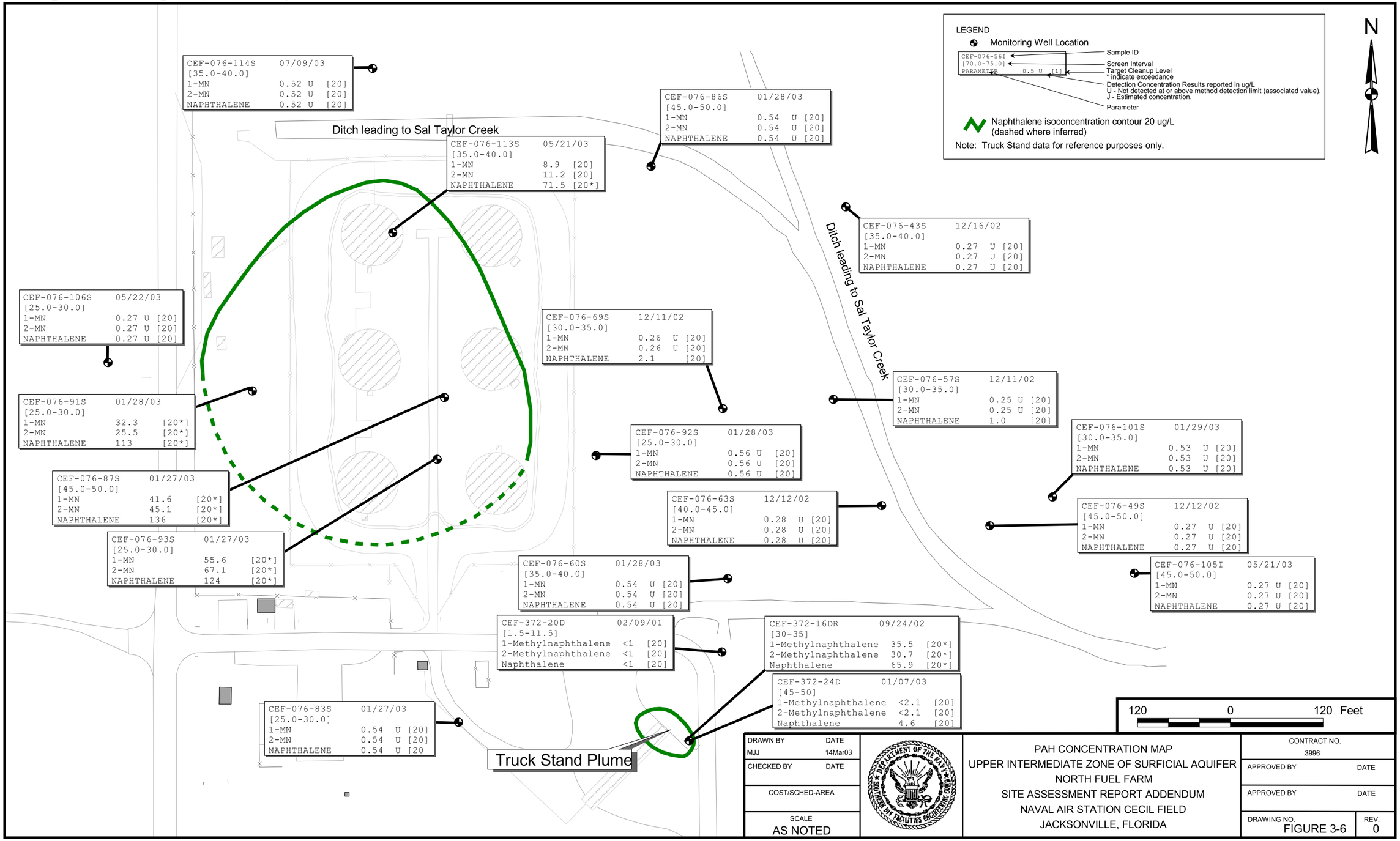

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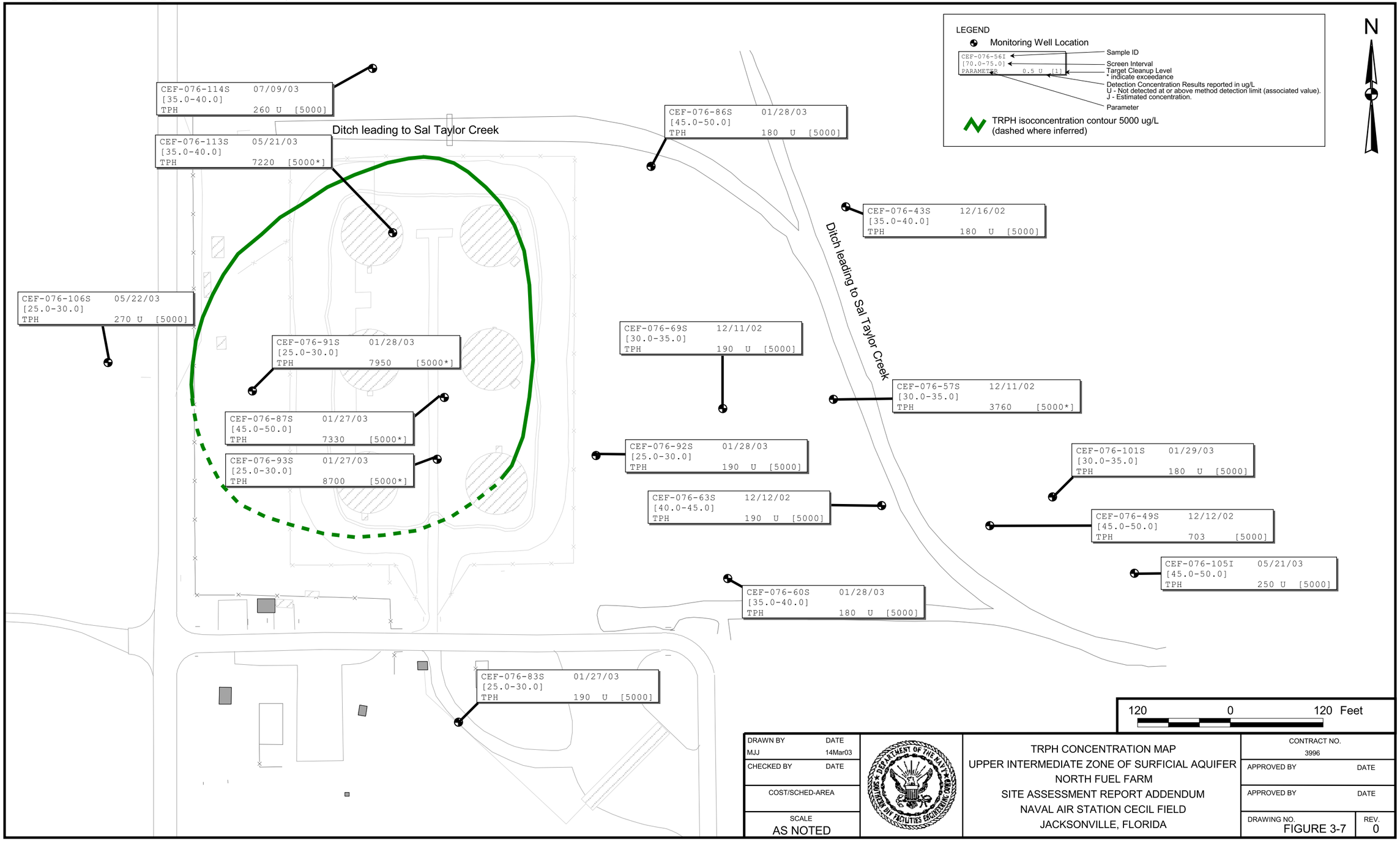

DRAWN BY MJJ	DATE 14Mar03	TRPH CONCENTRATION MAP UPPER INTERMEDIATE ZONE OF SURFICIAL AQUIFER NORTH FUEL FARM SITE ASSESSMENT REPORT ADDENDUM NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NO. 3996
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHED-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3-7 / REV. 0

3.3.2.4 Lead – Upper Intermediate Zone

Lead was detected at a concentration exceeding the GCTL of 15 µg/L in four upper intermediate zone monitoring wells:

- CEF-076-92S 17.8 µg/L
- CEF-076-101S 29.4 µg/L
- CEF-076-106S 27.6 µg/L
- CEF-076-114S 23 µg/L

Each of these wells exhibited turbidity levels during the purging process that may have contributed to these results. The turbidity for those wells ranged from 630 to 1,000 NTUs. Later in Section 3.4, it will be shown that two (106S and 114S) of the four wells are in upgradient locations. Therefore, the exceedances in this zone may be due to natural causes. The lead analytical results for the upper intermediate zone are shown on Figure 3-8.

3.3.3 Lower Intermediate Zone

Groundwater samples were collected from 14 monitoring wells screened in the lower intermediate zone. Nine of the monitoring wells sampled from this zone had exceedances of one or more analytes. VOCs, PAHs, and TRPH were detected above GCTLs. Eight of the 14 wells exceeded NADSC standards, specifically for BEX. No other COCs exceeded NADSC standards in the lower intermediate zone. The GCTL and NADSC exceedances detected in samples from the lower intermediate zone are summarized on Table 3-10.

3.3.3.1 Volatile Organics – Lower Intermediate Zone

Volatile organic compounds at concentrations exceeding GCTLs were detected in nine of the 14 lower intermediate zone monitoring wells sampled. VOC exceedances in the lower intermediate zone were limited to BTEX. The VOC analytical results for the lower intermediate zone are shown on Figure 3-9.

Benzene was detected at concentrations exceeding the GCTL of 1 µg/L in eight monitoring wells:

- CEF-076-70I 8,490 µg/L (NADSC exceeded)
- CEF-076-39D 7,280 µg/L (NADSC exceeded)
- CEF-076-50I 4,410 µg/L (NADSC exceeded)
- CEF-076-64I 334 µg/L (NADSC exceeded)
- CEF-076-89I 60.7 µg/L

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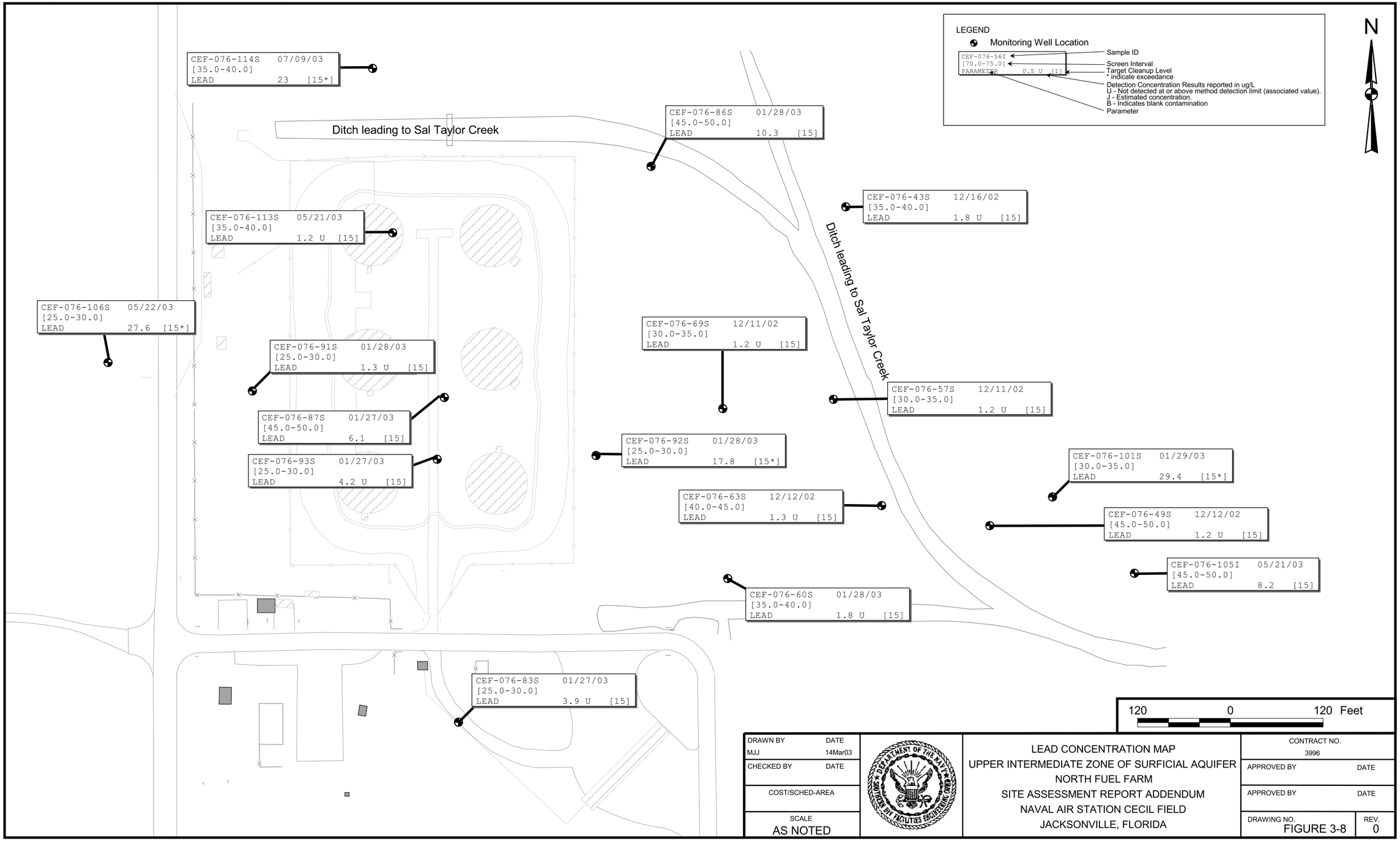

DRAWN BY MJJ	DATE 14Mar03	LEAD CONCENTRATION MAP UPPER INTERMEDIATE ZONE OF SURFICIAL AQUIFER NORTH FUEL FARM SITE ASSESSMENT REPORT ADDENDUM NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NO. 3996
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHED-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3-8 / REV. 0

TABLE 3-10
GROUNDWATER EXCEEDANCES, LOWER INTERMEDIATE ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76	SITE-76
Sample Location CEF-076-			39D	50I	61I	64I	70I
Sample ID CEF-076-GW-			E39D-01	E50I-01	E61I-01	E64I-01	E70I-01
Sample Date			12/17/02	12/12/02	12/11/02	12/12/02	12/11/02
Screen Interval (ft bls)			55 - 65	75 - 80	65 - 70	70 - 75	65 - 70
Inorganics (µg/L)	GCTL	NADSC					
LEAD	15	150	2.0 B	1.2 U	1.2 U	1.2 U	1.4 B
Semivolatile Organics (µg/L)							
1-METHYLNAPHTHALENE	20	200	**39.2**	0.28 U	11.8	0.27 U	0.26 U
2-METHYLNAPHTHALENE	20	200	**52**	0.28 U	13.1	0.27 U	0.26 U
NAPHTHALENE	20	200	**115**	0.39 J	**122**	11.7	**28.9**
Volatile Organics (µg/L)							
1,2-DICHLOROETHANE	3	300	**50 U**	**25 U**	**5 U**	**10 U**	**50 U**
BENZENE	1	100	**7280**	**4410**	**5 U**	**334**	**8490**
BROMODICHLOROMETHANE	0.6		**50 U**	**25 U**	**5 U**	**10 U**	**50 U**
CHLOROFORM	5.7		**50 U**	**25 U**	5 U	**10 U**	**50 U**
ETHYLBENZENE	30	300	**615**	**35 U**	**97.3**	**125**	**269**
TOLUENE	40	400	**103**	25 U	5.6 J	15.7 J	**50 U**
TOTAL XYLENES	20	200	**6850**	**1710**	**886**	**3480**	**7130**
Petroleum Hydrocarbons (µg/L)							
TOTAL PETROLEUM HYDROCARBONS	5000	50000	**9740**	1780	3700	2970	4980

Site			SITE-76	SITE-76	SITE-76	SITE-76
Sample Location CEF-076-			73I	85I	89I	111I
Sample ID CEF-076-GW-			E73I-01	N85I-01	N89I-01	N111I-01
Sample Date			12/18/02	01/28/03	01/27/03	5/22/2003
Screen Interval (ft bls)			60 - 65	55 - 60	50 - 55	65 - 70
Inorganics (µg/L)	GCTL	NADSC				
LEAD	15	150	1.2 U	1.2 U	4.4 B	1.2 U
Semivolatile Organics (µg/L)						
1-METHYLNAPHTHALENE	20	200	0.26 U	2.2 U	0.56 U	0.26 U
2-METHYLNAPHTHALENE	20	200	0.26 U	0.54 U	0.56 U	0.26 U
NAPHTHALENE	20	200	0.26 U	4.4 U	4.4 U	0.26 U
Volatile Organics (µg/L)						
1,2-DICHLOROETHANE	3	300	2.5 U	**5 U**	**5 U**	0.5 U
BENZENE	1	100	**6.7**	**20.7**	**60.7**	**3.0**
BROMODICHLOROMETHANE	0.6		**2.5 U**	**5 U**	**5 U**	0.5 U
CHLOROFORM	5.7		2.5 U	5 U	5 U	1.1
ETHYLBENZENE	30	300	3.5 U	10	**220**	0.5 U
TOLUENE	40	400	4.3 J	14.8	11.8	0.62
TOTAL XYLENES	20	200	**878**	**3020**	**1560**	1 U
Petroleum Hydrocarbons (µg/L)						
TOTAL PETROLEUM HYDROCARBONS	5000	50000	1320	2780	1290	180 U

Notes:
Positive detections are shaded.
Values exceeding GCTLs are in **bold**.
J = indicates an estimated concentration.
U = indicates a concentration less than the detection limit.
B (organic) = indicates blank contamination detected during analysis.
B (inorganic) = indicates a result >= IDL, but < RL.
IDL = instrument detection limit
RL = reporting limit

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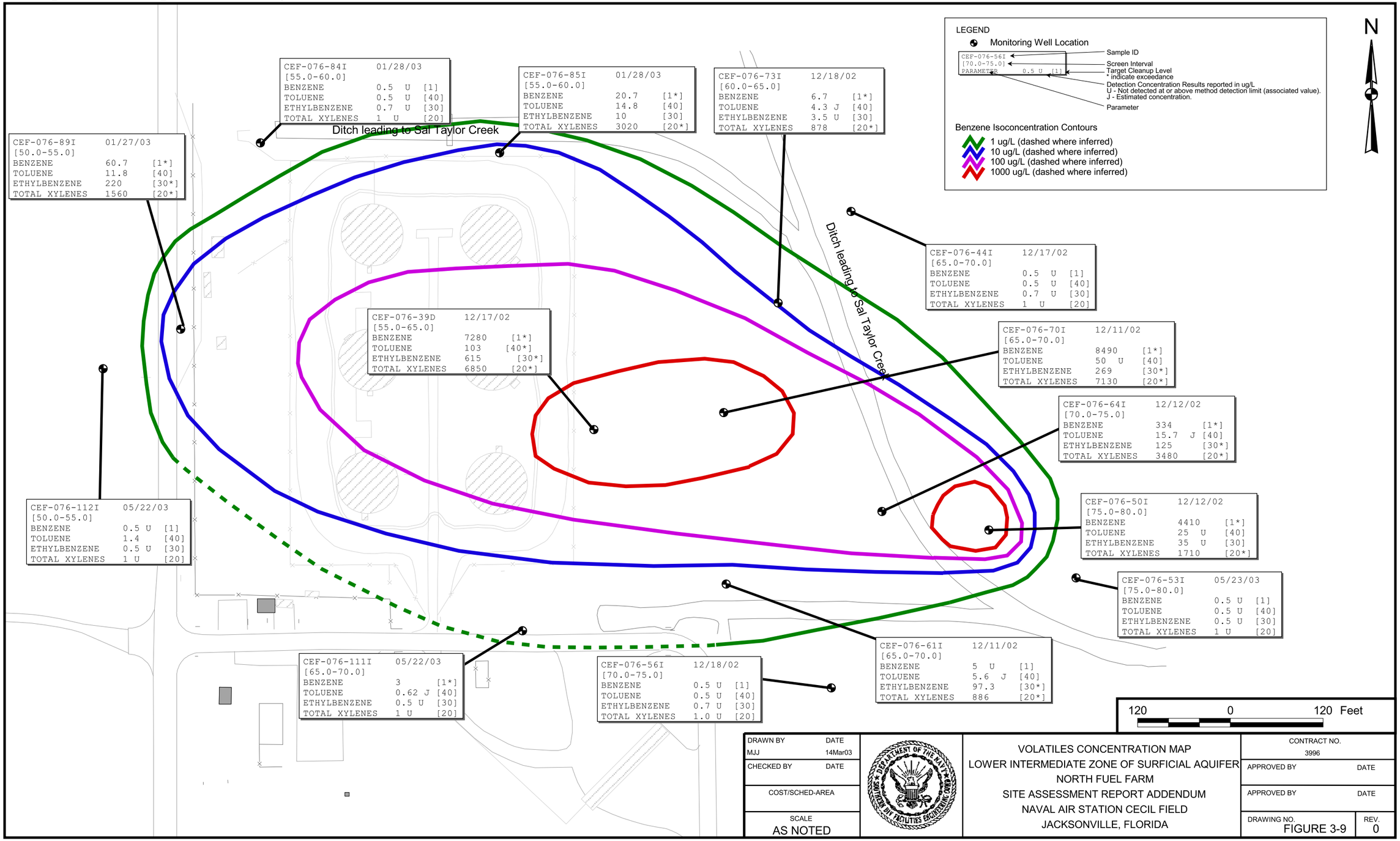

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SCALE	AS NOTED

VOLATILES CONCENTRATION MAP
LOWER INTERMEDIATE ZONE OF SURFICIAL AQUIFER
NORTH FUEL FARM
SITE ASSESSMENT REPORT ADDENDUM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NO. 3996	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 3-9	REV. 0

- CEF-076-85I 20.7 µg/L
- CEF-076-73I 6.7 µg/L
- CEF-076-111I 3.0 µg/L

Toluene was detected at a concentration exceeding the GCTL of 40 µg/L in CEF-076-39D. The reported toluene concentration for this well was 103 µg/L.

Ethylbenzene was detected at concentrations exceeding the GCTL of 30 µg/L in five monitoring wells:

- CEF-076-39D 615 µg/L (NADSC exceeded)
- CEF-076-70I 269 µg/L
- CEF-076-89I 220 µg/L
- CEF-076-64I 125 µg/L
- CEF-076-61I 97.3 µg/L

Total xylenes were detected at concentrations exceeding the GCTL of 20 µg/L in eight monitoring wells:

- CEF-076-70I 7,130 µg/L (NADSC exceeded)
- CEF-076-39D 6,850 µg/L (NADSC exceeded)
- CEF-076-64I 3,480 µg/L (NADSC exceeded)
- CEF-076-85I 3,020 µg/L (NADSC exceeded)
- CEF-076-50I 1,710 µg/L (NADSC exceeded)
- CEF-076-89I 1,560 µg/L (NADSC exceeded)
- CEF-076-61I 886 µg/L (NADSC exceeded)
- CEF-076-73I 878 µg/L (NADSC exceeded)

3.3.3.2 PAHs – Lower Intermediate Zone

PAH concentrations exceeding GCTLs were detected in three of the 14 lower intermediate zone monitoring wells sampled. PAH exceedances were limited to naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene and are shown on Figure 3-10.

Naphthalene was detected at concentrations exceeding the GCTL of 20 µg/L in three monitoring wells:

- CEF-076-61I 122 µg/L
- CEF-076-39D 115 µg/L
- CEF-076-70I 28.9 µg/L

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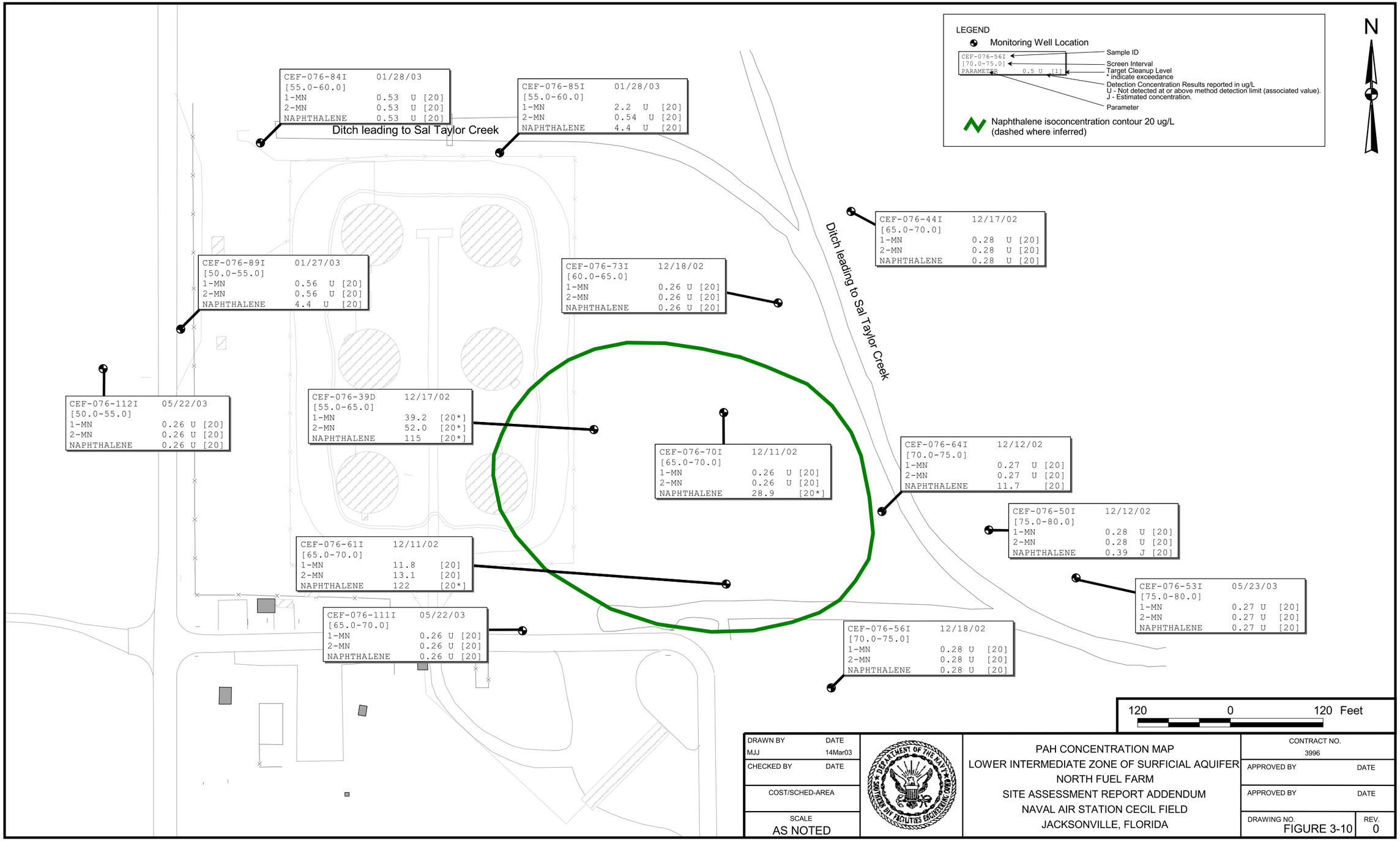

DRAWN BY	DATE		PAH CONCENTRATION MAP LOWER INTERMEDIATE ZONE OF SURFICIAL AQUIFER NORTH FUEL FARM SITE ASSESSMENT REPORT ADDENDUM NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NO. 3996	
MJJ	14Mar03			APPROVED BY	DATE
CHECKED BY	DATE			APPROVED BY	DATE
COST/SCHED-AREA				DRAWING NO. FIGURE 3-10	REV. 0
SCALE AS NOTED					

1-Methylnaphthalene was detected at a concentration exceeding the GCTL of 20 µg/L in CEF-076-39D. The reported naphthalene concentration for this well was 39.2 µg/L.

2-Methylnaphthalene was detected at a concentration exceeding the GCTL of 20 µg/L in CEF-076-39D. The reported naphthalene concentration for this well was 52 µg/L.

3.3.3.3 TRPH – Lower Intermediate Zone

TRPH was detected in lower intermediate zone monitoring well CEF-076-39D at a concentration exceeding the GCTL of 5,000 µg/L. The reported TRPH concentration for this well was 9,740 µg/L. The TRPH analytical results for the lower intermediate zone are shown on Figure 3-11.

3.3.4 Deep Zone

Groundwater samples were collected from 18 monitoring wells screened in the deep zone. Nine of the monitoring wells sampled from this zone had exceedances of one or more analytes. VOCs were the only petroleum constituents that were detected at concentrations above GCTLs. Four of the nine wells exceeded NADSC standards, specifically for benzene only. No other COC exceeded the NADSC standards in the deep zone. The GCTL and NADSC exceedances detected in samples from the deep zone are summarized on Table 3-11.

VOCs at concentrations exceeding GCTLs were detected in nine of the 18 deep zone monitoring wells sampled. VOC exceedances in the upper deep zone included benzene, total xylenes, and bromodichloromethane. The VOC analytical results for the upper intermediate zone are shown on Figure 3-12.

Benzene was detected at concentrations exceeding the GCTL of 1 µg/L in nine monitoring wells:

- CEF-076-51D 1,340 µg/L (NADSC exceeded)
- CEF-076-98D 1,040 µg/L (NADSC exceeded)
- CEF-076-110D 842 µg/L (NADSC exceeded)
- CEF-076-80D 390 µg/L (NADSC exceeded)
- CEF-076-116D 75.7 µg/L
- CEF-076-65D 6.6 µg/L
- CEF-076-99D 5.8 µg/L
- CEF-076-100D 5.2 µg/L
- CEF-076-115D 2.1 µg/L

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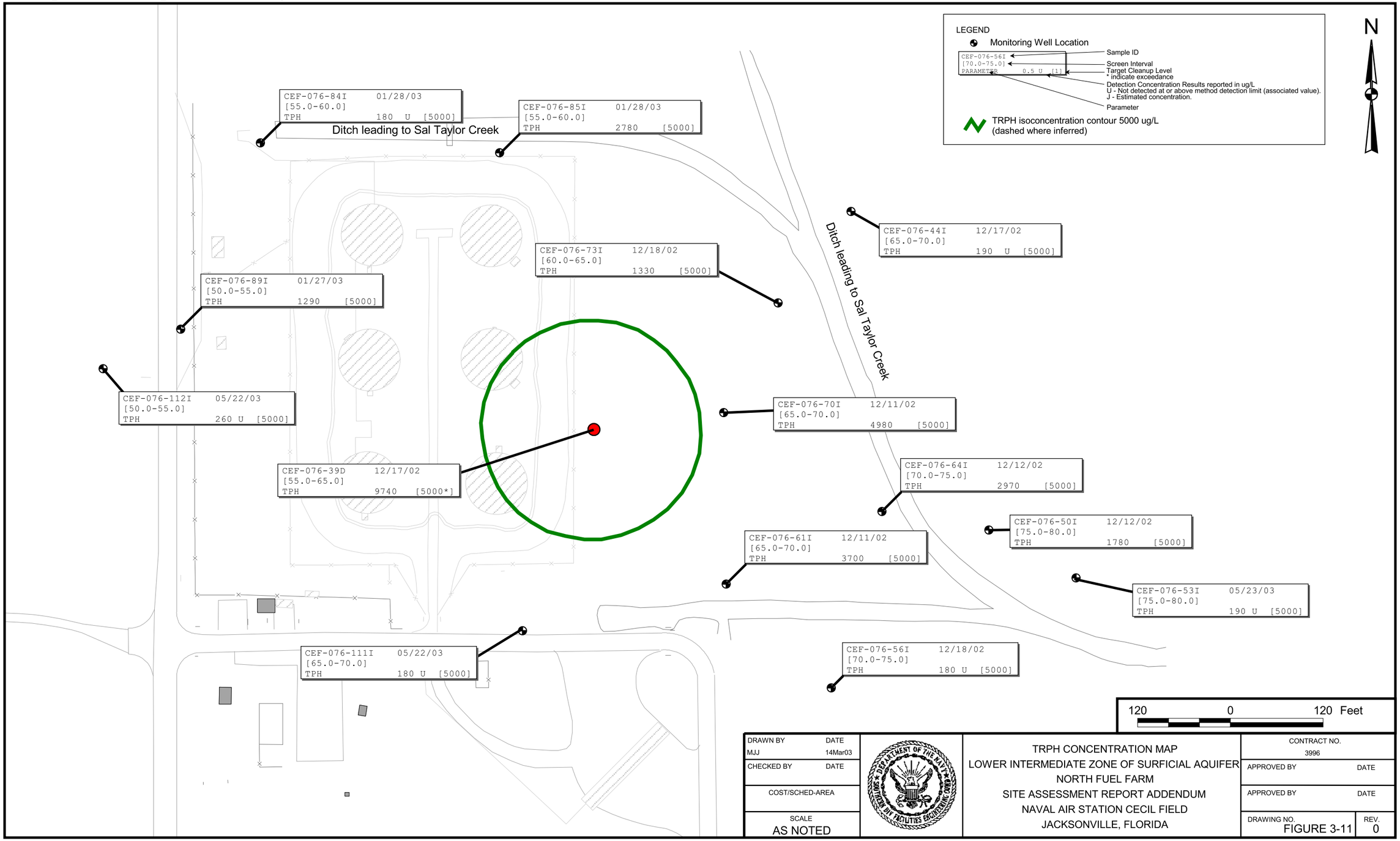

DRAWN BY MJJ	DATE 14Mar03	TRPH CONCENTRATION MAP LOWER INTERMEDIATE ZONE OF SURFICIAL AQUIFER NORTH FUEL FARM SITE ASSESSMENT REPORT ADDENDUM NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NO. 3996
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHED-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3-11 / REV. 0

TABLE 3-11
GROUNDWATER EXCEEDANCES, DEEP ZONE

SITE ASSESSMENT REPORT ADDENDUM
NORTH FUEL FARM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

Site			SITE-76	SITE-76	SITE-76	SITE-76	SITE-76
Sample Location CEF-076-			51D	65D	80D	98D	99D
Sample ID CEF-076-GW-			E51D-01	E65D-01	E80D-01	N98D-01	N99D-01
Sample Date			12/12/02	12/12/02	12/16/02	02/11/03	02/10/03
Screen Interval (ft bls)			100 - 110	100 - 110	110 - 120	105 - 110	95 - 100
Inorganics (µg/L)	GCTL	NADSC					
LEAD	15	150	1.2 U	1.2 U	1.2 U	2.8 B	2.6 B
Semivolatile Organics (µg/L)							
1-METHYLNAPHTHALENE	20	200	0.27 U	0.27 U	0.27 U	0.52 U	0.5 U
2-METHYLNAPHTHALENE	20	200	0.27 U	0.27 U	0.27 U	0.52 U	0.5 U
NAPHTHALENE	20	200	0.27 U	0.27 U	0.27 U	5	0.5 U
Volatile Organics (µg/L)							
1,2-DICHLOROETHANE	3	300	**10 U**	0.5 U	**5 U**	0.5 U	0.5 U
BENZENE	1	100	**1340**	**6.6**	**390**	**1040**	**5.8**
BROMODICHLOROMETHANE	0.6		**10 U**	0.5 U	**5 U**	0.5 U	0.5 U
CHLOROFORM	5.7		**10 U**	0.5 U	5 U	0.5 U	0.5 U
ETHYLBENZENE	30	300	14 U	0.7 U	7 U	19.4	1
TOLUENE	40	400	10 U	0.96 J	5 U	0.6 J	0.5 U
TOTAL XYLENES	20	200	**33.2 J**	**97.4**	10 U	**95.6**	2.4 J
Petroleum Hydrocarbons (µg/L)							
TOTAL PETROLEUM HYDROCARBONS	5000	50000	170 U	180 U	180 U	398	170 U

Site			SITE-76	SITE-76	Site 76	Site 76
Sample Location CEF-076-			100D	110D	115D	116D
Sample ID CEF-076-GW-			N100D-01	N110D-01	N115D-01	N116D-01
Sample Date			01/29/03	5/22/2003	07/10/03	07/10/03
Screen Interval (ft bls)			110 - 115	105 - 110	105 - 110	105 - 110
Inorganics (µg/L)	GCTL	NADSC				
LEAD	15	150	1.2 U	5.4	1.2 U	3.8 B
Semivolatile Organics (µg/L)						
1-METHYLNAPHTHALENE	20	200	0.52 U	0.27 U	0.5 U	0.5 U
2-METHYLNAPHTHALENE	20	200	0.52 U	0.27 U	0.5 U	0.5 U
NAPHTHALENE	20	200	0.52 U	1.4	0.5 U	0.5 U
Volatile Organics (µg/L)						
1,2-DICHLOROETHANE	3	300	0.5 U	0.5 U	0.5 U	0.5 U
BENZENE	1	100	**5.2**	**842**	**2.1**	**75.7**
BROMODICHLOROMETHANE	0.6		0.5 U	0.5 U	0.5 U	**0.67 J**
CHLOROFORM	5.7		0.5 U	0.5 U	0.5 U	3.7
ETHYLBENZENE	30	300	0.7 U	1.7	0.5 U	0.5 U
TOLUENE	40	400	0.58 J	0.78 J	0.5 U	0.5 U
TOTAL XYLENES	20	200	1 U	**21.0**	1 U	1 U
Petroleum Hydrocarbons (µg/L)						
TOTAL PETROLEUM HYDROCARBONS	5000	50000	180 U	264 J	170 U	170 U

Notes:
Positive detections are shaded.
Values exceeding GCTLs are in bold.
U = indicates a concentration less than the detection limit.
J - indicates an estimated concentration.
B (organic) = indicates blank contamination detected during analysis.
B (inorganic) = indicates a reuslt >= IDL, but < RL.
IDL = instrument detection limit
RL = reporting limit

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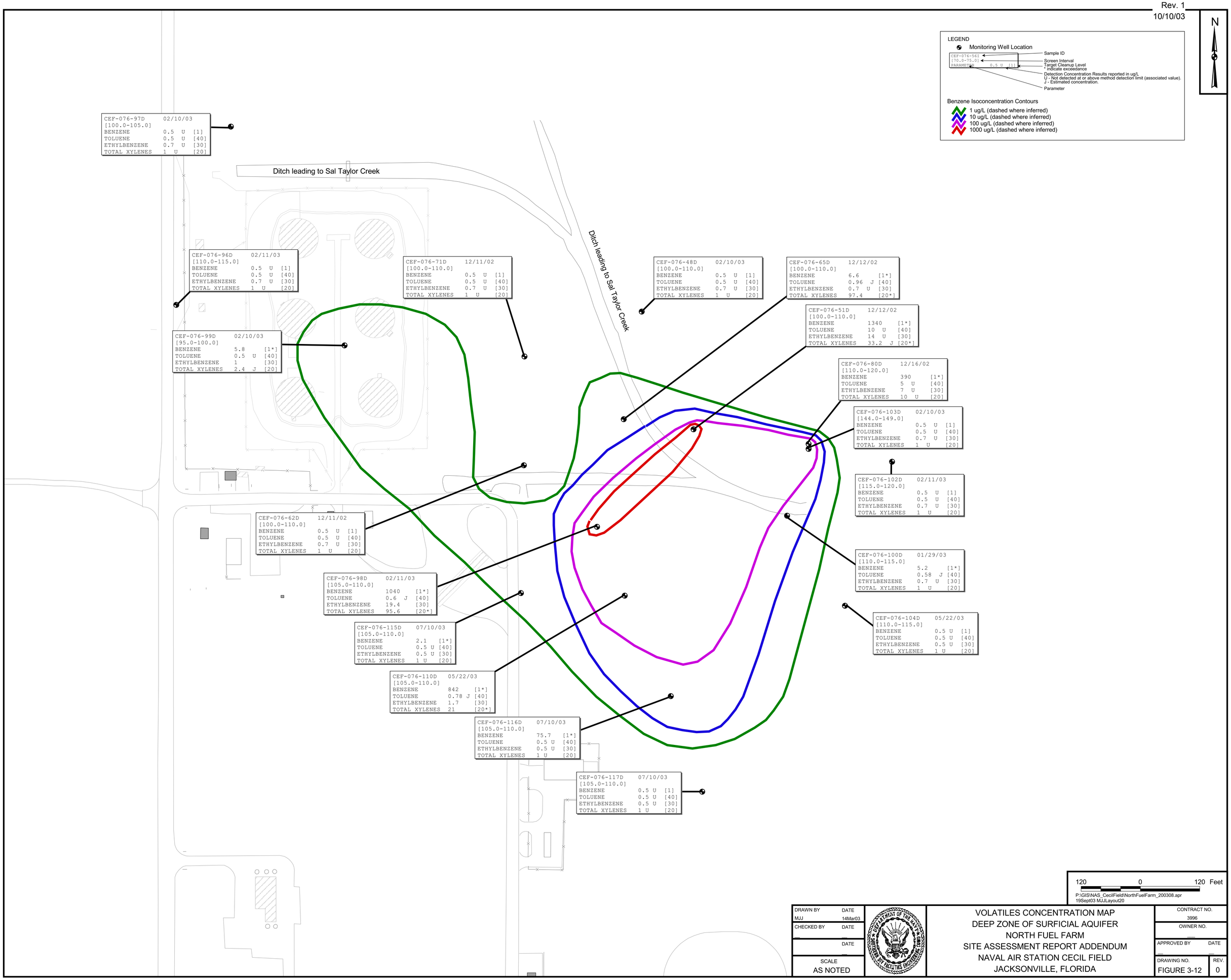
10/10/03


LEGEND
Monitoring Well Location
CEF-076-56I
[70.0-75.0]
PARAMETER 0.5 U [1]
Sample ID
Screen Interval
Target Cleanup Level
* indicate exceedance
Detection Concentration Results reported in ug/L
U - Not detected at or above method detection limit (associated value).
J - Estimated concentration.
Parameter
Benzene Isoconcentration Contours
1 ug/L (dashed where inferred)
10 ug/L (dashed where inferred)
100 ug/L (dashed where inferred)
1000 ug/L (dashed where inferred)
N
Ditch leading to Sal Taylor Creek
Ditch leading to Sal Taylor Creek
CEF-076-97D 02/10/03
[100.0-105.0]
BENZENE 0.5 U [1]
TOLUENE 0.5 U [40]
ETHYLBENZENE 0.7 U [30]
TOTAL XYLENES 1 U [20]
CEF-076-96D 02/11/03
[110.0-115.0]
BENZENE 0.5 U [1]
TOLUENE 0.5 U [40]
ETHYLBENZENE 0.7 U [30]
TOTAL XYLENES 1 U [20]
CEF-076-71D 12/11/02
[100.0-110.0]
BENZENE 0.5 U [1]
TOLUENE 0.5 U [40]
ETHYLBENZENE 0.7 U [30]
TOTAL XYLENES 1 U [20]
CEF-076-48D 02/10/03
[100.0-110.0]
BENZENE 0.5 U [1]
TOLUENE 0.5 U [40]
ETHYLBENZENE 0.7 U [30]
TOTAL XYLENES 1 U [20]
CEF-076-65D 12/12/02
[100.0-110.0]
BENZENE 6.6 [1*]
TOLUENE 0.96 J [40]
ETHYLBENZENE 0.7 U [30]
TOTAL XYLENES 97.4 [20*]
CEF-076-51D 12/12/02
[100.0-110.0]
BENZENE 1340 [1*]
TOLUENE 10 U [40]
ETHYLBENZENE 14 U [30]
TOTAL XYLENES 33.2 J [20*]
CEF-076-99D 02/10/03
[95.0-100.0]
BENZENE 5.8 [1*]
TOLUENE 0.5 U [40]
ETHYLBENZENE 1 [30]
TOTAL XYLENES 2.4 J [20]
CEF-076-80D 12/16/02
[110.0-120.0]
BENZENE 390 [1*]
TOLUENE 5 U [40]
ETHYLBENZENE 7 U [30]
TOTAL XYLENES 10 U [20]
CEF-076-103D 02/10/03
[144.0-149.0]
BENZENE 0.5 U [1]
TOLUENE 0.5 U [40]
ETHYLBENZENE 0.7 U [30]
TOTAL XYLENES 1 U [20]
CEF-076-102D 02/11/03
[115.0-120.0]
BENZENE 0.5 U [1]
TOLUENE 0.5 U [40]
ETHYLBENZENE 0.7 U [30]
TOTAL XYLENES 1 U [20]
CEF-076-62D 12/11/02
[100.0-110.0]
BENZENE 0.5 U [1]
TOLUENE 0.5 U [40]
ETHYLBENZENE 0.7 U [30]
TOTAL XYLENES 1 U [20]
CEF-076-100D 01/29/03
[110.0-115.0]
BENZENE 5.2 [1*]
TOLUENE 0.58 J [40]
ETHYLBENZENE 0.7 U [30]
TOTAL XYLENES 1 U [20]
CEF-076-98D 02/11/03
[105.0-110.0]
BENZENE 1040 [1*]
TOLUENE 0.6 J [40]
ETHYLBENZENE 19.4 [30]
TOTAL XYLENES 95.6 [20*]
CEF-076-104D 05/22/03
[110.0-115.0]
BENZENE 0.5 U [1]
TOLUENE 0.5 U [40]
ETHYLBENZENE 0.5 U [30]
TOTAL XYLENES 1 U [20]
CEF-076-115D 07/10/03
[105.0-110.0]
BENZENE 2.1 [1*]
TOLUENE 0.5 U [40]
ETHYLBENZENE 0.5 U [30]
TOTAL XYLENES 1 U [20]
CEF-076-110D 05/22/03
[105.0-110.0]
BENZENE 842 [1*]
TOLUENE 0.78 J [40]
ETHYLBENZENE 1.7 [30]
TOTAL XYLENES 21 [20*]
CEF-076-116D 07/10/03
[105.0-110.0]
BENZENE 75.7 [1*]
TOLUENE 0.5 U [40]
ETHYLBENZENE 0.5 U [30]
TOTAL XYLENES 1 U [20]
CEF-076-117D 07/10/03
[105.0-110.0]
BENZENE 0.5 U [1]
TOLUENE 0.5 U [40]
ETHYLBENZENE 0.5 U [30]
TOTAL XYLENES 1 U [20]
120 0 120 Feet
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19Sept03 MJJLayout20
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DATE 14Mar03
CHECKED BY
DATE
DATE
SCALE AS NOTED
VOLATILES CONCENTRATION MAP
DEEP ZONE OF SURFICIAL AQUIFER
NORTH FUEL FARM
SITE ASSESSMENT REPORT ADDENDUM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA
CONTRACT NO. 3996
OWNER NO.
APPROVED BY
DATE
DRAWING NO. FIGURE 3-12
REV. 0

Total xylenes were detected at concentrations exceeding the GCTL of 20 µg/L in four monitoring wells:

- CEF-076-65D 97.4 µg/L
- CEF-076-98D 95.6 µg/L
- CEF-076-51D 33.2 J µg/L
- CEF-076-110D 21.0 µg/L

Bromodichloromethane was detected at a concentration exceeding the GCTL of 0.6 µg/L in CEF-076-116D. The reported bromodichloromethane concentration for this well was 0.67 J µg/L. This compound was also present at 6.2 µg/L in a source blank (CEF-076-WB-001) that was collected on June 2, 2003. The lab report for this sample is in Appendix L. This compound is a typical byproduct of the chlorination process used to make water potable for the public. Since this well was installed using the same potable water source as the source blank, this sample result is attributed to the local water treatment process rather than the site conditions.

3.4 GROUNDWATER FLOW AND VERTICAL GRADIENT

Groundwater levels were measured on July 2, 2001; February 6, 2003; and June 11, 2003. Data from the first two events were used to construct groundwater flow maps as required by Chapter 62-770, FAC. The measurements were used to calculate elevations relative to msl (Table 2-1) for the four, previously described surficial aquifer zones.

During the first water level gauging event in July 2001, the oil water interface probe detected a trace of product at less than the reportable limit of 0.1 ft in wells CEF-076-65D and CEF-076-66I. No free product was detected during the last two events.

Figures 3-13, 3-14, 3-15 and 3-16 show the groundwater elevations and flow as diagrammed for the July 2001 event. The flow shown for the water table zone indicates a groundwater divide may exist at the site with flow on the west side moving toward the southwest and flow on the east side of the divide moving to the north and south. A combination of recent drought conditions and the recent removal of the tank farm mound may have created this groundwater flow pattern in the water table zone. The deeper zone maps are more consistent in the flow pattern and generally show flow to the southeast. According to the CARA (ABB-ES, 1997b), the groundwater flow patterns for these three deeper zones were basically east-southeast, so the flow pattern appears unchanged below the water table.

Figures 3-17, 3-18, 3-19, and 3-20 were created to diagram the groundwater elevation and flow for the February 2003 event. The flow shown for the water table zone still indicates the existence of a small

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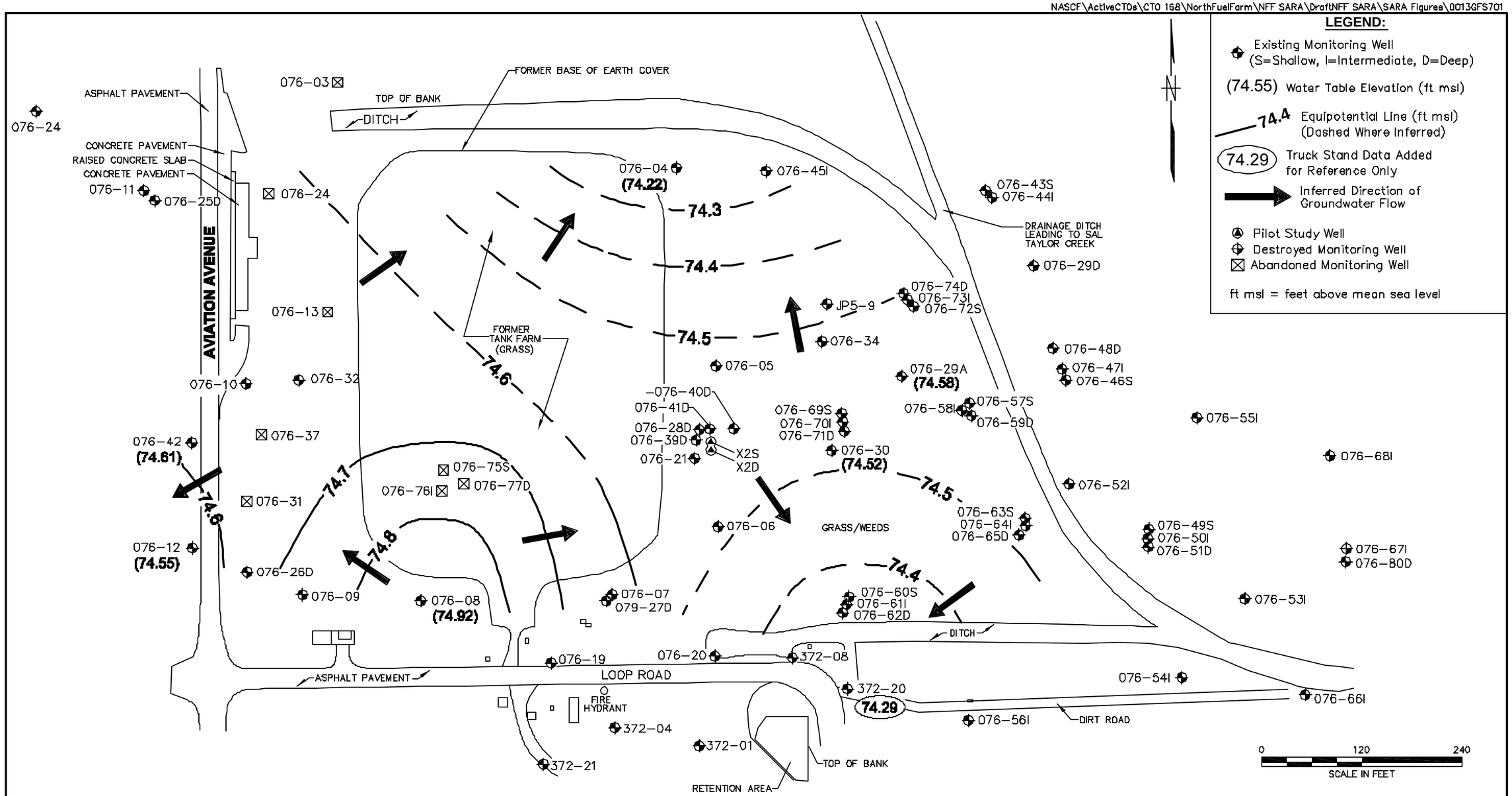

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK DATE 7/31/01
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

GROUNDWATER FLOW MAP, JULY 2, 2001
DEPTH INTERVAL 0-20 FT BLS
NORTH FUEL FARM
SITE ASSESSMENT REPORT ADDENDUM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NO. 3996
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3-13
REV. 0

FORM CADD NO. SOIV_BH.DWG - REV 0 - 1/20/98

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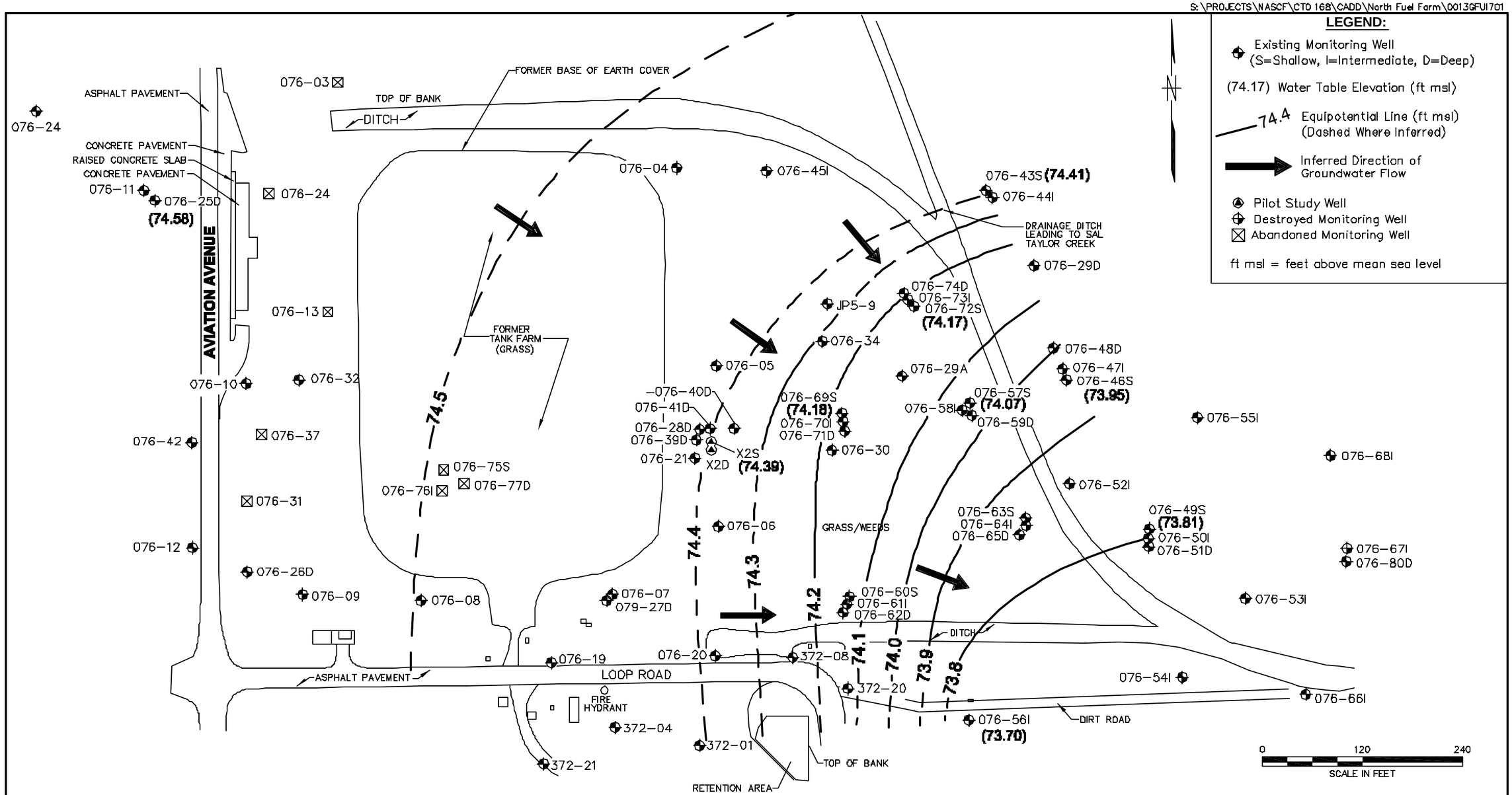

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

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CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

GROUNDWATER FLOW MAP, JULY 2, 2001
DEPTH INTERVAL 35-55 FT BLS
NORTH FUEL FARM
SITE ASSESSMENT REPORT ADDENDUM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NO. 3996
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3-14
REV. 0

FORM CADD NO. SDIV_BH.DWG - REV D - 1/20/98

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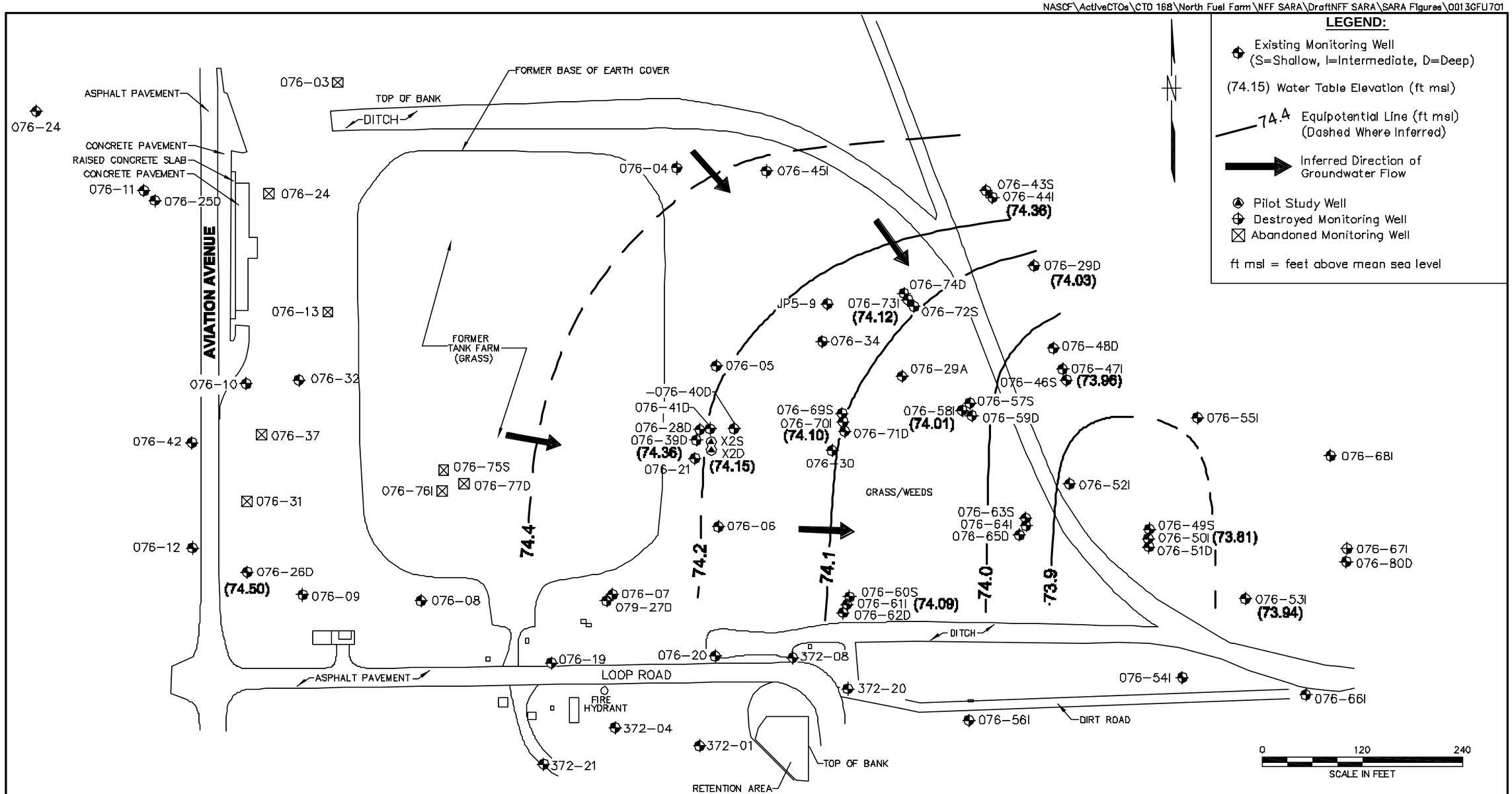

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK DATE 7/31/01
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

GROUNDWATER FLOW MAP, JULY 2, 2001
DEPTH INTERVAL 60-80 FT BLS
NORTH FUEL FARM
SITE ASSESSMENT REPORT ADDENDUM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NO. 3996
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3-15
REV. 0

FORM CADD NO. SDIV_BH.DWG - REV D - 1/20/98

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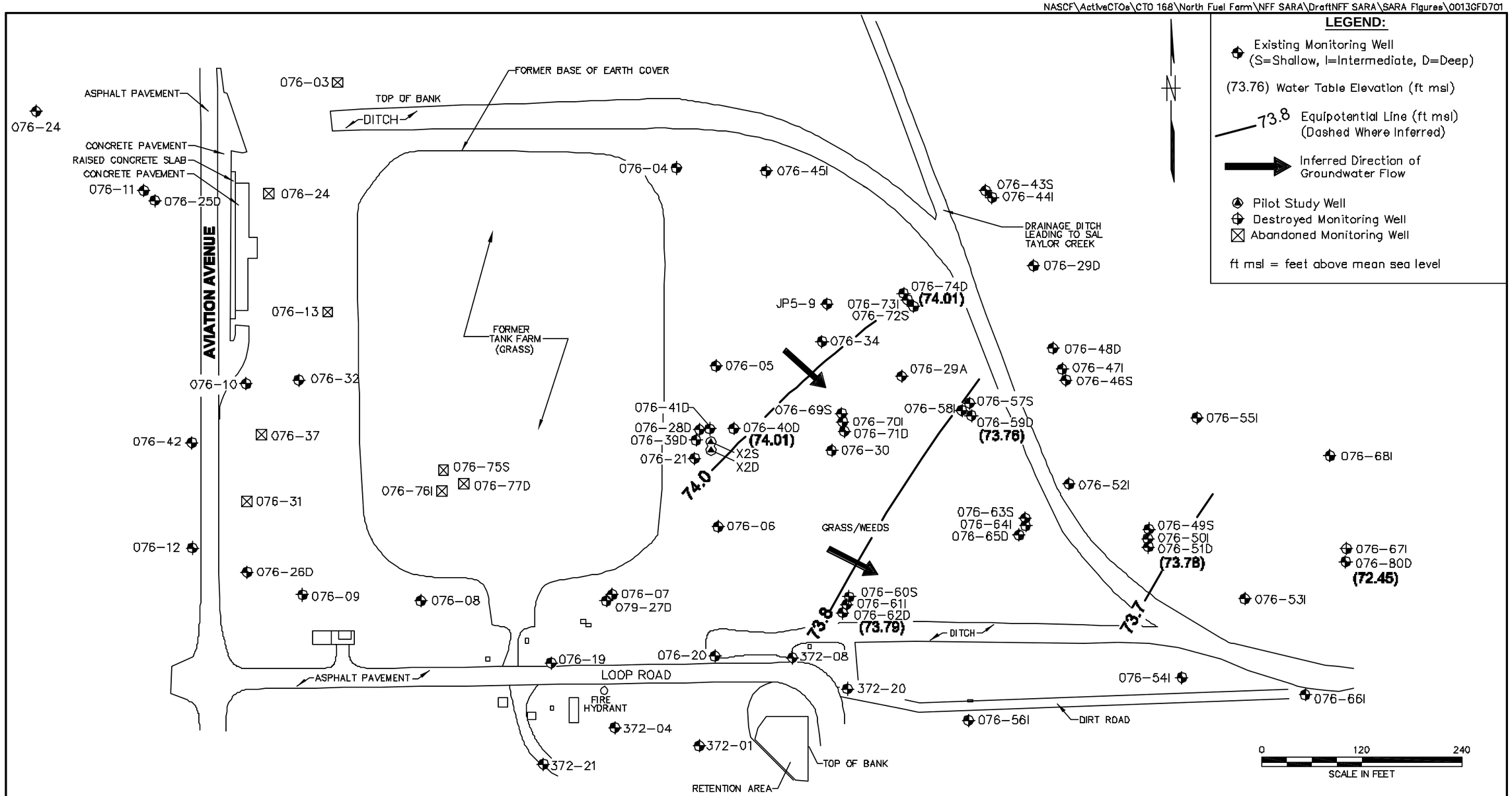

NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY LLK DATE 7/31/01
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

GROUNDWATER FLOW MAP, JULY 2, 2001
DEPTH INTERVAL 100-120 FT BLS
NORTH FUEL FARM
SITE ASSESSMENT REPORT ADDENDUM
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

CONTRACT NO. 3996
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 3-16
REV. 0

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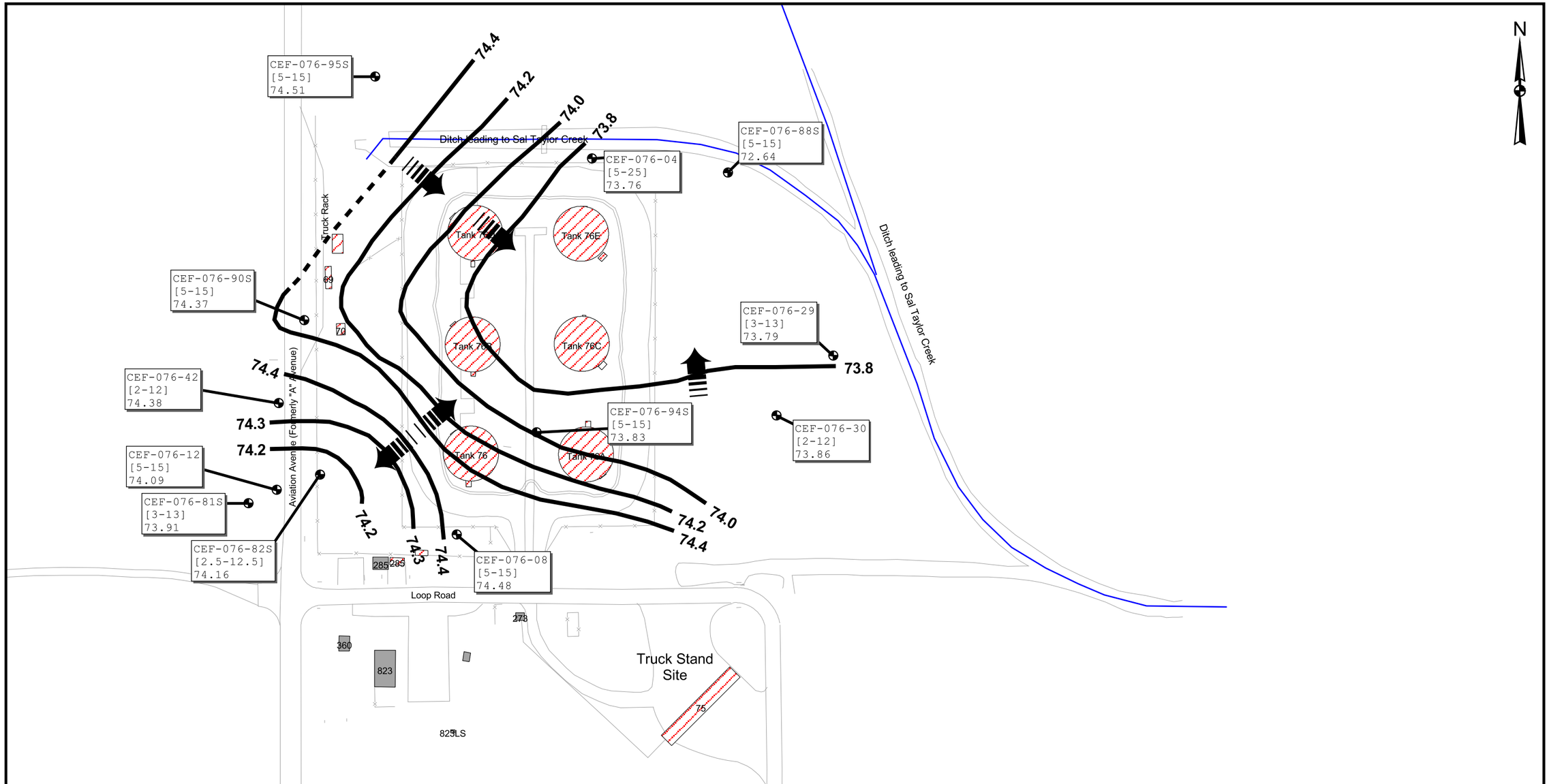

DRAWN BY MJJ	DATE 03Sept03	GROUNDWATER FLOW MAP (2/5 - 6/03) WATER TABLE ZONE NORTH FUEL FARM SITE ASSESSMENT REPORT ADDENDUM NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NO. 3996
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHED-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3-17 / REV. 0

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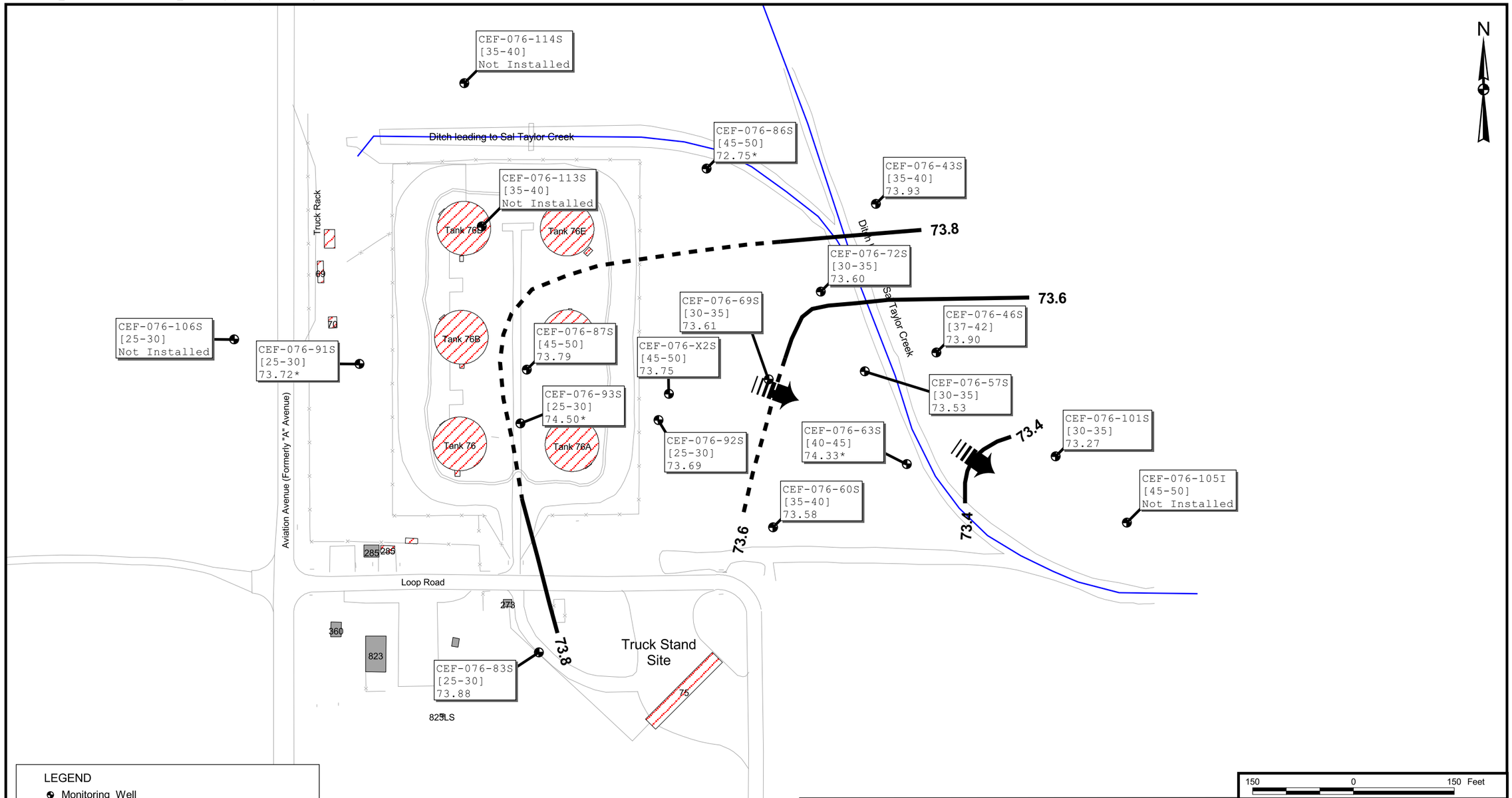

DRAWN BY MJJ	DATE 03Sept03	GROUNDWATER FLOW MAP (2/5 - 6/03) UPPER INTERMEDIATE ZONE NORTH FUEL FARM SITE ASSESSMENT REPORT ADDENDUM NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NO. 3996
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHED-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3-18 / REV. 0

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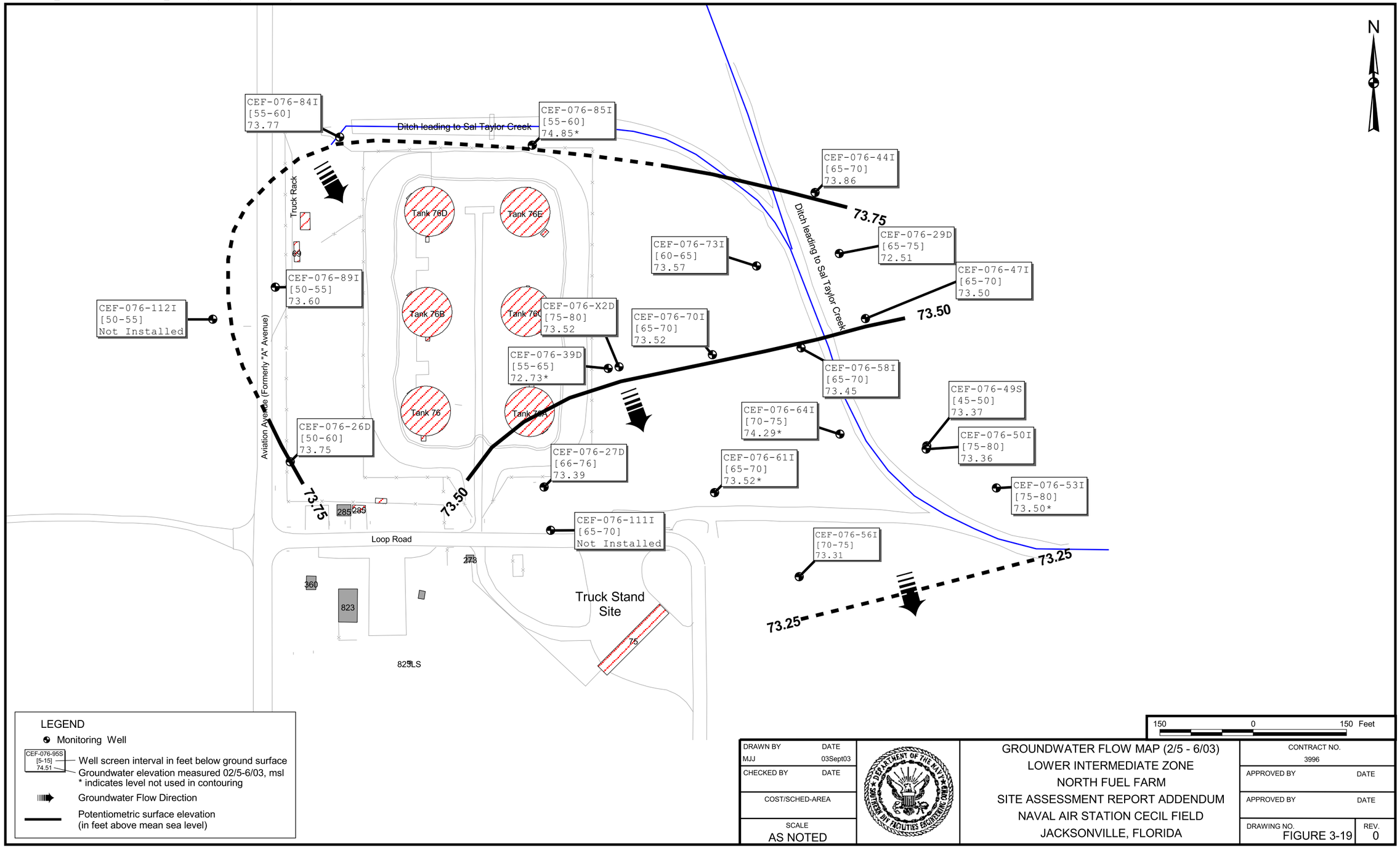

DRAWN BY	DATE	GROUNDWATER FLOW MAP (2/5 - 6/03) LOWER INTERMEDIATE ZONE NORTH FUEL FARM SITE ASSESSMENT REPORT ADDENDUM NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NO. 3996	
MJJ	03Sept03		APPROVED BY	DATE
CHECKED BY	DATE		APPROVED BY	DATE
COST/SCHED-AREA			DRAWING NO. FIGURE 3-19	REV. 0
SCALE AS NOTED				

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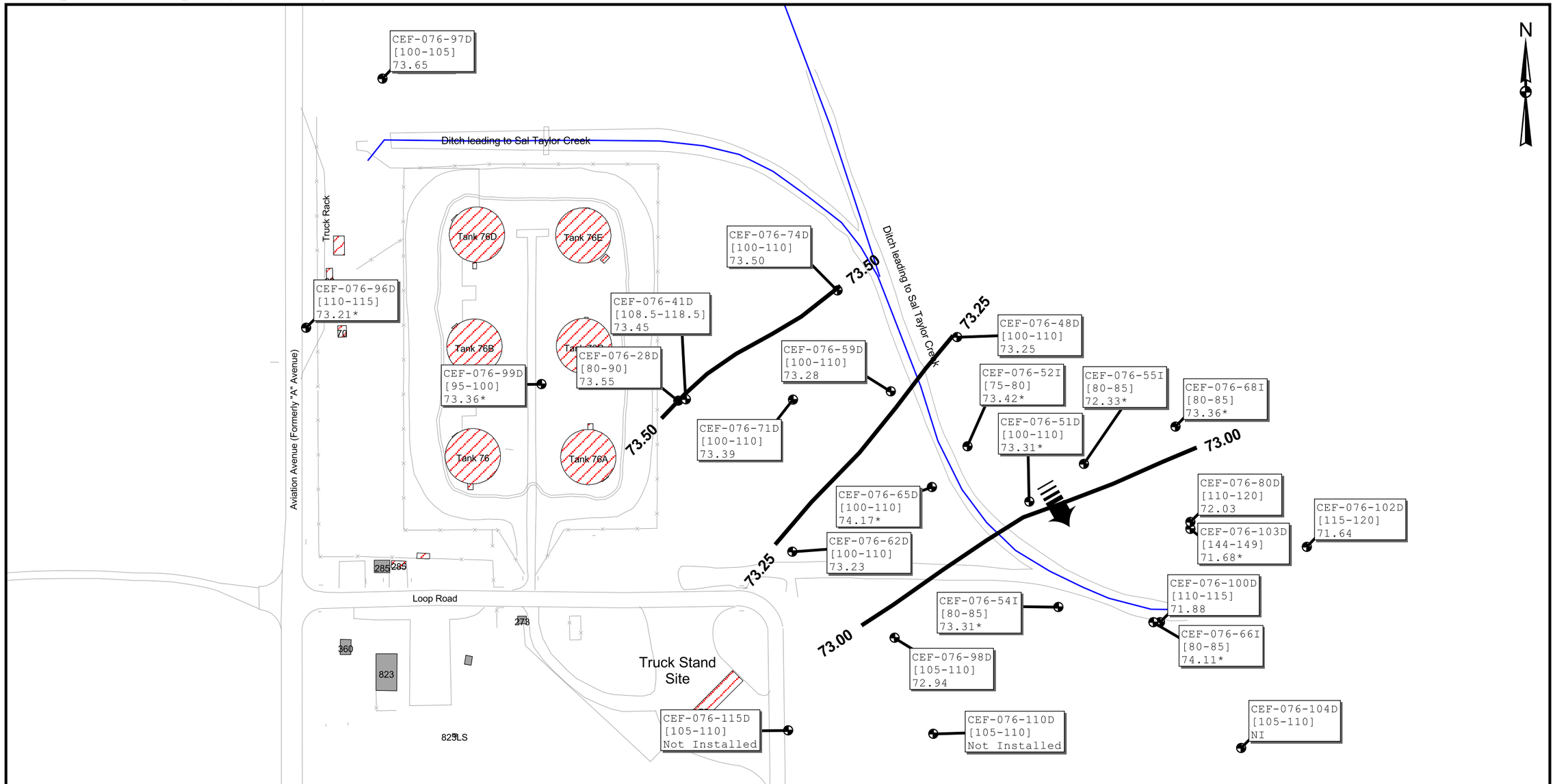


DRAWN BY MJJ	DATE 03Sept03	GROUNDWATER FLOW MAP (2/5 - 6/03) DEEP ZONE NORTH FUEL FARM SITE ASSESSMENT REPORT ADDENDUM NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA	CONTRACT NO. 3996
CHECKED BY	DATE		APPROVED BY / DATE
COST/SCHED-AREA			APPROVED BY / DATE
SCALE AS NOTED			DRAWING NO. FIGURE 3-20 / REV. 0

divide on the western side of the site where groundwater flow continues to the southwest. However, the area over the former tank farm mound appears to be flowing toward the east-northeast. The upper intermediate zone and the deep zone appear to share a similar flow direction to the southeast, while the lower intermediate zone appears to be flowing more to the south-southeast.

Vertical gradient was also evaluated at the site using a series of 6 well clusters with staggered screen intervals. Appendix M contains information on the well clusters used, their screen intervals, water elevations, and the calculations used to determine the vertical gradient at each paired location. The resulting gradient data points were plotted and mapped on Figure 3-21. This diagram indicates a slight upward gradient (overall difference = 0.03 ft) on the north quarter of the area under investigation; however, it appears that the southern portion of the site is experiencing a slight downward vertical gradient (overall difference = 0.05 ft). According to the CARA (ABB-ES, 1997b), a downward vertical gradient also existed at the time of that investigation although their reported overall gradient was closer to 0.5 ft.

3.5 LITHOLOGY

Additional lithological data was collected as soil cuttings logged during hollow stem auger drilling to a maximum depth of 65 ft bls. The lithology observed was consistent with the general site geology described in the CARA (ABB-ES, 1997b). During the mud rotary and rotasonic drilling, additional lithologic data was collected from intervals below the maximum logging depth reported in the CARA (ABB-ES, 1997b) (approximately 120 ft bls). Appendix F contains the boring logs for the following work:

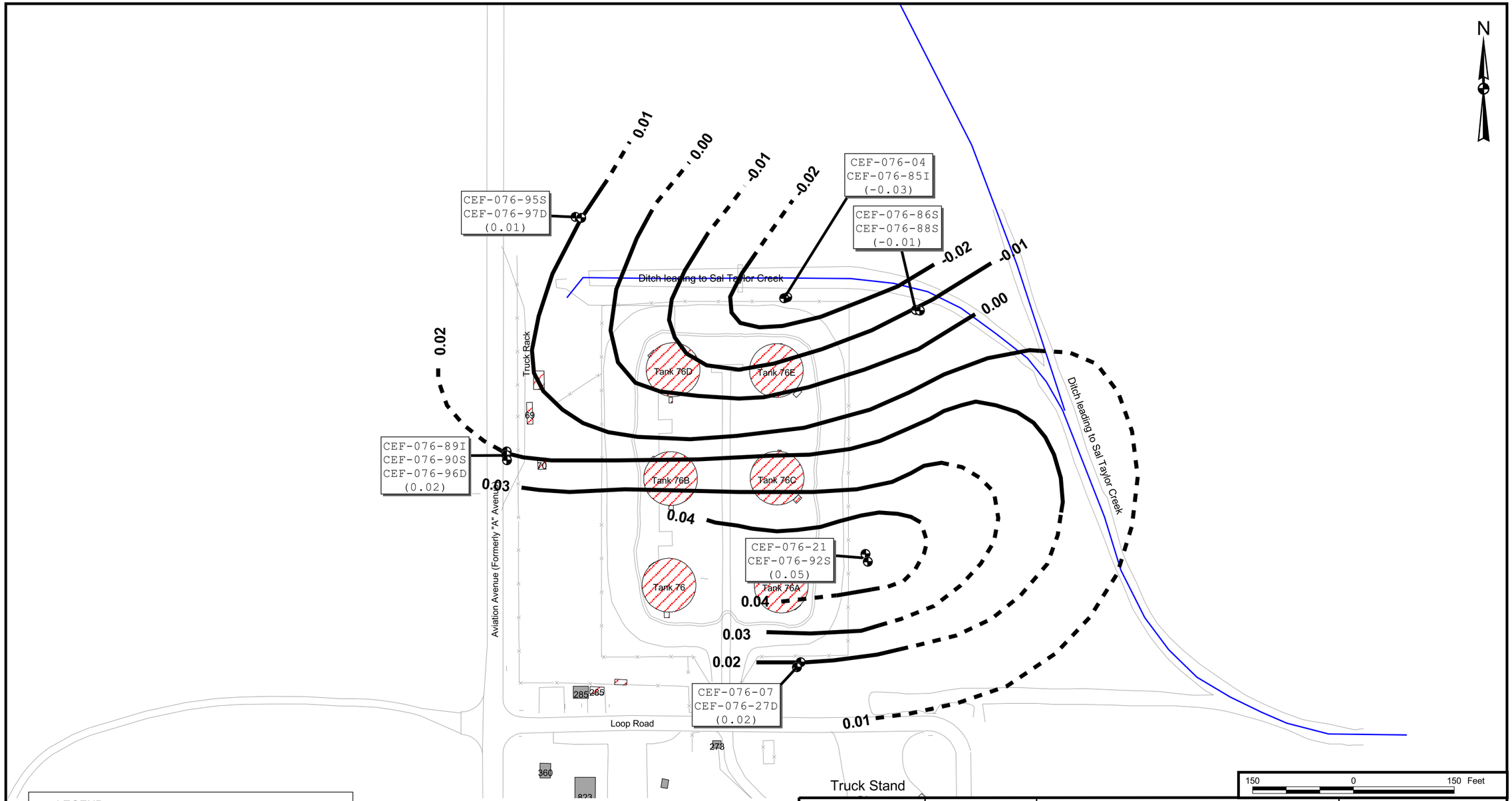
- The boring for monitoring well CEF-076-103D was split-spooned continuously from 110 to 118 ft bls and thereafter on 5-ft centers from 120 to 147 ft bls.

- The boring, labeled CEF-076-111D, was drilled by rotasonic and continuous soil samples were extracted from 106 to 126 ft bls.

- The boring, labeled CEF-076-118D, was drilled by rotasonic and continuous soil samples were extracted from 105 to 130 ft bls.

The CARA (ABB-ES, 1997b) reported a 2-ft thick hard, dry clay from approximately 112 to 114 ft bls in the boring for CEF-076-51D. Similarly, TtNUS encountered this same hard, dry clay from approximately 113 to 115.5 ft bls in boring CEF-076-103D. This unit was noted to have fissures filled with fine sand, which indicates it may still transmit groundwater to underlying units. Except for one 6-inch thick clay unit at 116.5 to 117 ft bls, the remaining borehole to 147 ft bls appeared to be composed of sands and weathered limestone units. Because monitoring well CEF-076-103D screened approximately 144 to

P:\GIS\NAS_CecilField\NorthFuelFarm_200308.apr 17Sept03 MJJ Layout09



LEGEND

- Monitoring Well
- CEF-076-07 / CEF-076-27D (0.02) — Monitoring Wells used as vertical gradient data point; Positive Gradient = Downward Flow; Negative Gradient = Upward Flow
- Vertical Gradient Isocontours (Dashed where inferred)

DRAWN BY MJJ	DATE 10Sept03	VERTICAL GRADIENT DISTRIBUTION MAP JUNE 2003 NORTH FUEL FARM SITE ASSESSMENT REPORT ADDENDUM NAVAL AIR STATION CECIL FIELD JACKSONVILLE, FLORIDA
CHECKED BY	DATE	
COST/SCHED-AREA		
SCALE AS NOTED		

CONTRACT NO. 3996	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 3-21	REV. 0

149 ft bls does not show any sign of petroleum impacts, the two thin clay units (at 113 to 115.5 and 116.5 to 117 ft bls) above that screen interval may be acting as an aquiclude to prevent further downward migration of the petroleum COCs reported in well CEF-076-80D screened from 115 to 120 ft bls. Considering that only TRPH was detected in this deep well, CEF-076-103D, and at a concentration below the GCTL, TtNUS recommends using this well as a vertical extent point of compliance for the site.

The occurrence of clayey to weathered limestone units in the boring, CEF-076-103D, at about 117 ft bls correlates with the upper units of the Hawthorn Group as reported in the Remedial Investigation Report (RIR) (TtNUS, 1999c) at approximately 95 to 120 ft bls. As noted in the RIR, lower permeability units of the Hawthorn Group occur below this upper unit and act to impede downward migration of groundwater to the Floridan Aquifer.

Boring logs were also prepared for soil borings 111D and 118D which were installed adjacent to monitoring wells CEF-076-98D and CEF-076-110D, respectively. These boring logs indicate a plastic clay unit that is a minimum of 8 ft thick at similar depth intervals (118 to 126 ft bls in 111D and 120 to 128 ft bls in 118D) to the thinner dry, clay unit reported in the area of wells CEF-076-51D and 80D (113 to 115 ft bls). The existence of this thick continuous clay unit underlying the area of highest VOC contamination in the deep zone on site is considered a reasonable vertical extent barrier to further downward migration.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 SEDIMENT

The concentration of TRPH exceeded the SCTL at one sediment sample location (SW/SED 2). TtNUS recommends that an additional sample be collected from this location for analyses by the TRPH subclassification method specified in Rule 62-770.680(1)(c)3, FAC. The analytical results will be compared to the TRPH subgroup SCTLs specified in the TRPH Working Group Method. If the TRPH subgroup concentrations are all below their respective SCTLs, no further action will be recommended for the sediment. If any of the subgroup concentrations exceed their respective SCTLs, a source removal will be conducted to remediate the impacted sediment.

4.2 SURFACE WATER AND GROUNDWATER CONCLUSIONS AND RECOMMENDATIONS

The surface water analytical results indicated that the TRPH and lead were below applicable regulatory guidelines; therefore, TtNUS recommends NFA for this medium.

The groundwater data indicated the following conclusions:

- Groundwater flow in the water table zone with respect to the area of petroleum contamination appears to be to the east-northeast, flow in the upper intermediate and deep zones appear to be consistently to the southeast, and flow in the lower intermediate appears to be to the south-southeast.

- No free product was detected on site during the last two events. Trace amounts of free product was detected during the first of three water level measurement events.

- Groundwater contamination in the water table zone has been delineated to the area of the former tank farm mound. VOCs, PAHs, and TRPH concentrations exceed GCTLs.

- The lead contamination in the well, CEF-076-12, appears to result from sample turbidity. The re-sampling results for the filtered sample were below the GCTL.

- The lead contamination in the well, CEF-076-88S, appears to result from sample turbidity. The turbidity during sampling stayed at 999 NTUs.

- Groundwater contamination in the upper intermediate zone has been delineated to two areas – the former tank farm mound and a smaller area immediately to the east of and centered over the ditch

leading to Sal Taylor Creek. The lead contamination reported for this zone appears to be the result of natural causes because two (wells 106S and 114S) of the four (92S, 101S, 106S, and 114S) locations with reported GCTL exceedances are in upgradient locations.

- Groundwater contamination in the lower intermediate zone covers the majority of the site and is bracketed by Aviation Avenue, Loop Road, and the ditch on site and extends across that ditch to the east. This area of contamination is predominantly composed of VOCs with the PAHs and TRPH covering much smaller areas on site.

- Groundwater contamination in the deep zone is limited to VOC compounds and is delineated as an irregular shape that includes the lower southeast quarter of the former tank mound and extends from there to the southeast (in the direction of flow) to a much larger area immediately to the southeast of the site and east of the former Truck Rack.

- The vertical gradient calculated from data collected during this investigation is significantly lower than the vertical gradient previously reported. However, the distribution of contaminants suggests that the vertical gradient is sufficient to cause downward movement of dissolved petroleum constituents. Petroleum contamination in the deep zone is limited to the more soluble VOCs. Very little evidence of less soluble PAH and TRPH compounds were observed in the deep zone samples.

- The vertical migration of petroleum contamination is controlled by a clay unit that is a minimum of 8-ft thick in the area of greatest petroleum contamination in the deep zone. Data from CEF-076-103D indicate that this clay horizon acts as an aquaclude. Thus, the vertical extent of petroleum contamination at this site is considered to be approximately 120 ft bls.

Based on the findings and conclusions of this SARA, TtNUS recommends the following steps for the groundwater medium:

- Monitoring well CEF-076-88S should be re-sampled for total and filtered lead.

- The preparation of a RAPA to address the NADSC exceedances at this site, which are generally defined by the 100 µg/L contour lines for VOCs shown on Figures 3-1, 3-5, 3-9, and 3-12.

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APPENDIX A

TABLE 1-1 AND EXECUTIVE SUMMARY FROM CARA (ABB-ES, 1997)

SRR 1998 SOIL EXCAVATION MAP

SRR 1999 SOIL EXCAVATION MAP

SRR 2001 SOIL EXCAVATION MAP AND FDEP APPROVAL LETTER

CARA 1997 REVISION 2 FIGURE 1

Table 1-1
Summary Investigation

Contamination Assessment Report Addendum
North Fuel Farm Site
Naval Air Station Cecil Field
Jacksonville, Florida

Date	Assessment Activities	Remarks
1991	37 soil borings 26 water-table monitoring wells 4 vertical extent monitoring wells	Submitted CAR (June 1992).
October 1993 to January 1994	92 soil borings 3 water-table monitoring wells 1 vertical extent monitoring well	Response to FDEP comments to June 1992 CAR.
April and May 1994	43 soil borings	Assess 1,800-gallon JP-5 release on west side of NFF (November 1993).
	4 water-table monitoring wells	Free-product delineation on west side of NFF.
	2 intermediate and 1 vertical extent monitoring wells	Assess deep AVGAS plume on east side of NFF.
June 1994	12 soil borings	1,800-gallon JP-5 release (additional assessment).
October - November 1994	Collected 45 groundwater samples from 9 Hydropunch™ borings on east side of NFF	Estimate number of monitoring wells needed to assess deep AVGAS plume from Tanks 76, 76A, and 76B. Submitted Technical Memo in January 1995.
April - September 1995	8 shallow monitoring wells 14 intermediate monitoring wells 7 deep monitoring wells	Assess horizontal and vertical extent of deep AVGAS plume.

Notes: CAR = contamination assessment report.
FDEP = Florida Department of Environmental Protection.
JP-5 = jet petroleum 5
NFF = North Fuel Farm.
AVGAS = aviation gasoline.
TM = trade mark.

EXECUTIVE SUMMARY

The North Fuel Farm (NFF) at Naval Air Station Cecil Field is located at the northeast corner of A Avenue and Loop Road. The fuel farm consists of six 595,000-gallon, interior-lined, asphalt-coated, steel, earth-mounded tanks that contain jet petroleum (JP-5) jet fuel. Recent major fuel spills at the NFF site occurred on August 3, 1987 (22,772 gallons), February 10, 1991 (913,000 gallons), and November 28, 1993 (1,800 gallons).

In 1991, ABB Environmental Services, Inc. (ABB-ES), was contracted by Southern Division, Naval Facilities Engineering Command (SOUTHNAVFACENGCOM) to conduct a contamination assessment to characterize and assess the vertical and horizontal extent of contamination at the NFF. ABB-ES, on behalf of SOUTHNAVFACENGCOM, submitted a contamination assessment report (CAR) to the Florida Department of Environmental Protection (FDEP) in June 1992. FDEP reviewed the NFF CAR and recommended that additional soil borings and monitoring wells be installed and sampled to better delineate the extent of soil contamination and free product at the site. FDEP also recommended that the 913,000-gallon JP-5 fuel spill be assessed and that the comments to the NFF CAR be incorporated into the CAR for the 913,000-gallon JP-5 release.

The NFF site is one of three sites in the area affected by releases associated with fuel storage and distribution operations at the facility. The other two sites are the Truck Stand site and the JP-5 Spill site. Separate CARs and CAR Addenda have previously been submitted for both the Truck Stand site (ABB-ES, 1995b) and the JP-5 Spill site (ABB-ES, 1996). This CAR Addendum was prepared for the NFF site and incorporates pertinent soil and groundwater data from the contamination assessments conducted at the Truck Stand and JP-5 Spill sites.

ABB-ES was subsequently authorized by SOUTHNAVFACENGCOM to conduct supplemental assessments and prepare a CAR Addendum for the NFF site. The supplemental assessments, conducted from October 1993 through September 1995 at the NFF site, included soil boring sampling and installation and sampling of monitoring wells in the shallow, intermediate, and deep zones of the surficial aquifer on the east side of the NFF. Results and conclusions based on the supplemental assessment and recommendations for the NFF site are presented in this CAR Addendum.

Based on the site history, findings of the contamination assessment (CA) field investigations, and laboratory analytical results, the following is a summary of existing conditions at the NFF Site:

- Site soil consists predominantly of silty sand from the surface to approximately 50 feet below land surface (bls). Below 50 feet bls, sediments increase in clay content to a depth of about 80 feet bls. From 80 feet to 100 feet bls, phosphate pebbles, shark teeth, quartz pebbles, shell fragments, barnacles, and other carbonate sediments are abundant. Below 100 feet bls, sandy clay separates the base of the surficial aquifer from the top of the upper zone of the Hawthorn Group.

- Depth to water ranges from approximately 3 feet to 5 feet bls at the site. There is a net downward vertical hydraulic gradient in the general vicinity of the fuel farm, and a net upward vertical gradient in the eastern part of the site. The upward gradient is associated with the drainage ditch east of the site that feeds into Sal Taylor Creek.

- The groundwater flow direction at the water table is radially outward from the fuel farm. Groundwater flow is east-southeast in the shallow, intermediate, and deep zones of the surficial aquifer. Near the drainage ditch to Sal Taylor Creek, however, the deep zone groundwater flow direction changes to south-southeast.

- The average hydraulic gradient across the site ranges from 0.001 to 0.0007 feet per foot (ft/ft) in the upper (shallow and intermediate) zones and 0.00076 ft/ft in the deep zone. The average hydraulic conductivity for the shallow, intermediate, and deep zones are 5.67 feet per day (ft/day), 6.24 ft/day, and 0.29 ft/day, respectively. The average pore water velocity is 0.0227 ft/day in the shallow zone, 0.0177 ft/day in the intermediate zone, and 0.0002 ft/day in the deep zone.

Soil and Groundwater Contamination Assessment.

- Approximately 11,000 cubic yards (yd^3) of excessively contaminated soil exceeding 1,000 parts per million (ppm) were excavated from the JP-5 Spill site and the area on the west side of the NFF between A Avenue and Tanks 76 and 76B during the initial remedial action. Clean backfill material was returned to the excavated areas.

- Excessively contaminated soil (organic vapor analyzer headspace reading exceeding 50 ppm) was detected in four areas designated A through D at the site.

- Benzene, total volatile organic aromatics (VOAs), and total naphthalenes concentrations in groundwater samples from site monitoring wells exceeded Chapter 62-770, Florida Administrative Code (FAC), No Further Action (NFA) and Monitoring Only (MO) target levels for Class G-II groundwater.

- The vertical extent of petroleum-contaminated groundwater exceeding the Chapter 62-770, FAC, NFA and MO target levels for Class G-II groundwater is less than 109 feet bls.

- The source of much of the petroleum contamination at the site has been abated.

- Free-phase petroleum product was detected in several of the site monitoring wells. Free product is being collected at the site via recovery wells and trenches installed, operated, and maintained by the response action contractor, Bechtel Environmental, Incorporated.

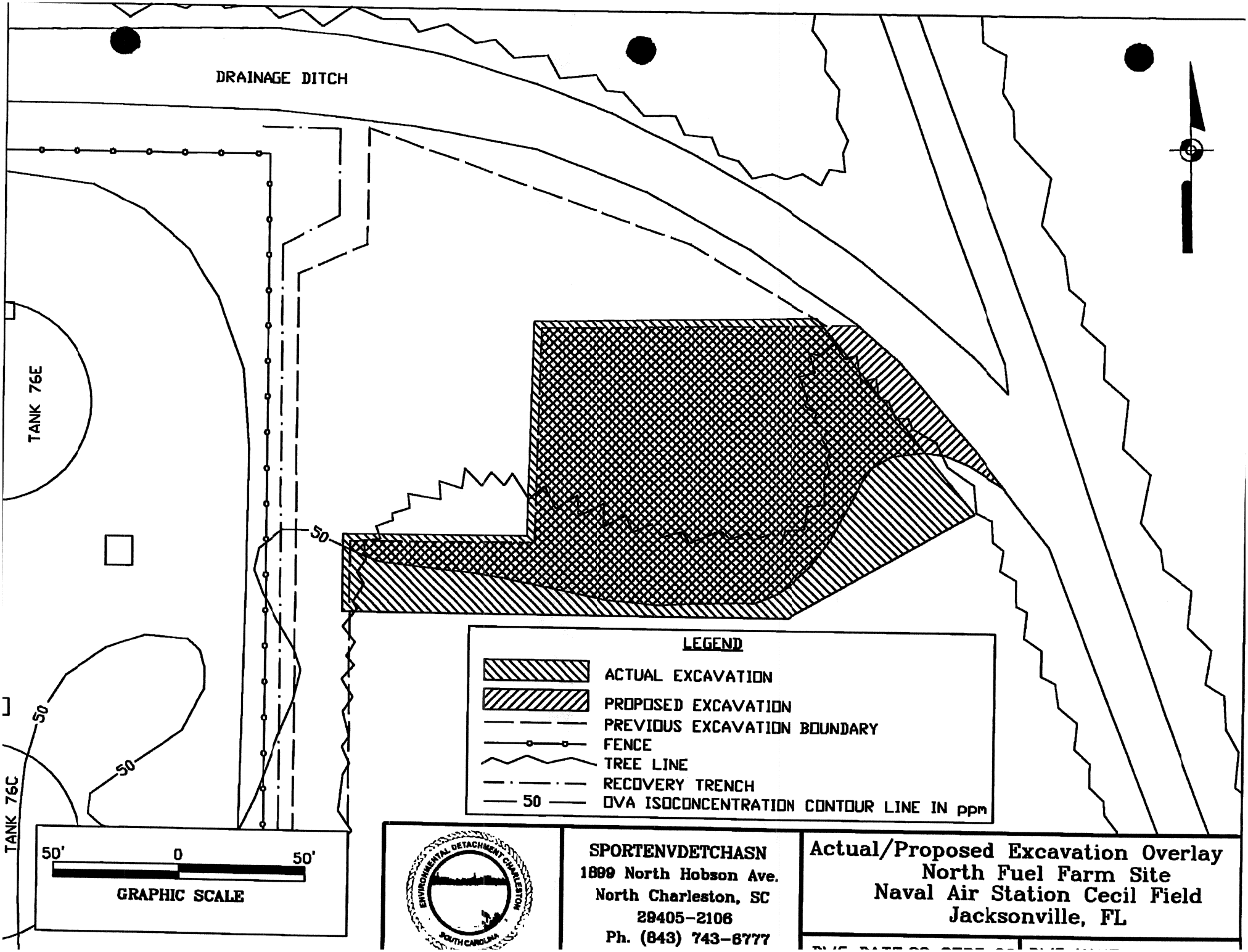
CONCLUSIONS.

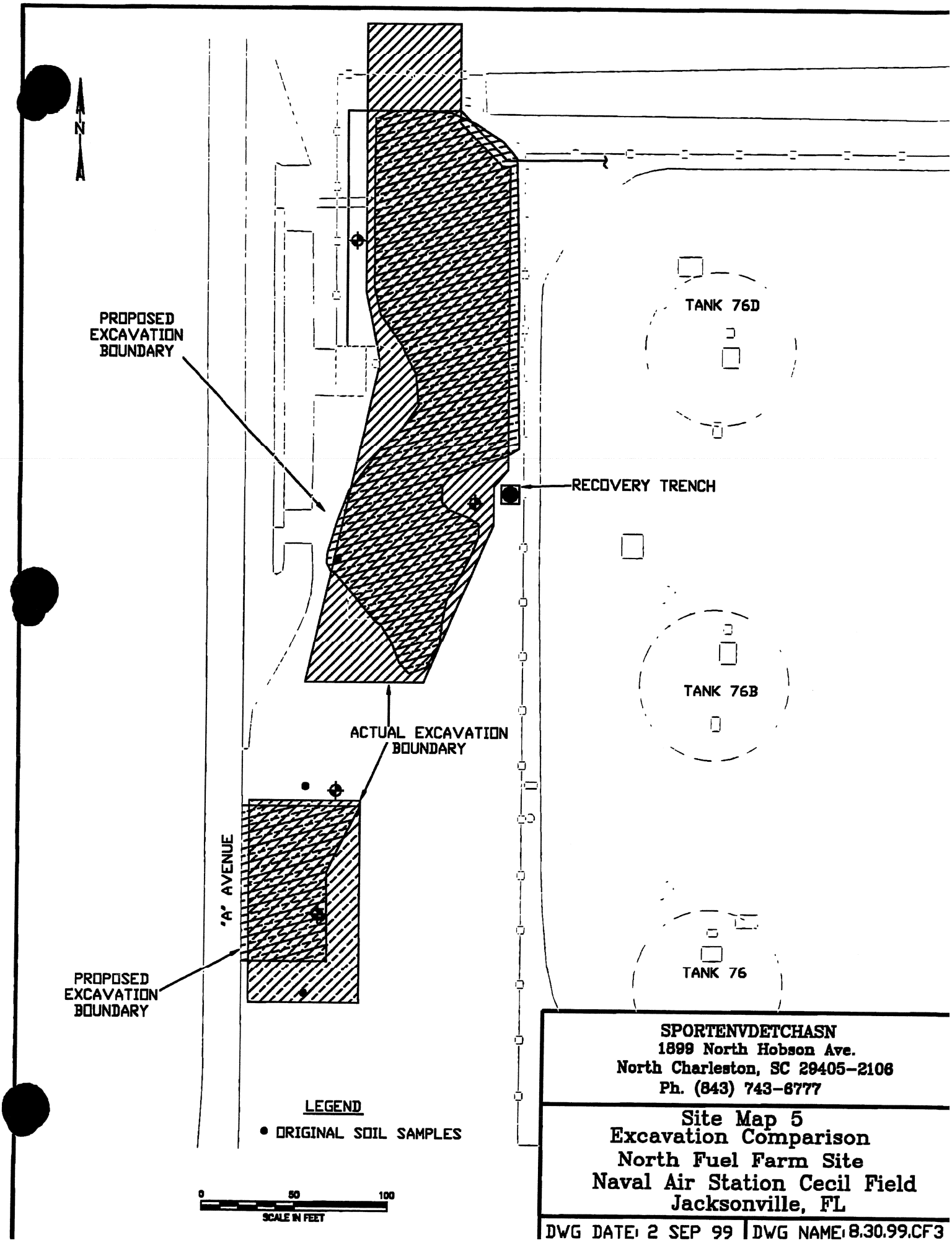
- The horizontal and vertical extent of excessively contaminated soil and petroleum-contaminated groundwater have been assessed at the NFF site in accordance with Chapter 62-770, FAC.

- Spills and leaks from the fuel storage and overfill containment tanks at the site are the sources of soil and groundwater contamination.

- Petroleum-contaminated groundwater exceeding the Chapter 62-770, FAC, NFA and MO target levels for Class G-II groundwater has migrated vertically downward into the surficial aquifer and downgradient from the source areas.

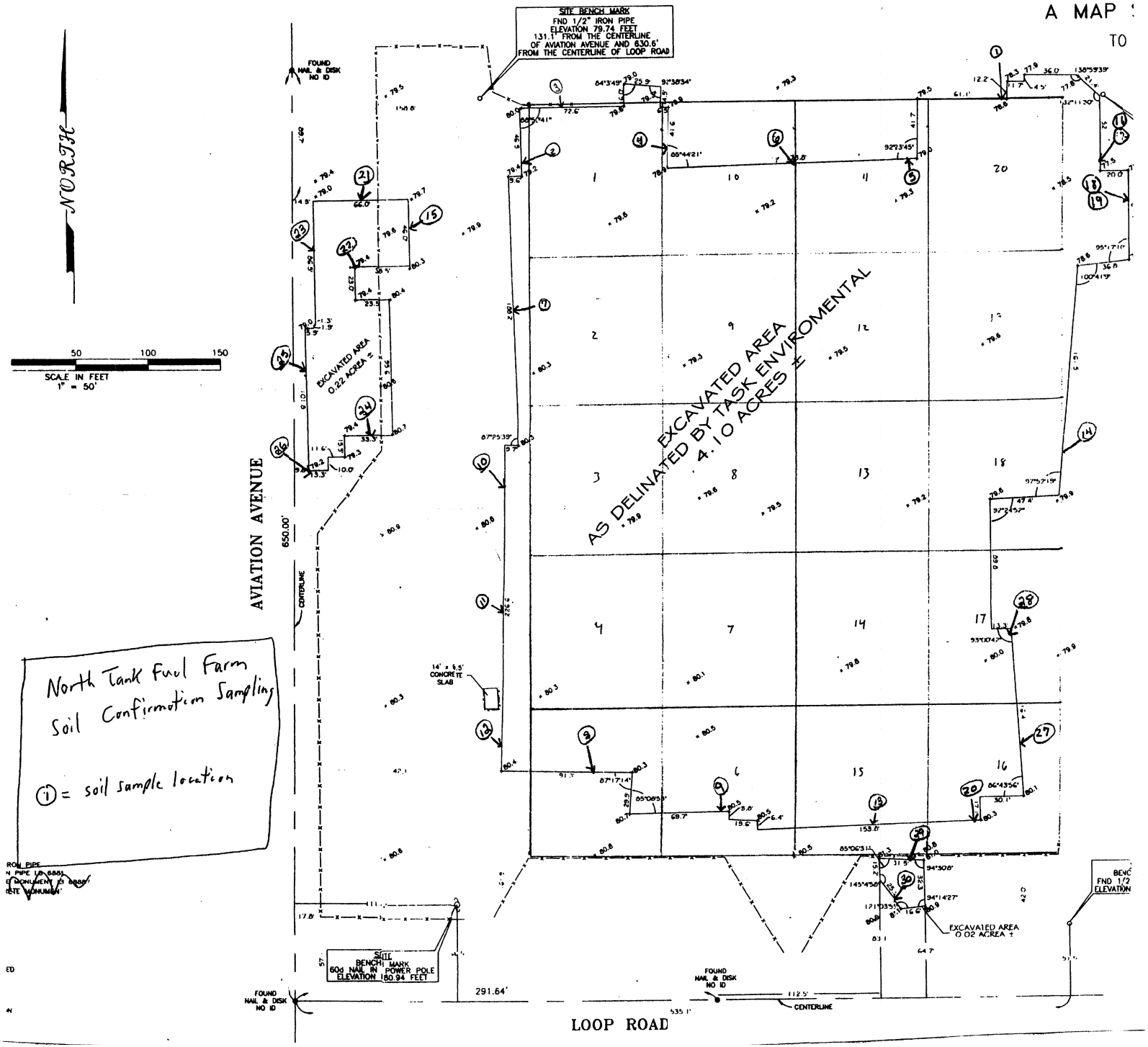
RECOMMENDATIONS. Based on the findings, conclusions and interpretations of the CA at the NFF Site, ABB-ES recommends the development of a remedial action plan (RAP) to address the requirements of Chapter 62-770, FAC. The horizontal extent of groundwater contamination has not been adequately assessed in the deep zone of the surficial aquifer; therefore, one additional deep monitoring well should be installed approximately 120 feet downgradient (southeast) of monitoring well 076-51D adjacent to monitoring well 076-53I. Installation of the additional monitoring well will be addressed in the RAP.


DRAINAGE DITCH
TANK 76E
TANK 76C
50
50
50
LEGEND
ACTUAL EXCAVATION
PROPOSED EXCAVATION
PREVIOUS EXCAVATION BOUNDARY
FENCE
TREE LINE
RECOVERY TRENCH
50 OVA ISOCONCENTRATION CONTOUR LINE IN ppm
50' 0 50'
GRAPHIC SCALE
ENVIRONMENTAL DETACHMENT CHARLESTON
SOUTH CAROLINA
SPORTENVDETCHASN
1899 North Hobson Ave.
North Charleston, SC
29405-2106
Ph. (843) 743-6777
Actual/Proposed Excavation Overlay
North Fuel Farm Site
Naval Air Station Cecil Field
Jacksonville, FL


N
PROPOSED EXCAVATION BOUNDARY
TANK 76D
RECOVERY TRENCH
TANK 76B
ACTUAL EXCAVATION BOUNDARY
'A' AVENUE
PROPOSED EXCAVATION BOUNDARY
TANK 76
LEGEND
ORIGINAL SOIL SAMPLES
0
50
100
SCALE IN FEET
SPORTENVDETCHASN
1899 North Hobson Ave.
North Charleston, SC 29405-2106
Ph. (843) 743-6777
Site Map 5
Excavation Comparison
North Fuel Farm Site
Naval Air Station Cecil Field
Jacksonville, FL
DWG DATE: 2 SEP 99
DWG NAME: 8.30.99.CF3

A MAP

TO


NORTH
SCALE IN FEET
1" = 50'
SITE BENCH MARK
FND 1/2" IRON PIPE
ELEVATION 79.74 FEET
131.1' FROM THE CENTERLINE
OF AVIATION AVENUE AND 630.6'
FROM THE CENTERLINE OF LOOP ROAD
FOUND NAIL & DISK NO ID
EXCAVATED AREA
0.22 ACRES ±
EXCAVATED AREA
AS DELINATED BY TASK ENVIROMENTAL
4.10 ACRES ±
AVIATION AVENUE
650.00'
CENTERLINE
14' x 4.5' CONCRETE SLAB
SITE BENCH MARK
60d NAIL IN POWER POLE
ELEVATION 180.94 FEET
291.64'
LOOP ROAD
EXCAVATED AREA
0.02 ACRES ±
FOUND NAIL & DISK NO ID
CENTERLINE
North Tank Fuel Farm
Soil Confirmation Sampling
① = soil sample location

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Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

David B. Struhs
Secretary

February 22, 2002

Commanding Officer
Mr. Wayne Hansel, Code ES245
SOUTHNAVFACENGCOM
Post Office Box 190010
North Charleston, SC 29419-0068

RE: Source Removal Report, Soil and Aboveground Tank Removal at North Tank Fuel Farm, Tank Numbers 76, 76A, 76B, 76C, 76D and 76E, Naval Air Station Cecil Field

Dear Mr. Hansel:

The Department has completed its review of the Source Removal Report, Soil and Aboveground Tank Removal at North Tank Fuel Farm, Tank Numbers 76, 76A, 76B, 76C, 76D and 76E, Naval Air Station Cecil Field, dated November 2001 (received November 28, 2001), prepared and submitted by CH2M Hill Constructors, Inc. The report adequately documents the removal of the six tanks and all associated piping and appurtenances; the abandonment of existing monitoring wells atop the tank mound; the excavation, transport and disposal of 140,957.03 tons of petroleum contaminated soil; the collection and recycling of 19,550 gallons of free product and petroleum contact water; the collection, treatment and disposal of approximately 79,000 gallons of stormwater; and the restoration of the site after source removal. Please submit an engineering certification page for this document that certifies the work contained in the report for our records.

If you have any concerns regarding this letter, please contact me at (850) 921-9991.

Sincerely,

David P. Grabka, P.G.
Remedial Project Manager

cc: Brian Cheary, FDEP Northeast District
Dawn Taylor, USEPA - Atlanta
John Flowe, City of Jacksonville
Scott Glass, SOUTHNAVFACENGCOM

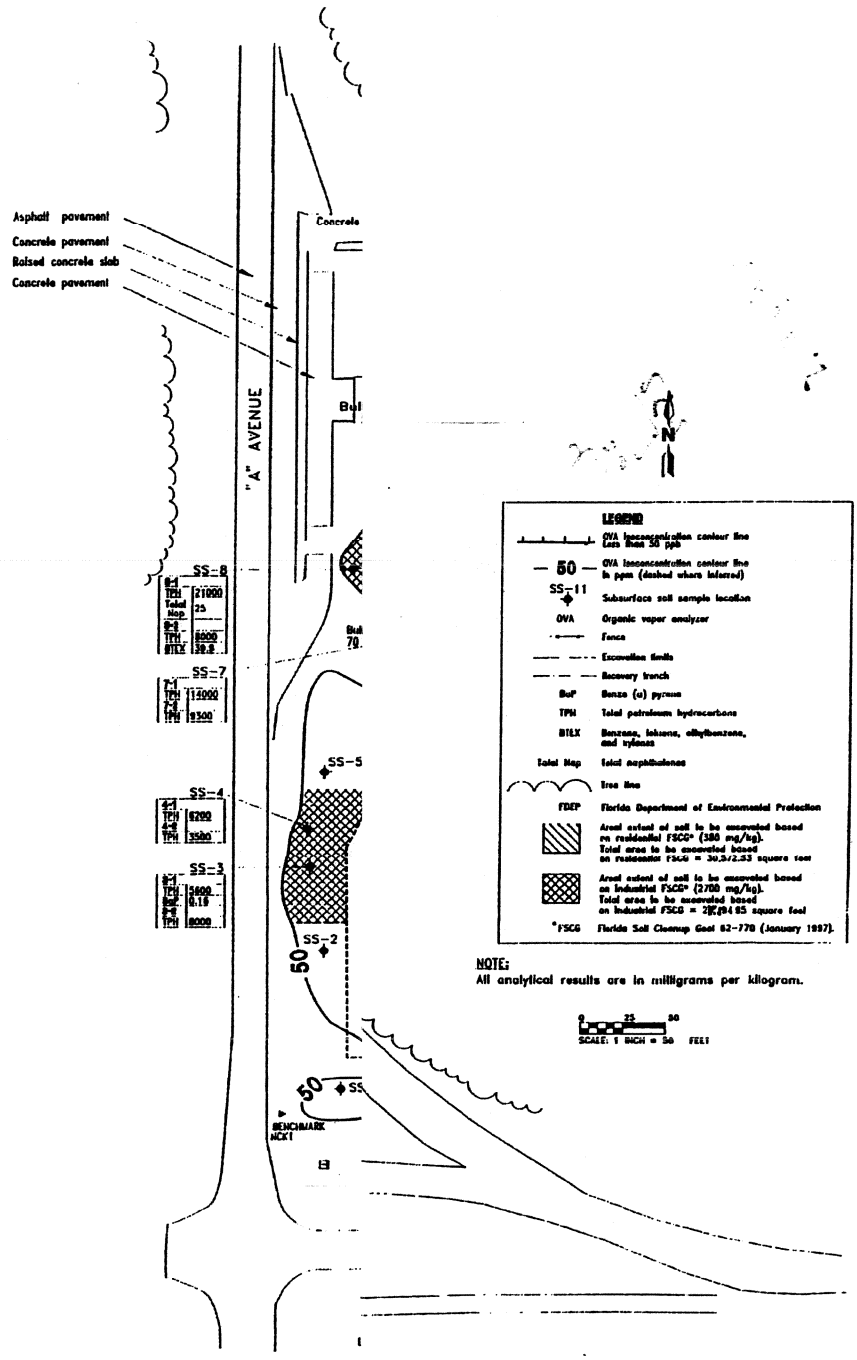

FIGURE 1
LABORATORY ANALYTICAL RESULTS EXCEEDING FDEP SOIL CLEANUP GOALS FOR SUBSURFACE SOIL AT NORTH FUEL FARM SITE

CONTAMINATION ASSESSMENT REPORT ADDENDUM (REVISION 2)

NORTH FUEL FARM SITE
NAVAL AIR STATION CECIL FIELD
JACKSONVILLE, FLORIDA

APPENDIX B

SURFACE WATER AND SEDIMENT SAMPLE LOG SHEETS

Tetra Tech NUS, Inc. SURFACE WATER SAMPLE LOG SHEET

Project Site Name: NAS CECIL FIELD
Project No.: 0039

Sample ID No.: CEF076SW0019
Sample Location: Site 076 #1
Sampled By: JB
C.O.C. No.: —

[X] Stream
[ ] Spring
[ ] Pond
[ ] Lake
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 9/6/01								
Time: 0940								
Depth: surface								
Method: submerge								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PVO	HCl	3x 40 mL	✓
PAH	—	2x 1L Amber	
TRPH	H_2SO_4	2x 1L Amber	
EDB	HCl	3x 40 mL	✓
Total Pb	HNO_3	.5L Poly	✓

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD | Duplicate ID No.: CEF076MDW01

Signature(s):

Tetra Tech NUS, Inc.

SURFACE WATER SAMPLE LOG SHEET

Project Site Name: NAS CECIL FIELD
Project No.: 0039

Sample ID No.: CEF076SW00201
Sample Location: Site 076 #2
Sampled By: JB
C.O.C. No.: —

[X] Stream
[ ] Spring
[ ] Pond
[ ] Lake
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 9/6/01								
Time: 1015								
Depth: Surface								
Method: Submerge								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
DPVO	HCl	3 x 40 mL	✓
PAH	—	2 x 1 L Amber	✓
TRPH	H_2SO_4	2 x 1 L Amber	✓
EDB	HCl	HCl	✓
Total Pb	HNO_3	.5 L Poly	✓

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD | Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SURFACE WATER SAMPLE LOG SHEET

Page ___ of ___

Project Site Name: NAS CECIL FIELD
Project No.: 0039

Sample ID No.: CEF076SWW00B01
Sample Location: Site 07C #B
Sampled By: JB
C.O.C. No.: —

- [x] Stream
- [ ] Spring
- [ ] Pond
- [ ] Lake
- [ ] Other:
- [ ] QA Sample Type:

Type of Sample:
- [x] Low Concentration
- [ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 9/6/01								
Time: 1055								
Depth: surface								
Method: submerge								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PPVO	HCl	3x 40mL	✓
PAH	—	2x 1L Amber	✓
TRPH	H_2SO_4	2x 1L Amber	✓
EDB	HCl	3x 40mL	✓
Total Pb	HNO_3	1L Poly	✓

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD | Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc. **SURFACE WATER SAMPLE LOG SHEET**

Project Site Name: NAS CECIL FIELD
Project No.: 0039

Sample ID No.: CEF076SW W0401
Sample Location: Site 076 #4
Sampled By: JB
C.O.C. No.: —

[X] Stream
[ ] Spring
[ ] Pond
[ ] Lake
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. Degrees C	Turbidity NTU	DO mg/l	Salinity %	Other NA
Date: 9/6/01								
Time: 1135								
Depth: Surface								
Method: Submerge								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PPVO	HCl	3x 40mL	✓
PAH	—	2x 1L Amber	✓
TRPH	H_2SO_4	2x 1L Amber	✓
EDB	HCl	3x 40mL	✓
Total Pb	HNO_3	.5L Poly	✓

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD | Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NAS CECIL FIELD
Project No.: N3996

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: CEF-076SDC00101
Sample Location: CEF-076-C001
Sampled By: JB
C.O.C. No.: —

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 9/6/01 Time: 0940 Method: auger Monitor Reading (ppm): 0	0-1'	Black	Sand w/ Some organic material & moisture

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	LAB
BTEX, MTBE, TRPH, PAH	2 4oz Amber	—	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:	Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NAS CECIL FIELD
Project No.: N3996

[] Surface Soil
[] Subsurface Soil
[X] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: CEF076SD00201
Sample Location: CEF076-COAR
Sampled By: JB
C.O.C. No.: —

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 9/6/01 Time: 1015 Method: auger Monitor Reading (ppm): 0	0-1'	Black	Sand w/some organic material, moist

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	LAB
BTEX, MTBE, TRPH, PAH	2 4oz Amber	✓	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.: CEF076DU001

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NAS CECIL FIELD
Project No.: N3996

Sample ID No.: CEF076SD00301
Sample Location: CEF076-C003
Sampled By:
C.O.C. No.:

[ ] Surface Soil
[ ] Subsurface Soil
[X] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 9/6/01 Time: 1055 Method: Gauger Monitor Reading (ppm): 0	0-1'	Black	Sand w/ some organic material, moisture

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	LAB
BTEX, MTBE, TRPH, PAH	2 4oz Amber	✓	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NAS CECIL FIELD
Project No.: N3996

Sample ID No.: CEF076SD0040
Sample Location: CEF-076-0004
Sampled By: JB
C.O.C. No.: —

- [ ] Surface Soil
- [ ] Subsurface Soil
- [x] Sediment
- [ ] Other:
- [ ] QA Sample Type:

Type of Sample:
- [x] Low Concentration
- [ ] High Concentration

GRAB SAMPLE DATA:

	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 9/6/01 Time: 1135 Method: auger Monitor Reading (ppm): 0	0-1	Black	sand w/ some organic material

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	LAB
BTEX, MTBE, TRPH, PAH	2 4oz amber	✓	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.: CEF076MDC04	Signature(s):

APPENDIX C

GROUNDWATER LEVEL MEASUREMENT SHEETS

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: NAS Cecil Field
Project No.: 3996JG0050310
Location: North Fuel Farm
Personnel: Mervin Dale/Bill Olson
Weather Conditions: muggy, high 80s, no wind
Measuring Device: Oil/Water Indicator_Heron
Tidally Influenced: Yes ____ No __X__
Remarks:

Well or Piezometer Number CEF-76-	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)* btoc	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments
4	7/2/2001	1705	80.15	12.93	5.93	None	74.22	
8	7/2/2001	1719	79.33	14.44	4.41	None	74.92	
11	7/2/2001	1733	79.98	23.20	3.33	None	76.65	
12	7/2/2001	1721	76.98	15.23	2.43	None	74.55	
21			78.28	11.76	NM	None	NM	
25D	7/2/2001	1731	78.21		3.63	None	74.58	
26D	7/2/2001	1709	79.10	60.00	4.60	None	74.50	
28D			78.05	89.50	NM	None	NM	4 inch ID PVC casing
29A	7/2/2001	1530	75.04	13.00	0.46	None	74.58	
29D	7/2/2001	1631	77.15	77.00	3.12	None	74.03	
30	7/2/2001	1659	75.42	12.50	0.90	None	74.52	
39D	7/2/2001		77.82	60.00	3.46	None	74.36	
40D	7/2/2001	1512		56.15	4.75	None	-4.75	
41D	7/2/2001		78.12	115.00	4.11	None	74.01	
42	7/2/2001	1725	77.09	12.50	2.48	**Trace**	74.61	
43S	7/2/2001	1636	77.68	43.30	3.27	None	74.41	
44I	7/2/2001	1638	77.70	73.30	3.34	None	74.36	
45S	7/2/2001	1626	77.31	44.70	3.36	None	73.95	
47I	7/2/2001	1628	77.31	73.00	3.35	None	73.96	
48D	7/2/2001	1629	77.85	+100	5.89	None	71.96	
49S	7/2/2001	1621	78.14	53.20	4.33	None	73.81	
50I	7/2/2001	1620	78.17	80.00	4.36	None	73.81	
51D	7/2/2001	1617	78.09	110.00	4.31	None	73.78	
~~29C~~ 52I	7/2/2001	1623	79.01	82.20	5.10	None	73.91	
53I	7/2/2001	1613	77.90	80.00	3.96	None	73.94	

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: NAS Cecil Field
Project No.: 3996JG0050310
Location: North Fuel Farm
Personnel: Mervin Dale/Bill Olson
Weather Conditions: muggy, high 80s, no wind
Measuring Device: Oil/Water Indicator_Heron
Tidally Influenced: Yes ____ No __X__
Remarks:

Well or Piezometer Number CEF-76-	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)* btoc	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments
54I	7/2/2001	1602	80.09	87.20	6.38	None	73.71	
~~29B~~ 55I	7/2/2001	1615	77.09	87.90	3.31	None	73.78	
56I	7/2/2001	1558	80.91	41.00	7.21	None	73.70	
57S	7/2/2001	1532	77.74		3.67	None	74.07	
58I	7/2/2001	1534	77.66	75.00	3.65	Trace	74.01	
59D	7/2/2001	1535	77.63		3.87	None	73.76	
60S	7/2/2001		80.93		NM			Well Lock Frozen Shut-Need bolt cutters
61I	7/2/2001	1546	81.12		7.03	None	74.09	
62D	7/2/2001	1545	80.98		7.19	None	73.79	
63S	7/2/2001	1537		47.30	4.25	None	-4.25	
64I	7/2/2001	1539		77.65	4.10	None	-4.10	
65D	7/2/2001	1540		120.00	4.33	**Trace**	-4.33	
66I	7/2/2001	1605		85.00	6.25	**Trace**	-6.25	
67I	7/2/2001			90.00	NM	None	NM	Buried under trees.
68I	7/2/2001		77.46					Located later.
69S	7/2/2001	1520	78.21	38.20	4.03	None	74.18	
70I	7/2/2001	1521	78.21	73.00	4.11	None	74.10	
71D	7/2/2001	1522	78.04	85.00	4.04	None	74.00	
72S	7/2/2001	1525	77.20		3.03	None	74.17	
73I	7/2/2001	1526	77.02	65.00	2.90	None	74.12	
74D	7/2/2001	1528	77.06		3.05	None	74.01	

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: NAS Cecil Field
Project No.: 3996JG0050310
Location: North Fuel Farm
Personnel: Mervin Dale/Bill Olson
Weather Conditions: muggy, high 80s, no wind
Measuring Device: Oil/Water Indicator_Heron
Tidally Influenced: Yes ____ No __X__
Remarks:

Well or Piezometer Number CEF-76-	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)* btoc	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments
75S				65.00			0.00	Abandoned
76I				92.70			0.00	Abandoned
77D				120.00			0.00	Abandoned
80D	7/2/2001	1610	77.81	120.00	5.36	None	72.45	
CEF-372-20	7/2/2001	1554	79.97	11.6	4.33	None	75.64	Truck Stand Well
X2S	7/2/2001	1500	80.00	52.40	5.61	None	74.39	Pilot study test well
X2D	7/2/2001	1505	79.99	80.60	5.84	None	74.15	Pilot study test well
27D			79.43					
7			79.46	15.00				
81S			79.35	13.02				
82S			78.92	12.62				

* All measurements to the nearest 0.01 foot

DN: 3996:4.4:121

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: North Fuel Farm SAR Investigation
Location: Cecil Field
Weather Conditions: Cloudy 50°F
Tidally Influenced: Yes ___ No _X_

Project No.: 3996.JG0050325
Personnel: Chris Gleaton and ~~Scott McGuire~~ P. LEDEX
Measuring Device Solinst Model 122 Oil/Water Ind.
Remarks: Air monitor background=

Well or Piezometer Number CEF-76-	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)* btoc	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments PID (ppm) BH/BZ	2-
4	2/6/03	1342	80.15	12.93	6.39		73.76	0.3/0.0	10
8	2-5-03	1358	79.33	14.44	4.85		74.48	0.5/0.0	10
? 11			79.98	23.20					
NEEDS WELL LID → 12	2-5-03	1324	76.98	15.23	2.89		74.09	0.2/0.0	1
? 21			78.28	11.76					
? 25D			78.21						
26D	2/6/03	1402	79.10	60.00	5.35		73.75	0.0/0.0	10
28D	2/6/03	1330	78.05	89.50	4.50		73.55	4 inch ID PVC casing 86.2/0.0	102
29A	2/6/03	1043	75.04	13.00	1.25		73.79	0.8/0.0	105
29D	2/5/03	1556	77.15	77.00	4.64		72.51	0.3/0.0	112
NEEDS CAP → 30	2.6.03	1114	75.42	12.50	1.56		73.86	0.0/0.0	101
39D	2/6/03	1325	77.82	60.00	5.09		72.73	14.7/0.0	10
? 40D				56.15					
41D	2/6/03	1330	78.12	115.00	4.67			0.2/0.0	1026
42	2-5-03	1302	77.09	12.50	2.71		74.38	0.4/0.0	1152
43S	2/5/03	1605	77.68	43.30	3.75		73.93	0.4/0.0	1126
44I	2/5/03	1600	77.70	73.30	3.84		73.86	0.3/0.0	112
45D	2/5/03	1537	77.31	44.70	3.76		73.55	0.3/0.0	112
47I	2/5/03	1539	77.31	73.00	3.81		73.50	0.2/0.0	112
48D	2/5/03	1542	77.85	+100	4.60		73.25	0.8/0.0	1123
49S	2-5-03	1517	78.14	53.20	4.77		73.37	0.3/0.0	111
50I	2-5-03	1516	78.17	80.00	4.8[illegible]		73.36	43.6/0.0	1118
51D	2-5-03	1515	78.09	110.00	4.78			0.4/0.0	1119
~~29C~~ 52I	2-5-03	1530	79.01	82.20	[illegible]59		73.42	12.2/0.0	1120
53I	2-5-03	1455	77.90	80.00	4.40		73.50	0.3/0.0	1119

* All measurements to the nearest 0.01 foot
NM = not measured.

BH=borehole of well BZ=breathing zone of worker

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: North Fuel Farm SAR Investigation
Location: Cecil Field
Weather Conditions:
Tidally Influenced: Yes ___ No _X_
Project No.: 3996.JG0050325
Personnel: Chris Gleaton and Scott McGuire
Measuring Device: Solinst Model 122 Oil/Water Ind.
Remarks:

Well or Piezometer Number CEF-76-	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)* btoc	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments PID (ppm) BH/BZ	T e PI
54I	2-6-03	0930	80.09	87.20	6.78		73.31	0.5/0.0	11
~~29B~~ 55I	2/5/03	1620	77.09	87.90	4.76		72.33	0.6/0.0	11
56I	2.6.03	0945	80.91	~~41.00~~	7.60		73.31	0.2/0.0	110
57S	2.6.03	1026	77.74		4.21		73.53	13.2/0.0	105
58I	2.6.03	1027	77.66	75.00	4.21		73.45	0.4/0.0	105
59D	2.6.03	1028	77.63		4.35			0.2/0.0	105
60S	2/6/03	1314	80.93		7.35		73.58	Well Lock Frozen Shut-Need bolt cutters 0.0/0.0	103
61I	2/6/03	1314	81.12		7.60			0.4/0.0	110
62D	2/6/03	1314	80.98		7.75			0.3/0.0	110
63S	2.6.03	1008		47.30	4.78			0.5/0.0	1100
No Lock 64I	2.6.03	1009		77.65	4.64			48.6/0.0	1101
65D	2.6.03	1010		120.00	4.85			0.6/0.0	1102
66I	2.6.03	0925		85.00	6.72			0.2/0.0	110
~~67I~~				~~90.00~~				Buried under trees	
68I	2-5-03	1410	77.46		4.1			Located 3/06	113
69S	2.6.03	1111	78.21	38.20	4.60		73.61	0.4/0.0	1014
70I	2.6.03	1112	78.21	73.00	4.69		73.52	66.2/0.0	1015
71D	2.6.03	1113	78.04	85.00	~~3.6~~ 4.65		73.39	0.6/0.0	1015
72S	2.6.03	1050	77.20		3.6			0.3/0.0	1045
73I	2.6.03	1051	77.02	65.00	3.45		73.57	3.3/0.0	1046
74D	2.6.03	1052	77.06		3.56			0.4/0.0	104

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: North Fuel Farm SAR Investigation
Project No.: 3996.JG0050325
Location: Cecil Field
Personnel: Chris Gleaton and Scott McGuire
Weather Conditions:
Measuring Device: Solinst Model 122 Oil/Water Ind.
Tidally Influenced: Yes ___ No _X_
Remarks:

Well or Piezometer Number CEF-76-	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)* btoc	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments PID (ppm) BH/BZ	2-5 11/ O P
~~75S~~				65.00				Abandoned	
~~76I~~				92.70				Abandoned	
~~77D~~				120.00				Abandoned	
80D	2-5-03	1441	77.81	120.00	5.78			0.4/0.0	11:1
NEEDS NEW CAP → CEF-372-20	2-6-03	1000	79.97	11.6	4.70			Truck Stand Well 0.2/0.0	114
X2S	2/6/03	1453	80.00	52.40	6.25			2.4/0.0 Pilot study test wel	103
X2D	2/6/03	1455	79.99	80.60	6.47			349/0.0 Pilot study test wel	1032
079-27D	2-6-03	1421	79.43		6.04			1.6/0.0	114
~~[illegible]~~-7	2-6-03	1420	79.46	15.00	4.93		74.53	0.4/0.0	114
~~[illegible]~~- 81S	2-5-03	1321	79.35	13.02	5.44		73.91	0.3/0.0	115
82S	2/6/03	1400	78.92	12.62	4.76		74.16	0.0/0.0	095

* All measurements to the nearest 0.01 foot

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: North Fuel Farm SAR Investigation
Location: Cecil Field
Weather Conditions:
Tidally Influenced: Yes ___ No _x_

Project No.: 3996.JG0050325
Personnel: Chris Gleaton and Scott McGuire
Measuring Device Solinst Model 122 Oil/Water Ind.
Remarks:

Well or Piezometer Number CEF-076-	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments PID (ppm) BH/BZ	2-5-0 1 T/ or PID
83S	2/6/03	1500		30	5.25			0.6/0.0	114
84I	2/6/03	1355		60	7.85			0.4/0.0	093
85I	2/6/03	1345		60	6.65			79.5/0.0	1002
86S	2/6/03	1337		50	5.60			0.9/0.0	1009
87S	2.6.03	1415		50	7.74			6.1/0.0	0953
88S	2/6/03	1835		15	5.86			1.4/0.0	1010
89I	2-5-03	1333		55	4.00			42.8/0.0	093
90S	2-5-03	1334		15	3.21			4.6/0.0	092
91S	2/6/03	1357		30	9.49			143/0.0	0941
92S	2/6/03	1322		30	8.19			0.4/0.0	1020
93S	2.6.03	1417		30	7.09			217/0.0	0950
94S	2.6.03	1418		15	7.76			449/0.0	0951
95S	2/6/03	1350		15	6.37			1.2/0.0 ~~0.7/0.0~~	0936
96D	2-5-03	1335		115	4.3			0.7/0.0	0925
PRESSURE → 97D	2/6/03	1352		105	7.25			0.0/0.0	0935
98D	2.6.03	0946		110	8.45			3.4/0.0	1106
PRESSURE → 99D	2.6.03	1416		100	8.33			0.6/0.0	0952
100D	2.6.03	0924		115	8.27			1.2/0.0	1109
101S	2/5/03	1615		35	4.37			1.4/0.0	1129
102D	2/5/03	1632		120	6.91			0.8/0.0	1110
103D	2-5-03	1440		149	6.71			0.9/0.0	1112

* All measurements to the nearest 0.01 foot

DN: 377614.4.182

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: North Fuel Farm SARA Investigation
Project No.: 3996.JG0050325
Location: Cecil Field
Personnel: Scott McGuire and Pete Leverette
Weather Conditions:
Measuring Device: Heron H.01L Interface Meter # R5138
Tidally Influenced: Yes ____ No __X__
Remarks: Air monitor background=

Well or Piezometer Number CEF-76-	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)* btoc	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments PID (ppm) BH/BZ
? 4	6/11/03	1658	80.15	12.93	6.65			0/0
8		1504	79.33	14.44	3.81			0/0
? ~~11~~			~~79.98~~	~~23.20~~				
12		1506	76.98	15.23	2.00			0/0
21		1542	78.28	11.76	2.98			0/0
? ~~25D~~			~~78.21~~					
26D		1607	79.10	60.00	4.28			0/0
28D		1542	78.05	89.50	3.65			0.8/0 4 inch ID PVC casing
29A		1529	75.04	13.00	0.5			0/0
29D		1423	77.15	77.00	3.57			0/0
30		1538	75.42	12.50	0.7			0/0
39D		1542	77.82	60.00	3.14			0/0
? ~~40D~~				~~56.15~~				
41D		1543	78.12	115.00	3.79			0/0
42		1509 ~~1450~~	77.09	12.50	1.87			0.8/0
43S		1419	77.68	43.30	3.08			0/0
44I		1420	77.70	73.30	3.13			0/0
~~45S~~ 46S		1427	77.31	44.70	3.10			0/0
47I		1426	77.31	73.00	3.10			0/0
48D		1425	77.85	+100	3.85			0/0
49S		1430	78.14	53.20	4.10			0/0
50I		1431	78.17	80.00	4.11			31.8/0
51D		1432	78.09	110.00	4.03			0/0
~~29C~~ 52I		1429	79.01	82.20	4.84			NO LOCK 0/0
53I		1435	77.90	80.00	3.69			NO LOCK 13.2/0

* All measurements to the nearest 0.01 foot
NM = not measured.

BH=borehole of well

BZ=breathing zone of worker

CTD 168, 4.4

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: North Fuel Farm SARA Investigation
Project No.: 3996.JG0050325
Location: Cecil Field
Personnel: Scott McGuire and Pete Leverette
Weather Conditions:
Measuring Device: Heron H.01L Interface Meter # R5138
Tidally Influenced: Yes ____ No __X__
Remarks: Air monitor background=

Well or Piezometer Number CEF-76-	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)* btoc	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments PID (ppm) BH/BZ
54I	6/11/03	1450	80.09	87.20	6.00			0/0
~~29B~~ 55I	~~1434~~	1434	77.09	87.90	3.06			0/0
56I		1454	80.91	41.00	6.72			0/0
57S		1526	77.74	35.00	3.47			6.2/0
58I		1526	77.66	75.00	3.40			21.0/0
59D		1525	77.63	114.00	3.58			0/0
60S		1520	80.93	40.00	6.50			NO LOCK 0/0
61I		1519	81.12	70.00	6.73			0/0
62D		1518	80.98	110.00	6.86			17.9/0
63S		1523		47.30	4.01			0/0
64I		1522		77.65	3.83			NO LOCK 16.4/0
65D		1522		120.00	4.02			NO LOCK 0/0
66I		1448		85.00	5.97			0/0
~~67I~~				~~90.00~~				Buried under trees.
68I		1439	77.46	87.60	3.37			Cut Lock 0/0
69S		1534	78.21	38.20	3.75			NO LOCK 0/0
70I		1535	78.21	73.00	3.84			NO LOCK 18.7/0
71D		1536	78.04	85.00	3.78			NO LOCK 0/0
72S		1530	77.20	36.55	2.82			0/0
73I		1531	77.02	65.00	2.66			0/0
74D		1532	77.06	114.65	2.78			0/0

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: North Fuel Farm SARA Investigation
Project No.: 3996.JG0050325
Location: Cecil Field
Personnel: Scott McGuire and Pete Leverette
Weather Conditions:
Measuring Device: Heron H.01L Interface Meter # R5138
Tidally Influenced: Yes ____ No _X_
Remarks: Air monitor background=

Well or Piezometer Number CEF-76-	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)* btoc	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments PID (ppm) BH/BZ
~~75S~~				~~65.00~~				Abandoned
~~76I~~				~~92.70~~				Abandoned
~~77D~~				~~128.00~~				Abandoned
80D	6/11/03	1438	77.81	120.00	4.96			0/0
CEF-372-20		1457	79.97	11.6	3.93			NO LOCK Truck Stand Well 0/0
X2S		1544	80.00	52.40	5.31			PVC only Pilot study test well
X2D		1545	79.99	80.60	~~8~~ 5.57			PVC only Pilot study test well
27D		1501	79.43	79.50	5.05			0/0
7		1500	79.46	15.00	3.79			NO LOCK 0/0
81S		1507	79.35	13.02	4.48			0/0
~~82S~~			~~78.92~~	~~12.02~~				DAMAGED

* All measurements to the nearest 0.01 foot

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: North Fuel Farm SARA Investigation
Project No.: 3996.JG0050325
Location: Cecil Field
Personnel: Scott McGuire and Pete Leverette
Weather Conditions:
Measuring Device: Heron H.01L Interface Meter # R5138
Tidally Influenced: Yes ____ No __X__
Remarks: Air monitor background=

Well or Piezometer Number CEF-076-	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments PID (ppm) BH/BZ
83S	6/11/03	1459		30	4.28			0.8/0
84I		1551		60	6.83			0/0
85I		1549		60	6.79			53.7/0
86S		1548		50	3.80			Need CAP 0/0
87S		1619		50	6.72			Need CAP 0/0
88S		1547		15	4.32			0/0
89I		1516		55	2.86			0/0
90S		1515		15	2.14			0/0
91S		1605		30	8.36			NO LOCK 502/0
92S		1541		30	7.22			2.3/0
93S		1615		30	5.97			1706/0
94S		1614		15	6.76			594/0
95S		1553		15	5.64			0/0
96D		1513	~~1513~~ SARA	115	3.08			0/0
97D		1555		105	6.25			0/0
99D ~~98D~~		1617		100 ~~110~~	7.26			NO LOCK 0/0
98D ~~99D~~		1465 ~~1458~~		110 ~~100~~	7.57			NO LOCK 0/0
100D		1447		115	7.41			NO LOCK 0/0
101S		1434	1	35	3.64			NO LOCK 1.5/0
102D		1442		120	6.23			NO LOCK 0/0
103D		1439		149	6.00			NO LOCK 0/0
104D		1444		115	7.03			0/0
105I		1436		50	4.22			0/0
106S		1511		30	7.16			0/0
107S		1609		15	6.83			NO LOCK 5.1/0

* All measurements to the nearest 0.01 foot

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: North Fuel Farm SARA Investigation
Project No.: 3996.JG0050325
Location: Cecil Field
Personnel: Scott McGuire and Pete Leverette
Weather Conditions:
Measuring Device: Heron H.01L Interface Meter # R5138
Tidally Influenced: Yes ___ No _X_
Remarks: Air monitor background=

Well or Piezometer Number CEF-076-	Date	Time	Elevation of Reference Point (feet)*	Total Well Depth (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments PID (ppm) BH/BZ
108S		1603		15	5.82			0.4/0
109S		1545		15	5.62			1.3/0
110D		1452		110	9.25			4.6/0
111I		15.02		70	7.93			0/0
112I		1512		55	6.89			0/0
113S		1602		40	6.41			3.1/0

* All measurements to the nearest 0.01 foot

APPENDIX D

SURVEY DATA

TETRA TECH NUS
CECIL FIELD ADDITIONAL
SOIL SAMPLE LOCATIONS
SITE: NORTH FUEL FARM
SURVEY DATE: 07/03/01
JOB NUMBER: 01-06-15

NORTHING (Y)	EASTING (X)	ELEVATION (NAVD 88)	DESCRIPTION	LOCATION
2148443.52	377723.73	80.15	CEF-076-04	NORTH SIDE PVC
		78.03		CONCRETE
		78.00		GROUND
2147897.27	377527.25	79.33	CEF-076-08	NORTH SIDE PVC
		79.49		CONCRETE
		79.50		GROUND
2148385.47	377208.94	79.98	CEF-076-11	NORTH SIDE PVC
		78.17		CONCRETE
		78.00		GROUND
2147962.19	377265.36	76.98	CEF-076-12	NORTH SIDE PVC
		77.33		CONCRETE
		77.20		GROUND
2148061.14	377840.03	78.28	CEF-076-21	NORTH SIDE PVC
		78.47		CONCRETE
		78.60		GROUND
2148372.85	377223.60	78.21	CEF-076-25D	NORTH SIDE PVC
		78.41		CONCRETE
		78.40		GROUND
2147933.26	377329.95	79.10	CEF-076-26D	NORTH SIDE PVC
		79.34		CONCRETE
		79.40		GROUND
2148095.12	377845.26	78.05	CEF-076-28D	NORTH SIDE PVC
		78.25		CONCRETE
		78.30		GROUND
2148157.31	378073.86	75.04	CEF-076-29A	NORTH SIDE PVC
		75.21		CONCRETE
		75.20		GROUND
2148003.72	378432.18	77.09	CEF-076-55I	NORTH SIDE PVC
		74.36		CONCRETE
		74.30		GROUND
2148029.25	378263.72	79.01	CEF-076-52I	NORTH SIDE PVC
		76.65		CONCRETE
		76.60		GROUND
2148267.71	378212.51	77.15	CEF-076-29D	NORTH SIDE PVC
		74.65		CONCRETE
		74.50		GROUND

TETRA TECH NUS
CECIL FIELD ADDITIONAL
SOIL SAMPLE LOCATIONS
SITE: NORTH FUEL FARM
SURVEY DATE: 07/03/01
JOB NUMBER: 01-06-15

NORTHING (Y)	EASTING (X)	ELEVATION (NAVD 88)	DESCRIPTION	LOCATION
2148070.40	377991.68	75.42	CEF-076-30	NORTH SIDE PVC
		75.58		CONCRETE
		75.50		GROUND
2148083.42	377840.81	77.82	CEF-076-39D	NORTH SIDE PVC
		78.31		CONCRETE
		78.50		GROUND
2148097.32	377856.14	78.12	CEF-076-41D	NORTH SIDE PVC
		78.28		CONCRETE
		78.20		GROUND
2148088.20	377268.72	77.09	CEF-076-42	NORTH SIDE PVC
		77.36		CONCRETE
		77.30		GROUND
2148371.87	378166.92	77.68	CEF-076-43S	NORTH SIDE PVC
		74.77		CONCRETE
		74.60		GROUND
2148365.86	378173.66	77.70	CEF-076-44I	NORTH SIDE PVC
		74.91		CONCRETE
		74.80		GROUND
2148151.15	378257.56	77.31	CEF-076-~~45S~~ 46S	NORTH SIDE PVC
		74.66		CONCRETE
		74.50		GROUND
2148163.19	378254.31	77.31	CEF-076-47I	NORTH SIDE PVC
		74.76		CONCRETE
		74.60		GROUND
2148187.43	378248.42	77.85	CEF-076-48D	NORTH SIDE PVC
		74.87		CONCRETE
		74.60		GROUND
2147958.83	378353.15	78.14	CEF-076-49S	NORTH SIDE PVC
		75.46		CONCRETE
		75.30		GROUND
2147953.56	378351.90	78.17	CEF-076-50I	NORTH SIDE PVC
		75.55		CONCRETE
		75.30		GROUND
2147949.31	378353.26	78.09	CEF-076-51D	NORTH SIDE PVC
		75.47		CONCRETE

TETRA TECH NUS
CECIL FIELD ADDITIONAL
SOIL SAMPLE LOCATIONS
SITE: NORTH FUEL FARM
SURVEY DATE: 07/03/01
JOB NUMBER: 01-06-15

NORTHING (Y)	EASTING (X)	ELEVATION (NAVD 88)	DESCRIPTION	LOCATION
		75.30		GROUND
2147891.34	378464.84	77.90	CEF-076-53I	NORTH SIDE PVC
		75.10		CONCRETE
		75.10		GROUND
2147796.90	378395.23	80.09	CEF-076-54I	NORTH SIDE PVC
		77.58		CONCRETE
		77.40		GROUND
2147748.95	378147.90	80.91	CEF-076-56I	NORTH SIDE PVC
		78.46		CONCRETE
		78.40		GROUND
2148122.71	378150.75	77.74	CEF-076-57S	NORTH SIDE PVC
		75.36		CONCRETE
		75.30		GROUND
2148116.46	378151.00	77.66	CEF-076-58I	NORTH SIDE PVC
		75.14		CONCRETE
		74.90		GROUND
2148108.54	378152.48	77.63	CEF-076-59D	NORTH SIDE PVC
		75.09		CONCRETE
		74.90		GROUND
2147890.53	378014.05	80.93	CEF-076-60S	NORTH SIDE PVC
		78.39		CONCRETE
		78.20		GROUND
2147883.58	378012.02	81.12	CEF-076-61I	NORTH SIDE PVC
		78.56		CONCRETE
		78.40		GROUND
2147876.68	378009.84	80.98	CEF-076-62D	NORTH SIDE PVC
		78.45		CONCRETE
		78.40		GROUND
2148110.58	378007.57	78.21	CEF-076-69S	NORTH SIDE PVC
		75.65		CONCRETE
		75.60		GROUND
2148105.46	378008.79	78.21	CEF-076-70I	NORTH SIDE PVC
		75.63		CONCRETE
		75.40		GROUND
2148096.49	378011.25	78.04	CEF-076-71D	NORTH SIDE PVC

TETRA TECH NUS
CECIL FIELD ADDITIONAL
SOIL SAMPLE LOCATIONS
SITE: NORTH FUEL FARM
SURVEY DATE: 07/03/01
JOB NUMBER: 01-06-15

NORTHING (Y)	EASTING (X)	ELEVATION (NAVD 88)	DESCRIPTION	LOCATION
		75.55		CONCRETE
		75.40		GROUND
2148241.01	378084.91	77.20	CEF-076-72S	NORTH SIDE PVC
		74.72		CONCRETE
		74.70		GROUND
2148247.59	378079.45	77.02	CEF-076-73I	NORTH SIDE PVC
		74.63		CONCRETE
		74.60		GROUND
2148254.89	378075.74	77.06	CEF-076-74D	NORTH SIDE PVC
		74.46		CONCRETE
		74.40		GROUND
2147850.15	378574.58	77.81	CEF-076-80D	NORTH SIDE PVC
		75.26		CONCRETE
		75.00		GROUND
2148085.85	377858.49	79.99	CEF-076-X2D	NORTH SIDE PVC
		78.22		CONCRETE
		78.20		GROUND
2148089.17	377859.21	80.00	CEF-076-X2S	NORTH SIDE PVC
		78.22		CONCRETE
		78.19		GROUND
2147795.20	378006.50		CEF-372-20	COULD NOT OPEN MONITORING WELL

TETRA TECH NUS
CECIL FIELD ADDITIONAL
EXISTING MONITORING WELL LOCATIONS
SITE: NORTH FUEL FARM
SURVEY DATE: 07/19/01
JOB NUMBER: 01-06-15

NORTHING (Y)	EASTING (X)	ELEVATION (NAVD 88)	DESCRIPTION	LOCATION
2147892.74	377738.00	79.43	CEF-076-27D	FLUSH W/ GROUND
		79.55		CONCRETE
		79.50	4-Inch ID well	GROUND
2147900.36	377743.63	79.46	CEF-076-7	FLUSH W/ GROUND
		79.75		CONCRETE
		79.70	2-inch ID well	GROUND
2148057.94	378564.65	77.46	CEF-076-68I	ABOVE GROUND
		74.72		CONCRETE
		74.54		GROUND

nfuelfarm_17dec01

TETRA TECH NUS
CECIL FIELD NORTH FUEL FARM
EXISTING WELL LOCATIONS
SURVEY DATE 12/17/2001
ARC JOB No. 01-16-15

DESCRIPTION	NORTHING(Y)	EASTING(X)	ELEVATION	
MW CEF-076-81S	2147942.97	377224.68	TOP OF CASING	79.35
			CONCRETE	79.71
			GROUND	79.6
MW CEF-076-82S	2147984.80	377328.15	TOP OF CASING	78.92
			CONCRETE	79.21
			GROUND	79.1
DPT A8	2148551.54	377423.51		
DPT C8	2148549.17	377627.65		
DPT E8	2148528.50	377826.75		
DPT-AA-1	2147883.11	377334.34		
DPT-AA-2	2147984.39	377325.49		
DPT AA-3	2148084.22	377326.92		
DPT-AA-4	2148181.42	377322.54		
DPT-AA-5	2148282.70	377322.56		
DPT-AA-6	2148371.51	377322.14		
DPT-AB-2	2147982.63	377273.67		
DPT-AB-4	2148182.63	377269.62		
DPT-AB-7	2148459.32	377269.16		
DPT-AC-1	2147884.55	377226.00		
DPT-AC-2	2147983.17	377225.02		
DPT-AC-3	2148080.13	377227.33		

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TETRA TECH NUS
CECIL FIELD NORTH FUEL FARM
EXISTING WELL LOCATIONS
SURVEY DATE 06/09/03
ARC JOB No. 01-06-15
Revised 06/24/03

NORTHING(Y)	EASTING(X)	DESCRIPTION	ELEVATION	
2147942.92	377224.75	MW-CEF-076-81S	GROUND	79.7
			CONCRETE	79.72
			TOP OF CASING	79.36
2147984.34	377328.37	MW-CEF-076-82S	GROUND	79.3
			CONCRETE	79.47
			TOP OF CASING	78.94
2147704.47	377665.67	MW-CEF-076-83S	GROUND	79.1
			CONCRETE	79.44
			TOP OF CASING	79.13
2148454.63	377409.32	MW-CEF-076-84I	GROUND	78.3
			CONCRETE	78.52
			TOP OF CASING	81.62
2148441.84	377718.94	MW-CEF-076-85I	GROUND	78.2
			CONCRETE	78.48
			TOP OF CASING	81.50
2148424.21	377914.91	MW-CEF-076-86S	GROUND	73.3
			CONCRETE	75.7
			TOP OF CASING	78.35
2148125.00	377647.33	MW-CEF-076-87S	GROUND	78.2
			CONCRETE	78.14
			TOP OF CASING	81.53
2148423.10	377920.96	MW-CEF-076-88S	GROUND	75.3
			CONCRETE	75.51
			TOP OF CASING	78.5
2148213.57	377306.01	MW-CEF-076-89I	GROUND	77.7
			CONCRETE	77.82
			TOP OF CASING	77.60
2148208.49	377305.59	MW-CEF-076-90S	GROUND	77.7
			CONCRETE	77.79
			TOP OF CASING	77.58
2148133.53	377398.78	MW-CEF-076-91S	GROUND	79.4
			CONCRETE	79.63
			TOP OF CASING	83.21
2148049.98	377843.59	MW-CEF-076-92S	GROUND	78.7
			CONCRETE	78.69
			TOP OF CASING	81.88
2148045.08	377638.23	MW-CEF-076-93S	GROUND	78.3
			CONCRETE	78.41
			TOP OF CASING	81.59

2148045.48	377643.14	MW-CEF-076-94S	GROUND	78.2
			CONCRETE	78.37
			TOP OF CASING	81.59
2148562.80	377408.40	MW-CEF-076-95S	GROUND	77.4
			CONCRETE	77.87
			TOP OF CASING	80.88
2148200.86	377306.55	MW-CEF-076-96D	GROUND	77.7
			CONCRETE	77.75
			TOP OF CASING	77.51
2148561.42	377417.07	MW-CEF-076-97D	GROUND	77.7
			CONCRETE	77.91
			TOP OF CASING	80.90
2147752.41	378157.92	MW-CEF-076-98D	GROUND	78.1
			CONCRETE	78.38
			TOP OF CASING	81.39
2148119.19	377647.20	MW-CEF-076-99D	GROUND	78.1
			CONCRETE	78.11
			TOP OF CASING	81.69
2147774.71	378542.30	MW-CEF-076-100D	GROUND	76.9
			CONCRETE	77.2
			TOP OF CASING	80.15
2147996.14	378434.54	MW-CEF-076-101S	GROUND	74.4
			CONCRETE	74.58
			TOP OF CASING	77.64
2147883.92	378754.50	MW-CEF-076-102D	GROUND	75.2
			CONCRETE	75.50
			TOP OF CASING	78.55
2147909.78	378585.81	MW-CEF-076-103D	GROUND	75.0
			CONCRETE	75.46
			TOP OF CASING	78.39
2147592.49	378659.58	MW-CEF-076-104D	GROUND	75.3
			CONCRETE	75.52
			TOP OF CASING	79.08
2147897.58	378540.47	MW-CEF-076-105I	GROUND	74.8
			CONCRETE	74.87
			TOP OF CASING	78.15
2148170.09	377211.93	MW-CEF-076-106S	GROUND	78.5
			CONCRETE	78.55
			TOP OF CASING	81.85
2147886.95	377398.33	MW-CEF-076-107S	GROUND	79.0
			CONCRETE	79.11
			TOP OF CASING	82.26
2148282.92	377637.11	MW-CEF-076-108S	GROUND	77.9
			CONCRETE	77.97
			TOP OF CASING	81.47
2148209.91	377831.66	MW-CEF-076-109S	GROUND	78.9
			CONCRETE	77.82

			TOP OF CASING	80.92
2147613.16	378214.04	MW-CEF-076-110D	GROUND	78.7
			CONCRETE	78.82
			TOP OF CASING	82.51
2147823.06	377748.59	MW-CEF-076-111I	GROUND	78.5
			CONCRETE	78.62
			TOP OF CASING	82.23
2148162.21	377205.66	MW-CEF-076-112I	GROUND	78.5
			CONCRETE	78.58
			TOP OF CASING	81.56
2148338.24	377580.49	MW-CEF-076-113S	GROUND	78.0
			CONCRETE	78.99
			TOP OF CASING	81.22

NORTHFUELFARM_072103

CECIL FIELD SOIL SAMPLE LOCATIONS
ADDITIONAL WELLS, NORTH FUEL FARM
ARC SURVEYING & MAPPING INC.
JULY 14, 2003

DESCRIPTION	NORTHING (Y)	EASTING (X)	ELEVATION	
CEF-076-114D	2148551.12	377554.33	TOP OF CASING	80.91
			CONCRETE	78.00
			GROUND	77.8
CEF-076-115D	2147618.08	3758004.01	TOP OF CASING	82.46
			CONCRETE	79.81
			GROUND	79.7
CEF-076-116D	2147409.71	378306.91	TOP OF CASING	82.83
			CONCRETE	79.63
			GROUND	79.2
CEF-076-117D	2147216.66	378370.65	TOP OF CASING	81.78
			CONCRETE	79.70
			GROUND	79.2

APPENDIX E

4DIM CD

Please see attached CD for Appendix E.

APPENDIX F

BORING LOGS

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NFF
PROJECT NUMBER: 3996
DRILLING COMPANY: TRANS AMERICA
DRILLING RIG: GEOPROBE (ADVANCE 66 DT)
BORING NUMBER: CEF-076-81S
DATE: 12-4-01
GEOLOGIST: L. KNIGHT
DRILLER: DAVID HEARN

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
							SAND: VF & F-- organic-rich (v.dk brown) 2-2.5' and 4-7'; otherwise, medium brown and gray-brown						
				7 HARD PAN 9				7 9	HARD PAN				
				13.5			EOB 13.5						
				13.5			EOB 13.5'						

LLK

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm):

Converted to Well: Yes / No

Well I.D. #: CEF-076-81S

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NORTH FUEL FARM
PROJECT NUMBER: N3996
DRILLING COMPANY: TRANSAMERICA
DRILLING RIG: GEOPROBE (ADVANCE 66 DT)

BORING NUMBER: CEF. 076 · 82S
DATE: 12·4·01
GEOLOGIST: L. KNIGHT
DRILLER: D. HEARN

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
							↑						
							SAND: FILL··						
							orange·brown,						
							pale grey, yellow						
							brown						
							↓						
				7			HARD PAN·· SAND						
							VF; V. dk. brown						
				9			↑						
							SAND: VF\F;						
							MED. BROWN						
							↓						
							13' EOB						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 14.6

Converted to Well: Yes ✓ No _____ Well I.D. #: CEF-076-82S

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: TRANSAMERICAN
DRILLING RIG: Deitrich D-120

BORING NO.: CEF-~~876~~ 835 ~~372-255~~
DATE: 12/10/02
GEOLOGIST: Scott McGuire
DRILLER: Louis Johnson

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
				0-8"			Blk + Gray Fi sa					0	0
				8"-2'			Red/Brn Fi sa		▽ 6'			0	0
				2'-4'			Lt Brn Fi sa					0	0
				4'-6'			Lt Brn Fi sa					0	0
				6'305			DK Brn Fi sa					0	0

* When rock co[illegible] or rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks:

Converted to Well: Yes X No _____ Well I.D. #: CEF-~~876~~-835 ~~372-255~~

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: TRANSAMERICAN
DRILLING RIG: Deitrich D-120

BORING NO.: CEF-076-84I
DATE: 12/11/02
GEOLOGIST: S. McGuire
DRILLER: Louis Johnson

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler Bkr	Borehole	Driller Bkr
				0-4'			DK Brn Fi Sa					0	0
				4'-20'			DK Brn Fi Sa, silty		▽ 6'			0	0
				20-60.5			Brn Fi sâlty Sa					0	0
												0	0

* When rock c[illegible] or rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks:

Converted to Well: Yes X No _____ Well I.D. #: CEF-076-84I

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: TRANSAMERICAN
DRILLING RIG: Deitrich D-120

BORING NO.: CEF-076-85I
DATE: 12/11/02
GEOLOGIST: S.McGuire
DRILLER: Louis Johnson

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sample Bag	Breathing Zone	Drilling Area
				0-1'			DK Brn Fi sa					0	0
				1'-4'			Brn/Gry Fi sa					0	0
				4-20'			DK Brn Fi sa		▽ 6'			0	0
				20'-60'			Brn Fi silty sa		56'-57.5' Bl/Gr cly			0	0
									Blush Green clay				

* When rock ac[illegible] or rock brokeness.

** Include monitor reading in 6 foot intervals of borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 56-57.5 Blush Green clay on auger.

Converted to Well: Yes X No _____ Well I.D. #: CEF-076-85I

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: TRANSAMERICAN
DRILLING RIG: Diedrich D-120

BORING NO.: CEF-076-86S
DATE: 12/12/02
GEOLOGIST: S. McGuire
DRILLER: Louis Johnson

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
				0-6"			Lt Brn Fi sa					0	0
				6"-4'			DK Brn Fi sa		▽ 6'			0	0
				4-20'			DK Brn / Brn Fi sa					0	0
				20-50			Brn Fi silty sa					0	0

* When rock c[illegible] or rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks:

Converted to Well: Yes X No _____ Well I.D. #: CEF-076-86S

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: TRANSAMERICAN
DRILLING RIG: Diedrich D-120

BORING NO.: CEF-076-875
DATE: 12/12/02
GEOLOGIST: S. McGuire
DRILLER: Louis Johnson

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sample Bag	Breathing Zone	Driller Area
				0-4'			DK Brn Fi sa					0	0
				4'-20'			DK Brn Fi sa		▽ 6'			0	0
				20-50'			Brn Fi silty Sa					0	0

* When rock co[illegible] or rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes X No ____ Well I.D. #: CEF-076-875

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: TRANSAMERICAN
DRILLING RIG: Diedrich D-120

BORING NO.: CEF-076-885
DATE: 12/12/02
GEOLOGIST: S. McGuire
DRILLER: Louis Johnson

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification *	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole	Driller BZ
				0-4'			DK Brn Fi sa					0	0
				4-14.5'			Brn Fi sa		▽ 6'			0	0

* When rock c[illegible] or rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks:

Converted to Well: Yes X No _____ Well I.D. #: CEF-076-885

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: TRANSAMERICAN
DRILLING RIG: Diedrich D-120

BORING NO.: CEF-076-89I
DATE: 12/13/02
GEOLOGIST: S. McGuire
DRILLER: Louis Johnson

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
				0-4'			DK Brn Fi sa					0	0
				4-16'			DK Brn Fi sa					0	0
				16-55'			Brn Fi silty sa					0	0

* When rock co[illegible] or rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks:

Converted to Well: Yes X No _____ Well I.D. #: CEF-076-89I

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: TRANSAMERICAN
DRILLING RIG: Diedrich D-120

BORING NO.: CEF-076-905
DATE: 12-13-02
GEOLOGIST: MEZV DALE
DRILLER: L. JOHNSON

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole	Driller BZ
	0-15				dk. red brn		silty fine sand	SM	wet from recent rain				

* When rock co[illegible] or rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: Fid Hydrogen empty

Drilling Area Background (ppm): —

Converted to Well: Yes X No _____ Well I.D. #: CEF-076-905.

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: TRANSAMERICAN
DRILLING RIG: Diedrich D-120

BORING NO.: CEF-076-915
DATE: 12/13/02
GEOLOGIST: S. McGuire
DRILLER: Louis Johnson

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole	Driller BZ
				0-4'			DK Bm Fi sa					0	0
				4-30'			Bm Fi sa					0	0

* When rock c[illegible] r rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes X No

Well I.D. #: CEF-076-

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: TRANSAMERICAN
DRILLING RIG: D-120

BORING NO.: CEF-076-925
DATE: 12/16/02
GEOLOGIST: Louis Johnson
DRILLER: C Gleaton

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sample Bag	Borehole	Drilling Air
				0-10		Dr Bn	Fine Sand	SM	@ 8'			0	0
				10-12		Dr Bn	Fine Sand	SM	Moist	-	-	-	-
				12-15		Dr Bn	Fine Sand	SM	Wet	-	-	-	-
				15-26		Dr Bn	Fine Sand	SM	Wet	-	-	-	-
				26-30		Dr Bn	Fine Sand	SM	Wet	-	-	-	-

* When rock c[illegible] r rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0.0

Converted to Well: Yes X No _____ Well I.D. #: CEF-076-925

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: TRANSAMERICAN
DRILLING RIG: D-120

BORING NO.: CEF-076-935
DATE: 12/16/02
GEOLOGIST: C Gleaton
DRILLER: Louis Johnson

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler B.Z.	Breathing	Driller B.Z.
				0-4		Dr Bn	Fine Sand	SM		–	–	0	0
				4-8		Dr Bn	Silty Sand	SM	▽ 8				
				8-20		Dr Bn	Silty Sand	SM	Wet				
				20-25		Dr Bn	Silty Sand	SM	Wet				
				25-30		Dr Bn	Silty Sand	SM	Wet				

* When rock ox[illegible]r rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0.0

Converted to Well: Yes X No _____ Well I.D. #: CEF-076-935

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: TRANSAMERICAN
DRILLING RIG: D-120

BORING NO.: CEF-076-945
DATE: 12/16/02
GEOLOGIST: C Gleaton
DRILLER: Lewis Johnson

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
				0-4		Dr Bn	Silty Sand	SM		-	-	0	0
				4-8		Dr Bn	Silty Sand	SM	▽ 8	-	-	0	0
				8-15		Dr Bn	Silty Sand	SM					

* When rock c[illegible] or rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0.0

Remarks: Dr Bn = Dark Brown

Converted to Well: Yes X No _____ Well I.D. #: CEF-076-945

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: TRANSAMERICAN
DRILLING RIG: D-120

BORING NO.: CEF-076-955
DATE: 12/16/02
GEOLOGIST: C Gleaton
DRILLER: Louis Johnson

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Background	Sampler BZ	Borehole	Driller BZ**
				0-2		Bk	Fine Sand	SM		-	-	0	0
				2-3.5		Ye	Fine Sand	SM		-	-	0	0
				3.5-6		DrBn	Fine Sand	SM	∇ 6'				
				6'-15		Dr Bn	Fine Sand	SM					

* When rock c[illegible] r rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0.0

Remarks: Bk = Black Ye = Yellow DrBn = Dark Brown

Converted to Well: Yes X No _____ Well I.D. #: CEF-076-955

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: TRANSAMERICAN
DRILLING RIG: Diedrich D-120

BORING NO.: CEF-076-1015
DATE: 1/8/03
GEOLOGIST: SCOTT McGuire
DRILLER: Lewis Johnson

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler B.Z.	Borehole	Drilling B.Z.
				0-2'			DK Brn Fi SA	SP				0	0
				2-4'			Brn Fi sa	SP				0	0
				4-10'			Brn Fi sa	SP	▽5'			0	0
				10-35'			Brn Fi sa	SP				0	0
							EOB @ 35' bls.						

* When rock c[illegible] rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks:

Converted to Well: Yes X No _____ Well I.D. #: CEF-076-1015

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD, NFF
PROJECT NUMBER: N3996
DRILLING COMPANY: TRANSAMERICAN
DRILLING RIG: DIETRICH D-120

BORING NO.: CEF-076-103D
DATE: 1/14/03 - 1/20/03
GEOLOGIST: MERVIN DALE
DRILLER: LOUIS JOHNSON

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistance or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler Bz	Breathing**	Driller BZ**
1	110-110.5	13/6"	1/1		OLIVE GREEN		Slightly clayey, v.f. sd.	SP					
	110.5-111	20/6"	1/1				SAME AS ABOVE						
	111-111.5	13/6"	1/1				SAME AS ABOVE						
	111.5-112	15/6"	1/1				SAME AS ABOVE						
2	112-112.5	12/6"	1/1		GREENISH GRAY		SILTY V. FINE SAND	SP					
	112.5-113	27/6"	1/1				SAME AS ABOVE						
	113-113.9"	50/6"	75/1		LT. GRAY		HARD DRY CLAY	CL	WITH GREEN-GRAY STREAKS OF V. FINE SAND				
	—	29/6"	.5/1				CLAY, FRACTURED						
3	114-115.5	16/6"	1/1		LT. GRAY		FRACTURED, DRY	CL	LOW TO NO				
	—	20/6"	1/1		TO OLIVE GRAY		CLAY		PLASTICITY				
	—	40/6"	1/1				SAME AS ABOVE						
	115.5-116	25/6"	0/1				No recovery		possible SAND?				
4	116-116.5	18/6"	0/1				No recovery		possible SAND?				
116.75 →	116.5-117	44/6"	1/1		dk. green gray		CALCAREOUS CLAY						
	116.75-117	X	—		LT. greenish gray		CLAYEY LIMESTONE						
	117-117.5	50/6"	1/1				SAME AS ABOVE						
	117.5-118	40/6"	1/1		LT. greenish gray		weathered limestone		TRACE CLAY				
5	120-120.5	34/6"	1/1		greenish gray		LIMESTONE		some clay and SAND				
	120.5-121	45/6"	1/1				SAME AS above						
	121-122	92/60 6"/6"	1/1 & 0/1				SAME AS Above		No recovery - bottom 6"				

* When rock core, RQD or rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: V.f.sd. = very fine sand, start 5' centers at sample no. 5

Converted to Well: Yes X No ____ Well I.D. #: CEF-076-103D

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD, NFF
PROJECT NUMBER: N3996
DRILLING COMPANY: TRANSAMERICAN
DRILLING RIG: DIETRICH D-120
BORING NO.: CEF-076-103D
DATE: 1/14/03 - 1/20/03
GEOLOGIST: MERVIN DALE
DRILLER: LOUIS JOHNSON

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/Consistency or Rock Hardness	Color	Material Classification	USCS*	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
6	125-125.5	18/6"	1/1		GREENISH	GRAY	LIMESTONE						
	125.5-126	46/6"	1/1				SAME AS above						
	126-126.5	59/6"	1/1				SAME AS Above						
	126.5-127	159/6"	1/1		OLIVE	GRAY	SILTY SAND, VERY FINE	SP	DENSE, SOME CLAY				
7	130-130.5	7/6"	1/1				slough		possible sand?				
	130.5-131	18/6"	1/1				slough		" ?				
	131-131.5	30/6"	1/1		greenish brown		fine to med. sand	SP	trace clay				
	131.5-132	24/6"	1/1		yellow brown		v. fine sand	SP	limestone fragments				
8	135	90/1.5	3"/24"		—		Limestone, cemented						
—	137	125/1.5					Angular, very hard						
9	140-140.5	24/6"	1/1				slough w/ fractured lime rock.						
	140.5-141	29/6"	1/1		LT.	GRAY	limestone w/ broken shell		non-cemented shells 1-2 mm across				
	141-142	43/6" 34/6"	1/1				SAME AS above						
10	145-145.25	18/6"	1/1				slough (mud, sand, bits of shell).						
	145.25-146.25	26/6"	1/1		LT.	GRAY	limestone, uncemented		25-30% sand, shell				
		52/6"	1/1						1% black phosphate grains				
	146.25-147	55/6"	0/1				No recovery						

* When rock c[illegible] r rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): [ ]

Remarks: Continued mud rotary to about 149' b/s to set well.

Converted to Well: Yes X No ____ Well I.D. #: CEF-076-103D

DN: 3996; 4.4; 128

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: Prosonic
DRILLING RIG: Rotasonic

BORING NO.: CEF-076, 104D
DATE: 5/14/03
GEOLOGIST: Mervin Dale
DRILLER: Dan Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
108-117' 5/5	9/10'					Olive gray	slightsilty medium SAND	SP-SM	wet				1.5
							EOB @ 118' 6/5						
							MWD						

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 1.2

Converted to Well: Yes X No ~~X~~ MWD

Well I.D. #: CEF-076-104D

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD / NFF
PROJECT NUMBER: N3996
DRILLING COMPANY: Prosonic
DRILLING RIG: ~~Rotasonic~~ GEOPROBE 6610DT

BORING NO.: CEF-076- MW106S
DATE: 5.15.03
GEOLOGIST: ~~Mervin Dale~~ L. KNIGHT
DRILLER: ~~Dan Mitchell~~ A. PETELSON

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sample BZ	Borehole**	Driller BZ**
							SAND: fine; med gray w/ organic matter						
				4.0			SAND: w/ some silt; fine/v. fine; pale yellow. gray & v. dk brown						
				12.0			SAND: very fine; v. dark brown						
				22.0									
				24.0			AA - med yellow. brown						
							SAND w/ some silt; fine & v. fine; gray. brown						
				30.0			EOB = 30' ft blc						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 3.4

Converted to Well: Yes / No x Well I.D. #: CEF. 076. MW106S

BORING LOG

Tetra Tech NUS, Inc.

Page ___ of ___

PROJECT NAME: NAS CECIL FIELD / BLDG 285
PROJECT NUMBER: N3996
DRILLING COMPANY: Prosonic
DRILLING RIG: ~~Rotasonic~~ GEOPROBE 6610DT

BORING NO.: CEF-076- MW107S
DATE: 5.15.03
GEOLOGIST: ~~Mervin Dale~~ L. KNIGHT
DRILLER: ~~Dan Mitchell~~ A. PETERSON

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	MATERIAL DESCRIPTION: Material Classification	USCS*	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ*	Borehole**	Driller BZ**
							SAND: fine; pale gray; NATIVE MATERIAL						
				2.5									
							~~SAND: fine; dk brown and yellow brown~~						
				4.0									
							SAND: w/ trace silt and clay; fine & v. fine. yellow-brown & dk brown. gray. SATURATED ~6' bls						
				14			EOB = 14' bls						

* When rock coring, enter rock brokeness.
** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 3.1

Converted to Well: Yes ✓ No x

Well I.D. #: CEF. 076. MW107S

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD/NFF
PROJECT NUMBER: N3996
DRILLING COMPANY: Prosonic
DRILLING RIG: ~~Rotasonic~~ GEOPROBE 6610DT

BORING NO.: CEF-076- MW108S
DATE: 5.15.03
GEOLOGIST: ~~Mervin Dale~~ L. KNIGHT
DRILLER: ~~Dan Mitchell~~ A. PETERSON

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistancy or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
							SAND: fill; fine; yellow-brown						
				4									
							SAND: w/ trace silt and clay; fine/v. fine; gray-brown becoming yellow brown at 7.5' bls						
				14			EOB = 14' bls						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 3.7

Converted to Well: Yes ✓ No x

Well I.D. #: CEF. 076. MW108S

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: Prosonic
DRILLING RIG: ~~Rotasonic~~ GEOPROBE 6610DT

BORING NO.: CEF-076-MW109S
DATE: 5.15.03
GEOLOGIST: ~~Mervin Dale~~ L. KNIGHT
DRILLER: ~~Dan Mitchell~~ A. PETERSON

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
							SAND: fill; v. fine; yellow-brown and dark gray						
				4									
							SAND..w/ trace silt and clay; v. fine; dark brown, yellow brown, gray brown						
				14			EOB=14' bls						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 3.1

Converted to Well: Yes ✓ No x Well I.D. #: CEF.076.MW109S

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: Prosonic
DRILLING RIG: Rotasonic

BORING NO.: CEF-076-110D
DATE: 5/15/03
GEOLOGIST: Mervin Dale
DRILLER: Dan Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
—	100-108	—	8/8'			LT Gray	slightly silty med. SAND	SM	wet	—	—	—	—
—	108-110	—	2/2'			OLIVE GRAY	clayey sand FINE	SC	~15-20% clay				
							EOB @ 110' b/s.						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): —

Converted to Well: Yes X No ~~X~~ MW Well I.D. #: CEF-076-110D

BORING LOG

Tetra Tech NUS, Inc.

PROJECT NAME: NAS CECIL FIELD
PROJECT NUMBER: N3996
DRILLING COMPANY: Prosonic
DRILLING RIG: Rotasonic

BORING NO.: CEF-076- 1110
DATE: 5/16/03
GEOLOGIST: Mervin Dale
DRILLER: Dan Mitchell

(FT.) Sample No. and Type or RQD Top Depth	Depth (Ft.) or Run No. Bottom	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
106	115				olive gray		clayey fine sand	SC	some shell (~5%)				1.5
115	116				olive gray		clayey fine sand	SC	~5% silica pebbles w/ fossils embedded (pebbles are dark gray).				
116	117				greenish gray		sandy clay *	ML	<15% fine sand				
117	117.5				greenish gray		clayey sand * med to coarse **	SC	~5% re-cemented pebbles (siliceous).				
117.5	119				dark gray		clay *	CH	dense, rollable				
119	126				lt. gray		clay *	CH	dense, rollable				
							EOB @ 126' BLS						

MD

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: * fizzes fishly in HCl. ** grains are subangular

Drilling Area Background (ppm): 1.5

Converted to Well: Yes ~~* MD~~ (No) ~~* MD~~ Well I.D. #: ~~CEF-076-1110~~ MD

CECIL OPS (Nextel)
158* 150927* ___
176 or 162

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NFF, SARA, NASCF
PROJECT NUMBER: N3996
DRILLING COMPANY: ProSonic
DRILLING RIG: Rotosonic

BORING NUMBER: CEF-076-118D
DATE: 7/2/03
GEOLOGIST: SCOTT McGuire
DRILLER: Dan Mitchell

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
				105/108.5			Grayish clayey, silty					0	0
							Sand						
				108.5/110			Greenish Gray clayey sand						
				110/120			Greenish Gray clay						
							with limestone frag						
				120/128			white chalky clay						
				128/130			Greenish, Gray clay						
							with limestone frag						
							EOBe 130 NO						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks:

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No X Well I.D. #: N/A

APPENDIX G

MONITORING WELL CONSTRUCTION SHEETS

Tetra Tech NUS, Inc.

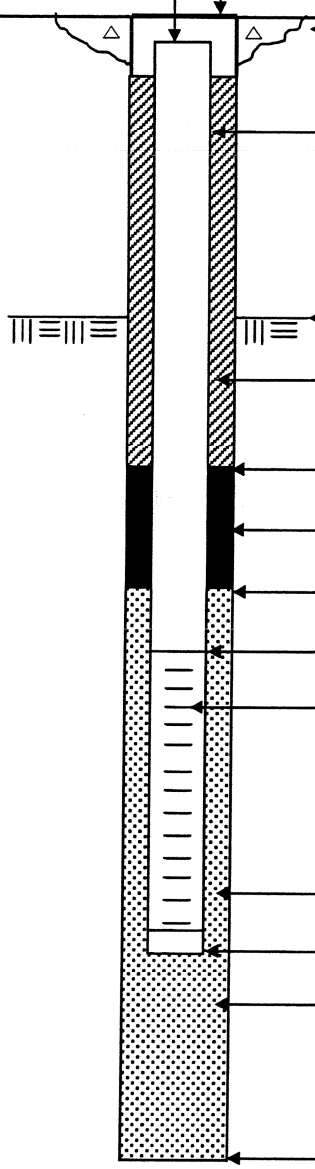
WELL No.: CEF-076-81S

MONITORING WELL SHEET

PROJECT:	NORTH FUEL FARM	DRILLING Co.:	TRANSAMERICA	BORING No.:	CEF-076-81S
PROJECT No.:	N3996	DRILLER:	DAVID HEARNE	DATE COMPLETED:	12-4-01
SITE:	NFF	DRILLING METHOD:	HSA	NORTHING:	
GEOLOGIST:	L. KNIGHT	DEV. METHOD:	PERISTALTIC	EASTING:	

Ground Elevation =

Datum:



Not to Scale

Elevation / Depth of Top of Riser:	/
Elevation / Height of Top of Surface Casing:	/
I.D. of Surface Casing:	8"
Type of Surface Casing:	Steel
Type of Surface Seal:	QUIKRETE CONCRETE
I.D. of Riser:	2"
Type of Riser:	PVC
Borehole Diameter:	8"
Elevation / Depth Top of Rock:	/ N/A
Type of Backfill:	TYPE I PORTLAND CEMENT (QUIKRETE)
Elevation / Depth of Seal:	/ 1.5
Type of Seal:	30/65 Sand
Elevation / Depth of Top of Filter Pack:	/ 2.0
Elevation / Depth of Top of Screen:	/ 3.0
Type of Screen:	PVC
Slot Size x Length:	0.010" x 10'
I.D. of Screen:	2"
Type of Filter Pack:	20/30 SILICA SAND
Elevation / Depth of Bottom of Screen:	/ 13.0
Elevation / Depth of Bottom of Filter Pack:	/ 13.5
Type of Backfill Below Well:	
Elevation / Total Depth of Borehole:	13.5

Tetra Tech NUS, Inc.

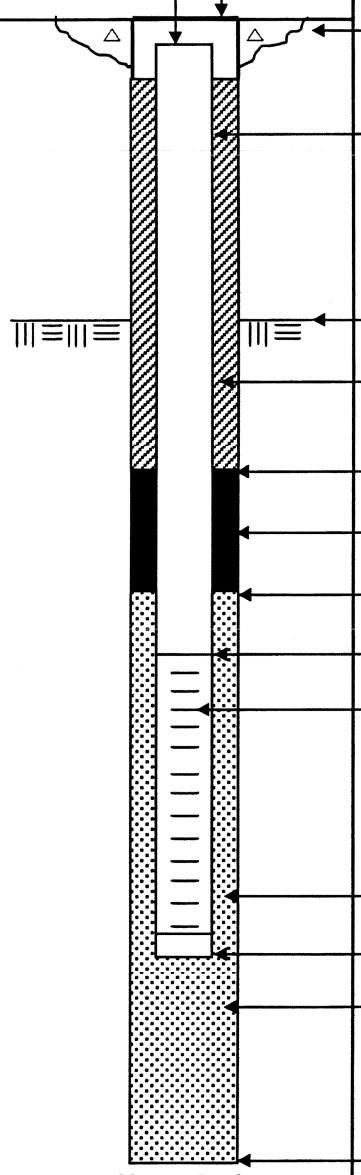
WELL No.: CEF-076-82S

MONITORING WELL SHEET

PROJECT:	NORTH FUEL FARM	DRILLING Co.:	TRANS AMERICA	BORING No.:	CEF-076-82S
PROJECT No.:	N3996	DRILLER:	DAVID HEARNE	DATE COMPLETED:	12-4-01
SITE:	NFF	DRILLING METHOD:	HSA	NORTHING:	
GEOLOGIST:	L. KNIGHT	DEV. METHOD:	PERISTALTIC	EASTING:	

Ground Elevation =

Datum:



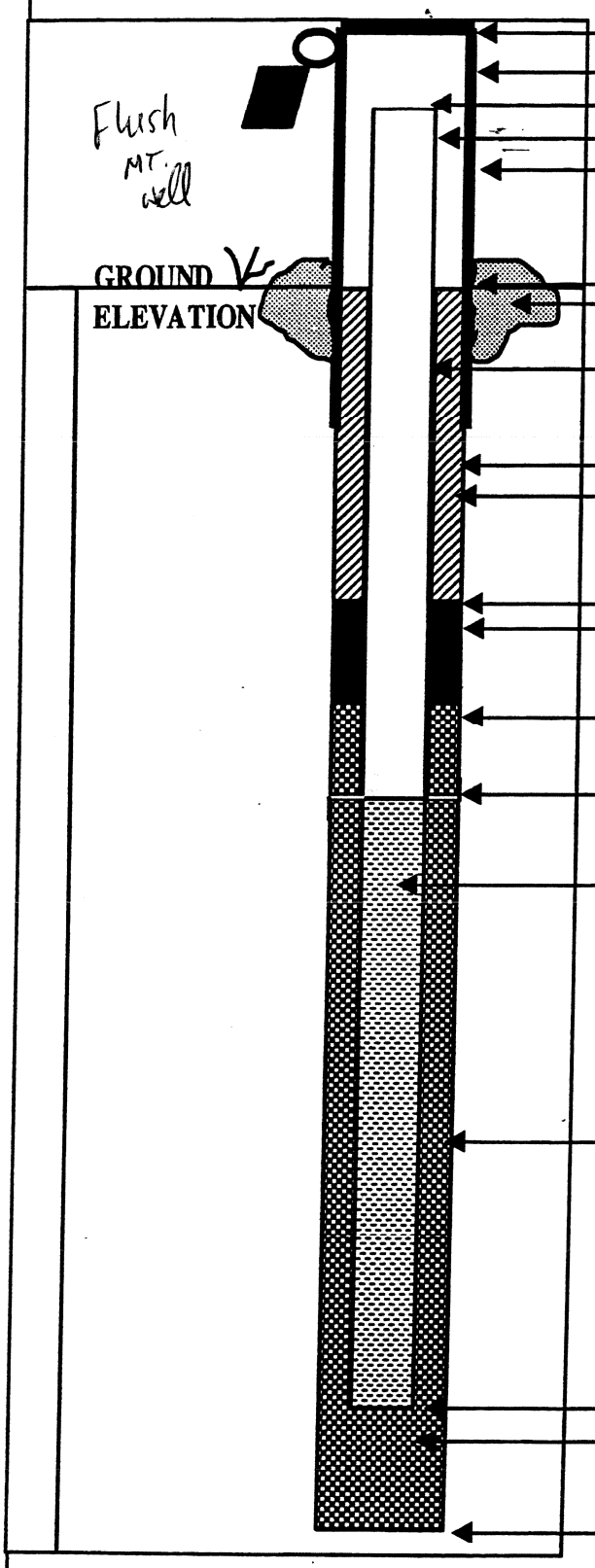
Not to Scale

Elevation / Depth of Top of Riser:	1
Elevation / Height of Top of Surface Casing:	1
I.D. of Surface Casing:	8"
Type of Surface Casing:	Steel
Type of Surface Seal:	QUIKRETE CONCRETE
I.D. of Riser:	2"
Type of Riser:	PVC
Borehole Diameter:	8"
Elevation / Depth Top of Rock:	1 N/A
Type of Backfill:	TYPE I PORTLAND CEMENT (QUIKRETE)
Elevation / Depth of Seal:	11.0
Type of Seal:	30/65 Sand
Elevation / Depth of Top of Filter Pack:	11.5
Elevation / Depth of Top of Screen:	12.5
Type of Screen:	PVC
Slot Size x Length:	0.010" x 10'
I.D. of Screen:	2"
Type of Filter Pack:	20/30 SILICA SAND
Elevation / Depth of Bottom of Screen:	112.5
Elevation / Depth of Bottom of Filter Pack:	113.0
Type of Backfill Below Well:	
Elevation / Total Depth of Borehole:	113.0

BORING NO.: CEF-076-835

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

PROJECT:	NAS Ceal Field	DRILLING Co.:	TransAmerica	BORING No.:	076-835
PROJECT No.:	N3996	DRILLER:	Louis Johnson	DATE COMPLETED:	12/10/02
SITE:	North Fuel Farm	DRILLING METHOD:	Hollow stem	NORTHING:	—
GEOLOGIST:	S. McGuire	DEV. METHOD:	submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 0"

ELEVATION OF TOP OF RISER PIPE: 79.13

RISER STICK-UP ABOVE GROUND SURFACE: 0"

I.D. OF SURFACE CASING: ~~6"~~ 8"

TYPE OF SURFACE CASING: ~~Aluminum~~ Steel, boltdown ~~Hinged Above grade locking cover~~ 8" manhole

GROUND ELEVATION: 79.1

TYPE OF SURFACE SEAL: QUIKRETE (2'x2'x6") pad

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: monoflex, sch 40

BOREHOLE DIAMETER: 8"

TYPE OF SEAL: Portland cement

ELEVATION / DEPTH OF SEAL: 120'

TYPE OF SEAL: 30-65 sand

ELEVATION / DEPTH TOP OF FILTER PACK: 123'

ELEVATION / DEPTH TOP OF SCREEN: 125'

TYPE OF SCREEN: monoflex, sch 40

SLOT SIZE X LENGTH: .010 x 5'

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: 20-30 sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 130'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 130.5'

TYPE OF BACKFILL BELOW WELL: 20-30 sand

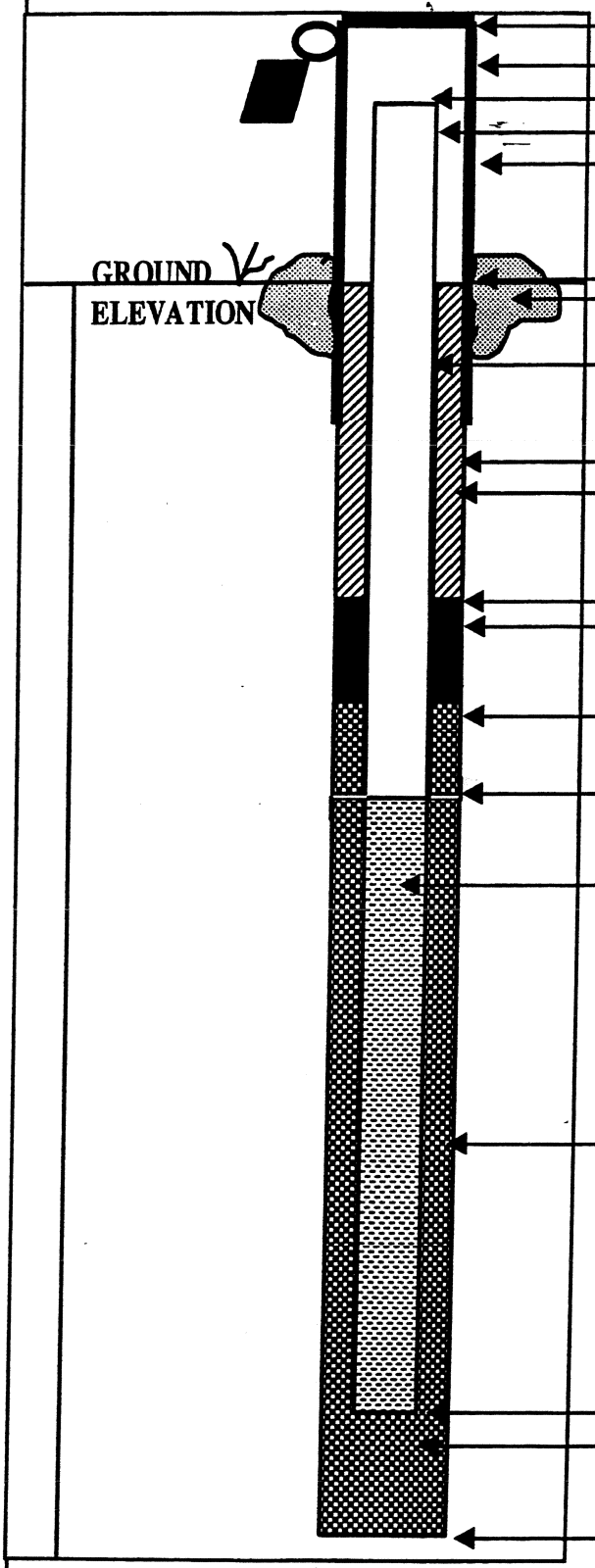
ELEVATION / DEPTH OF BOREHOLE: 130.5'

* Above-grade casing = surface casing

BORING NO. CEF-076-84I

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

PROJECT:	NAS Cecil Field	DRILLING Co.:	TransAmerica	BORING No.:	076-84I
PROJECT No.:	N3996	DRILLER:	Louis Johnson	DATE COMPLETED:	12/11/02
SITE:	North Fuel Farm	DRILLING METHOD:	Hollow stem	NORTHING:	—
GEOLOGIST:	S. McGuire	DEV. METHOD:	Submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 81.62

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum, square hinged, locking cover stickup

GROUND ELEVATION: 78.3

TYPE OF SURFACE SEAL: Quikrete (2'x2'x6") pad

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Monoflex, sch 40

BOREHOLE DIAMETER: 8"

TYPE OF SEAL: Portland Cement

ELEVATION / DEPTH OF SEAL: 150'

TYPE OF SEAL: 30-65 Sand

ELEVATION / DEPTH TOP OF FILTER PACK: 153'

ELEVATION / DEPTH TOP OF SCREEN: 155'

TYPE OF SCREEN: monoflex, sch 40

SLOT SIZE X LENGTH: .010 x 5'

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: 20-30 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 160'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 160.5'

TYPE OF BACKFILL BELOW WELL: 20-30 Sand

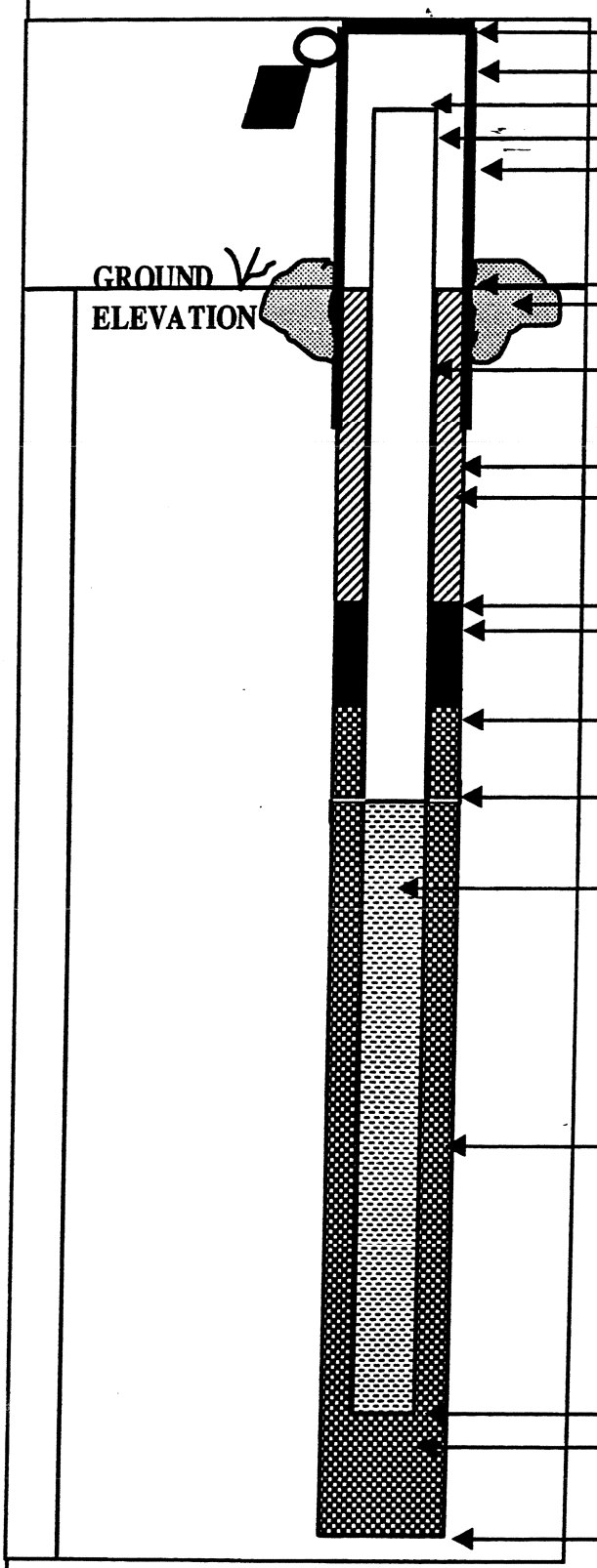
ELEVATION / DEPTH OF BOREHOLE: 160.5'

*Above-grade casing = surface casing

BORING NO.: CEF-076-85I

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

PROJECT:	NAS Cecil Field	DRILLING Co.:	TransAmerica	BORING No.:	076-85I
PROJECT No.:	N3996	DRILLER:	Louis Johnson	DATE COMPLETED:	12/11/02
SITE:	North Fuel Farm	DRILLING METHOD:	Hollow stem	NORTHING:	—
GEOLOGIST:	S. McGuire	DEV. METHOD:	Submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 81.50

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum, hinged lockable

GROUND ELEVATION: 78.2

TYPE OF SURFACE SEAL: QuikRete (2x2'x6") PAD

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: monoflex, sch 40

BOREHOLE DIAMETER: 8"

TYPE OF SEAL: Portland Cement

ELEVATION / DEPTH OF SEAL: 150'

TYPE OF SEAL: 30-65 Sand

ELEVATION / DEPTH TOP OF FILTER PACK: 153'

ELEVATION / DEPTH TOP OF SCREEN: 155'

TYPE OF SCREEN: Monoflex, sch 40

SLOT SIZE X LENGTH: .010 x 5'

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: 20-30 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 160'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 160.5'

TYPE OF BACKFILL BELOW WELL: 20-30 sand

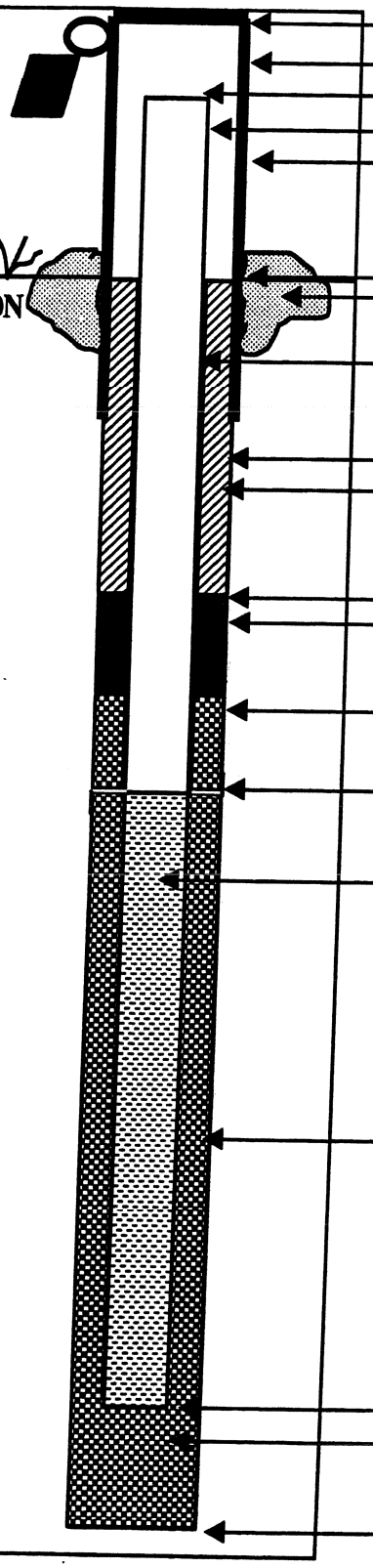
ELEVATION / DEPTH OF BOREHOLE: 160.5'

* Above-grade casing = surface casing

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

BORING NO.: CEF-076-86

PROJECT:	NAS Cecil field	DRILLING Co.:	TransAmerica	BORING No.:	076-86S
PROJECT No.:	N3996	DRILLER:	LJ	DATE COMPLETED:	12/12/02
SITE:	North Fuel Farm	DRILLING METHOD:	Hollow stem	NORTHING:	—
GEOLOGIST:	S. McGuire	DEV. METHOD:	submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 78.35

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum, hinged, lockable

GROUND ELEVATION: 73.3

TYPE OF SURFACE SEAL: Quikrete 2'X2'X6" PAD

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Monoflex, Sch 40

BOREHOLE DIAMETER: 8"

TYPE OF SEAL: Portland Cement

ELEVATION / DEPTH OF SEAL: 140'

TYPE OF SEAL: 30-65 Sand

ELEVATION / DEPTH TOP OF FILTER PACK: 143'

ELEVATION / DEPTH TOP OF SCREEN: 145'

TYPE OF SCREEN: Monoflex, Sch 40

SLOT SIZE X LENGTH: .010 x 5'

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: 20-30 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 150'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 150.5'

TYPE OF BACKFILL BELOW WELL: 20-30 Sand

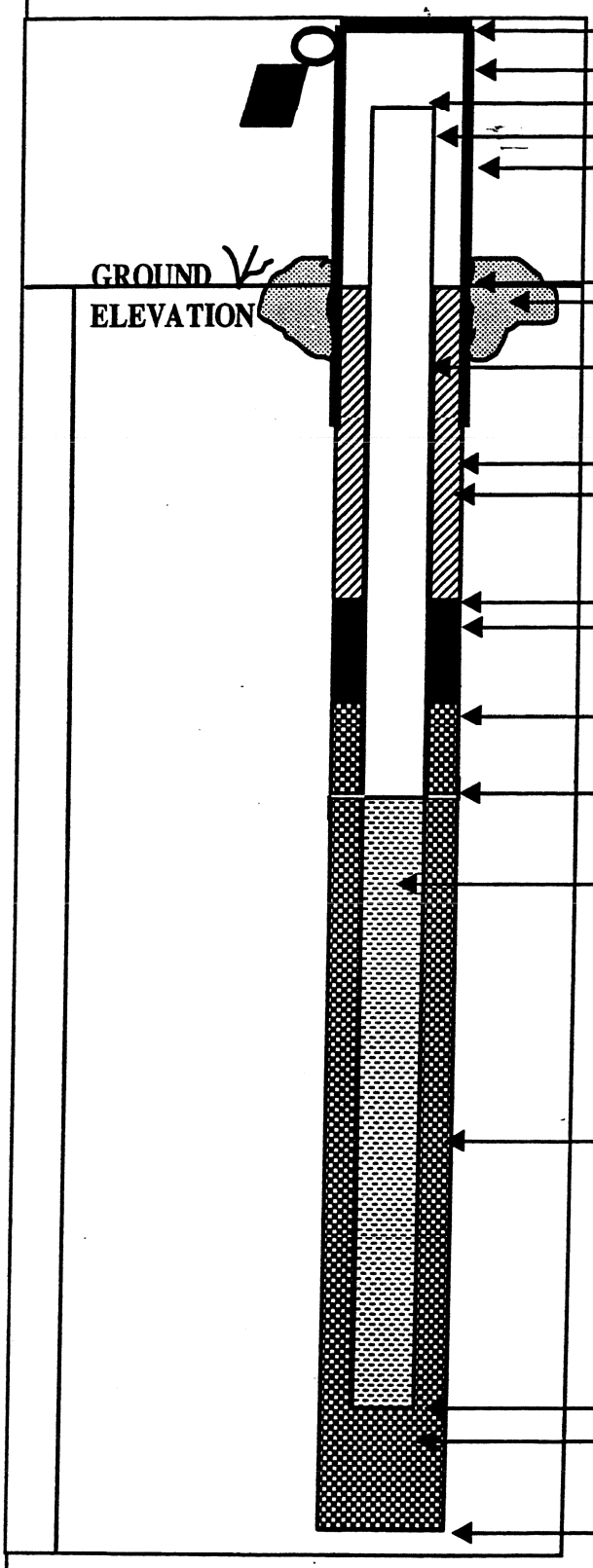
ELEVATION / DEPTH OF BOREHOLE: 150.5'

*Above-grade casing = surface casing

BORING NO.: CEF-076-87S

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

PROJECT:	NAS Cecil Field	DRILLING Co.:	Trans America	BORING No.:	076-87S
PROJECT No.:	N3096	DRILLER:	Louis Johnson	DATE COMPLETED:	12/12/02
SITE:	North Fuel Farm	DRILLING METHOD:	Hollow Stem	NORTHING:	—
GEOLOGIST:	S. McGuire	DEV. METHOD:	submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 81.53

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum, hinged, lockable

GROUND ELEVATION: 78.2

TYPE OF SURFACE SEAL: Quikrete, 2'x2'x6" PAD

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Monoflex, Sch 40

BOREHOLE DIAMETER: 8"

TYPE OF SEAL: Portland Cement

ELEVATION / DEPTH OF SEAL: 140'

TYPE OF SEAL: 30-65 Sand

ELEVATION / DEPTH TOP OF FILTER PACK: 143'

ELEVATION / DEPTH TOP OF SCREEN: 145'

TYPE OF SCREEN: monoflex, sch 40

SLOT SIZE X LENGTH: .010 x 5'

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: 20-30 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 150'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 150.5'

TYPE OF BACKFILL BELOW WELL: 20-30 Sand

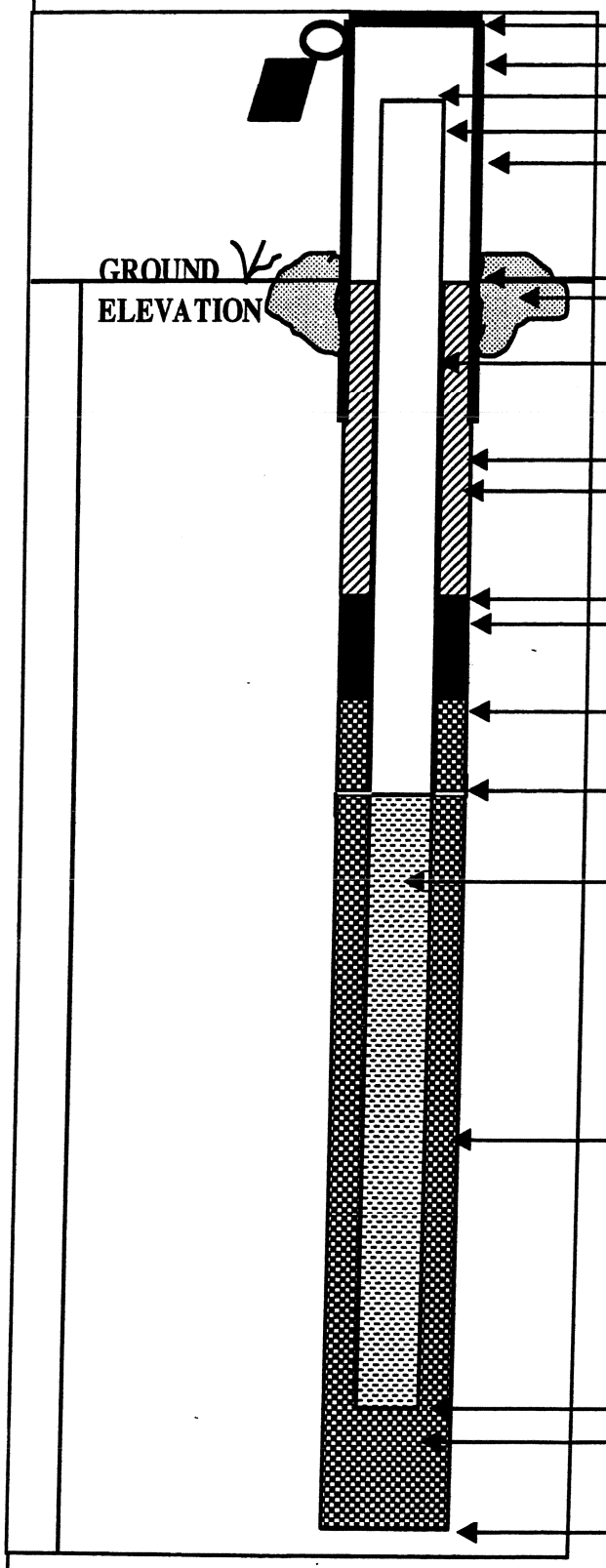
ELEVATION / DEPTH OF BOREHOLE: 150.5'

*Above-grade casing = surface casing

BORING NO.: CEF-076-88

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

PROJECT:	NAS Cecil Field	DRILLING Co.:	TransAmerica	BORING No.:	076-885
PROJECT No.:	N3996	DRILLER:	Louis Johnson	DATE COMPLETED:	12/12/02
SITE:	North Fuel Farm	DRILLING METHOD:	Hollow Stem	NORTHING:	—
GEOLOGIST:	S. McGuire	DEV. METHOD:	submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 78.50

RISER STICK-UP ABOVE GROUND SURFACE: .3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum, hinged, lockable

GROUND ELEVATION: 75.3

TYPE OF SURFACE SEAL: Quikrete 2'x2'x6" PAD

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: PVC, Sch. 40

BOREHOLE DIAMETER: 8"

TYPE OF SEAL: Portland Cement

ELEVATION / DEPTH OF SEAL: 11'

TYPE OF SEAL: 30-65 sand

ELEVATION / DEPTH TOP OF FILTER PACK: 13'

ELEVATION / DEPTH TOP OF SCREEN: 14'

TYPE OF SCREEN: Monoflex, Sch 40

SLOT SIZE X LENGTH: .010 x 10'

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: 20-30 sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 114'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 114.5

TYPE OF BACKFILL BELOW WELL: 20-30 Sand

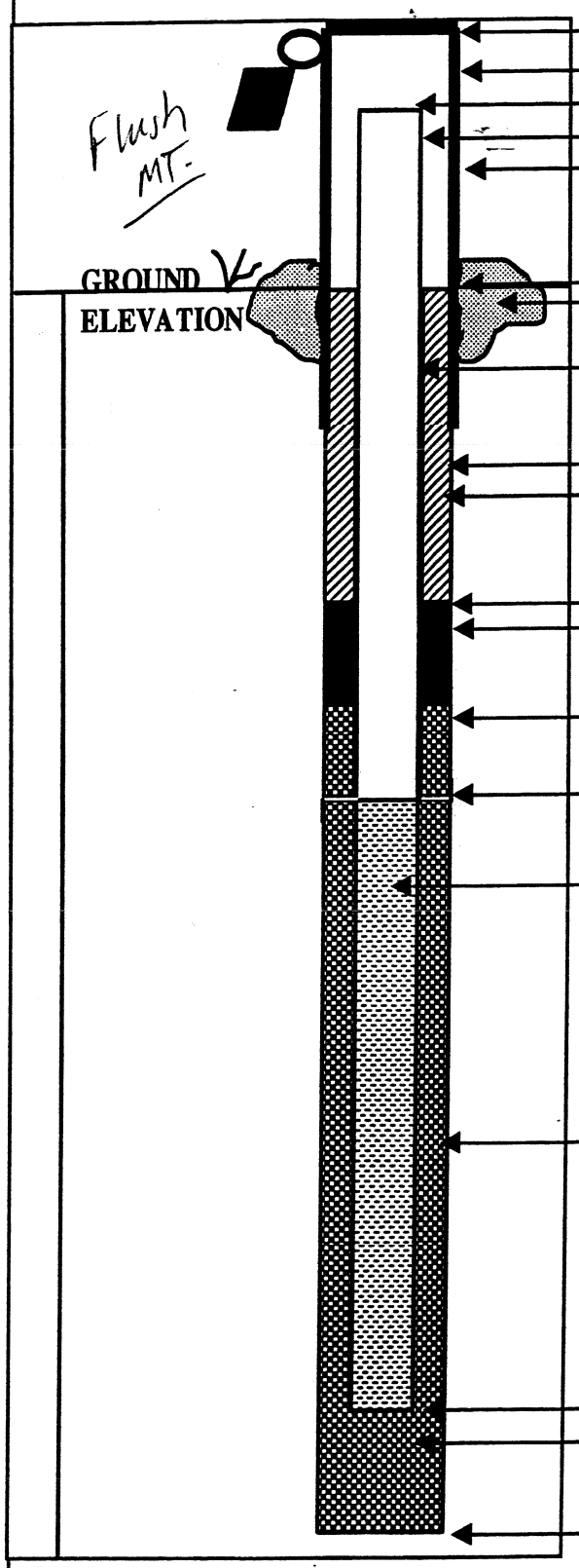
ELEVATION / DEPTH OF BOREHOLE: 114.5

*Above-grade casing = surface casing

BORING NO.: CEF-076-89I

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

PROJECT:	NAS Cecil Field	DRILLING Co.:	Trans America	BORING No.:	076-89I
PROJECT No.:	N3996	DRILLER:	Louis Johnson	DATE COMPLETED:	12/13/02
SITE:	North Fuel Farm	DRILLING METHOD:	Hollow stem	NORTHING:	—
GEOLOGIST:	S. McGuire	DEV. METHOD:	submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 0"

ELEVATION OF TOP OF RISER PIPE: 77.60

RISER STICK-UP ABOVE GROUND SURFACE: 0"

I.D. OF SURFACE CASING: 8"

TYPE OF SURFACE CASING: Steel bolldown manhole

GROUND ELEVATION: 77.7

TYPE OF SURFACE SEAL: Quikrete (2'x2'x6") PAD

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Monoflex, sch 40

BOREHOLE DIAMETER: 8"

TYPE OF SEAL: Portland Cement

ELEVATION / DEPTH OF SEAL: 145'

TYPE OF SEAL: 30-65 Sand

ELEVATION / DEPTH TOP OF FILTER PACK: 148

ELEVATION / DEPTH TOP OF SCREEN: 150'

TYPE OF SCREEN: Monoflex, sch 40

SLOT SIZE X LENGTH: .010 x 5'

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: 20-30 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 155'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 155.5'

TYPE OF BACKFILL BELOW WELL: 20-30 Sand

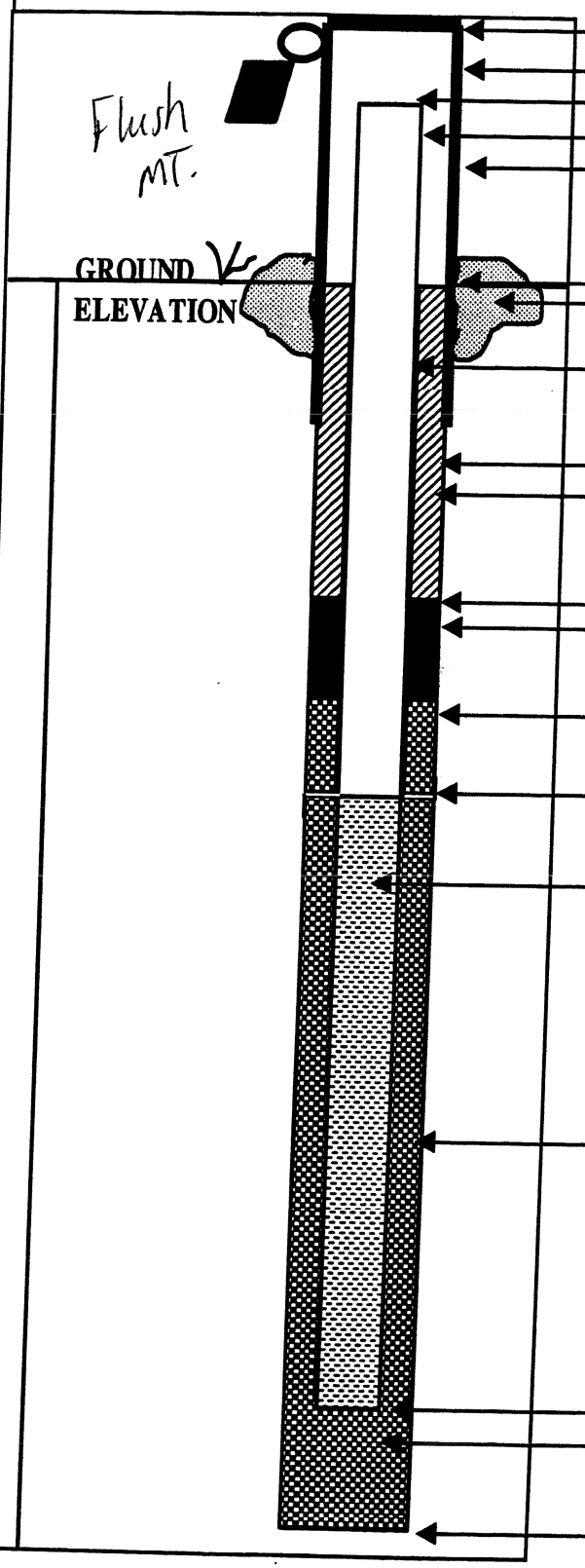
ELEVATION / DEPTH OF BOREHOLE: 155.5'

*Above-grade casing = surface casing

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

BORING NO.: _____

PROJECT:	N3996	DRILLING Co.:	TRANSAMERICAN	BORING No.:	CEF-076-905.
PROJECT No.:	NORTH FUEL FARM	DRILLER:	L. Johnson	DATE COMPLETED:	12-13-02
SITE:	CECIL FIELD	DRILLING METHOD:	HSA	NORTHING:	—
GEOLOGIST:	MERV DALE	DEV. METHOD:	submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 0"

ELEVATION OF TOP OF RISER PIPE: 77.58

RISER STICK-UP ABOVE GROUND SURFACE: 0"

I.D. OF SURFACE CASING: 8"

TYPE OF SURFACE CASING: Steel bolt down Manhole

GROUND ELEVATION: 77.7

TYPE OF SURFACE SEAL: Quickrete, 2'x2'x6" PAD

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Sch. 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF SEAL: Type I Portland Cement

ELEVATION / DEPTH OF SEAL: 12'

TYPE OF SEAL: 30/65 Fine Sand

ELEVATION / DEPTH TOP OF FILTER PACK: 13'

ELEVATION / DEPTH TOP OF SCREEN: 14'

TYPE OF SCREEN: Sch. 40 PVC

SLOT SIZE X LENGTH: 0.010" x 10'

I.D. OF SCREEN: 2 inch

TYPE OF FILTER PACK: 20/30 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 114'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 115'

TYPE OF BACKFILL BELOW WELL: 20/30 Sand

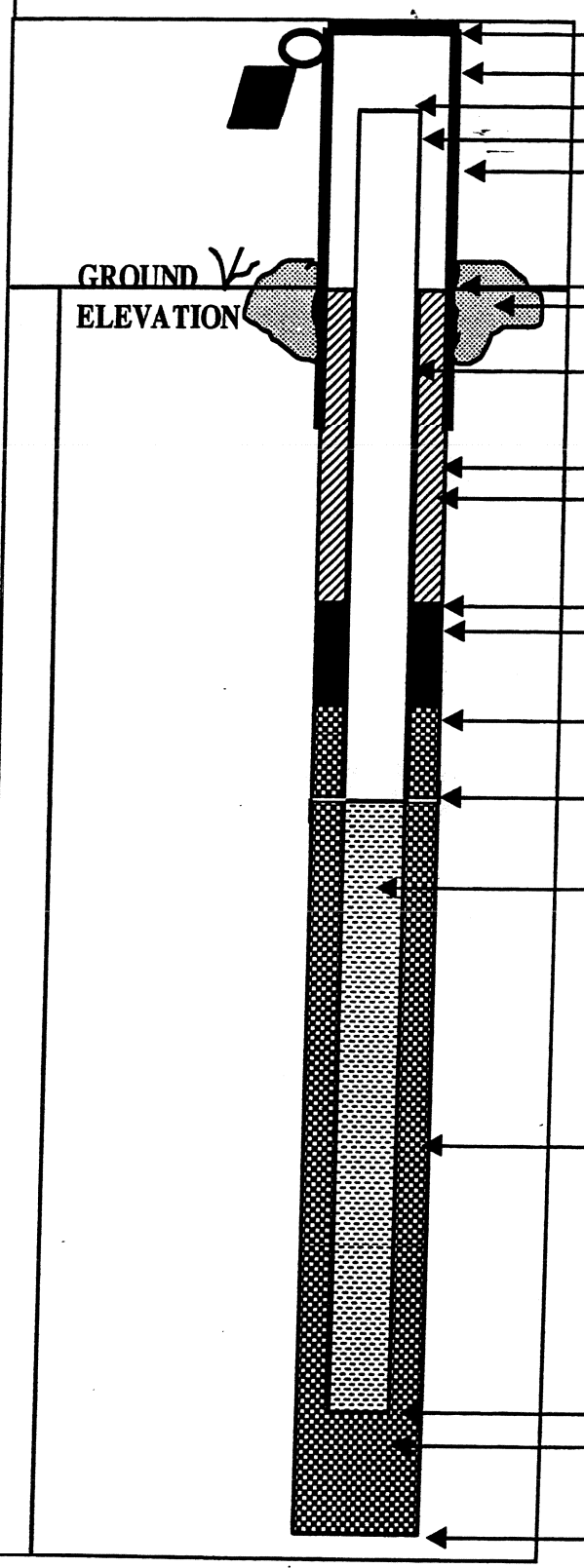
ELEVATION / DEPTH OF BOREHOLE: 115'

*Above-grade casing = surface casing

BORING NO.: CEF-076-915

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

PROJECT:	NAS Cecil Field	DRILLING Co.:	TransAmerica	BORING No.:	076-915
PROJECT No.:	N3996	DRILLER:	Louis Johnson	DATE COMPLETED:	12/13/02
SITE:	North Fuel Farm	DRILLING METHOD:	Hollow Stem	NORTHING:	—
GEOLOGIST:	S. McGuire	DEV. METHOD:	submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 83.21

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum locking, hinged cover

GROUND ELEVATION: 79.4

TYPE OF SURFACE SEAL: QuikCrete 2'x2'x6" PAD

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Monoflex, sch 40

BOREHOLE DIAMETER: 8"

TYPE OF SEAL: Portland Cement

ELEVATION / DEPTH OF SEAL: 120'

TYPE OF SEAL: 30-65 Sand

ELEVATION / DEPTH TOP OF FILTER PACK: 123'

ELEVATION / DEPTH TOP OF SCREEN: 125'

TYPE OF SCREEN: Monoflex, sch 40

SLOT SIZE X LENGTH: .010 x 5'

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: 20-30 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 130'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 130.5'

TYPE OF BACKFILL BELOW WELL: 20-30 Sand

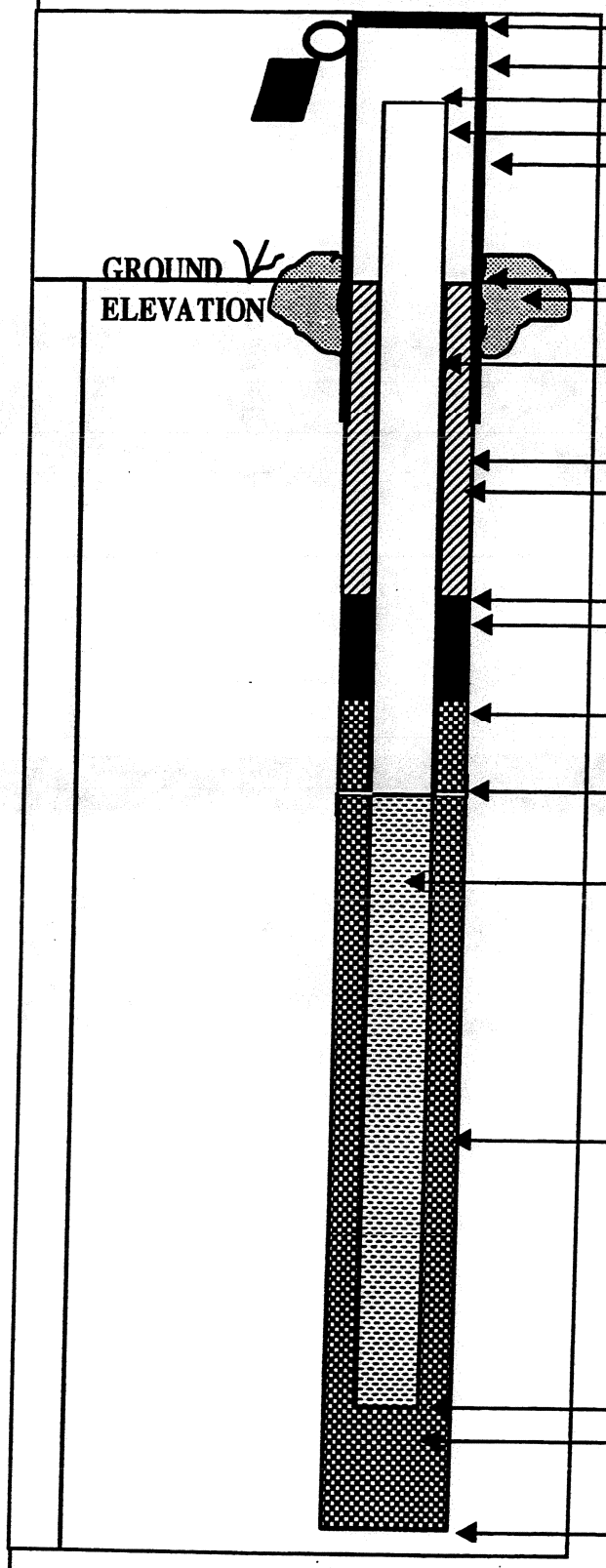
ELEVATION / DEPTH OF BOREHOLE: 130.5'

*Above-grade casing = surface casing

BORING NO.: CEF-076-925

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

PROJECT:	NAS Cecil Field	DRILLING Co.:	TransAmerican	BORING No.:	CEF-076-925
PROJECT No.:	N3996	DRILLER:	Louis Johnson	DATE COMPLETED:	12/16/02
SITE:	North Fuel Farm	DRILLING METHOD:	HSA	NORTHING:	—
GEOLOGIST:	C Gleaton	DEV. METHOD:	submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 81.88

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum hinged, locking

GROUND ELEVATION: 78.7

TYPE OF SURFACE SEAL: QuiKrete 2'X2'X6" PAD

RISER PIPE I.D.: 2 inch

TYPE OF RISER PIPE: Monoflex Sch40

BOREHOLE DIAMETER: 8 inch

TYPE OF SEAL: Portland Cement

ELEVATION / DEPTH OF SEAL: 120ft

TYPE OF SEAL: 30/65 Fine Sand

ELEVATION / DEPTH TOP OF FILTER PACK: 123ft

ELEVATION / DEPTH TOP OF SCREEN: 125ft

TYPE OF SCREEN: Monoflex, Sch40

SLOT SIZE X LENGTH: 0.010 x 5ft

I.D. OF SCREEN: 2 inch

TYPE OF FILTER PACK: 20/30 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 130ft

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 130ft

TYPE OF BACKFILL BELOW WELL:

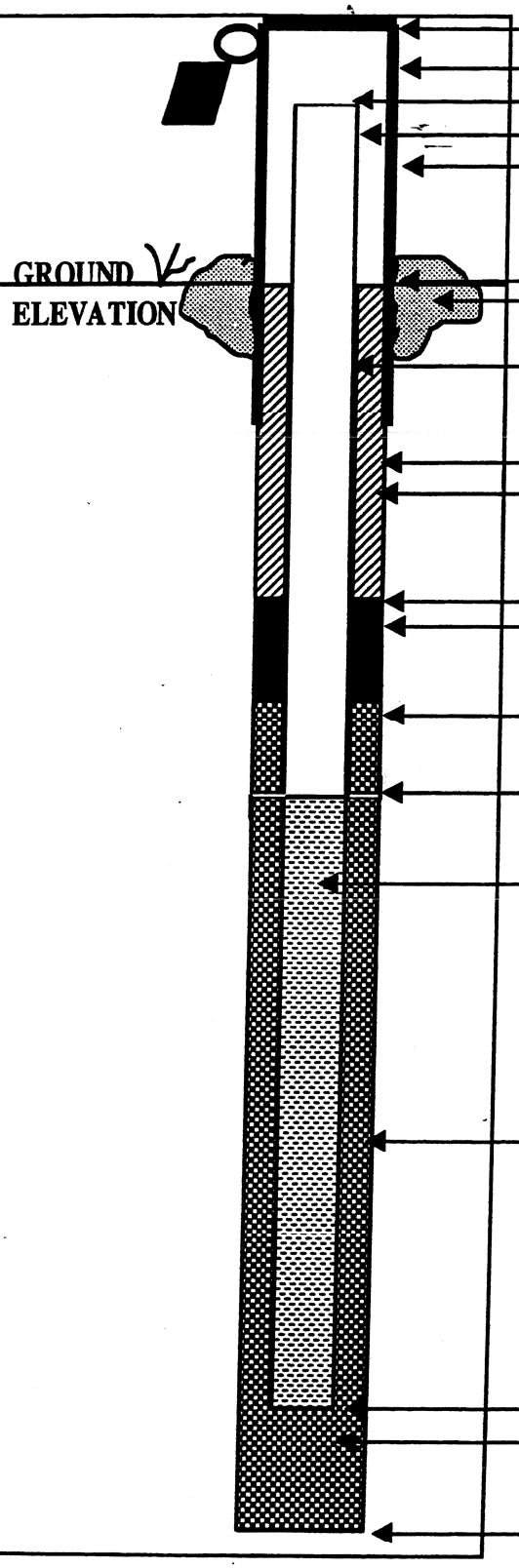
ELEVATION / DEPTH OF BOREHOLE: 130ft

*Above-grade casing = surface casing

BORING NO.: CEF-076-93

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

PROJECT:	NAS Cecil Field	DRILLING Co.:	TransAmerican	BORING No.:	CEF-076-93S
PROJECT No.:	N3996	DRILLER:	Louis Johnson	DATE COMPLETED:	12/16/02
SITE:	North Fuel Farm	DRILLING METHOD:	HSA	NORTHING:	—
GEOLOGIST:	C Gleaton	DEV. METHOD:	submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 81.59

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum, hinged, locking

GROUND ELEVATION: 78.3

TYPE OF SURFACE SEAL: Quikrete 2'x2'x6" PAD

RISER PIPE I.D.: 2 inch

TYPE OF RISER PIPE: Monoflex Sch40

BOREHOLE DIAMETER: 8 inch

TYPE OF SEAL: Portland Cement

ELEVATION / DEPTH OF SEAL: /20ft

TYPE OF SEAL: 30/65 Fine Sand

ELEVATION / DEPTH TOP OF FILTER PACK: /23ft

ELEVATION / DEPTH TOP OF SCREEN: /25ft

TYPE OF SCREEN: Monoflex, Sch40

SLOT SIZE X LENGTH: 0.010 x 5 ft

I.D. OF SCREEN: 2 inch

TYPE OF FILTER PACK: 20/30 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: /30ft

ELEVATION / DEPTH BOTTOM OF FILTER PACK: /30ft

TYPE OF BACKFILL BELOW WELL: 20/30 Sand

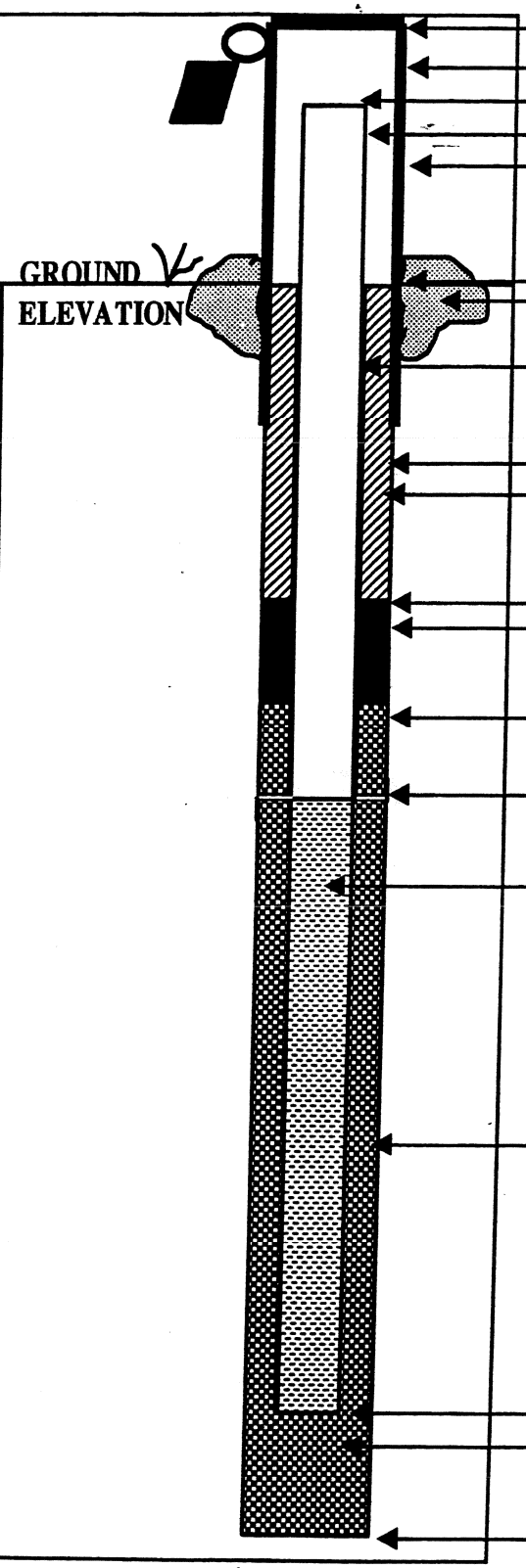
ELEVATION / DEPTH OF BOREHOLE: /30ft

*Above-grade casing = surface casing

BORING NO.: CEF-076-9

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

PROJECT:	NAS Cecil Field	DRILLING Co.:	TransAmerican	BORING No.:	CEF-076-945
PROJECT No.:	N3996	DRILLER:	Louis Johson	DATE COMPLETED:	12/16/02
SITE:	North Fuel Farm	DRILLING METHOD:	HSA	NORTHING:	—
GEOLOGIST:	C Gleaton	DEV. METHOD:	submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 81.59

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum hinged, locking

GROUND ELEVATION: 78.2

TYPE OF SURFACE SEAL: Quickrete 2X2'x6" PAD

RISER PIPE I.D.: 2 inch

TYPE OF RISER PIPE: Monoflex Sch 40

BOREHOLE DIAMETER: 8 inch

TYPE OF SEAL: Portland Cement

ELEVATION / DEPTH OF SEAL: 12ft

TYPE OF SEAL: 30/65 Fine Sand

ELEVATION / DEPTH TOP OF FILTER PACK: 13ft

ELEVATION / DEPTH TOP OF SCREEN: 15ft

TYPE OF SCREEN: Monoflex, Sch 40

SLOT SIZE X LENGTH: 0.010 x 10ft

I.D. OF SCREEN: 2 inch

TYPE OF FILTER PACK: 20/30 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 15ft

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 15ft

TYPE OF BACKFILL BELOW WELL: 20/30 Sand

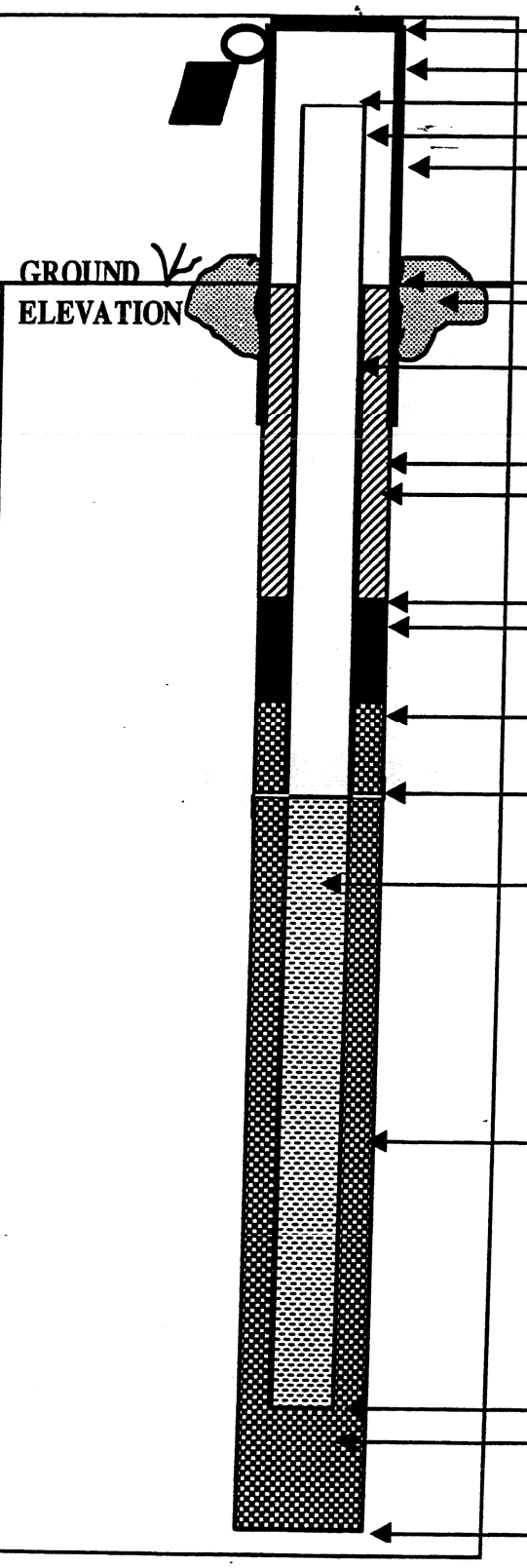
ELEVATION / DEPTH OF BOREHOLE: 15ft

*Above-grade casing = surface casing

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

BORING NO.: CEF-076-9

PROJECT:	NAS Cecil Field	DRILLING Co.:	TransAmerican	BORING No.:	CEF-076-955
PROJECT No.:	N3996	DRILLER:	Louis Johnson	DATE COMPLETED:	12/16/02
SITE:	North Fuel Farm	DRILLING METHOD:	HSA	NORTHING:	—
GEOLOGIST:	C Gleaton	DEV. METHOD:	submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 80.88

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum Hinged locking

GROUND ELEVATION: 77.4

TYPE OF SURFACE SEAL: QuikKrete 2'x2'x6" PAD

RISER PIPE I.D.: 2 inch

TYPE OF RISER PIPE: Monoflex, Sch 40

BOREHOLE DIAMETER: 8 inch

TYPE OF SEAL: Portland Cement

ELEVATION / DEPTH OF SEAL: 2ft/

TYPE OF SEAL: 30/65 Fine Sand

ELEVATION / DEPTH TOP OF FILTER PACK: 3ft/

ELEVATION / DEPTH TOP OF SCREEN: 5ft/

TYPE OF SCREEN: Monoflex, Sch 40

SLOT SIZE X LENGTH: 0.010 x 10ft

I.D. OF SCREEN: 2 inch

TYPE OF FILTER PACK: 20/30 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 15ft/

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 15ft/

TYPE OF BACKFILL BELOW WELL: 20/30 Sand

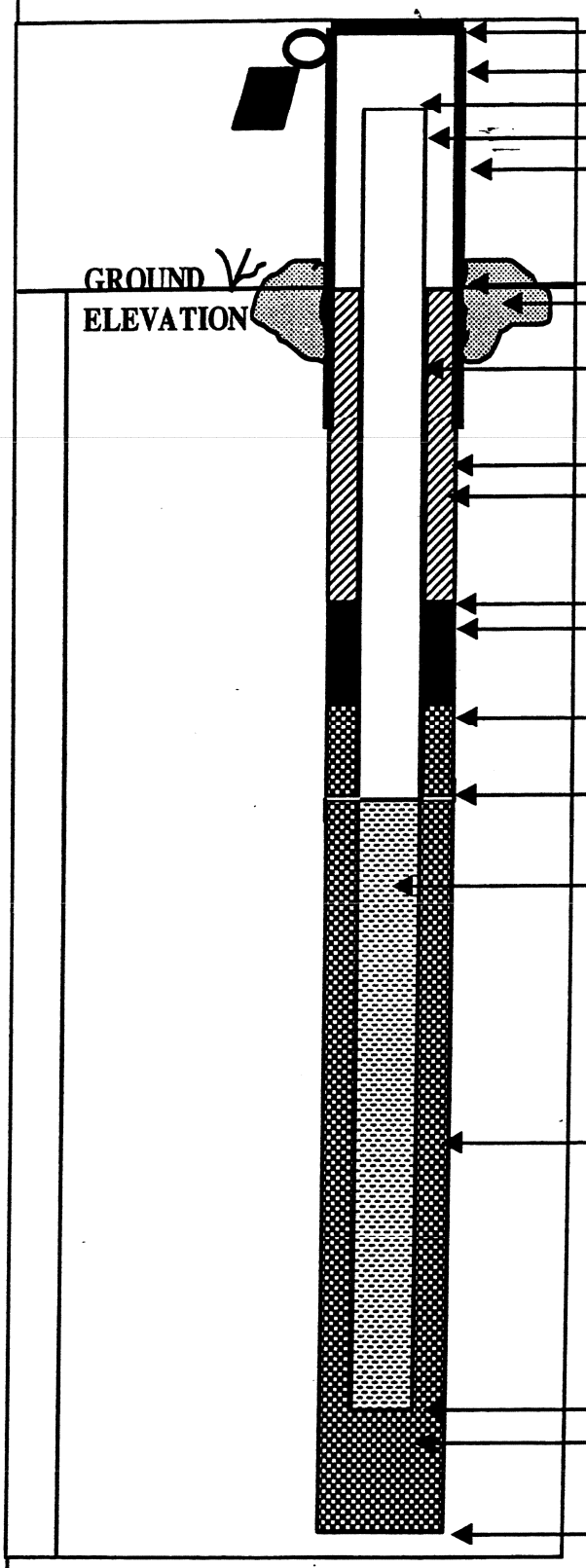
ELEVATION / DEPTH OF BOREHOLE: 15ft/

*Above-grade casing = SURFACE CASING

BORING NO.: CEF-076-96

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

PROJECT:	Cecil Field NAS	DRILLING Co.: Trans American	BORING No.: CEF-076-96D
PROJECT No.:	N3996	DRILLER: Louis Johnson	DATE COMPLETED: 12/18/02
SITE:	North Fuel Farm	DRILLING METHOD: Mud Rotary	NORTHING: —
GEOLOGIST:	C Gleaton	DEV. METHOD: Air bladder pump	EASTING: —



ELEVATION OF TOP OF SURFACE CASING*: N/A

STICK-UP TOP OF SURFACE CASING: N/A

ELEVATION OF TOP OF RISER PIPE: MD ~~N/A~~ 77.51

RISER STICK-UP ABOVE GROUND SURFACE: N/A

I.D. OF SURFACE CASING: ~~N/A~~ 8" MD

TYPE OF SURFACE CASING: Steel boltdown manhole

GROUND ELEVATION: 77.7

TYPE OF SURFACE SEAL: Quikrete 2'x2'x6" PAD

RISER PIPE I.D.: 2 inch

TYPE OF RISER PIPE: Monoflex, Sch 40

BOREHOLE DIAMETER: 6 inch

TYPE OF SEAL: Portland Cement

ELEVATION / DEPTH OF SEAL: 104.51

TYPE OF SEAL: 30/65 Fine Sand

ELEVATION / DEPTH TOP OF FILTER PACK: 107.51

ELEVATION / DEPTH TOP OF SCREEN: 109.51

TYPE OF SCREEN: Monoflex sch 40

SLOT SIZE X LENGTH: 0.010 inch X 5 ft

I.D. OF SCREEN: 2 inch

TYPE OF FILTER PACK: 20/30 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 114.51

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 0.51

TYPE OF BACKFILL BELOW WELL: 20/30 Sand

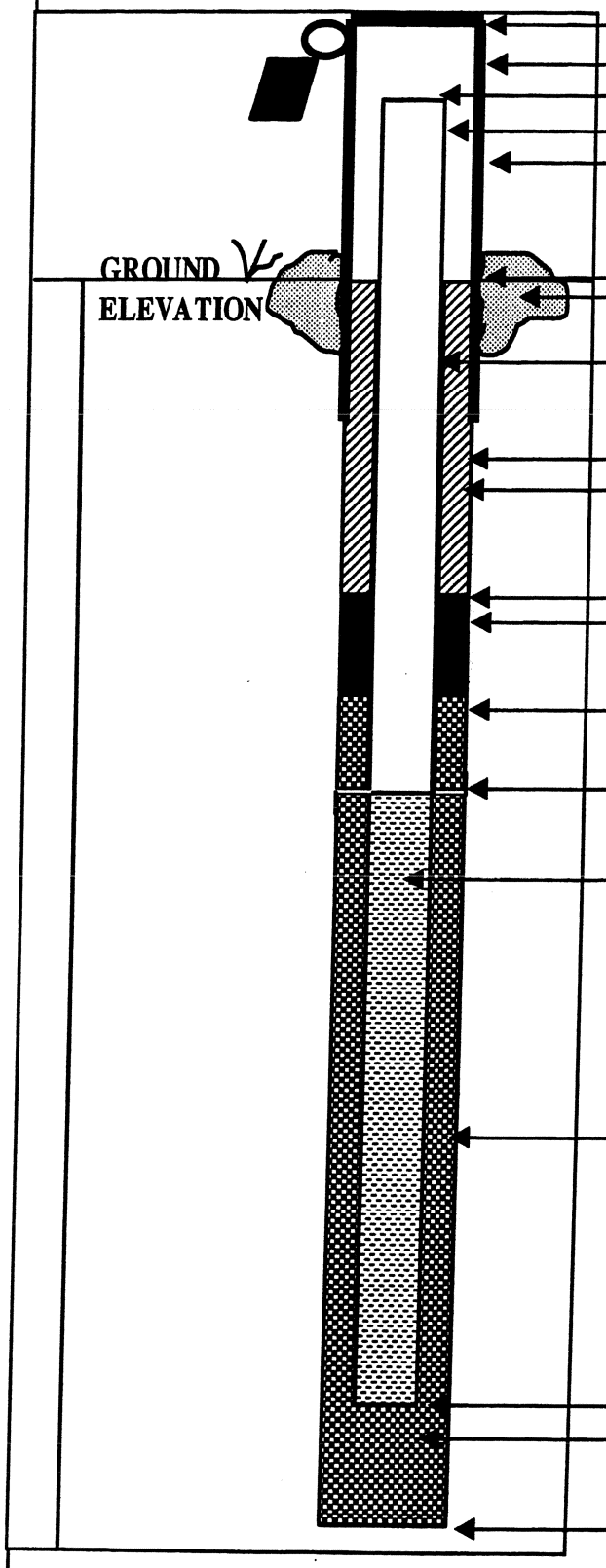
ELEVATION / DEPTH OF BOREHOLE: 115 1

*Above-grade casing = surface casing

BORING NO.: CEF-076-97

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

PROJECT:	NAS Cecil Field	DRILLING Co.:	TransAmerican	BORING No.:	CEF-076-97D
PROJECT No.:	N3996	DRILLER:	Louis Johnson	DATE COMPLETED:	12/19/02
SITE:	North Fuel Farm	DRILLING METHOD:	Mud Rotary	NORTHING:	—
GEOLOGIST:	C Gleaton	DEV. METHOD:	Air bladder pump	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 80.90

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum hinged locking

GROUND ELEVATION: 77.7

TYPE OF SURFACE SEAL: Quikrete 2' x 2' x 6" PAD

RISER PIPE I.D.: 2 inch

TYPE OF RISER PIPE: Monoflex Sch 40

BOREHOLE DIAMETER: 6 inch

TYPE OF SEAL: Portland Cement

ELEVATION / DEPTH OF SEAL: 195

TYPE OF SEAL: 30/65 Fine Sand

ELEVATION / DEPTH TOP OF FILTER PACK: 198

ELEVATION / DEPTH TOP OF SCREEN: 100

TYPE OF SCREEN: Monoflex, Sch 40

SLOT SIZE X LENGTH: 0.010 inch x 5 ft

I.D. OF SCREEN: 2 inch

TYPE OF FILTER PACK: 20/30 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 105

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 105

TYPE OF BACKFILL BELOW WELL: 20/30 Sand

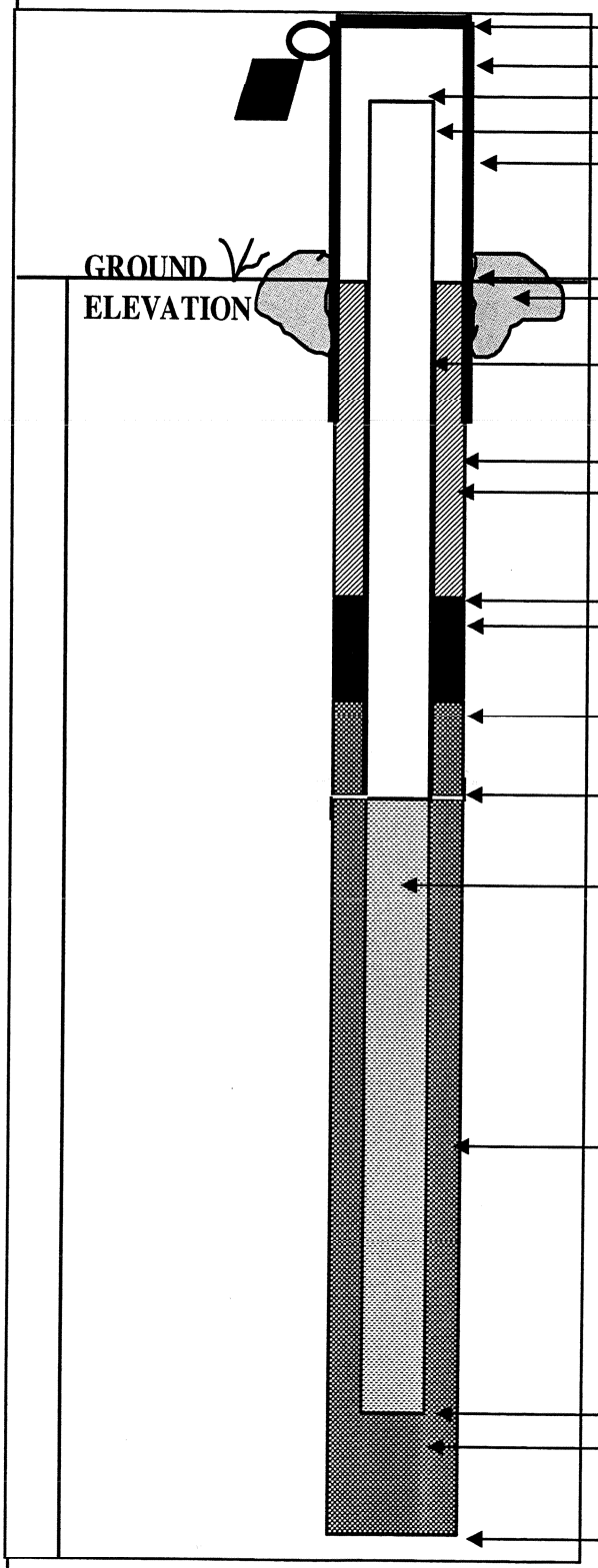
ELEVATION / DEPTH OF BOREHOLE: 105

*Above-grade casing = surface casing

BORING NO.: _____

Tetra Tech NUS, Inc. **OVERBURDEN MONITORING WELL SHEET**

PROJECT:	SARA, NFF, NASCF	DRILLING Co.:	TRANSAMERICAN	BORING No.:	CEF-076-98D
PROJECT No.:	N3996	DRILLER:	Louis JOHNSON	DATE COMPLETED:	12/19/02
SITE:	NORTH FUEL FARM	DRILLING METHOD:	Mud Rotary	NORTHING:	—
GEOLOGIST:	M. DACE	DEV. METHOD:	AIR BLADDER PUMP	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 81.39

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: ALUMINUM Hinged, Locking

GROUND ELEVATION: 78.1

TYPE OF SURFACE SEAL: QuikCrete 2'X2'X6" PAD

RISER PIPE I.D.: 2 INCH

TYPE OF RISER PIPE: MONOFLEX Sch. 40

BOREHOLE DIAMETER: 6 INCH

TYPE OF SEAL: Portland Cement Type I

ELEVATION / DEPTH OF SEAL: 1100'

TYPE OF SEAL: 30/65 FINE SAND

ELEVATION / DEPTH TOP OF FILTER PACK: 1103'

ELEVATION / DEPTH TOP OF SCREEN: 1105'

TYPE OF SCREEN: MONOFLEX, Sch. 40, PVC

SLOT SIZE X LENGTH: 0.010 inch x 5 ft.

I.D. OF SCREEN: 2 INCH

TYPE OF FILTER PACK: 20/30 SAND

ELEVATION / DEPTH BOTTOM OF SCREEN: 1110'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 1110'

TYPE OF BACKFILL BELOW WELL: 20/30 SAND

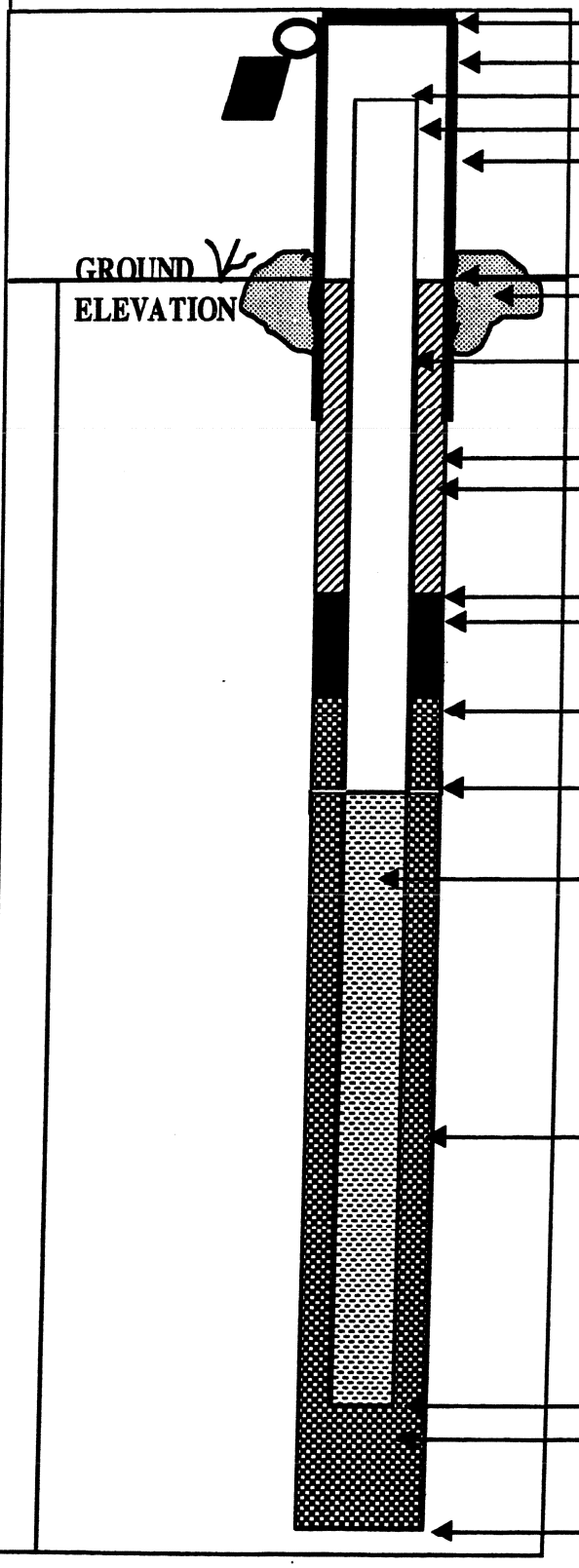
ELEVATION / DEPTH OF BOREHOLE: 1110'

* Above-grade casing = surface casing

BORING NO.: CEF-076-99D

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

PROJECT:	North Fuel Farm	DRILLING Co.:	TransAmerican	BORING No.:	076-99D
PROJECT No.:	N3996	DRILLER:	L. Johnson	DATE COMPLETED:	1/6/03
SITE:	NFF	DRILLING METHOD:	M. Rotary	NORTHING:	—
GEOLOGIST:	Scott McGuire	DEV. METHOD:	Air bladder pump	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 81.69

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum hinged locking

GROUND ELEVATION: 78.1

TYPE OF SURFACE SEAL: QuikCrete 2'X2'X6" PAD

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 8"

TYPE OF SEAL: Portland Cement

ELEVATION / DEPTH OF SEAL: 190'

TYPE OF SEAL: 30-65 sand

ELEVATION / DEPTH TOP OF FILTER PACK: 193'

ELEVATION / DEPTH TOP OF SCREEN: 195'

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 0.10

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: 20-30 sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 100'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 100.5'

TYPE OF BACKFILL BELOW WELL: 20-30 sand

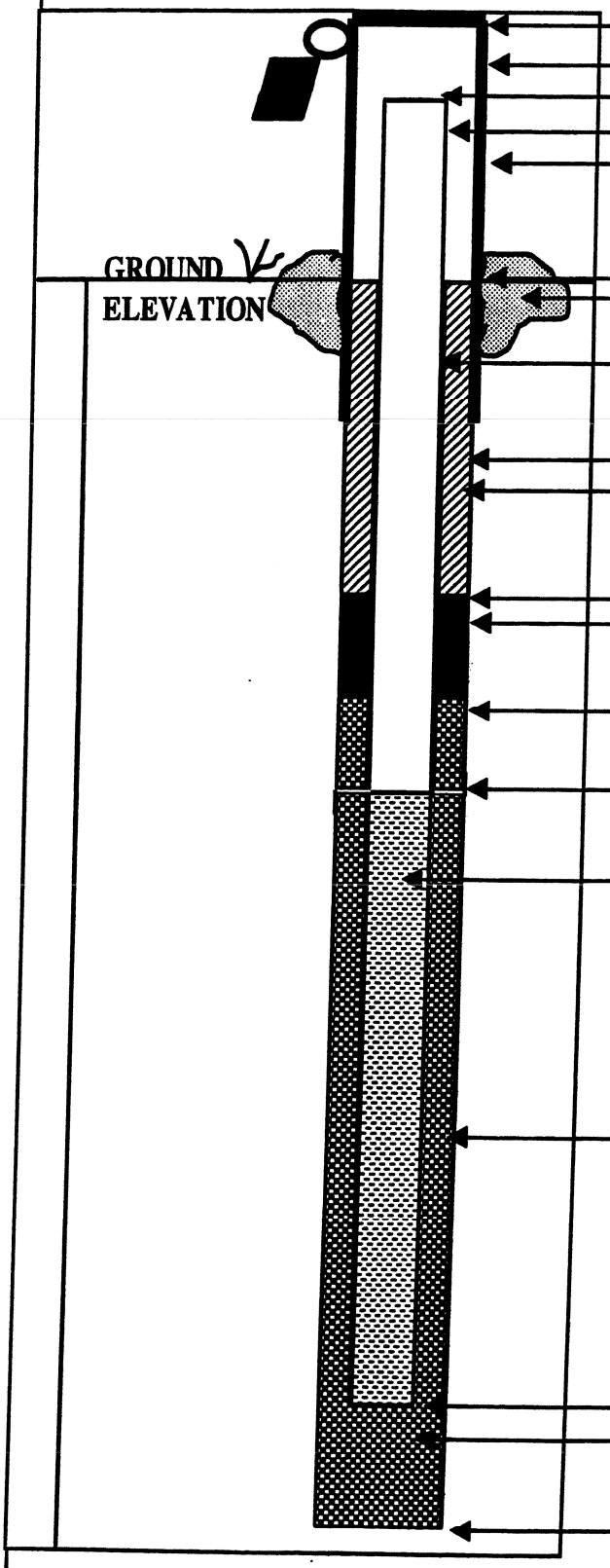
ELEVATION / DEPTH OF BOREHOLE: 100.5'

*Above-grade casing = surface casing

BORING NO.: CEF-07G-100D

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

PROJECT:	SARA, NFF, NASCF	DRILLING Co.:	TransAmerican	BORING No.:	07G-100D
PROJECT No.:	N3996	DRILLER:	L. Johnson	DATE COMPLETED:	1/8/03
SITE:	North Fuel Farm	DRILLING METHOD:	M. Rotary	NORTHING:	—
GEOLOGIST:	Scott McGuire	DEV. METHOD:	air bladder pump	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING:* —

STICK-UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 80.15

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum hinged, locking

GROUND ELEVATION: 76.9

TYPE OF SURFACE SEAL: Quikrete 2'x2'x6" PAD

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 8"

TYPE OF SEAL: Portland cement

ELEVATION / DEPTH OF SEAL: 1105'

TYPE OF SEAL: 30-65 sand

ELEVATION / DEPTH TOP OF FILTER PACK: 1108'

ELEVATION / DEPTH TOP OF SCREEN: 1110'

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 0.10

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: 20-30 sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 1115'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 1115.5'

TYPE OF BACKFILL BELOW WELL: 20-30 sand

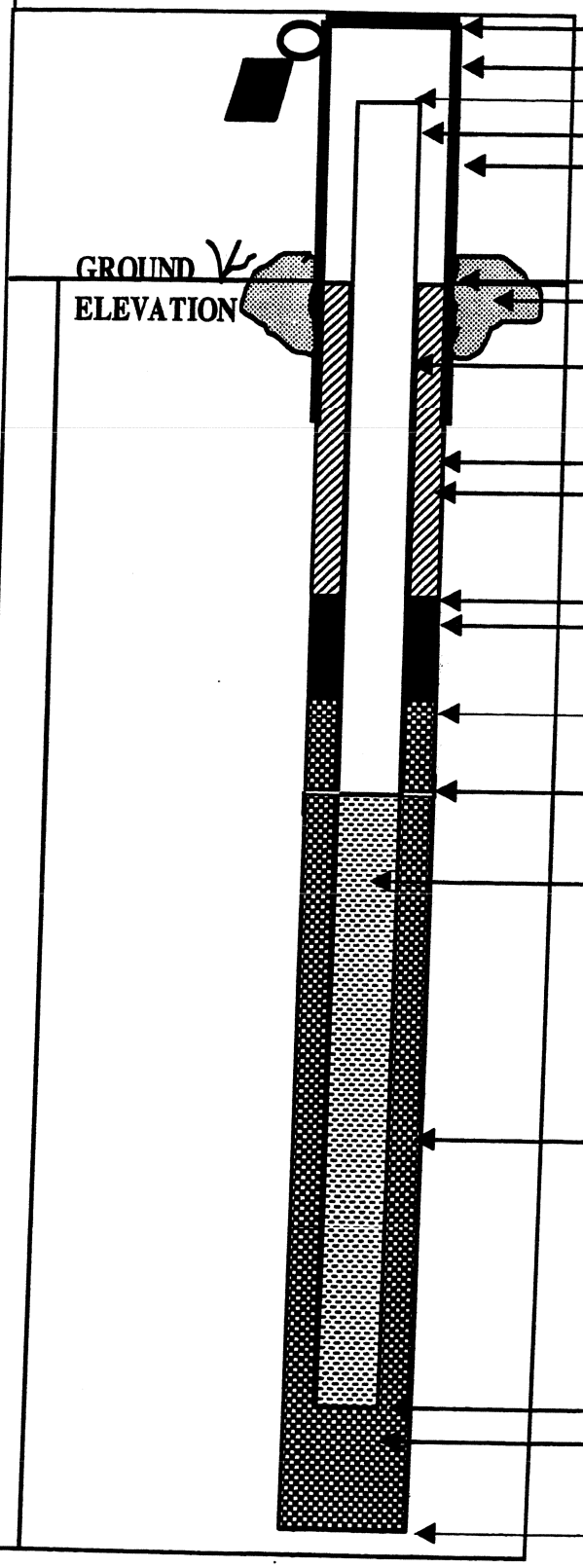
ELEVATION / DEPTH OF BOREHOLE: 1115.5'

*Above-grade casing = surface casing

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

BORING NO.: CEF-076-101

PROJECT:	SARA, NFF, NASCE	DRILLING Co.:	TransAmerican	BORING No.:	076-101S
PROJECT No.:	N3996	DRILLER:	USA L. Johnson	DATE COMPLETED:	1/8/03
SITE:	North Fuel Farm	DRILLING METHOD:	~~M. Rotary~~	NORTHING:	—
GEOLOGIST:	Scott McGuire	DEV. METHOD:	submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 77.64

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum hinged, locking

GROUND ELEVATION: 74.4

TYPE OF SURFACE SEAL: Quikrete 2'x2'x6" PAD

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 8"

TYPE OF SEAL: Portland cement

ELEVATION / DEPTH OF SEAL: 125'

TYPE OF SEAL: 30-65 sand

ELEVATION / DEPTH TOP OF FILTER PACK: 128'

ELEVATION / DEPTH TOP OF SCREEN: 130'

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 0.10

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: 20-30 sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 135'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 135.5

TYPE OF BACKFILL BELOW WELL: 20-30 Sand

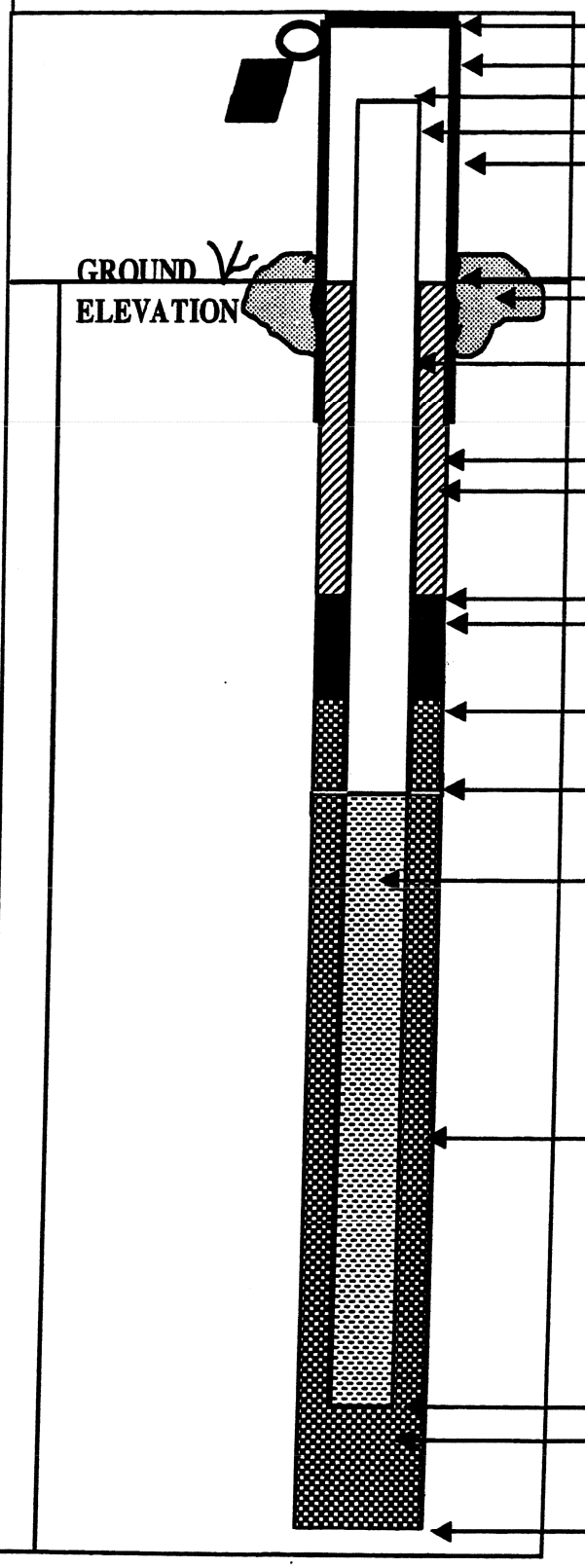
ELEVATION / DEPTH OF BOREHOLE: 135.5

*Above-grade casing = surface casing

BORING NO.: CEF-076-102

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

PROJECT:	SARA, NFF, NASCF	DRILLING Co.:	Trans American	BORING No.:	076-102D
PROJECT No.:	N3996	DRILLER:	L Johnson	DATE COMPLETED:	1/9/03
SITE:	North Fuel Farm	DRILLING METHOD:	M: Rotary	NORTHING:	—
GEOLOGIST:	Scott McGuire	DEV. METHOD:	air bladder pump	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 78.55

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum hinged, locking

GROUND ELEVATION: 75.2

TYPE OF SURFACE SEAL: Quikrete 2'X2'X6" PAD

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 8"

TYPE OF SEAL: Portland Cement

ELEVATION / DEPTH OF SEAL: 111'

TYPE OF SEAL: 30-65 Sand

ELEVATION / DEPTH TOP OF FILTER PACK: 114'

ELEVATION / DEPTH TOP OF SCREEN: 116'

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 0.10

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: 20-30 sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 121'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 121.5'

TYPE OF BACKFILL BELOW WELL: 20-30 sand

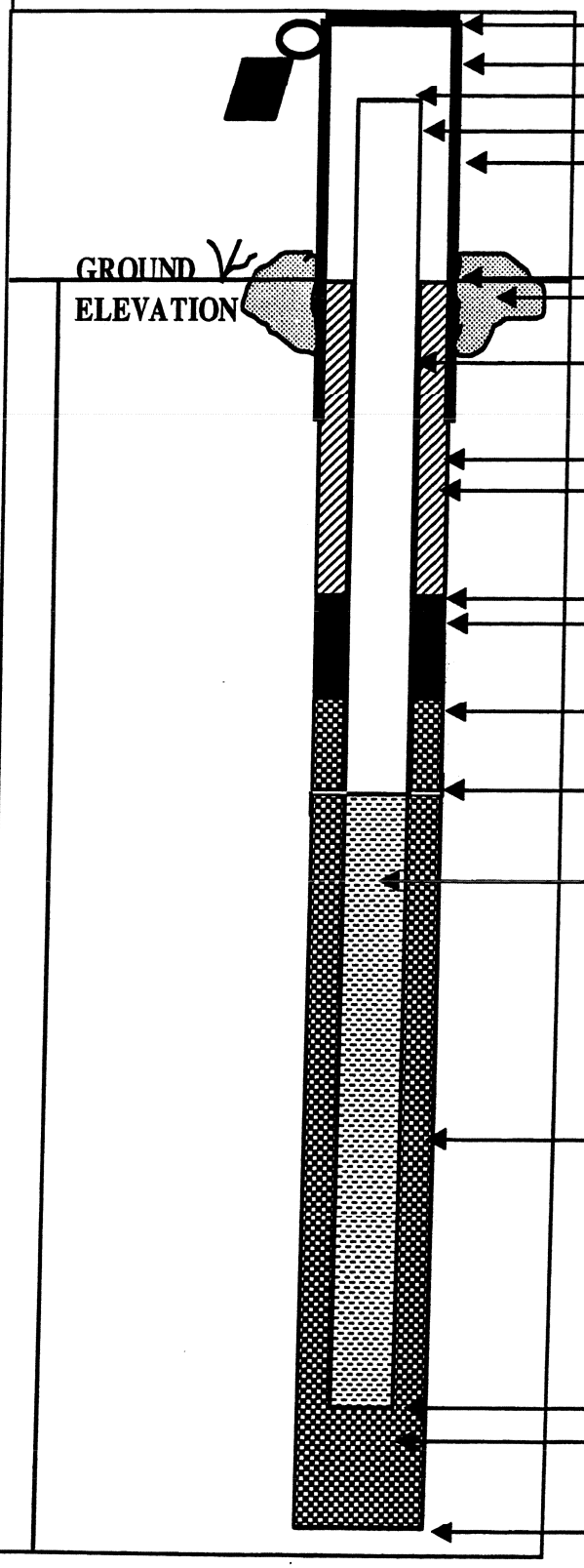
ELEVATION / DEPTH OF BOREHOLE: 121.5

*Above-grade casing = surface casing

BORING NO.: CEF-076-103D

Tetra Tech NUS, Inc. **OVERBURDEN* MONITORING WELL SHEET**

PROJECT:	SARA, NEF, NASCF	DRILLING Co.:	TransAmerican	BORING No.:	076-103D
PROJECT No.:	N3996	DRILLER:	L Johnson	DATE COMPLETED:	1/21/03
SITE:	North Pine Farm	DRILLING METHOD:	M. Rotary	NORTHING:	—
GEOLOGIST:	SCOTT McGuire	DEV. METHOD:	AIR BLADDER pump	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING*: —

STICK-UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 78.39

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum hinged, locking

GROUND ELEVATION: 75.0

TYPE OF SURFACE SEAL: QuiKrete 2'x2'x6" PAD

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 8"

TYPE OF SEAL: Portland Cement

ELEVATION / DEPTH OF SEAL: 139'

TYPE OF SEAL: 30-65 Sand

ELEVATION / DEPTH TOP OF FILTER PACK: 142'

ELEVATION / DEPTH TOP OF SCREEN: 144'

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 0.10

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: 20-30 sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 149'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 149.5

TYPE OF BACKFILL BELOW WELL: 20-30 sand

ELEVATION / DEPTH OF BOREHOLE: 149.5

*Above-grade casing = surface casing

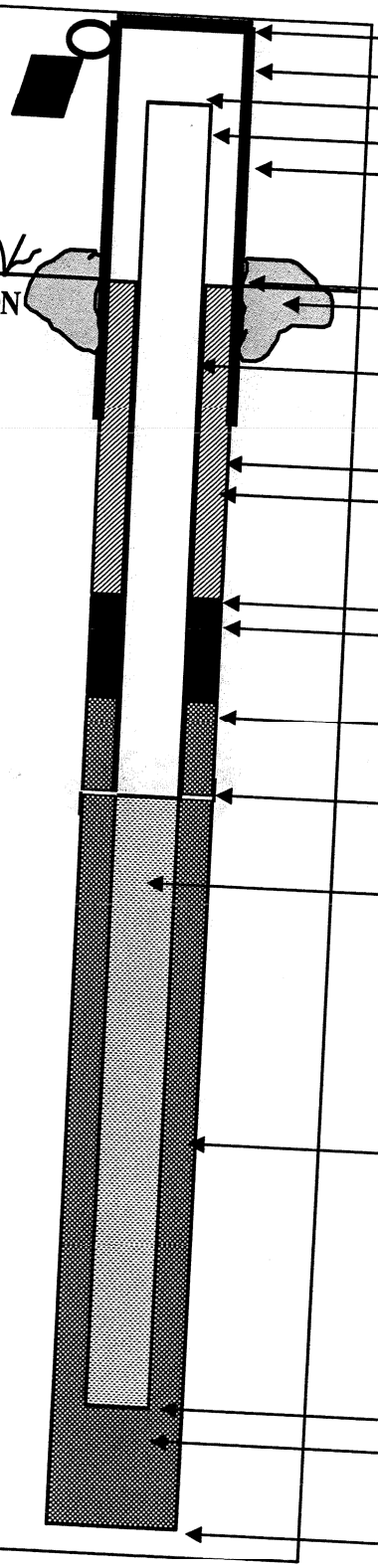
Tetra Tech NUS, Inc. **OVERBURDEN MONITORING WELL SHEET**

BORING NO.: 104D

PROJECT: NFF SARA INVESTIGATION
PROJECT No.: N3996, CTO 168
SITE: NORTH FUEL FARM
GEOLOGIST: MELV DALE

DRILLING Co.: PROSONIC
DRILLER: D. Mitchell
DRILLING METHOD: Rotasonic
DEV. METHOD: air bladder pump

BORING No.: 104D
DATE COMPLETED: 5/14/03
NORTHING: —
EASTING: —



ELEVATION OF TOP OF SURFACE CASING: —
STICK -UP TOP OF SURFACE CASING: 3.5'
ELEVATION OF TOP OF RISER PIPE: 79.08
RISER STICK-UP ABOVE GROUND SURFACE: 3.5'
I.D. OF SURFACE CASING: 6"
TYPE OF SURFACE CASING: Aluminum Hinged, locking
GROUND ELEVATION: 75.3
TYPE OF SURFACE SEAL: Quikrete 2'x2'x6" PAD
RISER PIPE I.D.: 2 inch
TYPE OF RISER PIPE: Sch. 40 PVC
BOREHOLE DIAMETER: 6 inch
TYPE OF SEAL: Type I Portland Cement
ELEVATION / DEPTH OF SEAL: 1103'
TYPE OF SEAL: 30/65 FINE SAND
ELEVATION / DEPTH TOP OF FILTER PACK: 1107'
ELEVATION / DEPTH TOP OF SCREEN: 1110'
TYPE OF SCREEN: Sch. 40 PVC
SLOT SIZE X LENGTH: 0.010" x 5'
I.D. OF SCREEN: 2 inch
TYPE OF FILTER PACK: 20/30 Sand
ELEVATION / DEPTH BOTTOM OF SCREEN: 1115'
ELEVATION / DEPTH BOTTOM OF FILTER PACK: 1116.5'
TYPE OF BACKFILL BELOW WELL: 20/30 SAND
ELEVATION / DEPTH OF BOREHOLE: 1118'

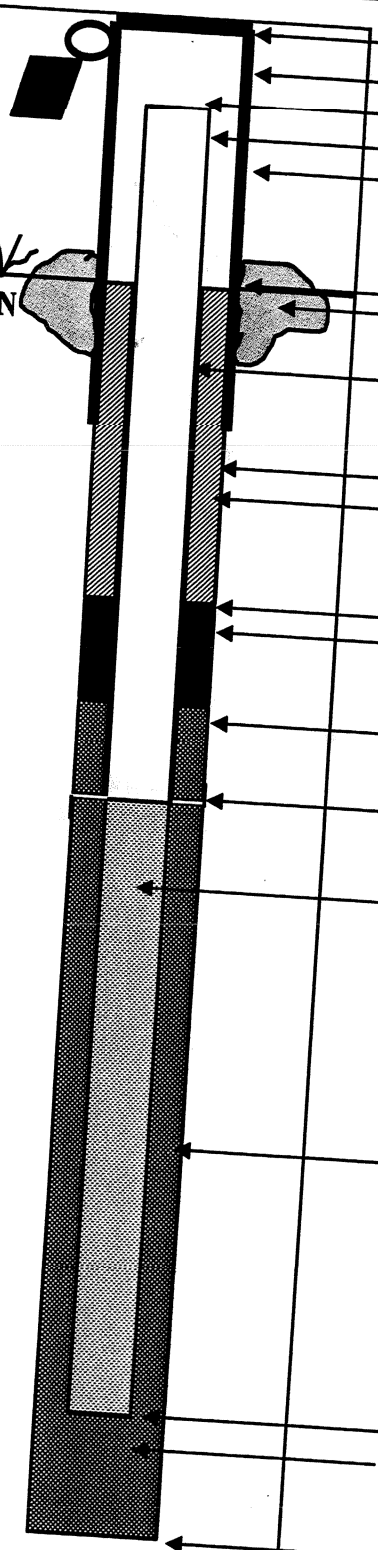
Tetra Tech NUS, Inc. **OVERBURDEN MONITORING WELL SHEET**

BORING NO.: CEF-076-

PROJECT: NFF SARA INVESTIGATION
PROJECT No.: N3996
SITE: North Fuel Farm
GEOLOGIST: MERV DALE

DRILLING Co.: PROSONIC
DRILLER: D. Mitchell
DRILLING METHOD: Rotosonic
DEV. METHOD: ~~AIR BLADDER~~ Submersible PUMP MD

BORING No.: CEF-076-105
DATE COMPLETED: 5/15/03
NORTHING:
EASTING:

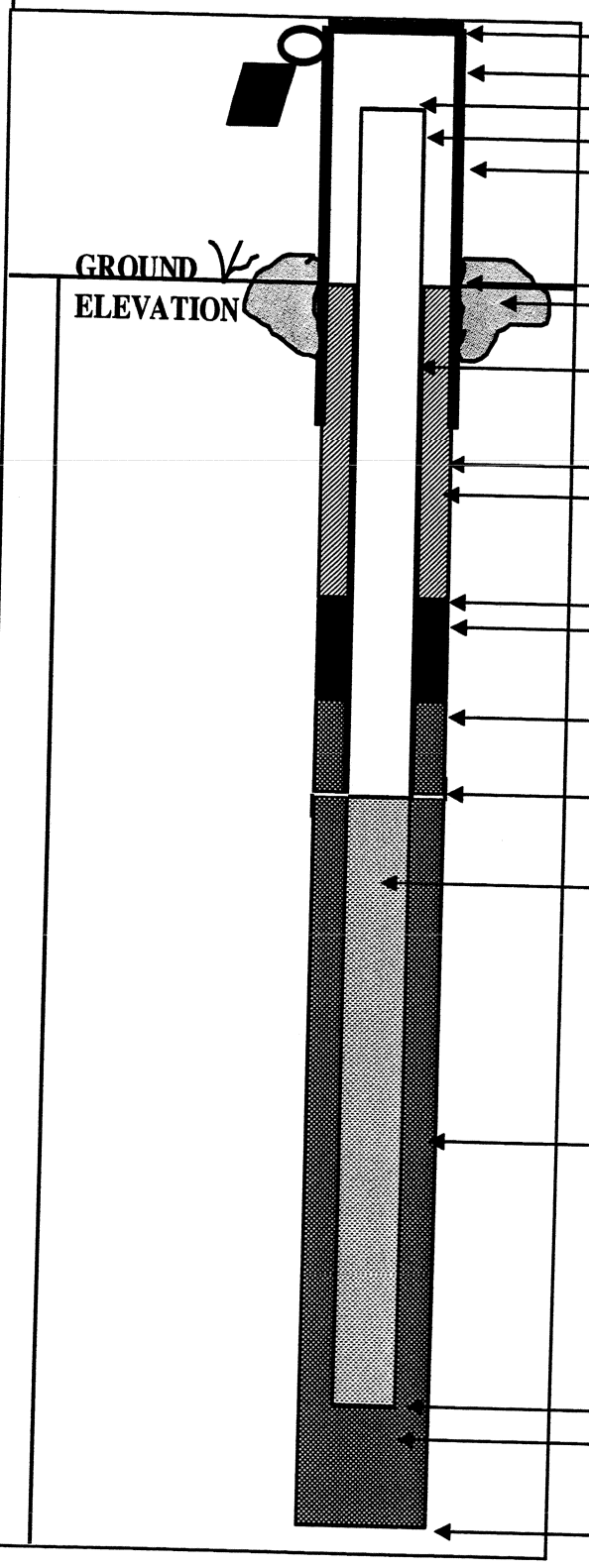


ELEVATION OF TOP OF SURFACE CASING: —
STICK -UP TOP OF SURFACE CASING: 3'
ELEVATION OF TOP OF RISER PIPE: 78.15
RISER STICK-UP ABOVE GROUND SURFACE: 3'
I.D. OF SURFACE CASING: 26"
TYPE OF SURFACE CASING: Aluminum Hinged, Locking
GROUND ELEVATION: 74.8
TYPE OF SURFACE SEAL: Quikrete 2X2'X6" PAD
RISER PIPE I.D.: 2 INCH
TYPE OF RISER PIPE: Sch. 40 PVC, Flush thread
BOREHOLE DIAMETER: 7 inch
TYPE OF SEAL: 3 Type I Portland Cement
ELEVATION / DEPTH OF SEAL: 138.5
TYPE OF SEAL: 30/65 Fine Sand
ELEVATION / DEPTH TOP OF FILTER PACK: 142.5'
ELEVATION / DEPTH TOP OF SCREEN: 145'
TYPE OF SCREEN: Sch. 40 PVC, flush thread
SLOT SIZE X LENGTH: 0.010 in x 5ft.
I.D. OF SCREEN: 2 inch
TYPE OF FILTER PACK: 20/30 Sand
ELEVATION / DEPTH BOTTOM OF SCREEN: 150'
ELEVATION / DEPTH BOTTOM OF FILTER PACK: 150' MD
TYPE OF BACKFILL BELOW WELL: Native material - silty fine sand.
ELEVATION / DEPTH OF BOREHOLE: 151'

Tetra Tech NUS, Inc. **OVERBURDEN MONITORING WELL SHEET**

BORING NO.: CEF.076.MW-106S

PROJECT No:	3996	DRILLING Co.:	PROSONIC	BORING No.:	CEF.076.MW-106S
PROJECT ~~No.~~	PHASE II DRILLING - NFF	DRILLER:	A. PETERSON	DATE COMPLETED:	5.15.03
SITE:	NORTH FUEL FARM (CEF)	DRILLING METHOD:	HSA	NORTHING:	—
GEOLOGIST:	L. KNIGHT	DEV. METHOD:	Submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING: —

STICK -UP TOP OF SURFACE CASING: 3.2

ELEVATION OF TOP OF RISER PIPE: 81.85

RISER STICK-UP ABOVE GROUND SURFACE: 2.7'

I.D. OF SURFACE CASING: ~~4"~~ 6"

TYPE OF SURFACE CASING: ~~4" STEEL~~ Aluminum and locking 6"

GROUND ELEVATION: 78.5

TYPE OF SURFACE SEAL: QUIKRETE 2X2X6" PAD

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: SCH 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF SEAL: TYPE I PORTLAND CEMENT

ELEVATION / DEPTH OF SEAL: 120.2

TYPE OF SEAL: 30/65 Fine Sand

ELEVATION / DEPTH TOP OF FILTER PACK: 123.0

ELEVATION / DEPTH TOP OF SCREEN: 125.0

TYPE OF SCREEN: SCH 40 PVC

SLOT SIZE X LENGTH: .010" X 5'

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: 20/30 Silica Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 130.0

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 130.0

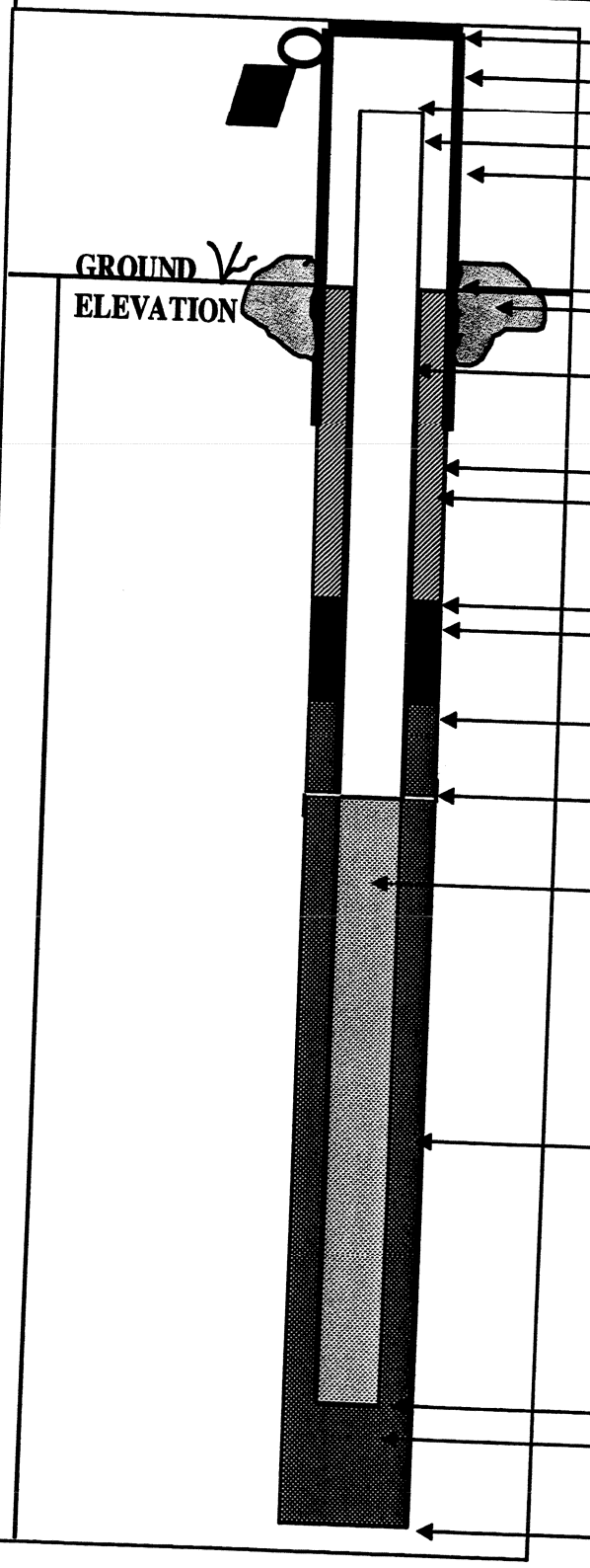
TYPE OF BACKFILL BELOW WELL: NA

ELEVATION / DEPTH OF BOREHOLE: 130.0

Tetra Tech NUS, Inc. **OVERBURDEN MONITORING WELL SHEET**

BORING NO.: CEF-076 MW 107

PROJECT:	BLDG 285 / CEF	DRILLING Co.:	PROSONIC	BORING No.:	CEF-076-MW107S
PROJECT No.:	0039	DRILLER:	A. PETERSON	DATE COMPLETED:	5-15-03
SITE:	NORTH FUEL FARM (BLDG 285)	DRILLING METHOD:	HSA	NORTHING:	—
GEOLOGIST:	L. KNIGHT	DEV. METHOD:	submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING: —

STICK -UP TOP OF SURFACE CASING: 3.0'

ELEVATION OF TOP OF RISER PIPE: 82.26

RISER STICK-UP ABOVE GROUND SURFACE: 2.5'

I.D. OF SURFACE CASING: ~~4"~~ 6" MD

TYPE OF SURFACE CASING: ~~STEEL~~ Aluminum Hinged, locking

GROUND ELEVATION: 79.0

TYPE OF SURFACE SEAL: QUIKRETE 2'x2'x6" PAD

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: SCH 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF SEAL: TYPE I PORTLAND CEMENT

ELEVATION / DEPTH OF SEAL: 11.0

TYPE OF SEAL: 30/65 FINE SAND

ELEVATION / DEPTH TOP OF FILTER PACK: 12.5

ELEVATION / DEPTH TOP OF SCREEN: 14.0

TYPE OF SCREEN: SCH 40 PVC

SLOT SIZE X LENGTH: .010 X 10'

I.D. OF SCREEN: 2"

TYPE OF FILTER PACK: 20/30 Silica Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 114.0

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 114.0

TYPE OF BACKFILL BELOW WELL:

ELEVATION / DEPTH OF BOREHOLE: 114.0

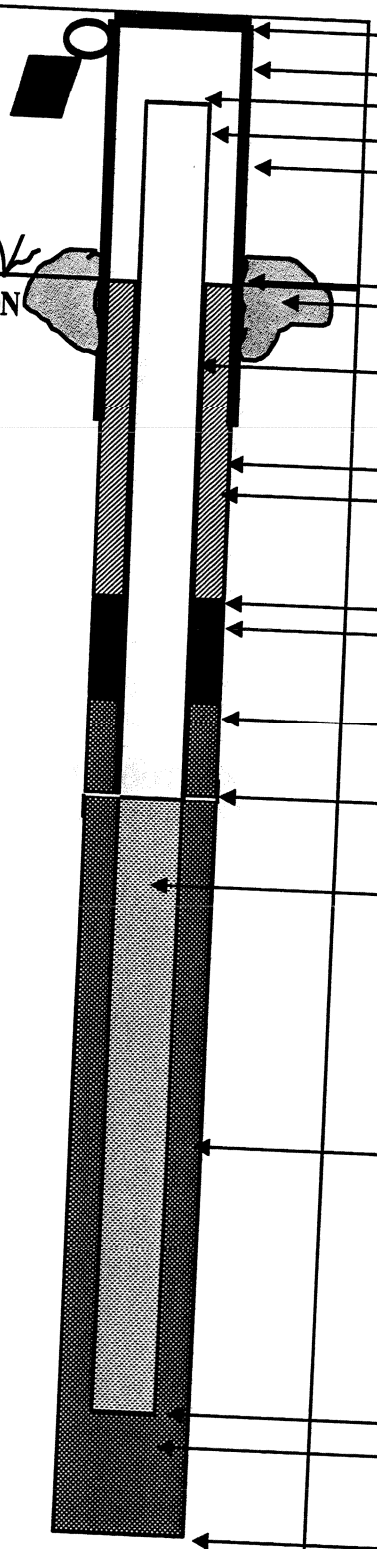
Tetra Tech NUS, Inc. **OVERBURDEN MONITORING WELL SHEET**

BORING NO.: CEF.076 MW-108

PROJECT: Phase II drilling NFF (CEF)
PROJECT No.: 3996
SITE: North Fuel Farm
GEOLOGIST: L. Knight

DRILLING Co.: PROSONIC
DRILLER: A. Peterson
DRILLING METHOD: HSA
DEV. METHOD: submersible

BORING No.: CEF.076.MW108S
DATE COMPLETED: 5-15-03
NORTHING:
EASTING:



ELEVATION OF TOP OF SURFACE CASING: —
STICK -UP TOP OF SURFACE CASING: 3.0
ELEVATION OF TOP OF RISER PIPE: 81.47
RISER STICK-UP ABOVE GROUND SURFACE: 2.5
I.D. OF SURFACE CASING: ~~4"~~ 6" MO
TYPE OF SURFACE CASING: ~~STEEL~~ Aluminum, locking
GROUND ELEVATION: 77.9
TYPE OF SURFACE SEAL: QUIKRETE 2'x2'x6" PAD
RISER PIPE I.D.: 2"
TYPE OF RISER PIPE: SCH 40 PVC
BOREHOLE DIAMETER: 8"
TYPE OF SEAL: TYPE I PORTLAND CEMENT
ELEVATION / DEPTH OF SEAL: 11.0
TYPE OF SEAL: 30/65 Fine Sand
ELEVATION / DEPTH TOP OF FILTER PACK: 12.5
ELEVATION / DEPTH TOP OF SCREEN: 14.0
TYPE OF SCREEN: SCH 40 PVC
SLOT SIZE X LENGTH: .010" X 10'
I.D. OF SCREEN: 2"
TYPE OF FILTER PACK: 20/30 Silica Sand
ELEVATION / DEPTH BOTTOM OF SCREEN: 14.0
ELEVATION / DEPTH BOTTOM OF FILTER PACK: 14.0
TYPE OF BACKFILL BELOW WELL:
ELEVATION / DEPTH OF BOREHOLE: 14.0

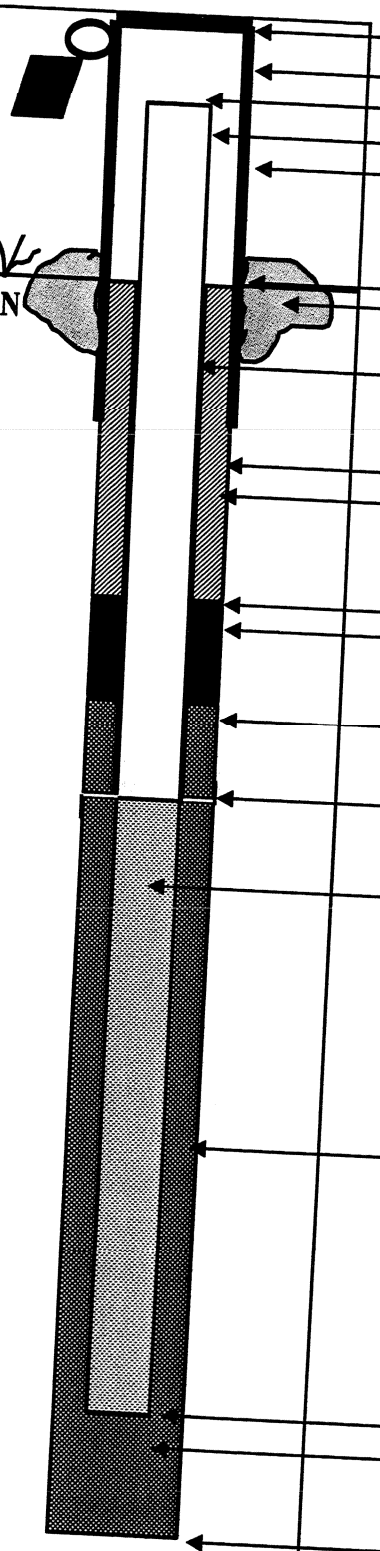
Tetra Tech NUS, Inc. **OVERBURDEN MONITORING WELL SHEET**

BORING NO.: CEF. 076 MW 109

PROJECT: PHASE II DRILLING. NFF (CEF)
PROJECT No.: 3996
SITE: NORTH FUEL FARM
GEOLOGIST: L. KNIGHT

DRILLING Co.: PROSONIC
DRILLER: A. PETERSON
DRILLING METHOD: HSA
DEV. METHOD: Submersible

BORING No.: CEF. 076. MW109
DATE COMPLETED: 5.15.03
NORTHING: —
EASTING: —



ELEVATION OF TOP OF SURFACE CASING: —
STICK -UP TOP OF SURFACE CASING: 3.0
ELEVATION OF TOP OF RISER PIPE: 80.92
RISER STICK-UP ABOVE GROUND SURFACE: 2.5
I.D. OF SURFACE CASING: 4" 6" MA
TYPE OF SURFACE CASING: ~~STEEL~~ Aluminum, hinged, locking
GROUND ELEVATION: 78.9
TYPE OF SURFACE SEAL: QUIKRETE 2'x2'x6" PAD
RISER PIPE I.D.: 2"
TYPE OF RISER PIPE: SCH 40 PVC
BOREHOLE DIAMETER: 8"
TYPE OF SEAL: ~~30/65 FINE SAND~~ BBK TYPE I PORTLAND CEMENT
ELEVATION / DEPTH OF SEAL: 11.0
TYPE OF SEAL: 30/65 FINE SAND
ELEVATION / DEPTH TOP OF FILTER PACK: 12.5
ELEVATION / DEPTH TOP OF SCREEN: 14.0
TYPE OF SCREEN: SCH 40 PVC
SLOT SIZE X LENGTH: .010 x 10'
I.D. OF SCREEN: 2"
TYPE OF FILTER PACK: 20/30 Silica Sand
ELEVATION / DEPTH BOTTOM OF SCREEN: 114.0
ELEVATION / DEPTH BOTTOM OF FILTER PACK: 114.0
TYPE OF BACKFILL BELOW WELL:
ELEVATION / DEPTH OF BOREHOLE: 114.0

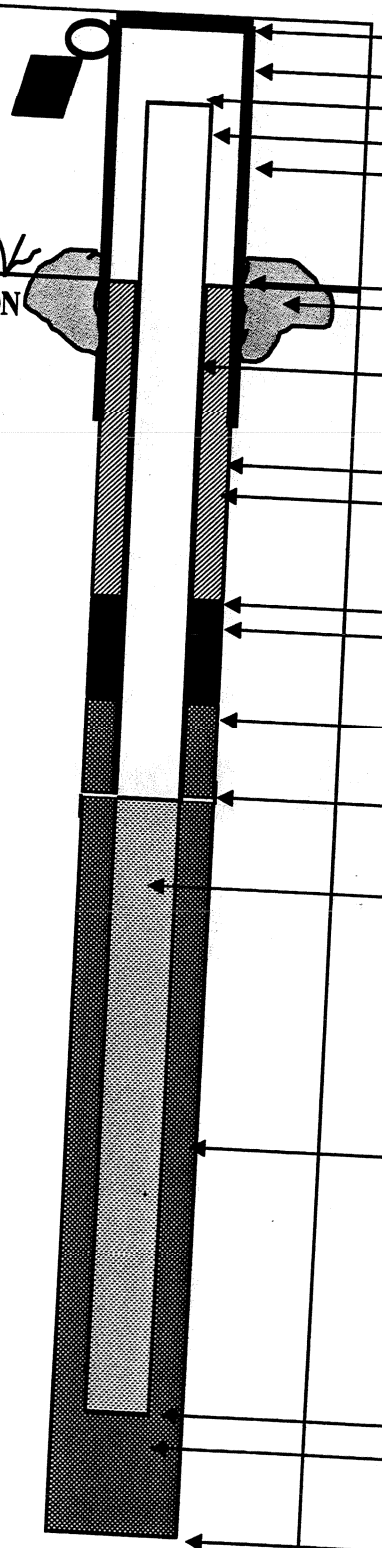
Tetra Tech NUS, Inc. **OVERBURDEN MONITORING WELL SHEET**

BORING NO.: CEF-076

PROJECT: NFF SARA INV.
PROJECT No.: N3996
SITE: NORTH FUEL FARM
GEOLOGIST: MERVIN DALE

DRILLING Co.: PROSONIC
DRILLER: DAN Mitchell
DRILLING METHOD: Roto sonic
DEV. METHOD: AIR BLADDER PUMP

BORING No.: CEF-076-1101
DATE COMPLETED: 5-16-0
NORTHING:
EASTING:

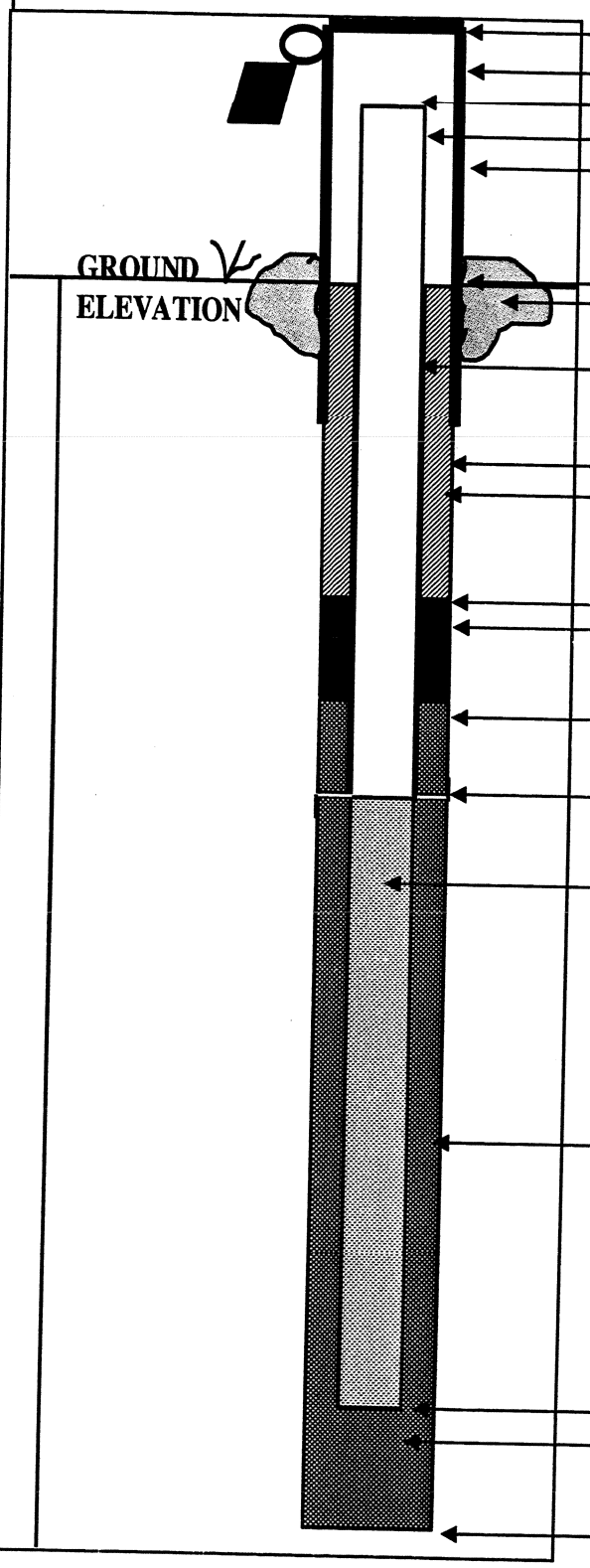


ELEVATION OF TOP OF SURFACE CASING: —
STICK -UP TOP OF SURFACE CASING: 3'
ELEVATION OF TOP OF RISER PIPE: 82.51
RISER STICK-UP ABOVE GROUND SURFACE: 3'
I.D. OF SURFACE CASING: 6"
TYPE OF SURFACE CASING: Aluminum Hinged, Locking
GROUND ELEVATION: 78.7
TYPE OF SURFACE SEAL: Quikrete 2'x2'x6" PAD
RISER PIPE I.D.: 2 inch
TYPE OF RISER PIPE: Sch. 40 PVC, flush thread
BOREHOLE DIAMETER: 6 inch
TYPE OF SEAL: Type I portland cement
ELEVATION / DEPTH OF SEAL: 197'
TYPE OF SEAL: 30/65 Sand Fine
ELEVATION / DEPTH TOP OF FILTER PACK: 1101'
ELEVATION / DEPTH TOP OF SCREEN: 1103'
TYPE OF SCREEN: Sch. 40 PVC, flush thread
SLOT SIZE X LENGTH: 0.010 inch x 5 ft.
I.D. OF SCREEN: 2 inch
TYPE OF FILTER PACK: 20/30 Sand
ELEVATION / DEPTH BOTTOM OF SCREEN: 1108'
ELEVATION / DEPTH BOTTOM OF FILTER PACK: 1112'
TYPE OF BACKFILL BELOW WELL: 20/30 Sand
ELEVATION / DEPTH OF BOREHOLE: 1112'

Tetra Tech NUS, Inc. **OVERBURDEN MONITORING WELL SHEET**

BORING NO.: CEF-076-111I

PROJECT:	NFF SARA INV.	DRILLING Co.:	PROSONIC	BORING No.:	CEF-076-111I
PROJECT No.:	N3996	DRILLER:	D. Mitchell	DATE COMPLETED:	5/18/03
SITE:	North Fuel Farm	DRILLING METHOD:	Rotosonic	NORTHING:	—
GEOLOGIST:	MERVIN DALE	DEV. METHOD:	Submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING: —

STICK -UP TOP OF SURFACE CASING: 3.5'

ELEVATION OF TOP OF RISER PIPE: 82.23

RISER STICK-UP ABOVE GROUND SURFACE: 3.5'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum Hinged, locking

GROUND ELEVATION: 78.5

TYPE OF SURFACE SEAL: Quikrete 2'x2'x6" PAD

RISER PIPE I.D.: 2 inches

TYPE OF RISER PIPE: Sch. 40 PVC, Flush Thread

BOREHOLE DIAMETER: 6 inches

TYPE OF SEAL: Type I Portland Cement

ELEVATION / DEPTH OF SEAL: 158.5'

TYPE OF SEAL: 30/65 FINE SAND

ELEVATION / DEPTH TOP OF FILTER PACK: 162'

ELEVATION / DEPTH TOP OF SCREEN: 165'

TYPE OF SCREEN: Sch. 40 PVC, Flush Thread

SLOT SIZE X LENGTH: 0.010 inch x 5 FT.

I.D. OF SCREEN: 2 Inches

TYPE OF FILTER PACK: 20/30 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 170'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 170.5'

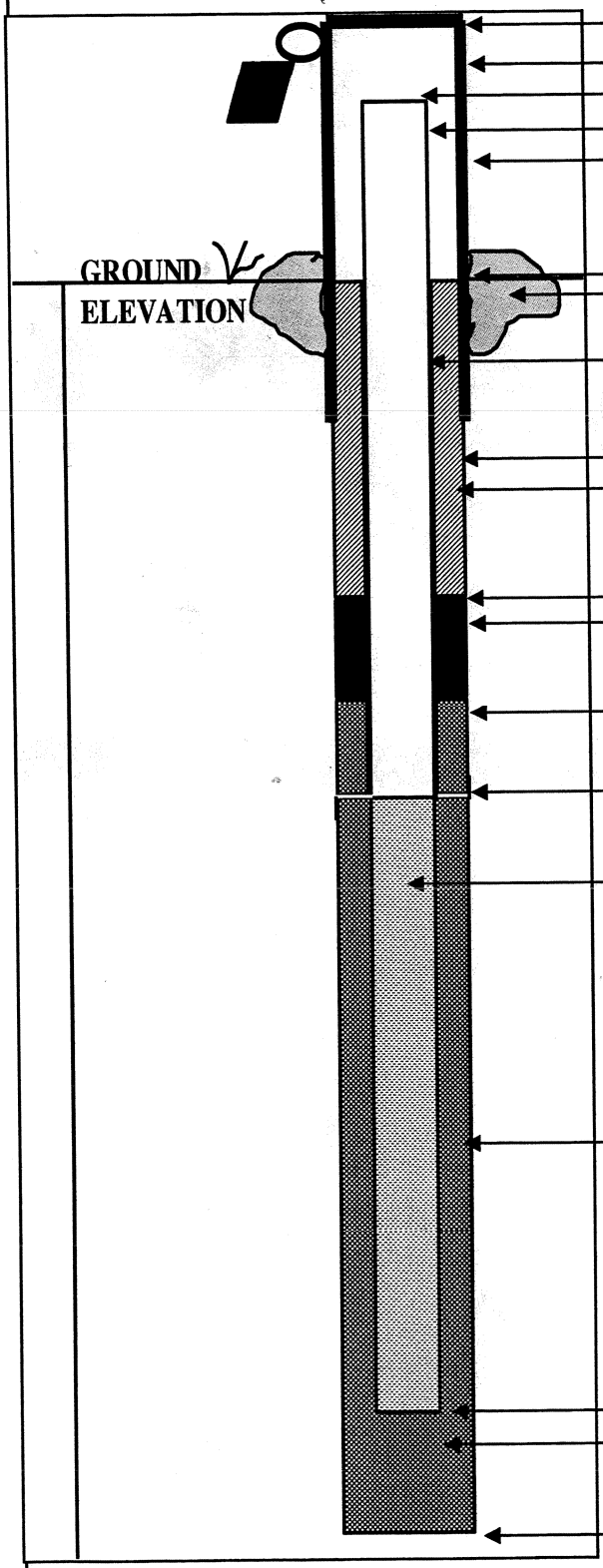
TYPE OF BACKFILL BELOW WELL: 20/30 Sand

ELEVATION / DEPTH OF BOREHOLE: 171'

BORING NO.: CEF-Q76-112

Tetra Tech NUS, Inc. **OVERBURDEN MONITORING WELL SHEET**

PROJECT:	NFF SARA INV.	DRILLING Co.:	PROSONIC	BORING No.:	CEF-Q76-112I
PROJECT No.:	N3996	DRILLER:	D. MITCHELL	DATE COMPLETED:	5/18/03
SITE:	North Farmington Hills MD	DRILLING METHOD:	ROTOSONIC	NORTHING:	—
GEOLOGIST:	MELVIN DALE	DEV. METHOD:	Submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING: —

STICK -UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 81.56

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum Hinged, Locking

GROUND ELEVATION: 78.5

TYPE OF SURFACE SEAL: Quikrete 2'x2'x6" PAD

RISER PIPE I.D.: 2 inches

TYPE OF RISER PIPE: Sch. 40 PVC, Flush thread

BOREHOLE DIAMETER: 6 inches

TYPE OF SEAL: Type I Portland Cement

ELEVATION / DEPTH OF SEAL: 142.5'

TYPE OF SEAL: 30/65 Fine Sand

ELEVATION / DEPTH TOP OF FILTER PACK: ~~148'~~ 147'

ELEVATION / DEPTH TOP OF SCREEN: 150'

TYPE OF SCREEN: Sch. 40 PVC, Flush Thread

SLOT SIZE X LENGTH: 0.010 inch x 5 FT.

I.D. OF SCREEN: 2 inches

TYPE OF FILTER PACK: 20/30 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 155'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 158'

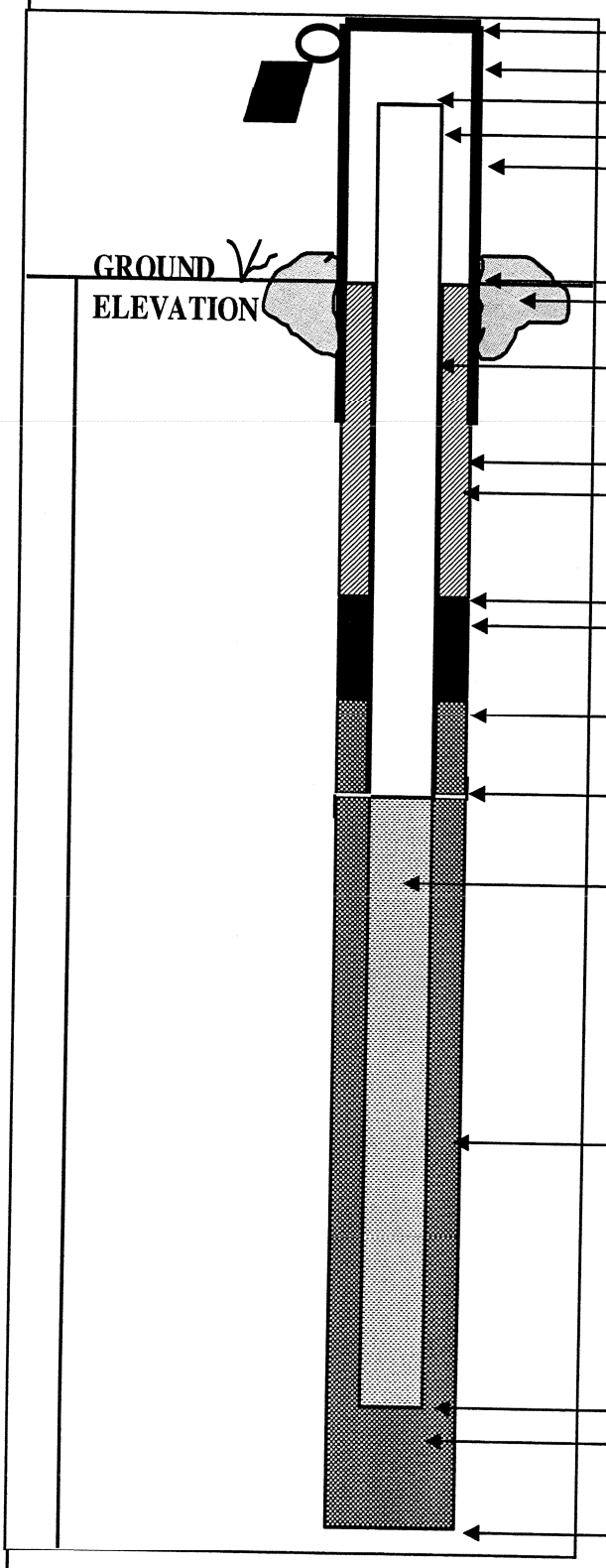
TYPE OF BACKFILL BELOW WELL: 20/30 Sand

ELEVATION / DEPTH OF BOREHOLE: 158'

Tetra Tech NUS, Inc. **OVERBURDEN MONITORING WELL SHEET**

BORING NO.: _____

PROJECT:	NFF SARA INV.	DRILLING Co.:	PROSONIC	BORING No.:	CEF-076-135
PROJECT No.:	N3996	DRILLER:	D. Mitchell	DATE COMPLETED:	5/19/03
SITE:	NORTH FUEL FARM	DRILLING METHOD:	ROTOSONIC	NORTHING:	—
GEOLOGIST:	MERVIN DALE	DEV. METHOD:	Submersible	EASTING:	—



ELEVATION OF TOP OF SURFACE CASING: —

STICK -UP TOP OF SURFACE CASING: 3'

ELEVATION OF TOP OF RISER PIPE: 81.22

RISER STICK-UP ABOVE GROUND SURFACE: 3'

I.D. OF SURFACE CASING: 6"

TYPE OF SURFACE CASING: Aluminum Hinged, locking

GROUND ELEVATION: 78.0

TYPE OF SURFACE SEAL: QuickRete ~~Hole~~ 2'X2'x6" PAD

RISER PIPE I.D.: 2 inches

TYPE OF RISER PIPE: Sch. 40 PVC, Flush Thread

BOREHOLE DIAMETER: 6 inches

TYPE OF SEAL: Type I Portland Cement

ELEVATION / DEPTH OF SEAL: 129'

TYPE OF SEAL: 30/65 Sand

ELEVATION / DEPTH TOP OF FILTER PACK: 132'

ELEVATION / DEPTH TOP OF SCREEN: 135'

TYPE OF SCREEN: Sch. 40 PVC, Flush Thread

SLOT SIZE X LENGTH: 0.010 inch x 5 FT.

I.D. OF SCREEN: 2 inches

TYPE OF FILTER PACK: 20/30 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 140'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 142'

TYPE OF BACKFILL BELOW WELL: 20/30 Sand

ELEVATION / DEPTH OF BOREHOLE: 142'

Tetra Tech NUS, Inc.

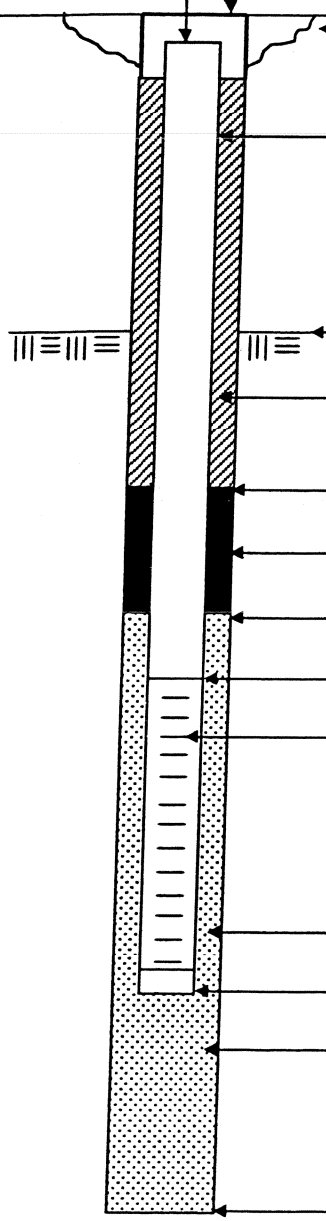
WELL No.: ~~C~~ MW-114S

MONITORING WELL SHEET (SINGLE-CASED)

PROJECT:	NFF SARA	DRILLING Co.:	Pro Sonic	BORING No.:	CEF-076-114S
PROJECT No.:	~~N4248~~ N3996	DRILLER:	D. Mitchell	DATE COMPLETED:	7/1/03
SITE:	NFF	DRILLING METHOD:	Rotosonic	NORTHING:	—
GEOLOGIST:	S. McGuire	DEV. METHOD:	Submersible	EASTING:	—

Ground Elevation =

Datum:



Not to Scale

Elevation / ~~Depth~~ HEIGHT of Top of Riser: MD	13'
Elevation / Height of Top of Surface Casing:	13'3"
I.D. of Surface Casing:	~~8"~~ 6" MD
Type of Surface Casing:	Aluminum, ~~Steel~~, Non-hinge, locking
Type of Surface Seal:	QuikRete Concrete
I.D. of Riser:	2"
Type of Riser:	PVC
Borehole Diameter:	6"
Elevation / Depth Top of Rock:	N/A
Type of Backfill:	Portland Type I cement
Elevation / Depth of Seal:	130'
Type of Seal:	30/65 Sand
Elevation / Depth of Top of Filter Pack:	133'
Elevation / Depth of Top of Screen:	135'
Type of Screen:	PVC
Slot Size x Length:	.010 x 5'
I.D. of Screen:	2"
Type of Filter Pack:	20/30 sand
Elevation / Depth of Bottom of Screen:	140'
Elevation / Depth of Bottom of Filter Pack:	140.5
Type of Backfill Below Well:	20/30 sand
Elevation / Total Depth of Borehole:	140.5

Tetra Tech NUS, Inc.

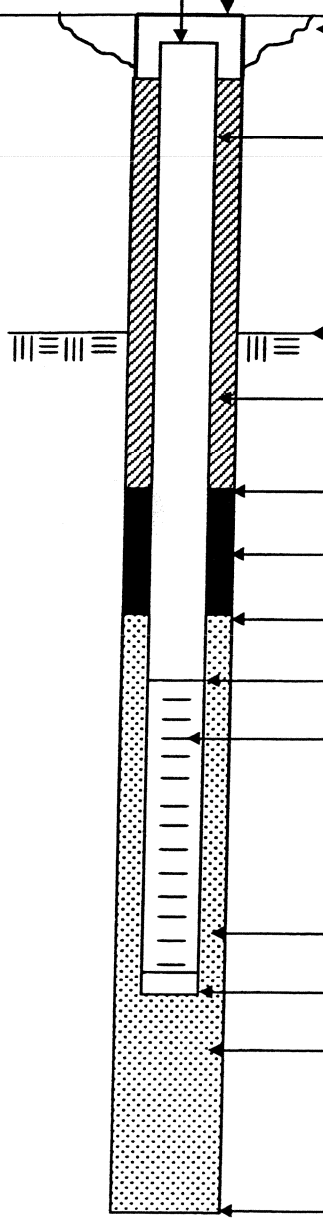
WELL No.: MW-115D

MONITORING WELL SHEET (SINGLE-CASED)

PROJECT:	NFF SARA	DRILLING Co.:	Pro Sonic	BORING No.:	CEF-076-115D
PROJECT No.:	~~N4248~~ N3996	DRILLER:	C. Wilson	DATE COMPLETED:	6/30/03
SITE:	NFF	DRILLING METHOD:	Rotosonic	NORTHING:	—
GEOLOGIST:	S. McGuire	DEV. METHOD:	Reverse Air Pump	EASTING:	—

Ground Elevation =

Datum:



Not to Scale

Elevation / ~~Depth~~ Height of Top of Riser:	13'
Elevation / Height of Top of Surface Casing:	13'3"
I.D. of Surface Casing:	~~8"~~ 6" MD
Type of Surface Casing:	Aluminum, ~~Steel~~, non-hinge, locking
Type of Surface Seal:	Quikreet concrete
I.D. of Riser:	2"
Type of Riser:	PVC
Borehole Diameter:	6"
Elevation / Depth Top of Rock:	N/A
Type of Backfill:	Portland Type I cement
Elevation / Depth of Seal:	100'
Type of Seal:	30/65 Sand
Elevation / Depth of Top of Filter Pack:	103'
Elevation / Depth of Top of Screen:	105
Type of Screen:	PVC
Slot Size x Length:	.010 x 5'
I.D. of Screen:	2"
Type of Filter Pack:	20/30 Sand
Elevation / Depth of Bottom of Screen:	110'
Elevation / Depth of Bottom of Filter Pack:	110.5'
Type of Backfill Below Well:	20/30 Sand
Elevation / Total Depth of Borehole:	110.5'

Tetra Tech NUS, Inc.

WELL No.: CEF-076-116D

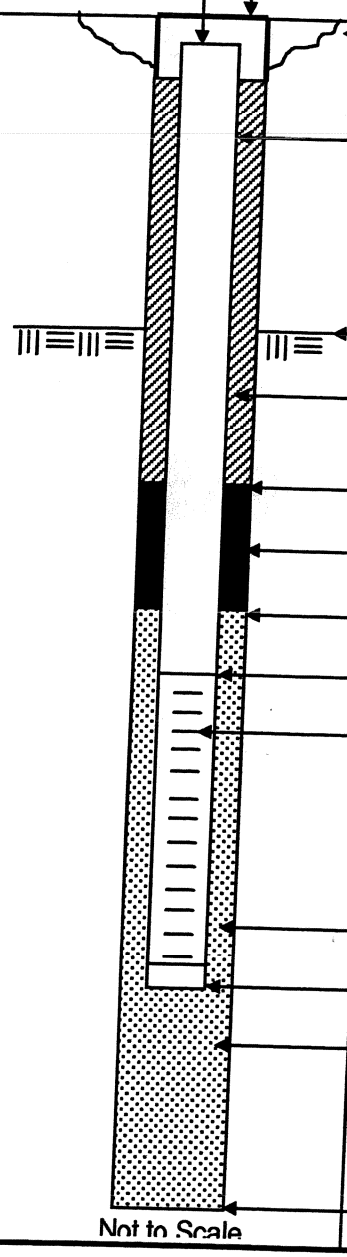
MONITORING WELL SHEET

PROJECT: NAS CECIL FIELD
PROJECT No.: ~~0009~~ 3996
SITE: North Fuel Farm
GEOLOGIST: M. DALE

DRILLING Co.: PROSONIC
DRILLER: Ch. Wilson
DRILLING METHOD: Rotosonic
DEV. METHOD: Reverse Air Pump

BORING No.: CEF-076-116D
DATE COMPLETED: 6/27/03
NORTHING: —
EASTING: —

Ground Elevation =
Datum:



Not to Scale

Elevation / ~~Depth~~ Ht. of Top of Riser: 13'

Elevation / Height of Top of Surface Casing: 13'3"

I.D. of Surface Casing: 6 inches

Type of Surface Casing: Aluminum Non-hinge Above-grade

Type of Surface Seal: Quikrete Concrete

I.D. of Riser: 2 inch

Type of Riser: Sch. 40 PVC

Borehole Diameter: 6 inch

Elevation / Depth Top of Rock: N/A

Type of Backfill: Type I Portland Cement

Elevation / Depth of Seal: 100'

Type of Seal: 30/65 Fine Sand

Elevation / Depth of Top of Filter Pack: 103'

Elevation / Depth of Top of Screen: 105'

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010" x 5'

I.D. of Screen: 2 inch

Type of Filter Pack: 20/30 Sand

Elevation / Depth of Bottom of Screen: 110'

Elevation / Depth of Bottom of Filter Pack: 110'

Type of Backfill Below Well: NATIVE SOIL

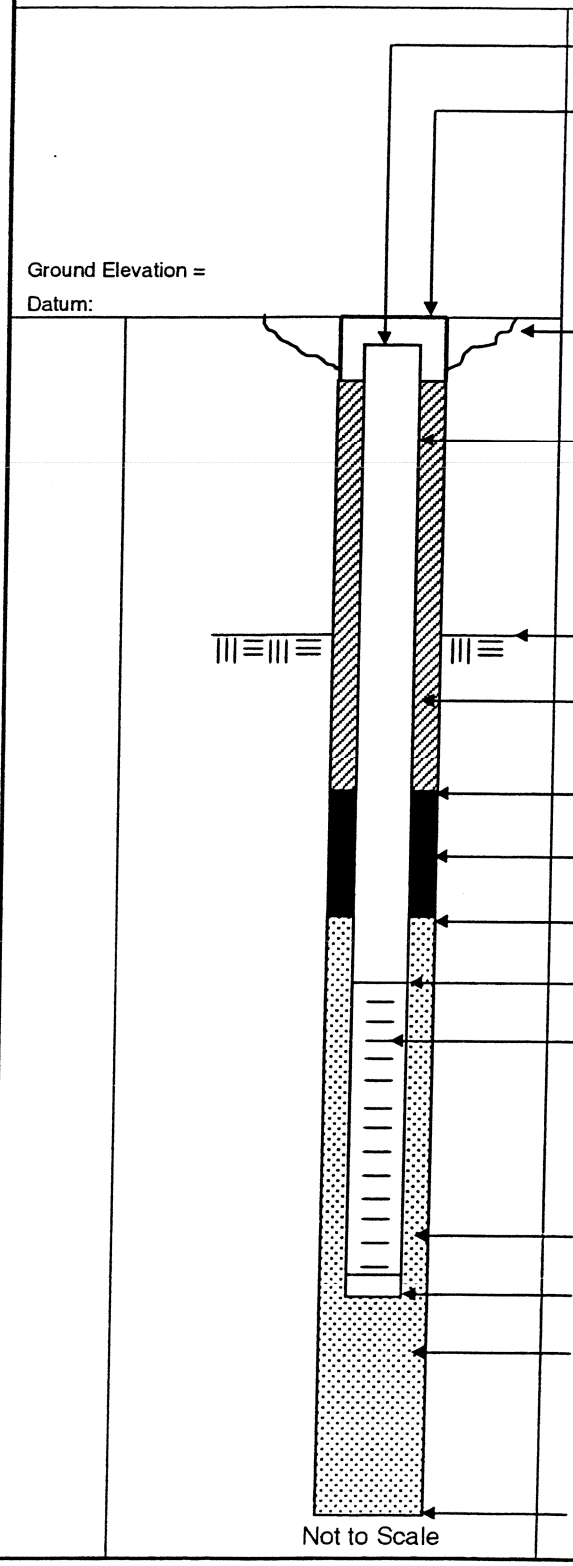
Elevation / Total Depth of Borehole: 110'

Tetra Tech NUS, Inc.

WELL No.: MW-117D

MONITORING WELL SHEET (SINGLE-CASED)

PROJECT:	NFF SARA	DRILLING Co.:	Pro Sonic	BORING No.:	CEF-076-117D
PROJECT No.:	~~N4248~~ N3996	DRILLER:	C. Wilson	DATE COMPLETED:	6/29/03
SITE:	NFF	DRILLING METHOD:	Rotosonic	NORTHING:	—
GEOLOGIST:	S. McGuire	DEV. METHOD:	AIR BLADDER PUMP	EASTING:	—



Elevation / ~~Depth~~ Ht. of Top of Riser:	13' MD
Elevation / Height of Top of Surface Casing:	13'3"
I.D. of Surface Casing:	~~8"~~ 6" MD
Type of Surface Casing:	Aluminum, ~~Steel~~, Non-hinge, locking
Type of Surface Seal:	QuiKreet concrete
I.D. of Riser:	2"
Type of Riser:	PVC
Borehole Diameter:	6"
Elevation / Depth Top of Rock:	N/A
Type of Backfill:	Portland Type I cement
Elevation / Depth of Seal:	1100'
Type of Seal:	30/65 Sand
Elevation / Depth of Top of Filter Pack:	1103'
Elevation / Depth of Top of Screen:	1105'
Type of Screen:	PVC
Slot Size x Length:	.010 x 5'
I.D. of Screen:	2"
Type of Filter Pack:	20/30 sand
Elevation / Depth of Bottom of Screen:	1110'
Elevation / Depth of Bottom of Filter Pack:	1110.5
Type of Backfill Below Well:	20/30 Sand
Elevation / Total Depth of Borehole:	1110.5'

APPENDIX H

CERTIFICATES OF CONFORMANCE

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-81S
Site Name: NORIN FUEL FARM
Date Installed: 12-4-01
Project Name: NFF SAR

Site Geologist: LOUIS KNIGHT
Drilling Company: TRANSAMERICAN
Driller: D. NEARNE
Project Number: N3996

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2" SCH 40 PVC	TONEY DRILLING SUPPLIES / ORLANDO, FL	NO
Well Screen	2" SCH 40 PVC	TONEY DRILLING SUPPLIES / ORLANDO, FL	
End Cap	2" SCH 40 PVC	TONEY DRILLING SUPPLIES / ORLANDO, FL	
Drilling Fluid	N/A	N/A	
Drilling Fluid Additives	N/A	N/A	
Backfill Material	N/A	N/A	
Annular Filter Pack	STANDARD / 20/30 SILICA SAND	STANDARD SAND CO.	
~~Bentonite Seal~~ CHOKESAND	STANDARD / 30-65 SILICA SAND	STANDARD SAND CO.	
Annular Grout	QUIKRETE - TYPE I PORTLAND CEMENT	FLORIDA IRRIGATION	
Surface Cement	QUIKRETE - CONCRETE	FLORIDA IRRIGATION	
Protective Casing	N/A	N/A	
Paint	N/A	N/A	
Rod Lubricant	N/A	N/A	
Compressor Oil	N/A	N/A	
MANHOLE (8" DIAM)	PETROLEUM EQUIPMENT MANUFACTURING CO (PEMCO)	TONEY DRILLING SUPPLIES / ORLANDO, FL	

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Louis Knight

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-S2S
Site Name: NORTH FUEL FARM
Date Installed: 12-4-01
Project Name: NFF SAR

Site Geologist: LOUIS KNIGHT
Drilling Company: TRANSAMERICAN
Driller: D. HEARNE
Project Number: N3996

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2" SCH 40 PVC	TONEY DRILLING SUPPLIES / ORLANDO, FL	NO
Well Screen	2" SCH 40 PVC	TONEY DRILLING SUPPLIES / ORLANDO, FL	
End Cap	2" SCH 40 PVC	TONEY DRILLING SUPPLIES / ORLANDO, FL	
Drilling Fluid	N/A	N/A	
Drilling Fluid Additives	N/A	N/A	
Backfill Material	N/A	N/A	
Annular Filter Pack	STANDARD / 20/30 SILICA SAND	STANDARD SAND CO.	
~~Bentonite Seal~~ CHOKESAND	STANDARD / 30-65 SILICA SAND	STANDARD SAND CO.	
Annular Grout	QUIKRETE - TYPE I PORTLAND CEMENT	FLORIDA IRRIGATION	
Surface Cement	QUIKRETE - CONCRETE	FLORIDA IRRIGATION	
Protective Casing	N/A	N/A	
Paint	N/A	N/A	
Rod Lubricant	N/A	N/A	
Compressor Oil	N/A	N/A	
MANHOLE (8" DIAM)	PETROLEUM EQUIPMENT MANUFACTURING Co (PEMCO)	TONEY DRILLING SUPPLIES / ORLANDO, FL	

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Louis Knight

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-~~076~~ ~~372~~ SAN-835 ~~-25 I~~
Site Name: NORTH FUEL FARM
Date Installed: 12/10/02
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996 J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex 2 x 10' sch 40	Atlantic Drilling Supply / Jax	No
Well Screen	Monoflex 2 x 5' sch 40 .010	Atlantic Drilling Supply / Jax	
End Cap / well Point	Locking cap / PVC	Atlantic Drilling Supply / Jax	
Drilling Fluid	None		
Drilling Fluid Additives			
Backfill Material			
Annular Filter Pack	Standard Sand 20-30	Standard Sand / Jax	
~~Bentonite~~ Seal	Standard Sand 30-65	Standard Sand / Jax	
Annular Grout	Portland Cement QuiKreet	Florida Irrigation / Jax	
Surface Cement	QuiKRete	QuiKrete Co., Atlanta, GA	
Protective Casing	8" boltdown cover, steel	Atlantic Drilling Supply, JAX	
Paint	None		
Rod Lubricant			
Compressor Oil			
Drums (1)	55 Gallon	Duval Container / Jax 355-0711	

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Scott R. McGuire

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-84I
Site Name: NORTH FUEL FARM
Date Installed: 12/11/02
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex 2x10' sch 40	Atlantic Drilling Supply / Jax	NO
Well Screen	Monoflex 2x5' sch 40 .010	Atlantic Drilling Supply / Jax	
End Cap / well Point	Locking cap / PVC	Atlantic Drilling Supply / Jax	
Drilling Fluid	None		
Drilling Fluid Additives			
Backfill Material			
Annular Filter Pack	Standard sand 20-30	Standard Sand / Jax	
~~Bentonite Seal~~	Standard sand 30-65	Standard Sand / Jax	
Annular Grout	Portland cement Quikreet	Florida Irrigation / Jax	
Surface Cement	Quikrete	Quikrete Co, Atlanta, GA	
Protective Casing	Aluminum 6" sticking, lockable	ADS, JAX, FL.	
Paint	None		
Rod Lubricant			
Compressor Oil			
Drum	55 Gallon	Duval Container 355-0711 / Jax	

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Scott R. McGuire

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-85I
Site Name: NORTH FUEL FARM
Date Installed: 12/11/02
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996 J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex 2x10' Sch 40	Atlantic Drilling Supply /Jax	NO
Well Screen	Monoflex 2x5' Sch 40 .010	Atlantic Drilling Supply /Jax	
End Cap / Well Point	Locking cap / PVC	Atlantic Drilling supply /Jax	
Drilling Fluid	None		
Drilling Fluid Additives			
Backfill Material			
Annular Filter Pack	Standard Sand 20-30	Standard Sand /Jax	
~~Bentonite~~ Seal	Standard Sand 30-65	Standard Sand /Jax	
Annular Grout	Portland Cement Quikreet	Florida Irrigation /Jax	
Surface Cement	Quikrete	Quikrete Co. Atlanta, GA	
Protective Casing	6" Aluminum hinged, lockable	ADS, Jax, FL.	
Paint	None		
Rod Lubricant			
Compressor Oil			
Drum	55 Gallon	Duval Container 355-0711/Jax	

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-86S
Site Name: NORTH FUEL FARM
Date Installed: 12/12/02
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996 J60 050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex 2x10' sch 40	Atlantic Drilling Supply / Jax	NO
Well Screen	Monoflex 2x5' sch 40	Atlantic Drilling supply / Jax	
End Cap / well Point	Locking cap / PVC	Atlantic Drilling supply / Jax	
Drilling Fluid	None		
Drilling Fluid Additives			
Backfill Material			
Annular Filter Pack	Standard Sand 20-30	Standard Sand / Jax	
~~Bentonite~~ Seal	Standard sand 30-65	Standard Sand / Jax	
Annular Grout	Portland Cement Quikreet	Florida Irrigation / Jax	
Surface Cement	Quikrete	Quikrete Atlanta, GA	
Protective Casing	6" Aluminum, hinged, lockable	ADS, Jax, FL	
Paint	None		
Rod Lubricant			
Compressor Oil			
Drum	55 Gallon		
		Duval Container / Jax	

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Scott R. McGuire

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-875
Site Name: NORTH FUEL FARM
Date Installed: 12/12/02
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996 J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Mono flex 2x10' sch 40	Atlantic Drilling Supply / Jax	NO
Well Screen	Monoflex 2x5' sch 40	Atlantic Drilling Supply / Jax	↓
End Cap / Well Point	Locking cap & PVC	Atlantic Drilling supply / Jax	↓
Drilling Fluid	None		↓
Drilling Fluid Additives	↓		↓
Backfill Material	↓		↓
Annular Filter Pack	Standard sand	Standard sand / Jax	↓
~~Bentonite~~ Seal	standard sand	Standard sand / Jax	↓
Annular Grout	Portland cement Quikreet	Florida Irrigation / Jax	↓
Surface Cement	Quikrete	Quikrete Atlanta, GA.	↓
Protective Casing	6" Aluminum, hinged, lockable	ADS, Jax, FL	↓
Paint	None		↓
Rod Lubricant	↓		↓
Compressor Oil	↓		↓
Drum	55 Gallon		↓
		Duval Container / Jax	↓

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Scott R. McGuire

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-885
Site Name: NORTH FUEL FARM
Date Installed: 12/12/02
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996 J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex 2x10' sch 40	Atlantic Drilling Supply / Jax	NO
Well Screen	Mono flex 2x10' sch 40	Atlantic Drilling Supply / Jax	
End Cap / Well Point	Locking cap / PVC	Atlantic Drilling Supply / Jax	
Drilling Fluid	None		
Drilling Fluid Additives			
Backfill Material			
Annular Filter Pack	Standard Sand 20-30	Standard Sand / Jax	
~~Bentonite~~ Seal	Standard Sand 30-65	Standard Sand / Jax	
Annular Grout	Portland Cement Quikreet	Florida Irrigation / Jax	
Surface Cement	Quikrete	Quikrete, Atlanta, GA	
Protective Casing	6" Aluminum, hinged, locking	ADS, Jax, FL	
Paint	None		
Rod Lubricant			
Compressor Oil			
Drum	55 Gallon	Duval Container / Jax	

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-89I
Site Name: NORTH FUEL FARM
Date Installed: 12/13/02
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996 J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex 2x10' sch 40	Atlantic Drilling Supply / Jax	No
Well Screen	Monoflex 2x5' sch 40	Atlantic Drilling Supply / Jax	↓
End Cap / well Point	Locking cap / PVC	Atlantic Drilling Supply / Jax	↓
Drilling Fluid	None		↓
Drilling Fluid Additives	↓		↓
Backfill Material	↓		↓
Annular Filter Pack	Standard sand 20-30	Standard sand / Jax	↓
~~Bentonite~~ Seal	Standard sand 30-65	Standard sand / Jax	↓
Annular Grout	Portland Cement · Quikreet	Florida Irrigation / Jax	↓
Surface Cement	Quikrete	Quikrete, Atlanta, GA	↓
Protective Casing	8" steel bolldown manhole	AP's, Jax, FL	↓
Paint	None		↓
Rod Lubricant	↓		↓
Compressor Oil	↓		↓
Drum	55 Gallon		↓
		Duval Container / Jax	↓

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Scott R. McGuire

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-876-905
Site Name: NORTH FUEL FARM
Date Installed: 12/13/02
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996 J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	MonoFlex 2x10' Sch 40	Atlantic Drilling Supply / Jax	NO
Well Screen	MonoFlex 2x10' Sch 40	Atlantic Drilling Supply / Jax	
End Cap / well Point	Locking cap / PVC	Atlantic Drilling supply / Jax	
Drilling Fluid	None		
Drilling Fluid Additives			
Backfill Material			
Annular Filter Pack	Standard Sand	Standard sand / Jax	
~~Bentonite~~ Seal	Standard Sand	Standard sand / Jax	
Annular Grout	Portland cement Quikreet	Florida Irrigation / Jax	
Surface Cement	Quikrete	Quikrete Atlanta, GA	
Protective Casing	8" steel bolt down manhole	ADS, JAX, FL.	
Paint	None		
Rod Lubricant			
Compressor Oil			
Drum	55 Gallon	Duval Container / Jax	

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Scott R. McGuire

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-915
Site Name: NORTH FUEL FARM
Date Installed: 12/13/02
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: LOUIS Johnson
Project Number: N3996 J60 050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex, sch 40 2x10'	Atlantic Drilling Supply /Jax	NO
Well Screen	Monoflex 2x5' sch 40	Atlantic Drilling Supply /Jax	
End Cap / ~~P~~ Well Point	Locking cap / Pvc	Atlantic Drilling Supply /Jax	
Drilling Fluid	None		
Drilling Fluid Additives			
Backfill Material			
Annular Filter Pack	Standard sand	Standard Sand /Jax	
~~Bentonite~~ Seal	Standard sand	Standard Sand /Jax	
Annular Grout	Portland Cement · QuiKreet	Florida Irrigation /Jax	
Surface Cement	QuiKrete	QuiKrete, Atlanta, GA	
Protective Casing	6" Aluminum, hinged, locking	ADS, JAX, FL	
Paint	None		
Rod Lubricant			
Compressor Oil			
Drum	55 Gallon	Duval Container /Jax	

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Scott R McGuire

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-925
Site Name: NORTH FUEL FARM
Date Installed: 12/16/02
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996 J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex, sch 40 2x10	Atlantic Drilling Supply / Jax	NO
Well Screen	Monoflex, sch 40 2SS 0.010 Screen	Atlantic Drilling Supply / Jax	
End Cap / Well Point	Locking Cap / PVC	Atlantic Drilling Supply / Jax	
Drilling Fluid	None		
Drilling Fluid Additives			
Backfill Material			
Annular Filter Pack	20/30 Standard Sand	Standard Sand / Jax	
Bentonite Seal	30/65 Fine Grain Sand	Standard Sand / Jax	
Annular Grout	Portland Cement	Florida Irrigation / Jax	
Surface Cement	Quikrete	Quikrete Atlanta, GA.	
Protective Casing	6" Aluminum, hinged, locking	ADS, Jax, FL	
Paint	None		
Rod Lubricant			
Compressor Oil			

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: C. Wlecke

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-935
Site Name: NORTH FUEL FARM
Date Installed: 12/16/02
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex, sch 40 2x10	Atlantic Drilling Supply/Jax	NO
Well Screen	Monoflex, sch 40 2x5 0.010 Screen	Atlantic Drilling Supply/Jax	
End Cap / Well Point	Locking Cap / PVC	Atlantic Drilling Supply/Jax	
Drilling Fluid	None		
Drilling Fluid Additives			
Backfill Material			
Annular Filter Pack	20/30 Standard Sand	Standard Sand / Jax	
Bentonite Seal	30/65 Fine Grain Sand	Standard Sand / Jax	
Annular Grout	Portland Cement	Florida Irrigation / Jax	
Surface Cement	QuiKrete	QuiKrete Atlanta, GA	
Protective Casing	6" Aluminum, hinged, locking	ADS, JAX, FL	
Paint			
Rod Lubricant			
Compressor Oil			

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: C. Wlecke

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-945
Site Name: NORTH FUEL FARM
Date Installed: 12/16/02
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996 J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex, sch 40 2x10	Atlantic Drilling Supply / Jax	NO
Well Screen	Monoflex, sch 40 2x5 0.010 Screen	Atlantic Drilling Supply / Jax	
End Cap / Well Point	Locking Cap / PVC	Atlantic Drilling Supply / Jax	
Drilling Fluid	None		
Drilling Fluid Additives			
Backfill Material			
Annular Filter Pack	20/30 Standard Sand	Standard Sand / Jax	
Bentonite Seal	30/65 Fine Grain Sand	Standard Sand / Jax	
Annular Grout	Portland Cement	Florida Irrigation / Jax	
Surface Cement	Quikrete	Quikrete Atlanta, GA	
Protective Casing	6" Aluminum, hinged, locking	ADS, JAX, FL	
Paint			
Rod Lubricant			
Compressor Oil			

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: C. Wlecke

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-955
Site Name: NORTH FUEL FARM
Date Installed: 12/16/02
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996 J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex, sch 40 2x10	Atlantic Drilling Supply / Jax	NO
Well Screen	Monoflex, sch 40 2x5 0.010 Screen	Atlantic Drilling Supply / Jax	↓
End Cap / Well Point	Locking Cap / PVC	Atlantic Drilling Supply / Jax	↓
Drilling Fluid	None		↓
Drilling Fluid Additives	↓		↓
Backfill Material	↓		↓
Annular Filter Pack	20/30 Standard Sand	Standard Sand / Jax	↓
Bentonite Seal	30/65 Fine Grain Sand	Standard Sand / Jax	↓
Annular Grout	Portland Cement	Florida Irrigation / Jax	↓
Surface Cement	Quikrete	Quikrete, Atlanta, GA	↓
Protective Casing	6" Aluminum hinged, locking	AOS, JAX, FL	↓
Paint	None		↓
Rod Lubricant	↓		↓
Compressor Oil	↓		↓
			↓
			↓

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: C. Wlecke

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-96D
Site Name: NORTH FUEL FARM
Date Installed: 12/18/02
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996 J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex, sch 40 2x10	Atlantic Drilling Supply / Jax	NO
Well Screen	Monoflex, sch 40 2SS 0.010 Screen	Atlantic Drilling Supply / Jax	
End Cap / Well Point	Locking Cap / PVC	Atlantic Drilling Supply / Jax	
Drilling Fluid	High Yield Bentonite	WYO-BEN / Billings Mont	
Drilling Fluid Additives	MD ~~None~~ Potable Water	CECIL FIELD	
Backfill Material	+ None		
Annular Filter Pack	20/30 Standard Sand	Standard Sand + Jax	
Bentonite Seal	30/65 Fine Grain Sand	Standard Sand / Jax	
Annular Grout	Portland Cement	Florida Irrigation / Jax	
Surface Cement	Quikrete	Quikrete, Atlanta, GA	
Protective Casing	8" steel boltdown cover	ADS, Jax, FL	
Paint	None		
Rod Lubricant			
Compressor Oil			

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: C. Wlecke

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-97D
Site Name: NORTH FUEL FARM
Date Installed: 12/19/02
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996 J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex, sch 40 2X10	Atlantic Drilling Supply / Jax	NO
Well Screen	Monoflex, sch 40 2&5 0.010 Screen	Atlantic Drilling Supply / Jax	
End Cap / Well Point	Locking Cap / PVC	Atlantic Drilling Supply / Jax	
Drilling Fluid	High Yield Bentonite	WYO-BEN / Billings Mont	
Drilling Fluid Additives	MD ~~None~~ Potable H_2O	CECIL FIELD	
Backfill Material	MD None	None	
Annular Filter Pack	20/30 Standard Sand	Standard Sand / Jax	
Bentonite Seal	30/65 Fine Grain Sand	Standard Sand / Jax	
Annular Grout	Portland Cement	Florida Irrigation / Jax	
Surface Cement	Quikrete	Quikrete, ATLANTA, GA	
Protective Casing	6" Aluminum hinged, locking	ADS, JAX, FL	
Paint	None		
Rod Lubricant			
Compressor Oil			

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: C. Wlecke

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-[redacted]
Site Name: NORTH FUEL FARM
Date Installed: [redacted] 12/19/02
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996 J60 050 320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex 2x10' Sch 40	Atlantic Drilling Supply /Jax	NO
Well Screen	Monoflex 2x5' Sch 40 .010	Atlantic Drilling Supply/Jax	
End Cap / Well Point	Locking cap / PVC	Atlantic Drilling supply /Jax	
Drilling Fluid	~~None~~ Potable water	CECIL FIELD	
Drilling Fluid Additives	NO + High Yield bentonite	WYO-BEN, Billings, MT.	
Backfill Material	None		
Annular Filter Pack	Standard Sand 20-30	Standard Sand /Jax	
~~Bentonite Seal~~	Standard Sand 30-65	Standard Sand /Jax	
Annular Grout	Portland Cement Quikreet	Florida Irrigation /Jax	
Surface Cement	Quikrete	Quikrete, Atlanta, GA	
Protective Casing	6" Aluminum, hinged, locking	AOS, JAX, FL.	
Paint	None		
Rod Lubricant	↓		
Compressor Oil			
Drum	55 Gallon	Duval Container 355-0711/Jax	↓

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: M. W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-99D
Site Name: NORTH FUEL FARM
Date Installed: 1/6/03
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996 J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex 2×10' Sch 40	Atlantic Drilling Supply /Jax	NO
Well Screen	Monoflex 2×5' Sch 40 .010	Atlantic Drilling Supply /Jax	
End Cap / Well Point	Locking cap / PVC	Atlantic Drilling Supply /Jax	
Drilling Fluid	~~None~~ Potable WATER	CECIL FIELD	
Drilling Fluid Additives	NO ~~None~~ High yielded bentonite	WYO-BEN, Billings, MT.	
Backfill Material			
Annular Filter Pack	Standard Sand 20-30	Standard Sand /Jax	
~~Bentonite Seal~~	Standard Sand 30-65	Standard Sand /Jax	
Annular Grout	Portland Cement Quikreet	Florida Irrigation /Jax	
Surface Cement	Quikrete	Quikrete, Atlanta, GA	
Protective Casing	6" Aluminum, hinged, locking	APS, JAX, FL	
Paint	None		
Rod Lubricant			
Compressor Oil			
Drum	55 Gallon	Duval Container 355-0711/Jax	

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Scott R. McGuire

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-100D
Site Name: NORTH FUEL FARM
Date Installed: 1/7/03
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996 J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex 2×10' Sch 40	Atlantic Drilling Supply /Jax	NO
Well Screen	Monoflex 2×5' Sch 40 .010	Atlantic Drilling Supply /Jax	
End Cap / Well Point	Locking cap / PVC	Atlantic Drilling Supply /Jax	
Drilling Fluid	~~None~~ Potable water	CECIL FIELD	
Drilling Fluid Additives	~~None~~ High Yield bentonite	WYO-BEN, Billings, MT.	
Backfill Material	None		
Annular Filter Pack	Standard Sand 20-30	Standard Sand /Jax	
~~Bentonite Seal~~	Standard Sand 30-65	Standard Sand /Jax	
Annular Grout	Portland Cement Quikreet	Florida Irrigation /Jax	
Surface Cement	Quikrete	Quikrete, Atlanta, GA	
Protective Casing	6" Aluminum, hinged, locking	ADS, Jax, FL.	
Paint	None		
Rod Lubricant			
Compressor Oil			
Drum	55 Gallon	Duval Container 355-0711/Jax	

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Scott R. McGuire

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-1015
Site Name: NORTH FUEL FARM
Date Installed: 1/8/03
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex 2x10' Sch 40	Atlantic Drilling Supply /Jax	NO
Well Screen	Monoflex 2x5' Sch 40 .010	Atlantic Drilling Supply /Jax	
End Cap / Well Point	Locking cap / PVC	Atlantic Drilling supply /Jax	
Drilling Fluid	None		
Drilling Fluid Additives			
Backfill Material			
Annular Filter Pack	Standard Sand 20-30	Standard Sand /Jax	
~~Bentonite Seal~~	Standard Sand 30-65	Standard Sand /Jax	
Annular Grout	Portland Cement Quikreet	Florida Irrigation /Jax	
Surface Cement	Quikrete	Quikrete, Atlanta, GA	
Protective Casing	6" Aluminum, hinged, locking	ADS, JAX, FL	
Paint	None		
Rod Lubricant			
Compressor Oil			
Drum	55 Gallon	Duval Container 355-0711/Jax	

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Scott R. McFarlane

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-102D
Site Name: NORTH FUEL FARM
Date Installed: 1/9/03
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Louis Johnson
Project Number: N3996 J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex 2×10' Sch 40	Atlantic Drilling Supply /Jax	NO
Well Screen	Monoflex 2×5' Sch 40 .010	Atlantic Drilling Supply /Jax	
End Cap / Well Point	Locking cap / PVC	Atlantic Drilling Supply /Jax	
Drilling Fluid	MO ~~None~~ Potable water	CECIL FIELD	
Drilling Fluid Additives	High Yield Bentonite	WYO-BEN, BILLINGS, MONT.	
Backfill Material	None		
Annular Filter Pack	Standard Sand 20-30	Standard Sand /Jax	
~~Bentonite Seal~~	Standard Sand 30-65	Standard Sand /Jax	
Annular Grout	Portland Cement Quikreet	Florida Irrigation /Jax	
Surface Cement	Quikrete	Quikrete, Atlanta, GA	
Protective Casing	6" Aluminum hinged locking	ADS, JAX, FL	
Paint	None		
Rod Lubricant			
Compressor Oil			
Drum	55 Gallon	Duval Container 355-0711/Jax	

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Scott R. McGuire

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-103D
Site Name: NORTH FUEL FARM
Date Installed: 1/21/03
Project Name: SARA, NORTH FUEL FARM

Site Geologist: MERVIN W. DALE
Drilling Company: TRANSAMERICAN
Driller: Lewis Johnson
Project Number: N3996 J60050320

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Monoflex 2x10' sch 40	Atlantic Drilling Supply / Jax	NO
Well Screen	Monoflex 2x5' sch 40	Atlantic Drilling Supply / Jax	
End Cap / Well Point	Locking cap / PVC	Atlantic Drilling supply / Jax	
Drilling Fluid	Potable WATER	CECIL FIELD	
Drilling Fluid Additives	High yield bentonite	WYO-BEN, BILLINGS, MT.	
Backfill Material	None		
Annular Filter Pack	Standard sand 20-30	Standard Sand / Jax	
Bentonite Seal	Standard sand 30-65	Standard sand / Jax	
Annular Grout	Portland Cement Quikreet	Florida Irrigation / Jax	
Surface Cement	Quikrete	Quikrete, ATLANTA, GA.	
Protective Casing	6" Aluminum, hinged, locking	ADS, JAX, FL	
Paint	None		
Rod Lubricant			
Compressor Oil			
Drum	55 Gallon	Duval Container 355-0711/Jax	

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Scott R. McGuire

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-104D
Site Name: NORTH FUEL FARM
Date Installed: 5/14/03
Project Name: SARA INVESTIGATION

Site Geologist: MERVIN DALE
Drilling Company: PROSONIC
Driller: DAN MITCHELL
Project Number: N3996

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2" x 10' Sch. 40 Flush-threaded	MONOFLEX, LARGO FL	NO
Well Screen	2" x 5' Sch. 40 0.010" slots flush threaded	MONOFLEX LARGO, FL	NO
End Cap	6" Sch. 40 PVC (2 IN. I.D.)	MONOFLEX, LARGO, FL	NO
Drilling Fluid	~~None~~ Potable water	Hydrant @ Aviation & Loop	yes MD
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20-30 GRADE SAND	STANDARD SAND, JAX, FL	NO
~~Bentonite~~ Seal, Fine Sand	30-65 GRADE SAND	STANDARD SAND, JAX, FL	NO
Annular Grout	PORTLAND CEMENT, Type I	TARMAC AMERICA, Inc. Medley FL	NO
Surface Cement	Quikrete	Quikrete, ATLANTA, GA	NO
Protective Casing	6" Aluminum hinged, locking	ADS, JAX, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-105I
Site Name: NORTH FUEL FARM
Date Installed: 5/15/03
Project Name: SARA INVESTIGATION

Site Geologist: MERVIN DALE
Drilling Company: PROSONIC
Driller: DAN Mitchell
Project Number: N3996

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2" x 10' Sch. 40 Flush-threaded	MONOFLEX, LARGO FL	NO
Well Screen	2" x 5' Sch. 40 0.010" slots flush threaded	MONOFLEX Largo, FL	NO
End Cap	6" Sch. 40 PVC (2" I.D.)	MONOFLEX, Largo, FL	NO
Drilling Fluid	MD ~~None Quik-Gel~~ ~~None~~ ~~MD~~ Potable H_2O	— Hydrant @ Aviation & Loop	— yes MD
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20-30 GRADE SAND	STANDARD SAND, JAX, FL	—
~~Bentonite~~ Seal, Fine Sand	30-65 GRADE SAND	STANDARD SAND, JAX, FL	NO
Annular Grout	PORTLAND CEMENT, Type I	TARMAC AMERICA, Inc. Medley, FL	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA	NO
Protective Casing	6" Aluminum Hinged locking	ADS, JAX, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin H. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-MW106S
Site Name: NORTH FUEL FARM
Date Installed: 5·15·03
Project Name: SARA INVESTIGATION

Site Geologist: MERVIN DALE
Drilling Company: PROSONIC
Driller: ADAM PETERSON
Project Number: N3996

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2"x10' Sch.40 Flush-threaded	MONOFLEX, LARGO FL	NO
Well Screen	2" x 5' Sch.40 0.010" slots flush threaded	MONOFLEX Largo, FL	NO
End Cap	6" POINT, SCH 40 PVC, flush threaded	MONOFLEX, LARGO, FL	NO
Drilling Fluid	None		—
Drilling Fluid Additives	None		—
Backfill Material	None		—
Annular Filter Pack	20-30 GRADE SAND	STANDARD SAND, JAX, FL	NO
~~Bentonite~~ Seal, Fine Sand	30-65 GRADE SAND	STANDARD SAND, JAX, FL	NO
Annular Grout	PORTLAND CEMENT, Type I	TARMAC AMERICA, Inc. Medley, FL	NO
Surface Cement	QuiKrete	QuiKrete, Atlanta, GA	NO
Protective Casing	6" Aluminum, hinged, locking	ADS, JAX, FL	NO
Paint	None		
Rod Lubricant	None		
Compressor Oil	None		

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: James Knight

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-MW 107S
Site Name: NORTH FUEL FARM
Date Installed: 5.15.03
Project Name: SARA INVESTIGATION

Site Geologist: MERVIN DALE
Drilling Company: PROSONIC
Driller: ADAM PETERSON
Project Number: N3996

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2" x 10' Sch. 40 Flush-threaded	MONOFLEX, LARGO FL	NO
Well Screen	2" x 5' Sch. 40, 0.010" slots, flush threaded	MONOFLEX Largo, FL	NO
End Cap	6" POINT-Flush-threaded Sch 40 PVC	MONOFLEX LARGO, FL	NO
Drilling Fluid	None		—
Drilling Fluid Additives	None		—
Backfill Material	None		—
Annular Filter Pack	20-30 GRADE SAND	STANDARD SAND, JAX, FL	NO
~~Bentonite Seal~~, Fine Sand	30-65 GRADE SAND	STANDARD SAND, JAX, FL	NO
Annular Grout	PORTLAND CEMENT, Type I	TARMAC AMERICA, Inc. Medley, FL	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA	NO
Protective Casing	6" Aluminum hinged, locking	ADS, JAX, FL	
Paint	None		
Rod Lubricant	None		
Compressor Oil	None		

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Jessie Knight

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-MW108S
Site Name: NORTH FUEL FARM
Date Installed: 5.15.03
Project Name: SARA INVESTIGATION

Site Geologist: MERVIN DALE
Drilling Company: PROSONIC
Driller: ADAM PETERSON
Project Number: N3996

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2" x 10' Sch. 40 Flush-threaded	MONOFLEX, LARGO FL	NO
Well Screen	2" x 5' Sch. 40, 0.010" slots, flush threaded	MONOFLEX, LARGO, FL	NO
End Cap	6" POINT, SCH 40 PVC, Flush thread	MONOFLEX, LARGO, FL	NO
Drilling Fluid	None		—
Drilling Fluid Additives	None		—
Backfill Material	None		—
Annular Filter Pack	20-30 GRADE SAND	STANDARD SAND, JAX, FL	NO
~~Bentonite~~ Seal, Fine Sand	30-65 GRADE SAND	STANDARD SAND, JAX, FL	NO
Annular Grout	PORTLAND CEMENT, Type I	TARMAC AMERICA, Inc. Medley FL	NO
Surface Cement	QUIKRETE	QUIKRETE, ATLANTA, GA	
Protective Casing	6" ALUMINUM, hinged locking	ADS, JAX, FL	
Paint	None		
Rod Lubricant	None		
Compressor Oil	None		

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: [signature]

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-MW109S
Site Name: NORTH FUEL FARM
Date Installed: 5.15.03
Project Name: SARA INVESTIGATION

Site Geologist: MERVIN DALE
Drilling Company: PROSONIC
Driller: ADAM PETERSON
Project Number: N3996

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2" x 10' Sch. 40 Flush-threaded	MONOFLEX, LARGO FL	NO
Well Screen	2" x 5' Sch. 40 0.010" slots flush threaded	MONOFLEX, Largo, FL	NO
End Cap	6" POINT - FLUSH THREADED SCH 40 PVC	MONOFLEX LARGO, FL	NO
Drilling Fluid	None		—
Drilling Fluid Additives	None		—
Backfill Material	None		—
Annular Filter Pack	20-30 GRADE SAND	STANDARD SAND, JAX, FL	NO
~~Bentonite~~ Seal, Fine Sand	30-65 GRADE SAND	STANDARD SAND, JAX, FL	NO
Annular Grout	PORTLAND CEMENT, Type I	TARMAC AMERICA Inc. Medley, FL	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA	
Protective Casing	6" Aluminum, hinged, locking	ADS, JAX, FL	
Paint	None		
Rod Lubricant	None		
Compressor Oil	None		

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: [signature]

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-110D
Site Name: NORTH FUEL FARM
Date Installed: 5/16/03
Project Name: SARA INVESTIGATION

Site Geologist: MERVIN DALE
Drilling Company: PROSONIC
Driller: DAN MITCHELL
Project Number: N3996

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2" x 10' Sch. 40 Flush-threaded	MONOFLEX, LARGO FL	NO
Well Screen	2" x 5' Sch. 40, 0.010" slots flush threaded	MONOFLEX Largo, FL	NO
End Cap	2" I.D. x 6" long Sch. 40 PVC, flush thread	MONO FLEX, Largo, FL	NO
Drilling Fluid	MD ~~None~~ Potable WATER	HYDRANT @ AVIATION And Loop	yes MD
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20-30 GRADE SAND	STANDARD SAND, JAX, FL	NO
~~Bentonite~~ Seal, Fine Sand	30-65 GRADE SAND	STANDARD SAND, JAX, FL	NO
Annular Grout	PORTLAND CEMENT, Type I	TARMAC AMERICA Inc. Medley, FL	NO
Surface Cement	QuikCrete	QuikCrete, ATLANTA, GA.	NO
Protective Casing	6" Aluminum hinged locking	ADS, JAX, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-111I
Site Name: NORTH FUEL FARM
Date Installed: 5/18/03
Project Name: SARA INVESTIGATION

Site Geologist: MERVIN DALE
Drilling Company: PROSONIC
Driller: DAN Mitchell
Project Number: N3996

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2" I.D. x 10' Sch. 40 Flush-threaded	MONOFLEX, LARGO FL	NO
Well Screen	2" x 5' Sch. 40, 0.010" slots flush threaded	MONOFLEX Largo, FL	NO
End Cap	2" I.D. x 6" long, Sch. 40 PVC, flush thread	MONOFLEX, LARGO, FL	NO
Drilling Fluid	~~None~~ Potable water	Fire hydrant @ Aviation Ave Loop Rd.	yes
Drilling Fluid Additives	~~None~~ Bentonite powder	QUIKGEL, BAROID, Houston, TX	NO
Backfill Material	None		
Annular Filter Pack	20-30 GRADE SAND	STANDARD SAND, JAX, FL	NO
~~Bentonite~~ Seal, Fine Sand	30-65 GRADE SAND	STANDARD SAND, JAX, FL	NO
Annular Grout	PORTLAND CEMENT, Type I	~~TARMAC AMERICA Inc. Medley, FL~~ *	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA.	NO
Protective Casing	6" aluminum hinged, locking	ADS, JAX, FL	NO
Paint	None		
Rod Lubricant	None		
Compressor Oil	None		

* CEMEX, TIFTON, GA.

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin A. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-112I
Site Name: NORTH FUEL FARM
Date Installed: 5/18/03
Project Name: NORTH FUEL FARM SARA INVESTIGATION

Site Geologist: MERVIN W. DALE
Drilling Company: PROSONIC
Driller: DAN MITCHELL
Project Number: N3996 CT0168

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2 IN. I.D., SCH. 40 PVC Flush Thread	MONOFLEX, Largo, FL	NO
Well Screen 5' long	2 IN I.D., Sch. 40 PVC, Flush Thread, 0.010 in. slots	MONOFLEX, Largo, FL.	NO
End Cap	2 IN. I.D., Sch. 40 PVC, Flush Thread, 6" long	MONOFLEX, Largo, FL	NO
Drilling Fluid	Potable WATER	HYDRANT AT AVIATION AND LOOP	Yes
Drilling Fluid Additives	None	—	NO
Backfill Material	None	—	NO
Annular Filter Pack	20/30 Sand	STANDARD SAND JAX, FL	NO
MD ~~Bentonite~~ Seal, FINE SAND	30/65 FINE SAND	STANDARD SAND, JAX, FL	NO
Annular Grout	Type I Portland Cement	CEMEX, TIFTON, GA	NO
Surface Cement	Quikrete	Quikrete, Atlanta, GA	NO
Protective Casing	6" Aluminum, hinged, locking	ADS, JAX, FL.	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-1135
Site Name: NORTH FUEL FARM
Date Installed: 5/19/03
Project Name: NFF SARA

Site Geologist: MERVIN DALE
Drilling Company: PROSONIC
Driller: DAN MITCHELL
Project Number: N3996

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	2IN. I.D. Sch. 40 PVC, Flush Thread	MONOFLEX, LARGO, FL	NO
Well Screen 5' long	2IN. I.D. Sch. 40 PVC, Flush Thread 0.010" slots	MONOFLEX, LARGO, FL	NO
End Cap	2IN. I.D. Sch. 40 PVC, Flush Thread, 6" long	MONOFLEX, LARGO, FL	NO
Drilling Fluid	Potable WATER	Hydrant at Aviation & Loop	~~NO~~ Yes NO
Drilling Fluid Additives	None		
Backfill Material	none		
Annular Filter Pack	20/30 Sand	STANDARD, JAX, FL	NO
NO ~~Bentonite Seal~~ Fine Sand	30/65 Sand	STANDARD, JAX, FL	NO
Annular Grout	Type I Portland Cement	CEMEX, TIFTON, GA	NO
Surface Cement	Quikrete	Quikrete, ATLANTA, GA	NO
Protective Casing	6" Aluminum, hinged, locked	ADS, JAX, FL	NO
Paint	None		↓
Rod Lubricant	↓		
Compressor Oil			

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-114S
Site Name: NORTH FUEL FARM
Date Installed: 7/1/03
Project Name: SARA INVESTIGATION

Site Geologist: SCOTT MC GUIRE
Drilling Company: PROSONIC
Driller: Charles Wilson
Project Number: 13996

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, Flush Thread, 2" x 10'	MONOFLEX / ADS	NO
Well Screen	Sch. 40 PVC, Flush Thread, 2" x 10', 0.010" slots	MONOFLEX / ADS	NO
End Cap	Sch. 40 PVC,	MONOFLEX / ADS	NO
Drilling Fluid	POTABLE WATER	CECIL WATER SUPPLY (LOCAL HYDRANT)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/30 SAND	Standard Sand, JAX, FL	NO
~~Bentonite~~ Seal, Fine Sand	30/65 SAND	Standard Sand, JAX, FL	NO
Annular Grout	Type I PORTLAND Cement *	TARMAC, MEDLEY, FL	NO
Surface Cement	QUIKRETE	QUIKRETE CO., ATLANTA, GA	NO
Protective Casing	6 IN., Aluminum, NON-KINGE locking	ADS, JAX, FL	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—
* Annular Grout Add.	QUIK GEL (Hi Yield Bentonite)	BAROID DRILLING, Houston, TX	NO

ADS = Atlantic Drilling Supply

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Merwin W. Dale FOR S.M.

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-115D
Site Name: NORTH FUEL FARM
Date Installed: 6/30/03
Project Name: SARA INVESTIGATION

Site Geologist: SCOTT McGuire
Drilling Company: PROSONIC
Driller: Charles Wilson
Project Number: 13996

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, Flush Thread, 2" x 10'	MONOFLEX / ADS	NO
Well Screen	Sch. 40 PVC, Flush Thread, 2" x 10', 0.010" slots	MONOFLEX / ADS	NO
End Cap	Sch. 40 PVC,	MONOFLEX / ADS	NO
Drilling Fluid	POTABLE WATER	CECIL WATER SUPPLY (LOCAL Hydrant)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/30 Sand	Standard Sand, JAX, FL	NO
~~Bentonite~~ Seal, Fine Sand	30/65 Sand	Standard Sand, JAX, FL	NO
Annular Grout	Type I PORTLAND Cement *	TARMAC, MEDLEY, FL	NO
Surface Cement	QUIKRETE	QUIKRETE CO., ATLANTA, GA	NO
Protective Casing	6" Aluminum, Non-hinge, locking	ADS, JAX, FL.	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—
* Annular Grout Add.	QUIK GEL (Hi Yield Bentonite)	BAROID DRILLING, Houston, TX	NO

ADS = Atlantic Drilling Supply

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Scott R. McGuire

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-116D
Site Name: NORTH FUEL FARM NAS CF
Date Installed: 6/26 - 6/27/03
Project Name: SARA INVESTIGATION

Site Geologist: MERVIN DALE
Drilling Company: PROSONIC
Driller: Ch. Wilson
Project Number: N3996

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	MONOFLEX Sch. 40 PVC, Flush Thread, 2"x10'	Atlantic Drilling Supply, JAX, FL	NO
Well Screen	MONOFLEX Sch. 40 PVC, Flush. Th., 2"x10' 0.010" slots	Atlantic Drilling, JAX, FL	NO
End Cap (SUP CAP) MD	MONO FLEX, PVC, 2" x 2" diam, Sch. 40 PVC	Atlantic Drilling Supply, JAX, FL	NO
Drilling Fluid	Potable Water	Cecil Water Supply (local hydrant)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/30 Sand	Standard Sand, JAX, FL	NO
~~Bentonite~~ Seal, Fine Sand	30/65 Sand	Standard Sand, JAX, FL	NO
Annular Grout	Type I Portland Cement *	TARMAC, MEDLEY, FL	NO
Surface Cement	QUIKRETE	QUIKRETE CO., ATLANTA, GA	NO
Protective Casing	6" Aluminum, Non-hinge, locking	ADS, JAX, FL	NO
Paint	—	—	—
Rod Lubricant	—	—	—
Compressor Oil	—	—	—
* Annular Grout Add.	QUIK GEL (Hi-Yield Bentonite)	BAROID DRILLING, Houston, TX	NO

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Mervin W. Dale

MONITORING WELL MATERIALS
CERTIFICATE OF CONFORMANCE

Well Designation: CEF-076-117D
Site Name: NORTH FUEL FARM
Date Installed: 6/29/03
Project Name: SARA INVESTIGATION

Site Geologist: SCOTT McGuire
Drilling Company: PROSONIC
Driller: Charles Wilson
Project Number: N3996

Material	Brand/Description	Source/Supplier	Sample Collected ?
Well Casing	Sch. 40 PVC, Flush Thread, 2"x10'	MONOFLEX / ADS	NO
Well Screen	Sch. 40 PVC, Flush Thread, 2"x10', 0.010" slots	MONOFLEX / ADS	NO
End Cap	Sch. 40 PVC,	MONOFLEX / ADS	NO
Drilling Fluid	POTABLE WATER	CECIL WATER SUPPLY (LOCAL Hydrant)	NO
Drilling Fluid Additives	None	—	—
Backfill Material	None	—	—
Annular Filter Pack	20/30 SAND	Standard Sand, JAX, FL	NO
~~Bentonite Seal~~, Fine Sand	30/65 Sand	Standard Sand, JAX, FL	NO
Annular Grout	Type I PORTLAND Cement *	TARMAC, MEDLEY, FL	NO
Surface Cement	QUIKRETE	QUIKRETE CO. ATLANTA, GA.	NO
Protective Casing	6", Aluminum, Non-hinge, locking	ADS, JAX, FL.	NO
Paint	None	—	—
Rod Lubricant	None	—	—
Compressor Oil	None	—	—
* Annular Grout Add.	QUIK GEL (Hi Yield Bentonite)	BAROID DRILLING, Houston, TX	NO

ADS = Atlantic Drilling Supply

To the best of my knowledge, I certify that the above described materials were used during installation of this monitoring well.

Signature of Site Geologist: Scott R. McGuire

APPENDIX I

GROUNDWATER SAMPLING AND LOW FLOW DATA SHEETS

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW- 12
Sample Location: CEF-076- 12
Sampled By: MO'NEILL
C.O.C. No.: NFF-121001
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 12/10/01 Time: 1600	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Method: Low Flow Peristaltic	CL	4.70	0.066	23.3	33.1	0.74	117	

PURGE DATA

Date: 12/10/01	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 1.5								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 15.23								
Static Water Level (WL): 2.06								
One ~~Casing~~ Screen Volume(gal/L): 1.6/6.2								
Start Purge (hrs): 1317								
End Purge (hrs): 1552								
Total Purge Time (min): 155								
Total Vol. Purged (gal/L): 31.5								

6.5 x 20 = 130
6.5 x 5 = 32.5

1315
1550

See Low Flow Purge Sheet

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	MO
#VOHs+1,2 dichloroethane+BTEX+MTBE			
metals (Lead)	HNO3	1-500mL plastic	MO
PAHs SW846 8310	None	2 - 1 liter glass ambers	MO
#Include 1- and 2-methylnaphthalene			
EDB			MO
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	MO

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD	Duplicate ID No.: None	Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-12
DATE: 12/10/01

250 ×5 / 1250 200 ×5

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments Volume
1317	2.06	1318	WL 2.29	1319	slow pump	WL 2.46			clear med brwn
1322	2.38	250	4.93	0.064	151.0	7.13	22.70	251	1.25
1327	2.41	250	4.83	0.065	137.0	2.31	22.50	255	~~2.50~~ slow pump
1332	2.38	200	4.97	0.063	125.0	3.84	22.7	244	~~3.75~~ 3.5
1337	2.40	200	4.73	0.066	62.4	1.43	22.3	250	~~4.5~~ 4.5
1342	2.46	200	4.70	0.066	63.8	1.24	22.3	248	~~5.25~~ 5.5
1347	2.40	200	4.69	0.066	65.7	1.14	22.4	246	~~6.0~~ 6.5
1352	2.40	200	4.68	0.066	56.0	1.78	22.3	236	~~7.75~~ 7.5
1357	2.37	200	4.67	0.066	49.6	1.21	22.3	224	~~8.0~~ 8.5
1402	2.37	200	4.67	0.066	50.1	0.98	22.3	212	~~9.25~~ 9.5
1407	2.37	200	4.67	0.066	50.7	0.87	22.4	203	~~10.5~~ 10.5
1412	2.37	200	4.67	0.066	49.6	0.84	22.4	193	~~11.75~~ 11.5 empty cup
1417	2.37	200	4.72	0.066	39.1	2.24	22.4	172	~~12.0~~ 12.5
1422	2.37	200	4.70	0.066	37.7	0.93	22.4	169	~~13.25~~ 13.5
1427	2.37	200	4.70	0.066	37.0	0.85	22.4	159	~~14.50~~ 14.5
1432	2.37	200	4.72	0.066	33.8	2.33	22.4	148	~~15.75~~ 15.5 change bucket empty cup
1437	2.37	200	4.70	0.066	33.6	1.37	22.4	145	~~16.0~~ 16.5
1442	2.37	200	4.69	0.066	33.6	0.87	22.4	135	~~17.25~~ 17.5
1452	~~1497~~ ~~sample~~ No 2.37	200	4.69	0.066	33.8	0.83	22.4	134	19.5
1502	2.37	200	4.70	0.066	34.4	0.83	22.4	132	21.5
1512	2.37	200	4.69	0.066	34.5	0.83	22.4	128	23.5
1522	2.38	200	4.70	0.066	35.6	0.81	22.3	123	25.5
1532		200							27.5 Looking for well 076-11
1542	2.37	200	4.70	0.066	33.8	0.83	22.3	120	29.5
1552	2.37	200	4.70	0.066	33.1	0.77	22.3	117	31.5
1600	sample								

SIGNATURE(S):

817 5429

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-42
Sample Location: CEF-076-42
Sampled By: L. MIDDLETON
C.O.C. No.: NFF-121001
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 12/11/01 Time: 1520	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l		Other
Method: Low Flow Peristaltic	CLEAR	4.42	0.099	21.8	3.2	0.80		

PURGE DATA

Date: 12/11/01	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 12.40	See Low Flow Purge Sheet							
Static Water Level (WL): 1.95 10FT SCREEN								
One Casing Volume(gal/L): 0.62								
Start Purge (hrs): 1405								
End Purge (hrs): 1510								
Total Purge Time (min): 65								
Total Vol. Purged (gal/L): 2.5/9.5								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	X
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	X
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	X
EDB			X
METALS			X

OBSERVATIONS / NOTES

Circle if Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-42
DATE: 12/11/01

	Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
	1405	1.95	300	—	—	—	—	—	—	
3	1415	2.21	300	4.38	0.098	7999	0.59	21.9	264	BROWN
6	1425	2.24	300	4.38	0.098	66	0	21.8	245	LT BROWN
9	1435	2.24	300	4.40	0.098	45	0	21.9	236	
12	1445	2.25	300	4.42	0.097	32	0.51	21.9	222	CLEAR
15	1455	2.26	300	4.40	0.097	21	0.68	21.9	225	
18	1505	2.26	300	4.40	0.098	8	0.77	21.8	219	
19.5	1510	2.26	300	4.42	0.099	3.2	0.80	21.8	217	
	END PURGE									

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-81S
Sample Location: CEF-076-81S
Sampled By: M. O'Neill
C.O.C. No.: NFF-121001
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Date: 12/10/01								
Time: 1205								
Method: Low Flow Peristaltic	Clr	4.91	0.135	22.4	4.0	2.19	164	

PURGE DATA

	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Date: 12/10/01								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 13.20	See Low Flow Purge Sheet							
Static Water Level (WL): 5.20								
One Casing Volume(gal/L): 1.3/4.9								
Start Purge (hrs): 1053								
End Purge (hrs): 1202								
Total Purge Time (min): 69								
Total Vol. Purged (gal/L): 13.8								

13.20
-5.20
8.00

13.00 x 0.17

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	MO
#VOHs+1,2 dichloroethane+BTEX+MTBE			
Metals Cheac	HNO_3	1-500 mL	MO
PAHs SW846 8310	None	2 - 1 liter glass ambers	MO
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	MO
EDB			MO

OBSERVATIONS / NOTES

Circle if Applicable:
MS/MSD
~~Duplicate ID No.:~~
CEF-076-MD-GW-01

Signature(s):

MS / MSD

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-815
DATE: 12/10/01

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	13.8L Volume	Comments
1053	5.20	200	Time 1056 WL 5.43 FLOW 200							Clear
1102	5.51	200	4.72	0.151	12.1	5.88	22.3	323	1.8L	
1107	5.53	200	4.73	0.149	11.6	4.29	22.3	323	2.8	
1112	5.55	200	4.78	0.145	6.1	3.61	22.3	308	3.8	
1117	5.55	200	4.81	0.144	5.7	3.33	22.3	291	4.8	
1122	5.55	200	4.87	0.142	3.4	3.06	22.3	271	5.8	
1127	5.55	200	4.91	0.140	2.5	2.84	22.4	247	6.8	
1132	5.56	200	4.92	0.139	1.8	2.69	22.4	222	7.8	
1137	5.58	200	4.91	0.139	1.6	2.64	22.5	204	8.8	
1142	5.57	200	4.93	0.137	4.2	2.99	22.5	184	9.8	
1147	5.57	200	4.93	0.136	3.9	2.61	22.5	174	10.8	
1152	5.57	200	4.94	0.135	3.2	2.35	22.4	165	11.8	
1157	5.56	200	4.91	0.135	3.8	2.24	22.4	165	12.8	
1202	5.56	200	4.91	0.135	4.0	2.19	22.4	164	13.8	
1205	Sample									

SIGNATURE(S):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-825
Sample Location: CEF-076-825
Sampled By: D.S
C.O.C. No.: NFF-121001
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Date: 12/10/01								
Time: 1620 (SAMPLE)								
Method: Low Flow Peristaltic	L+Brown TAN	5.44	0.153	23.03	81	1.19	-91	

PURGE DATA

	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Date: 12/10/01								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 28.7								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 12.62	See Low Flow Purge Sheet							
Static Water Level (WL): 4.28								
One Casing Volume(gal/L): 4.9								
Start Purge (hrs): 1230								
End Purge (hrs): 1610								
Total Purge Time (min): 220								
Total Vol. Purged (gal/L): 26.4								

180
40
220

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	DS
#VOHs+1,2 dichloroethane+BTEX+MTBE	–	3 40ml	DS
EDB			DS
PAHs SW846 8310	None	2 - 1 liter glass ambers	DS
#Include 1- and 2-methylnaphthalene			
METAL	HNO3	1 500ml PLASTIC	DS
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	DS

OBSERVATIONS / NOTES

Well Purged Slow

Circle if Applicable:
MS/MSD
Duplicate ID No.: CEF-076-DU-GW-01

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-GW-825
DATE: 12-10-01

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1230	4.28	200							
1240	4.81	120	5.48	0.141	224	9.61	24.30	44	TURN DOWN PUMP
1250	4.76	120	5.41	0.148	223	2.49	24.15	7	H_2O BROWN
1300	4.78	120	5.41	0.149	202	2.47	23.60	-23	
1310	4.78	120	5.42	0.148	192	1.99	23.59	-33	
1320	4.78	120	5.43	0.149	190	1.65	23.66	-44	
1330	4.78	120	5.43	0.149	185	1.54	23.49	-50	
1340	4.78	120	5.42	0.149	183	1.52	23.52	-55	
1350	4.78	120	5.42	0.150	184	1.51	23.54	-55	
1400	4.75	120	5.42	0.149	150	1.39	23.30	-65	
1410	4.72	120	5.43	0.149	140	1.33	23.34	-68	
1420	4.71	120	5.42	0.149	136	1.30	23.34	-70	H_2O STILL TAN
1430	4.71	120	5.51	0.148	105	8.35	23.13	-64	DUMPED H_2O
1440	4.69	120	5.45	0.151	97.9	2.17	23.15	-76	BATTERY SLOWED TURN UP
1500	4.73	120	5.45	0.150	87	1.37	23.13	-82	
1510	4.73	120	5.45	0.151	88	1.35	23.14	-80	
1520	4.74	120	5.45	0.151	85	1.29	23.12	-83	
1530	4.75	120	5.45	0.152	83	1.25	23.15	-86	
1540	4.75	120	5.45	0.152	84	1.21	23.16	-88	
1550	4.75	120	5.44	0.153	83	1.19	23.11	-89	STILL TAN COLOR
1600	4.75	120	5.44	0.153	81	1.20	23.04	-91	
1610	4.75	120	5.44	0.153	81	1.19	23.03	-91	LT. BROWN + TAN COLOR
		STOP PURGE		5 well	Volumes				
1620	SAMPLE								

SIGNATURE(S): [illegible]

PAGE 2 OF 2

* When Developing Well went Dry - [illegible]

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Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm
Project No.: N3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E012-01a
Sample Location: CEF-076-012
Sampled By: DS
C.O.C. No.: NFF-010802
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 1-8-~~03~~02	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity ORP	Other
Time: 1535								
Method: Low Flow Peristaltic	ORANGE	5.21	0.075	17.61	69.1	9.28	75	

PURGE DATA

Date: 1-8-02	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Method: Low Flow Peristaltic	See Low Flow Purge Sheet							
Monitor Reading (ppm): 0								
Well Casing Diameter: 2								
Well Casing Material: PVC								
Total Well Depth (TD): 15.18								
Static Water Level (WL): 3.09								
One Casing Volume(gal/L): 6.2								
Start Purge (hrs): 0938								
End Purge (hrs): 1530								
Total Purge Time (min): 95								
Total Vol. Purged (gal/L): 19								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Total Lead SW846 6010B	HNO3	Minimum 500 ml HDPT	DS
Dissolved Lead SW846 6010B	HNO3	Minimum 500 ml HDPT	DS

OBSERVATIONS / NOTES

Note: For the Dissolved (or filtered) sample, use a 1 micron filter. Also, change the label of that sample by changing the "GW" to a "GF"

18.6 TOTAL

NONE release
16PCF-4

Circle if Applicable:

MS/MSD	Duplicate ID No.:
None	None

Signature(s):

9

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm
PROJECT NUMBER: N3996.JG0050325

WELL ID.: CEF-076-012
DATE: 1-8-02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0938	3.09	200							
0950	3.35	200	4.79	0.081	73.0	5.94	16.6	301	
1000	3.32	200	4.71	0.074	67.3	4.69	17.3	343	
1010	3.32	200	4.65	0.073	55.5	4.18	17.6	346	
1020	3.33	200	4.57	0.070	59.8	3.75	18.2	335	
1030	3.34	200	4.53	0.071	62.2	3.17	18.6	311	
1040	3.34	200	4.53	0.071	52.2	2.96	19.0	295	
1050	3.34	200	4.52	0.070	53.5	2.85	18.8	292	
1100	3.34	200	4.53	0.071	44.4	2.59	19.3	288	
1110	3.35	200	4.53	0.071	44.7	2.43	19.4	285	
1525	3.09	200	6.63	0.075	71.2	12.09	17.62	85	H_2O looks VERY RED/ORANGE
1530	3.12	200	5.21	0.075	69.1	9.28	17.61	75	
1535	SAMPLED								

SIGNATURE(S): [signature]

* Temperature increased as air temp. ↑ WATER

PAGE 2 OF 2

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050 325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E 75-01
Sample Location: CEF-076-75
Sampled By: DS
C.O.C. No.: 076-121702
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 12-17-02 / Time: 1545	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Method: Low Flow Peristaltic	CC	6.30	0.112	12.7	14.0	4.61	—	—

PURGE DATA

Date: 12-17-02	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 15.5								
Static Water Level (WL): 4.26	See Low Flow Purge Data Sheet							
One Casing Volume(gal/L):								
Start Purge (hrs): 1340								
End Purge (hrs): 1540								
Total Purge Time (min): 120								
Total Vol. Purged (gal/L): ~~2~~ DS 3 1 (+)								

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	8260B	HCl	3- 40 ml vials	D
PAHs	8270C	None	2- 1 liter gl. Amber	
EDB	504.1		3- 40 ml vials	
TOTAL LEAD	6010B	HNO_3	1- 500 ml HDPE	
TRPH	FL-PRO	H_2SO_4	2- 1 liter gl. Amber	—

OBSERVATIONS / NOTES

Lab: Accutest

Circle if Applicable:

MS/MSD	Duplicate ID No.: Dup

Signature(s): [illegible]

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG050325

WELL ID.: CEF-Q76-7S
DATE: 12-17-02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments
1340	4.26	300						
1410	4.50	300	6.30	0.112	17	5.11	22.5	
1450	4.47	300	6.30	0.112	16	4.76	22.0	
1510	4.46	300	6.30	0.112	15	4.60	22.0	
1520	4.28	100	6.30	0.113	14.8	4.65	22.9	
1530	4.28	100	6.30	0.115	14.6	4.62	21.8	
1540	4.28	100	6.30	0.112	14.0	4.61	12.7	

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E 8S-01
Sample Location: CEF-076-B
Sampled By: DS
C.O.C. No.: 076-121702
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Date: 12-17-02								
Time: 1300								
Method: Low Flow Peristaltic	CL	6.31	0.136	22.3	.8	1.48	—	—

PURGE DATA

Date: 12-17-02	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 14.3								
Static Water Level (WL): 4.65								
One Casing Volume(gal/L): 6.2								
Start Purge (hrs): 1145								
End Purge (hrs): 1250								
Total Purge Time (min): 1300								
Total Vol. Purged (gal/L): 19								

See Low Flow Purge Data Sheet

DS
GS

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	8260B	HCl	3- 40 ml vials	DS
PAHs	8270C	None	2- 1 liter gl. Amber	
EDB	504.1		3- 40 ml vials	
TOTAL LEAD	6010B	HNO_3	1- 500 ml HDPE	
TRPH	FL-PRO	H_2SO_4	2- 1 liter gl. Amber	

OBSERVATIONS / NOTES

Lab: Accutest

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): [illegible]

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG050325

WELL ID.: CEF-876-85
DATE: 12-17-02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments
1145	4.65	300						
1205	4.92	300	6.23	0.124	0	1.40	22.2	
1215	4.93	300	6.26	0.127	10	1.18	22.3	
1226	4.93	300	6.28	0.134	15	1.28	22.4	
1235	4.94	300	6.29	0.135	6	1.20	22.4	
1245	4.94	300	6.30	0.136	7	1.44	22.3	
1250	4.93	300	6.31	0.136	8	1.48	22.3	

SIGNATURE(S): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E39D-01
Sample Location: CEF-076-39D
Sampled By: LM
C.O.C. No.: 076-39D
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Date: 12-17-02								
Time: 1420								
Method: Low Flow Peristaltic	CL	5.23	0.06	22.5	0.06	0.3	—	—

PURGE DATA

	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Date: 12-17-02								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 10.2								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 60								
Static Water Level (WL): 3.6								
One Casing Volume(gal/L): 6.2								
Start Purge (hrs): 1220								
End Purge (hrs): 1400								
Total Purge Time (min): 100								
Total Vol. Purged (gal/L): 20								

See Low Flow Purge Data Sheet

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	8260B	HCl	3- 40 ml vials	X
PAHs	8270C	None	2- 1 liter gl. Amber	X
EDB	504.1		3- 40 ml vials	X
TOTAL LEAD	6010B	HNO_3	1- 500 ml HDPE	X
TRPH	FL-PRO	H_2SO_4	2- 1 liter gl. Amber	X

OBSERVATIONS / NOTES

Lab: Accutest

STRONG Rotn. ODOR

Circle If Applicable:

MS/MSD

Duplicate ID No.: DUP01

Signature(s):

CEF-076-GW-DUP01

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG050325

WELL ID.: CEF-Q76-39D
DATE: 12/17/02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments	VOC
1220	3.60	200	—	—	—	—	—		0
1320	3.87	200	5.28	0.06	39	3.1	22.6	CLEAR	12
1330	3.88	200	5.26	0.06	5.6	0.4	22.6		14
1340	3.88	200	5.28	0.06	5.6	0.7	22.5		16
1350	3.88	200	5.24	0.06	4.3	0.4	22.5		18
1400	3.88	200	5.23	0.06	2.6	0.3	22.5		20
1420	SAMPLE								

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E435-01
Sample Location: CEF-076-435
Sampled By: LM
C.O.C. No.: 076-~~355~~-RS 121602
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Date: 12/16/02								
Time: 1410								
Method: Low Flow Peristaltic	CLEAR	5.41	0.07	20.2	20	0.1	—	—

PURGE DATA

	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Date: 12/16/02								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0/0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 42								
Static Water Level (WL): 2.92								
One Casing Volume(gal/L): 3.1 5' SCREEN								
Start Purge (hrs): 1130								
End Purge (hrs): 1405								
Total Purge Time (min): 155								
Total Vol. Purged (gal/L): 15.5								

See Low Flow Purge Data Sheet

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	8260B	HCl	3- 40 ml vials	X
PAHs	8270C	None	2- 1 liter gl. amber	X
EDB	504.1		3- 40 ml vials	X
TOTAL LEAD	6010B	HNO_3	1- 500 ml HDPE	X
TRPH	FL-PRO	H_2SO_4	2- 1 liter gl. amber	X

OBSERVATIONS / NOTES

Lab: Accutest

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

ROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
ROJECT NUMBER: N3996 JG050325

WELL ID.: CEF-876-435
DATE: 12/16/07

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments VOC
1230	2.52	100	—	—	—	—	—	Dk BROWN
1250	4.01	100	4.93	0.11	33	2.9	20.2	8 CLEAR LAMOTTE TURB = 25
1300	4.01	100	5.00	0.08	28	0.5	20.0	9 LAMOTTE TURB = 25
1305	4.02	100	5.36	0.08	25	8.5	20.0	9.5 LAMOTTE = 22
1325	4.02	100	5.29	0.07	16	0.4	20.0	11.5
1350	4.02	100	5.40	0.07	24	0.4	20.3	14
1400	4.02	100	5.40	0.07	22	0.4	20.2	15
1405	4.02	100	5.41	0.07	20	0.1	20.2	15.5
END PURGE								

SIGNATURE(S):

PAGE 2 OF 2

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050 325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E44F-01
Sample Location: CEF-076-44I
Sampled By: DS
C.O.C. No.: 076-44F DS 121702
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Date: 12/17/02								
Time: 1040								
Method: Low Flow Peristaltic	CL	5.40	0.35	19.3	58	0.73	—	—

PURGE DATA

	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Date: 12/17/02								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 73								
Static Water Level (WL): 3.05	See Low Flow Purge Data Sheet							
One Casing Volume(gal/L): 3.1								
Start Purge (hrs): 0920								
End Purge (hrs): 1130								
Total Purge Time (min): 130								
Total Vol. Purged (gal/L): 16								

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	8260B	HCl	3- 40 ml vials	DS
PAHs	8270C	None	2- 1 liter gl. Amber	
EDB	504.1		3- 40 ml vials	
TOTAL LEAD	6010B	HNO_3	1- 500 ml HDPE	
TRPH	FL-PRO	H_2SO_4	2- 1 liter gl. Amber	—

13.5

OBSERVATIONS / NOTES

Lab: Accutest

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG0850325

WELL ID.: CEF-876-44I
DATE: 12/17/02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments
0920	3.05	300						Some silt in well - pumping
0940	3.17	300	5.46	0.101	450	2.89	19.3	fast to remove - will slow
0950	3.19	300	5.44	0.099	130	0.80	19.9	~30 before 5 volumes to see if
1000	3.18	300	5.44	0.091	101	0.59	20.0	it clears -
1005	3.18	300	5.42	0.090	98	0.63	20.0	
1015	3.11	100	5.41	0.085	78	0.80	19.2	
1030	3.10	100	5.40	0.085	58	0.75	19.3	
1040	SAMPLE							

SIGNATURE(S): RDS

PAGE 2 OF 2

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E49S-01
Sample Location: CEF-076-49S
Sampled By: PC
C.O.C. No.: 076-12-1202
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Date: 12/12/02								
Time: 0955								
Method: Low Flow Peristaltic	CLEAR	5.0	0.05	20.1	6.1	0.4	—	

PURGE DATA

	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Date: 12/12/02								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 53.2'								
Static Water Level (WL): 4.4'								
One Casing Volume(gal/L): 3.1								
Start Purge (hrs): 0915								
End Purge (hrs): 0950								
Total Purge Time (min): 35								
Total Vol. Purged (gal): 10.5								

See Low Flow Purge Data Sheet

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	8260B	HCl	3- 40 ml vials	X
PAHs	8270C	None	2- 1 liter gl. Amber	X
EDB	504.1		3- 40 ml vials	X
TOTAL LEAD	6010B	HNO_3	1- 500 ml HDPE	X
TRPH	FL-PRO	H_2SO_4	2- 1 liter gl. Amber	X

OBSERVATIONS / NOTES

Lab: Accutest

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG050325

WELL ID.: CEF-Q76-49S
DATE: 12/12/02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments
0915	4.4	300	—	—	—	—	—	START PURGE
0920	4.60	1.5 300	5.0	0.10	36	1.2	19.8	
0925	4.61	3.0 300	5.1	0.08	28	0.7	20.0	
0930	4.61	4.5 300	5.0	0.06	15	0.6	20.1	
0935	4.61	6.0 300	5.0	0.05	11	0.5	20.1	
0940	4.60	7.5 300	5.0	0.05	8.7	0.5	20.0	
0945	4.60	9.0 300	5.0	0.05	7.3	0.5	20.1	
0950	4.60	10.5 300	5.0	0.05	6.1	0.4	20.1	
		SAMPLE TIME 0955						

SIGNATURE(S):

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E 50E 01
Sample Location: CEF-076-50E
Sampled By:
C.O.C. No.: 076-12/12/02
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 12/12/02	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Time: 1020								
Method: Low Flow Peristaltic	CL	4.94	0.057	20.4	4.3	0.62	—	—

PURGE DATA

Date: 12/12/02	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Method: Low Flow Peristaltic	See Low Flow Purge Data Sheet							
Monitor Reading (ppm): 19								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 52								
Static Water Level (WL): 4.44								
One Casing Volume(gal/L): 3.1								
Start Purge (hrs): 0815								
End Purge (hrs): 1045								
Total Purge Time (min): 60								
Total Vol. Purged (gal/L): 17								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs 8260B	HCl	3- 40 ml vials	✓
PAHs 8270C	None	2- 1 liter gl. Amber	
EDB 504.1		3- 40 ml vials	
TOTAL LEAD 6010B	HNO_3	1- 500 ml HDPE	
TRPH FL-PRO	H_2SO_4	2- 1 liter gl. Amber	

OBSERVATIONS / NOTES

Lab: Accutest

Circle if Applicable:
MS/MSD
Duplicate ID No.:

Signature(s): [signature]

DS

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG050325

WELL ID.: CEF-876-50
DATE: 12/12/02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments
0915	4.44	200						
0925	4.58	200	4.99	0.100	35	1.13	20.2	
0945	4.60	200	4.96	0.058	5.1	0.70	20.3	
0955	4.60	200	4.95	0.058	4.8	0.67	20.3	
1005	4.60	200	4.94	0.057	3.0	0.66	20.4	
1015	4.60	200	4.94	0.057	4.3	0.62	20.4	
1020	SAMPLE	TIME						

SIGNATURE(S): D-Bil

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E510-01
Sample Location: CEF-076-S1D
Sampled By: PC
C.O.C. No.: 076 - 12-12-02
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Date: 12/12/02 Time: 1135								
Method: Low Flow Peristaltic	CLEAR	5.3	0.08	20.4	0.20	0.4	—	

PURGE DATA

Date: 12/12/02	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 112								
Static Water Level (WL): 4.55'	See Low Flow Purge Data Sheet							
One Casing Volume(gal/L): 6.2								
Start Purge (hrs): 1025								
End Purge (hrs): 1130								
Total Purge Time (min): 65								
Total Vol. Purged (gal/L): 19.5								

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	8260B	HCl	3- 40 ml vials	X
PAHs	8270C	None	2- 1 liter gl. Amber	X
EDB	504.1		3- 40 ml vials	X
TOTAL LEAD	6010B	HNO_3	1- 500 ml HDPE	X
TRPH	FL-PRO	H_2SO_4	2- 1 liter gl. Amber	X

OBSERVATIONS / NOTES

Lab: Accutest

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG050325

WELL ID.: CEF-876-510
DATE: 12-12-02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments
1025	4.55	300	—	—	—	—	—	START PURGE
1030	4.73	1.5 300	5.2	0.08	1.3 ~~3.0~~	2.5	19.3	
1040	4.81	4.5 300	5.3	0.08	0.80	0.6	20.1	
1050	4.83	7.5 300	5.3	0.08	0.30	0.5	20.1	
1100	4.83	10.5 300	5.3	0.07	0.30	0.4	20.2	
1110	4.82	13.5 300	5.3	0.08	0.30	0.4	20.2	
1120	4.83	16.5 300	5.3	0.08	0.20	0.4	20.2	
1125	4.83	18.0 300	5.3	0.08	0.20	0.4	20.1	
1130	4.83	19.5 300	5.3	0.08	0.20	0.4	20.4	
		SAMPLE TIME 1135						

SIGNATURE(S): [signature]

205 / 936 4086

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-ESGI-01
Sample Location: CEF-076-56I
Sampled By: DS
C.O.C. No.: 076 - 121802
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Date: 12/18/02								
Time: 1610								
Method: Low Flow Peristaltic	CL	5.19	.044	21.6	11.0	0.55	—	—

PURGE DATA

Date: 12-18-02	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 76								
Static Water Level (WL): 6.82	See Low Flow Purge Data Sheet							
One Casing Volume(gal/L): 3.1								
Start Purge (hrs): 1330								
End Purge (hrs): 1605								
Total Purge Time (min): ~~235~~ DS 155								
Total Vol. Purged (gal/L): 15.5								

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	8260B	HCl	3- 40 ml vials	DS
PAHs	8270C	None	2- 1 liter gl. Amber	
EDB	504.1		3- 40 ml vials	
TOTAL LEAD	6010B	HNO_3	1- 500 ml HDPE	
TRPH	FL-PRO	H_2SO_4	2- 1 liter gl. Amber	

OBSERVATIONS / NOTES

Lab: Accutest

PUMPED A LOTS of SAND PACK SAND

Clogged pump several times

Circle If Applicable:		Signature(s):
MS/MSD	Duplicate ID No.:	R

CEF-076-GW-MSD2-01

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG050325

WELL ID.: CEF-Q76-S6I
DATE: 12-18-05

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments
1330	6.82	100						Slow as possible
1400	7.04	100	5.43	0.050	19	9.05	21.3	Volume - 3.0 L
1415	7.06	100	5.33	0.047	50	0.85	21.5	~~2.5 L~~ 4.5
1430	7.07	100	5.26	0.043	60	0.070	21.6	~~4.0 L~~ 6.0
1500	7.07	100	5.25	0.043	35	0.67	21.7	Mix ~~7.0 L~~ 9.0
1520	7.07	100	5.21	0.042	27	0.59	21.5	~~9.0 L~~ 11.0
1530	7.07	100	5.20	0.041	20.4	0.60	21.5	~~10 L~~ 12.0
1550	7.07	100	5.19	0.043	13.3	0.56	21.5	14.0
1605	7.07	100	5.19	0.044	11.0	0.55	21.6	15.0
1610	Sampling							

SIGNATURE(S): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E525-01
Sample Location: CEF-076-E525
Sampled By: DL
C.O.C. No.: 076-12-11-02
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Date: 12-11-02								
Time: 1340								
Method: Low Flow Peristaltic	CLEAR	5.3	0.06	20.1	34	0.4	—	

PURGE DATA

	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Date: 12-11-02								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 37.9								
Static Water Level (WL): 3.88								
One Casing Volume(gal/L): 3.1								
Start Purge (hrs): 1150								
End Purge (hrs): 1335								
Total Purge Time (min): 105								
Total Vol. Purged (gal/L): 15.75								

See Low Flow Purge Data Sheet

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	8260B	HCl	3- 40 ml vials	X
PAHs	8270C	None	2- 1 liter gl. Amber	X
EDB	504.1		3- 40 ml vials	X
TOTAL LEAD	6010B	HNO_3	1- 500 ml HDPE	X
TRPH	FL-PRO	H_2SO_4	2- 1 liter gl. Amber	X

OBSERVATIONS / NOTES

Lab: Accutest

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG050325

WELL ID.: CEF-Q76-57s
DATE: 12-11-02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments
1150	3.88	~~150~~ 150	—	—	—	—	—	START PURGE
1305	4.04	11.25 ~~150~~	5.1	0.06	34	0.4	20.2	
1310	4.04	12.0 150	5.2	0.06	32	0.4	20.3	
1320	4.04	13.5 150	5.4	0.06	23	0.4	20.2	
1330	4.04	15.0 150	5.2	0.06	33	0.5	20.1	
1335	4.04	15.75 150	5.3	0.06	34	0.4	20.1	
		SAMPLE TIME 1340						

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-EG11-01
Sample Location: CEF-076-G11
Sampled By: PC
C.O.C. No.: 076-1211-02
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Date: 12/11/02								
Time: 1715								
Method: Low Flow Peristaltic	CLEAR	4.8	0.04	20.5	19.5	8.4	—	

PURGE DATA

Date: 12/11/02	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 73.85'								
Static Water Level (WL): 7.00'								
One Casing Volume(gal/L): 3.1								
Start Purge (hrs): 1435								
End Purge (hrs): 1710								
Total Purge Time (min): 155								
Total Vol. Purged (gal/L): 15.5								

See Low Flow Purge Data Sheet

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs 8260B	HCl	3- 40 ml vials	X
PAHs 8270C	None	2- 1 liter gl. Amber	X
EDB 504.1		3- 40 ml vials	X
TOTAL LEAD 6010B	HNO_3	1- 500 ml HDPE	X
TRPH FL-PRO	H_2SO_4	2- 1 liter gl. Amber	X

OBSERVATIONS / NOTES

Lab: Accutest

Circle if Applicable:

MS/MSD | Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG050325

WELL ID.: CEF-Q76-G1i
DATE: 12-11-02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments
1435	7.00	100	—	—	—	—	—	START PURGE
1440	8.25	0.5 100	5.0	0.04	110	1.7	20.3	
1450	9.50	1.5 100	5.2	0.04	65	8.3	20.5	
1500	9.65	2.5 100	5.1	0.04	55	8.3	20.4	
1510	9.71	3.5 100	5.0	0.04	40	7.9	20.5	
1520	9.71	4.5 100	4.9	0.04	38	7.6	20.6	
1530	9.71	5.5 100	4.9	0.04	33	7.1	20.5	
1540	9.71	6.5 100	4.9	0.04	30	6.6	20.6	
1550	9.72	7.5 100	4.9	0.04	28	6.3	20.7	
1600	9.72	8.5 100	4.9	0.04	26	0.9	20.5	
1610	9.72	9.5 100	4.8	0.04	24	8.0	20.4	
1630	9.72	11.5 100	4.8	0.04	22	7.2	20.5	
1650	9.72	13.5 100	4.8	0.04	22	7.2	20.5	
1710	9.72	15.5 100	4.8	0.04	18.5	8.4	20.5	
		SAMPLE TIME	1715					

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E62D 01
Sample Location: CEF-076-62D
Sampled By: DS
C.O.C. No.: 076-121102
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Date: 12.11.02								
Time: 1800								
Method: Low Flow Peristaltic	CL	6.26	0.264	20.1	7	0.70	—	—

PURGE DATA

	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Date: 12.11.02								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 113.8								
Static Water Level (WL): 7.58								
One Casing Volume(gal/L): 6.2								
Start Purge (hrs): 1440								
End Purge (hrs): 1850								
Total Purge Time (min): 190								
Total Vol. Purged (gal/L): 19								

See Low Flow Purge Data Sheet

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	8260B	HCl	3- 40 ml vials	DS
PAHs	8270C	None	2- 1 liter gl. Amber	
EDB	504.1		3- 40 ml vials	
TOTAL LEAD	6010B	HNO_3	1- 500 ml HDPE	
TRPH	FL-PRO	H_2SO_4	2- 1 liter gl. Amber	

OBSERVATIONS / NOTES

Lab: Accutest

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG0050325

WELL ID.: CEF-876-62D
DATE: 12.11.02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments
1440	7.58	100						
1500	9.62	100	6.33	0.259	49	1.46	19.5	
1520	9.63	100	6.30	0.259	65	1.22	19.8	
1600	9.70	100	6.29	0.260	27	1.05	19.4	
1630	9.75	100	6.27	0.261	16	0.77	20.2	
1700	9.85	100	6.26	0.264	9	0.67	20.3	
1730	9.87	100	6.26	0.263	8	0.70	20.1	
1750	9.87	100	6.26	0.264	7	0.70	20.1	

SIGNATURE(S): RPH

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E63S-01
Sample Location: CEF-076-63S
Sampled By: DS
C.O.C. No.: 076-63S
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Date: 12/12/02								
Time: 1330								
Method: Low Flow Peristaltic								

PURGE DATA

Date: 12/12/02	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm):								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 47								
Static Water Level (WL): 4.36								
One Casing Volume(gal/L): 3.1								
Start Purge (hrs): 1100								
End Purge (hrs): 1230								
Total Purge Time (min): 90								
Total Vol. Purged (gal/L): 18 l								

See Low Flow Purge Data Sheet

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	8260B	HCl	3- 40 ml vials	DS
PAHs	8270C	None	2- 1 liter gl. Amber	
EDB	504.1		3- 40 ml vials	
TOTAL LEAD	6010B	HNO_3	1- 500 ml HDPE	
TRPH	FL-PRO	H_2SO_4	2- 1 liter gl. Amber	

OBSERVATIONS / NOTES

Lab: Accutest

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG050325

WELL ID.: CEF-876-635
DATE: 12/12/02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments
1100	4.36	225	5.31	0.043	138	0.83	20.7	
1120	4.61	225	5.28	0.044		0.62	20.8	
1140	4.60	225	5.20	0.040		0.51	20.8	
1210	4.60	225	5.19	0.040	80	0.50	20.9	
1220	4.45	100	5.14	0.040		0.49	20.9	Slow As Possible
1225	4.45	100	5.14	0.040		0.48	20.8	
1230	4.45	100	5.13	0.040	120	0.48	20.8	
1235	STOP	Pump	PULLED	5 Volumes	SAMPLE	AFTER	Lunch	
1330	SAMPLE							

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E~~76~~ 64E-01 DS
Sample Location: CEF-076-76
Sampled By: RB
C.O.C. No.: 076-121202
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Date: 121202								
Time: 1445								
Method: Low Flow Peristaltic	CL	4.87	0.43	20.7	9.5	0.61	—	—

PURGE DATA

Date: 12-12-02	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): ~~4.22~~ DS 77								
Static Water Level (WL): 4.22								
One Casing Volume(gal/L): 3.1								
Start Purge (hrs): 1355								
End Purge (hrs): 1430								
Total Purge Time (min): 35								
Total Vol. Purged (gal/L): 10.5								

See Low Flow Purge Data Sheet

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs 8260B	HCl	3- 40 ml vials	DS
PAHs 8270C	None	2- 1 liter gl. Amber	
EDB 504.1		3- 40 ml vials	
TOTAL LEAD 6010B	HNO_3	1- 500 ml HDPE	
TRPH FL-PRO	H_2SO_4	2- 1 liter gl. Amber	

OBSERVATIONS / NOTES

Lab: Accutest

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): RB

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG0050325

WELL ID.: CEF-876-64 I
DATE: 12/12/02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments
~~1355~~	~~4.22~~	~~300~~	~~4.88~~	~~0.44~~	~~4~~	~~0.71~~	~~20.7~~	DS
1415	4.40	300	4.88	0.44	4.6	0.71	20.7	
1425	4.37	300	4.87	0.43	4.8	0.63	20.6	
1430	4.37	300	4.87	0.43	4.5	0.61	20.7	
1445	SAMPLE							

SIGNATURE(S): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050 325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-EG50-01
Sample Location: CEF-076-G50
Sampled By: PC
C.O.C. No.: 076-12-12-02
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 12-12-02	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Time: 1535								
Method: Low Flow Peristaltic	CLEAR	5.8	0.15	20.0	1.77	0.6	—	

PURGE DATA

Date: 12/12/02	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Method: Low Flow Peristaltic	See Low Flow Purge Data Sheet							
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 112								
Static Water Level (WL): 4.2								
One Casing Volume(gal/L): 6.2								
Start Purge (hrs): 1220								
End Purge (hrs): 1530								
Total Purge Time (min): 190								
Total Vol. Purged (gal/L): 19.0								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs 8260B	HCl	3- 40 ml vials	X
PAHs 8270C	None	2- 1 liter gl. amber	X
EDB 504.1		3- 40 ml vials	X
TOTAL LEAD 6010B	HNO_3	1- 500 ml HDPE	X
TRPH FL-PRO	H_2SO_4	2- 1 liter gl. amber	X

OBSERVATIONS / NOTES

Lab: Accutest

Circle If Applicable:

MS/MSD | Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG050325

WELL ID.: CEF-Q76-G50
DATE: 12-12-02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments
1220	4.2	100	—	—	—	—	—	START PURGE
1225	5.4	0.5 100	5.8	0.15	1.44	2.7	19.9	
1230	6.1	1.0 100	5.8	0.15	1.43	1.2	19.3	
1320	7.95	6.0 100	5.6	0.15	1.07	1.1	19.7	
1400	8.00	10.0 100	5.7	0.14	1.33	0.7	19.9	
1430	8.00	13.0 100	5.7	0.15	1.33	0.6	19.8	
1500	7.99	16.0 100	5.8	0.15	2.34	0.5	20.0	
1510	7.99	17.0 100	5.8	0.15	2.03	0.6	20.0	
1520	7.99	18.0 100	5.8	0.15	1.96	0.6	19.9	
1530	7.99	19.0 100	5.8	0.15	1.77	0.6	20.0	
		SAMPLE	TIME	1535				

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E695-01
Sample Location: CEF-076-DS
Sampled By:
C.O.C. No.: 076-121102
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Date: 12-11-02								
Time: 1035								
Method: Low Flow Peristaltic	CL	4.92	0.030	20.2	18	0.59	—	—

PURGE DATA

Date: 12-11-02	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 38								
Static Water Level (WL): 4.2								
One Casing Volume(gal/L): 3.1								
Start Purge (hrs): 0920								
End Purge (hrs): 1030								
Total Purge Time (min): 70								
Total Vol. Purged (gal/L): 21								

See Low Flow Purge Data Sheet

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	8260B	HCl	3- 40 ml vials	
PAHs	8270C	None	2- 1 liter gl. Amber	
EDB	504.1		3- 40 ml vials	DS
TOTAL LEAD	6010B	HNO_3	1- 500 ml HDPE	
TRPH	FL-PRO	H_2SO_4	2- 1 liter gl. Amber	

OBSERVATIONS / NOTES

Lab: Accutest

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

3.4
3
15.5

Cal

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG050325

WELL ID.: CEF-876-69S
DATE: 12-11-02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments
0920	4.20	450						
0930	4.38	450	4.90	0.038	43	0.57	21.3	
0940	4.38	450	4.90	0.031	62	0.71	21.2	
0950	4.38	450	4.91	0.030	55	0.53	21.3	
1000	4.37	450	4.91	0.030	55	0.54	21.3	
1020	4.22	100	4.93	0.030	18	0.59	20.3	
1025	4.22	100	4.93	0.030	18	0.60	20.2	
1030	4.22	100	4.92	0.030	18	0.59	20.2	
1035	Sampled							

SIGNATURE(S):

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E70i-01
Sample Location: CEF-076-70i
Sampled By: PL
C.O.C. No.: 076 - 12-11-02
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Date: 12/11/02 Time: 1040								
Method: Low Flow Peristaltic	CLEAR	5.0	0.05	19.4	4.3	0.6	—	

PURGE DATA

	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Date: 12/11/02								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 23.4								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 73								
Static Water Level (WL): 4.5'								
One Casing Volume(gal/L): 3.1								
Start Purge (hrs): 0930								
End Purge (hrs): 1030								
Total Purge Time (min): 60								
Total Vol. Purged (gal/L): 14.5								

See Low Flow Purge Data Sheet

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	8260B	HCl	3- 40 ml vials	X
PAHs	8270C	None	2- 1 liter gl. amber	X
EDB	504.1		3- 40 ml vials	X
TOTAL LEAD	6010B	HNO_3	1- 500 ml HDPE	X
TRPH	FL-PRO	H_2SO_4	2- 1 liter gl. amber	X

OBSERVATIONS / NOTES

Lab: Accutest

Circle If Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG050325

WELL ID.: CEF-876-70i
DATE: 12/11/02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments
0930	4.40	400	—	—	—	—	—	
0935	4.53	2.0 400	5.1	0.06	300	0.9	20.4	
0940	4.54	4.0 400	5.1	0.06	72	0.9	20.5	
0945	4.54	6.0 400	5.1	0.06	59	0.6	20.7	
0950	4.54	8.0 400	5.1	0.06	130	0.5	20.8	
0955	4.54	10.0 400	5.1	0.06	210	0.5	20.7	
1000	4.40	10.5 100	5.1	0.06	250	0.6	20.7	
1010	4.40	11.5 100	5.0	0.06	92	0.7	19.6	
1020	4.40	12.5 100	5.0	0.06	2.5	0.7	19.5	
1025	4.40	13.5 100	5.0	0.05	4.4	0.6	19.5	
1030	4.40	14.5 100	5.0	0.05	4.3	0.6	19.4	
		SAMPLE TIME 1040						

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E 71D 01
Sample Location: CEF-076-71D
Sampled By: DS
C.O.C. No.: 076-124902
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Date: 12-11-02								
Time: 1345								
Method: Low Flow Peristaltic	CL	6.95	0.542	19.8	0	0.78	—	—

PURGE DATA

	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Date: 12-11-02								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 112								
Static Water Level (WL): 4.25	See Low Flow Purge Data Sheet							
One Casing Volume(gal/D): 3.1								
Start Purge (hrs): 1250								
End Purge (hrs): 1340								
Total Purge Time (min): 110								
Total Vol. Purged (gal/D): 11								

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	8260B	HCl	3- 40 ml vials	DS
PAHs	8270C	None	2- 1 liter gl. Amber	
EDB	504.1		3- 40 ml vials	
TOTAL LEAD	6010B	HNO_3	1- 500 ml HDPE	
TRPH	FL-PRO	H_2SO_4	2- 1 liter gl. Amber	

OBSERVATIONS / NOTES

Lab: Accutest

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): RL

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG050325

WELL ID.: CEF-Q76-71D
DATE: 12-11-02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments
1150	4.25	100						
1300	6.38	100	6.85	.672	0	1.34	19.5	
1310	6.38	100	6.95	0.557	0	0.84	19.8	
1320	6.37	100	6.96	0.543	0	0.80	19.9	
1330	6.37	100	6.95	0.542	0	0.80	19.9	
1340	6.37	100	6.95	0.542	0	0.78	19.8	
Sample	1345							

SIGNATURE(S): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E13E-01
Sample Location: CEF-076-13I
Sampled By: ME
C.O.C. No.: 076-121802
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other ORP
Date: 12.18.02								
Time: 1350								
Method: Low Flow Peristaltic	clear	4.67	0.104	20.10	5.0	1.13		-28

PURGE DATA

Date: 12.18.02	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 67.5								
Static Water Level (WL): 2.74	See Low Flow Purge Data Sheet							
One Casing Volume(gal/L): 3.1								
Start Purge (hrs): 1120								
End Purge (hrs): 1350								
Total Purge Time (min): 150								
Total Vol. Purged (gal/L): 15L								

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	8260B	HCl	3- 40 ml vials	MEF
PAHs	8270C	None	2- 1 liter gl. Amber	↓
EDB	504.1		3- 40 ml vials	↓
TOTAL LEAD	6010B	HNO_3	1- 500 ml HDPE	↓
TRPH	FL-PRO	H_2SO_4	2- 1 liter gl. Amber	↓

OBSERVATIONS / NOTES

Lab: Accutest

Circle if Applicable:

MS/MSD

Duplicate ID No.: CEF-076-GW-DUP03-01

Signature(s): MEFuqua

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG0050325

WELL ID.: CEF-Q76-GW-E73I-01
DATE: 12-18-02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments ORP	Comments VOL (L)
1120	2.75	100	—	—	—	—	—	—	—
1130	2.75	100	4.84	0.126	76.1	3.84	18.85	79	1.0 ~~0.5~~
1140	2.75	100	4.81	0.117	65.0	1.70	19.84	29	2.0
1150	2.75	100	4.76	0.113		1.37	20.02	12	3.0 ~~1.5~~
1205	2.75	100	4.74	0.111	31.0	1.41	20.20	-5	4.5 ~~2.0~~
1220	2.75	100	4.75	0.108	27.0	1.25	20.07	-4	6.0
1300	2.75	100	4.67	0.104		1.50	20.07	-24	10.L
1330	2.75	100	4.68	0.103	7.0	1.26	20.08	-27	13
1340	2.75	100	4.68	0.103	6.5	1.13	20.08	-26	14
1350	2.75	100	4.67	0.104	5.0	1.13	20.10	-28	15

↓ Sample Time

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E 80D-01
Sample Location: CEF-076-80D
Sampled By: LM
C.O.C. No.: 076 - ~~80D~~ D
Type of Sample: 12/16/02
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Date: 12/16/02								
Time: 1030								
Method: Low Flow Peristaltic	CLEAR	5.78	0.142	20.7	4	0.54	—	—

PURGE DATA

	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Date: 12/16/02								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0/0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 112								
Static Water Level (WL): 5.04								
One Casing Volume(gal/L): 6.2 10' SCREEN								
Start Purge (hrs): 0915								
End Purge (hrs): 1030								
Total Purge Time (min): 75								
Total Vol. Purged (gal/L): 22.5								

See Low Flow Purge Data Sheet

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	8260B	HCl	3- 40 ml vials	X
PAHs	8270C	None	2- 1 liter gl. Amber	X
EDB	504.1		3- 40 ml vials	X
TOTAL LEAD	6010B	HNO_3	1- 500 ml HDPE	X
TRPH	FL-PRO	H_2SO_4	2- 1 liter gl. Amber	X

OBSERVATIONS / NOTES

Lab: Accutest

Circle If Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG050325

WELL ID.: CEF-Q76-801
DATE: 12/16/02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments VOL
0915	5.04	300	—	—	—	—	—	0
0920	5.28	300	5.77	0.177	430	2.26	20.0	3 LT GREY
0925	5.28	300	5.78	0.143	2	0.62	20.7	16.5 CLEAR
0925	5.29	300	5.77	0.146	2	0.62	20.7	21 LAMOTTE TURB=1.6
0930	5.29	300	5.78	0.146	4	0.54	20.7	22.5

SIGNATURE(S): [signature]

PAGE 2 OF 2

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050 325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E815-01
Sample Location: CEF-076-E815
Sampled By: MF
C.O.C. No.: 076-12.18.02
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other ORP
Date: 12.18.02 Time: 1035 Method: Low Flow Peristaltic	Clear	3.98	0.690	21.210	1.2	0.92		358

PURGE DATA

Date: 12.18.02	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Method: Low Flow Peristaltic	1035							
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 13.0								
Static Water Level (WL): 5.00	See Low Flow Purge Data Sheet							
One Casing Volume(gal/L): 4.9								
Start Purge (hrs): 0910								
End Purge (hrs): 1010								
Total Purge Time (min): 60								
Total Vol. Purged (gal/L): 15L								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs 8260B	HCl	3- 40 ml vials	MF
PAHs 8270C	None	2- 1 liter gl. Amber	
EDB 504.1		3- 40 ml vials	
TOTAL LEAD 6010B	HNO_3	1- 500 ml HDPE	
TRPH FL-PRO	H_2SO_4	2- 1 liter gl. Amber	

OBSERVATIONS / NOTES

Lab: Accutest

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): MFingum

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG050325

WELL ID.: CEF-Q76-81S-01
DATE: 12.18.02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments ORP	Comments VOL (L)
0910	5.05	—	—	—	—	—	—	—	
0915	5.05 250	~~300~~	3.80	1.00	0	3.15	20.37	417	1.25
0920	5.05	250	3.82	1.00	0	1.28	20.91	384	2.5
0930	5.05	250	3.89	0.842	0	1.06	20.93	368	5.0
0940	5.05	250	3.89	0.841	7.3 (LM)	1.03	20.98	365	7.5
0950	5.05	250	3.90	0.723	0.5	1.02	21.14	361	10.0
1000	5.05	250	3.91	0.687	1.8	0.95	21.21	357	12.5
1010	5.05	250	3.92	0.687	1.4	0.91	21.23	356	15.0
1020	5.05 ~~Sampling~~	250	3.91	0.690	1.2	0.92	21.20	358	17.5
~~1025~~	Sampling								
1035									

F(S): MGfrymon

PAGE 2 OF 2

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NFF, GW SAMPLE EVT. 1, SARA
Project No.: N3996 JGO 050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E825-01
Sample Location: CEF-076-825
Sampled By: LM
C.O.C. No.: 076-121702
Type of Sample:
[ ] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	Salinity %	Other
Date: 12/17/02								
Time: 1155								
Method: Low Flow Peristaltic	Lt Brown	5.36	0.15	21.4	100	0.8	—	—

PURGE DATA

	Time	pH	S.C.	Temp (°C)	Turbidity	DO	Salinity	ORP
Date: 12/17/02								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0/0								
Well Casing Diameter: 2 IN.								
Well Casing Material: PVC								
Total Well Depth (TD): 12.5								
Static Water Level (WL): 4.42	See Low Flow Purge Data Sheet							
One Casing Volume(gal): 0.5								
Start Purge (hrs): 0945								
End Purge (hrs): 1150								
Total Purge Time (min): 125								
Total Vol. Purged (gal): 25								

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	8260B	HCl	3- 40 ml vials	X
PAHs	8270C	None	2- 1 liter gl. Amber	X
EDB	504.1		3- 40 ml vials	X
TOTAL LEAD	6010B	HNO_3	1- 500 ml HDPE	X
TRPH	FL-PRO	H_2SO_4	2- 1 liter gl. Amber	X

OBSERVATIONS / NOTES

Lab: Accutest

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field, NORTH FUEL FARM
PROJECT NUMBER: N3996 JG0050325

WELL ID.: CEF-Q76-825
DATE: 12/17/02

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp. (Celsius)	Comments	VOL
0945	4.42	200	–	–	–	–	–		0
0955	4.65	200	5.15	0.21	950	0.9	20.3	DARK BROWN	2
1005	4.68	200	5.20	0.21	550	1.6	20.4	LT BROWN	4
1015	4.69	200	5.27	0.20	460	2.2	20.5		6
1025	4.69	200	5.36	0.20	341	1.8	21.0		8
1035	4.69	200	5.36	0.20	200	1.2	21.0		10
1045	4.69	200	5.37	0.18	160	0.9	21.3		12
1055	4.69	200	5.37	0.18	140	0.9	21.3		14
1100	4.69	200	5.38	0.17	130	1.0	21.1		15
1120	4.69	200	5.36	0.16	120	0.8	21.3		19
1130	4.69	200	5.40	0.16	120	0.9	21.3	LAMOTTE TURB = 65	21
1140	4.69	200	5.39	0.15	110	0.8	21.3		23
1150	4.69	200	5.36	0.15	100	0.8	21.4		25
END PURGE									

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-~~E48D~~-01
Sample Location: CEF-076-E48D
Sampled By: SRM
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 2/10/03	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Time: 1345								
Method: Low Flow Peristaltic	clear	6.80	0.565	21.11	13.2	0.00	-110	

PURGE DATA

Date: 2/10/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 In.								
Well Casing Material:PVC								
Total Well Depth (TD): 100	See Low Flow Purge Sheet							
Static Water Level (WL): 4.45								
One Screen Volume(gal/L):								
Start Purge (hrs): 0945								
End Purge (hrs): 1335								
Total Purge Time (min): 3hr 50 min								
Total Vol. Purged (gal/L): 23								

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE				
PAHs	SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene				
TRPH	FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB	504	None	3-40 ml vials	✓
Total Lead	SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

*Note New tubing down to 90ft per Meru Dale. purge rate 100 ml/min. turbidity below 100 ntu's.

Horiba 46.6 NTU's
Lamotte 23.3

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Scott R. McGuire

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NAS Cecil Field Site 36
PROJECT NUMBER: ~~N8442.PJ0.050140~~ N3996JG0050325

WELL ID.: CEF-~~36-23S~~ 076-48D
DATE: 2/10/03

Time (HHMM)	Water Level (Feet BTOC)	Flow (mL/min.)	Cum. Vol. (Liters)	pH (S.U.)	Cond. (mS/cm)	Turb. HORIBA (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	TURB NTU LAMOTTE	Comments
0945	4.45	100								22.4	
0955	8.44	100	1	7.00	0.582	55.1	1.50	19.51	-19	24.1	
1005	8.56	100	2	7.00	0.576	61.7	1.26	19.60	-17	27.3	
1015	8.72	100	3	7.01	0.575	64.8	0.99	19.66	-51	28.1	
1025	8.84	100	4	6.99	0.575	67.3	0.72	19.76	-56	24.2	
1035	8.99	100	5	6.99	0.575	71.2	0.31	19.77	-59	27.6	Pump stopped *
1045	9.21	100	6	6.99	0.573	72.8	0.28	19.81	-62	22.3	
1055	10.96	100	7	6.98	0.573	49.6	0.25	19.98	-66	20.3	Pump stopped *
1105	12.10	100	8	6.97	0.573	49.2	0.15	19.99	-73	21.7	
1115	12.96	100	9	6.93	0.572	48.7	0.04	20.14	-77	21.5	
1125	13.75	100	10	6.93	0.571	43.9	0.01	20.19	-81	20.5	
1135	16.05	100	11	6.92	0.570	42.7	0.68	20.21	-84	18.9	Pump stopped *
1145	15.12	100	12	6.89	0.570	43.1	0.49	20.27	-87	17.7	
1155	15.43	100	13	6.88	0.570	40.2	0.26	20.35	-89	17.0	
1205	16.15	100	14	6.88	0.569	39.8	0.18	20.33	-89	15.9	
1215	16.23	100	15	6.87	0.571	36.7	0.10	20.29	-91	15.3	
1225	16.27	100	16	6.87	0.571	34.8	0.07	20.11	-96	14.4	
1235	16.38	100	17	6.87	0.567	33.6	0.04	20.06	-99	15.1	
1245	16.47	100	18	6.87	0.566	39.5	0.00	20.00	-102	15.8	
1255	16.56	100	19	6.87	0.566	38.4	0.01	20.03	-107	15.8	
1305	16.76	100	20	6.89	0.565	38.5	0.03	20.06	-109	16.1	
1315	16.91	100	21	6.87	0.565	38.9	0.00	20.10	-110	14.4	
1325	16.99	100	22	6.84	0.565	38.1	0.00	20.91	-110	13.9	
1335	17.10	100	23	6.80	0.565	37.3	0.00	21.11	-110	13.2	
1345	Sample Collected										

SIGNATURE(S): Scott R. McGuire

* Pump stopped due to slow purge rate. This affected drawdown.

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-~~N~~ E MD 60S-01
Sample Location: CEF-076- 60S
Sampled By: P Lowen etc
C.O.C. No.: 0399
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 1-28-03	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Time: 1520								
Method: Low Flow Peristaltic	CLEAR	4.57	0.057	20.89	1.4	1.08	101.7	

PURGE DATA

Date: 1-28-03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 42.51	See Low Flow Purge Sheet							
Static Water Level (WL): 7.06'								
One Screen Volume(gal/L): 3.1								
Start Purge (hrs): 1445								
End Purge (hrs): 1515								
Total Purge Time (min): 30								
Total Vol. Purged (gal/L): 12.0								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD

Duplicate ID No.: None

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-60s
DATE: 1-28-03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1445	7.06	400	—	—	—	—	—	—	START PURGE
1455	7.30	4.0 400	4.54	0.056	1.6	1.45	21.05	110.8	
1500	7.30	6.0 400	4.56	0.057	1.3	1.25	21.01	107.3	
1505	7.30	8.0 400	4.54	0.057	1.5	1.10	20.95	104.7	
1510	7.30	10.0 400	4.59	0.057	1.5	1.06	20.95	102.5	
1515	7.30	12.0 400	4.57	0.057	1.4	1.08	20.89	101.7	
	SAMPLE TIME 1520								
									PID BZ - 0 BG - 0

SIGNATURE(S): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N835-01
Sample Location: CEF-076-835
Sampled By: MLF
C.O.C. No.: 0342
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 1/27/03 Time: 1420	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l		Other
Method: Low Flow Peristaltic								

PURGE DATA

Date: 1.27.03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 30	See Low Flow Purge Sheet							
Static Water Level (WL): 5.41								
One Screen Volume(gal/L): 3.1								
Start Purge (hrs): 1240								
End Purge (hrs): 1410								
Total Purge Time (min): 90								
Total Vol. Purged (gal/L): 15.25								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD

Duplicate ID No.: None

Signature(s): M Yuqua

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-~~GW~~ MD N83s
DATE: 1.27.03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments	Lamotte Turbidimeter ↓	Cumulative Volume
1240	5.41	—	—	—	—	—	—	—			—
1245	5.61	400	5.19	0.068	253.0	1.03	21.2	112	lt Brown, translucent		2.0
1255	5.63	400	5.35	0.064	247.0	0.58	21.5	77	lt Brown, clear	200	6.0
1305	5.63	400	5.35	0.062	179.0	0.52	21.6	62			10.0
1310	5.63	400	5.33	0.062	87.3	0.46	21.6	57	Lamotte →	100	12.0
1315	5.63	250	5.34	0.061	99.1	0.47	21.3	51			13.25
1320	5.63	200	5.32	0.061	99.1	0.50	21.1	55			
1340	5.63	200	5.28	0.061	141	0.44	21.1	29			
1350	[redacted]	100	5.33	0.061	89	0.47	21.1	28	100		
1400	5.63	100	5.33	0.060	88	0.46	20.6	31	90.3		13.7
1410	5.63	100	5.31	0.060	89	0.44	20.7	33	70.8		14.2
1420	Sampling	100									14.75
											15.25

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 84I-01
Sample Location: CEF-076-84I
Sampled By: C Gleaton
C.O.C. No.: 0399
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 1/28/03	Color	pH	S.C.	Temp.	Turbidity	DO		Other
Time: 16:20	Visual	Standard	mS/cm	°C	NTU	mg/l		
Method: Low Flow Peristaltic	Clear	5.14	0.081	20.2	10	6.93		

PURGE DATA

Date: 1/28/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 63.7	See Low Flow Purge Sheet							
Static Water Level (WL): 7.69								
One Screen Volume (gal/L): .81								
Start Purge (hrs): 1400								
End Purge (hrs): 1610								
Total Purge Time (min): 130								
Total Vol. Purged (gal/L): 4.2								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD —

Duplicate ID No.: —

Signature(s): C. Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-84I
DATE: 1/28/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1400	7.60	—	—	—	—	—	—	—	Ho-bio NTU
1411	7.66	122	5.42	0.089	25	17.36	18.3	142	73.5
1420	7.64	122	5.41	0.086	18	13.86	19.2	90	51.3
1430	7.64	122	5.19	0.083	16	10.97	19.4	58	44.3
1440	7.64	122	5.19	0.084	15	7.81	20.0	41	40.7
1456	7.64	122	5.18	0.084	15	7.38	20.0	23	46.7
1504	7.64	122	5.19	0.082	23	7.23	20.1	16	54.9
1512	7.64	122	5.16	0.082	24	7.19	20.0	11	60.9
1527	7.65	122	5.14	0.082	18	7.17	20.1	4	57.7
1538	7.64	122	5.15	0.082	14	7.12	20.1	0	49.7
1548	7.64	122	5.15	0.081	11	6.98	20.1	0	46.6
1600	7.64	122	5.14	0.081	9	6.94	20.2	0	46.6
1610	7.64	122	5.14	0.081	10	6.93	20.2	0	41.5 4.2 gallons

SIGNATURE(S): C. Dlate

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N85I-01
Sample Location: CEF-076- 85I
Sampled By: P LEVIGUETTE
C.O.C. No.: 0399
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 1-28-03	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Time: 1340								
Method: Low Flow Peristaltic	CLEAR	5.04	0.054	22.42	9.35	0.12	87.2	

PURGE DATA

Date: 1-28-03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 10.8								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 63.6'	See Low Flow Purge Sheet							
Static Water Level (WL): 7.4'								
One Screen Volume(gal/L): 3.1								
Start Purge (hrs): 1220								
End Purge (hrs): 1330								
Total Purge Time (min): 70								
Total Vol. Purged (gal/L): 10.5								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:
MS/MSD
Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-85I
DATE: 1-28-03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1220	7.40	150	—	—	—	—	—	—	START PURGE
1225	7.49	0.25 150	5.17	0.078	21	0.86	22.11	104.6	
1235	7.49	150	5.02	0.067	15	0.57	22.14	103.6	
1310	7.49	7.5 150	5.01	0.058	11	0.09	22.25	94.3	
1320	7.49	9.0 150	5.07	0.056	10	0.10	22.52	87.3	
1325	7.49	9.75 150	5.00	0.055	9.55	0.11	22.52	89.1	
1330	7.49	10.5 150	5.04	0.054	9.35	0.12	22.42	87.2	

SAMPLE TIME 1340

PID
BZ -0.4
BG -0.2

SIGNATURE(S): Kate Lemb

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N865-01
Sample Location: CEF-076- 865
Sampled By: C Gleaton
C.O.C. No.: 0399
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 1/28/03	Color	pH	S.C.	Temp.	Turbidity	DO		Other
Time: 1050	Visual	Standard	mS/cm	°C	NTU	mg/l		
Method: Low Flow Peristaltic	Gray	5.38	0.108	18.9	1000	0.71		

PURGE DATA

Date: 1/28/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material:PVC								
Total Well Depth (TD): 53.1	See Low Flow Purge Sheet							
Static Water Level (WL): 4.45								
One Screen Volume (gal/L): .81								
Start Purge (hrs): 0904								
End Purge (hrs): 1033								
Total Purge Time (min): 89								
Total Vol. Purged (gal/L): 4.2								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:
MS/MSD
Duplicate ID No.: CEF-076-GW-MD3-01

Signature(s): C Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-86S
DATE: 1/28/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0904	4.45	—	—	—	—	—	—	—	Holding NTU
0916	4.46		5.33	0.138	400	6.94	17.1	27	458
0927	4.45		5.47	0.122	450	1.12	18.9	0	449
0937	4.43		5.43	0.121	450	0.97	19.2	0	462
0948	4.43		5.39	0.122	442	0.95	19.3	0	460
1000	4.43		5.36	0.112	782	0.92	19.7	0	715
1009	4.40		5.36	0.108	1000	0.82	19.5	0	999
1019	4.44		5.39	0.107	500	0.68	19.2	0	735
1030	4.43		5.36	0.108	1000	0.71	18.9	0	957 4.2 gal Purged

SIGNATURE(S): C. Slater

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N
Sample Location: CEF-076-875
Sampled By: CGleaton
C.O.C. No.: 0342
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 1/27/03	Color	pH	S.C.	Temp.	Turbidity	DO		Other
Time: 1745	Visual	Standard	mS/cm	°C	NTU	mg/l		
Method: Low Flow Peristaltic	Cloudy	5.08	0.079	17.6	450	6.45		

PURGE DATA

Date: 1.27.03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic	See Low Flow Purge Sheet							
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 50								
Static Water Level (WL): 7.45								
One Screen Volume (gal/L): .81								
Start Purge (hrs): 16:12								
End Purge (hrs): 17:38								
Total Purge Time (min): 86								
Total Vol. Purged (gal/L): 6								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	yes
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	yes
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	yes
EDB 504	None	3-40 ml vials	yes
Total Lead, SW846 6010B	HNO3	1 - 500 ml HDPE bottle	yes

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD

Duplicate ID No.: None

Signature(s): C. Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-875
DATE: 1/27/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	LaMotte → Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
16.12	7.45	—	—	—	—	—	—	—	Turb Ho-Lag
16.18	7.52		4.96	0.069	56	10.17	20.7	71	
1625	7.50		4.94	0.069	53	7.54	21.2	48	192
1632	7.51		4.94	0.069	50	6.71	21.6	41	215
1645	7.52		5.12	0.071	700	6.37	22.0	0	999
1700	7.52		5.13	0.077	650	6.39	20.5	0	999
1708	7.51		4.96	0.069	100	6.38	19.7	22	765
1718	7.51		5.03	0.074	550	6.38	19.8	0	999
1730	7.52		5.06	0.073	500	6.43	17.3	0	999
1738	7.52		5.08	0.079	450	6.45	17.6	0	999 At Sample

SIGNATURE(S): C. D. [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 885-01
Sample Location: CEF-076- 885
Sampled By: S. McGuire
C.O.C. No.: 0399
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 1/28/03 Time: 1125	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Method: Low Flow Peristaltic	Lt Brown	4.89	0.101	16.7	999	7.26	-41	

PURGE DATA

Date: 1/28/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 17.5	See Low Flow Purge Sheet							
Static Water Level (WL): 4.96								
One Screen Volume(gal/L): 6.2								
Start Purge (hrs): 0920								
End Purge (hrs): 1120								
Total Purge Time (min): 120								
Total Vol. Purged (gal/L): 33								

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE				
PAHs	SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene				
TRPH	FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB	504	None	3-40 ml vials	✓
Total Lead.	SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Water level decreased to 6.43 upon pumping due to poor recharge. At 6.43 water level stabilized with pumping rate 200 ml/min.

BZ = 0 ppm
BH = 0 ppm

Circle if Applicable:

MS/MSD

Duplicate ID No.: CEF-076-GW-Dup5-01

Signature(s): Scott R. McGuire

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076- 88S
DATE: 1/28/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. HORIBA (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	TURB NTU LAMOTTE Comments
0920	4.96	400							
0930	6.43	200	4.65	0.108	999	8.71	16.6	2	Err 3 Brn color
0940	6.43	200	4.75	0.106	999	7.75	16.2	-12	Water level dropped
0950	6.43	400	4.72	0.106	999	7.68	16.1	-17	to 6.43 due to slow
1000	6.43	400	4.77	0.104	999	7.81	16.0	-12	recharge. Water level
1010	6.43	400	4.82	0.101	999	8.00	15.9	-9	↓ stabilized at 6.43.
1020	6.43	400	4.82	0.101	999	7.86	15.8	-19	Err 3
1030	6.43	200	4.80	0.102	999	7.51	15.7	-25	↓
1040	6.43	200	4.79	0.101	999	5.48	15.8	-22	↓
1050	6.43	200	4.78	0.101	999	7.43	15.9	-23	↓
1100	6.43	200	4.83	0.100	999	7.37	16.1	-29	↓
1110	6.43	200	4.87	0.101	999	7.28	16.4	-33	Err 3
1120	6.43	200	4.89	0.101	999	7.26	16.7	-41	Err 3
1125	sample collected								

SIGNATURE(S): Scott R McGuire

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N89I-01
Sample Location: CEF-076-89I
Sampled By: C Gleaton
C.O.C. No.: 0342
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 1/27/03 Time: 1505	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l		Other
Method: Low Flow Peristaltic	Clear	4.89	0.050	23.3	150	5.98		

PURGE DATA

Date: 1/27/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 55	See Low Flow Purge Sheet							
Static Water Level (WL): 3.88								
One Screen Volume (gal/L): .81								
Start Purge (hrs): 1315								
End Purge (hrs): 1502								
Total Purge Time (min): 108								
Total Vol. Purged (gal/L): 4								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	yes
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	yes
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	yes
EDB 504	None	3-40 ml vials	yes
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	yes

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD	Duplicate ID No.:	Signature(s):
—	— None	C. Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076- 89I
DATE: 1/27/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
13.15	3.88								
1324	3.85		4.91	0.071	130	10.61	24.3	38	
1330	3.85		4.88	0.047	132	7.31	24.0	24	
1335	3.85		4.85	.044	150	6.64	23.6	19	
1344	3.85		4.81	0.043	5.3	6.39	23.3	12	
1352	3.85		4.79	0.042	17	6.19	23.3	5	
1401	3.85		4.79	0.040	17	6.12	23.3	0	
1409	3.85		4.77	0.039	17	6.04	23.3	0	2 gal purged
1418	3.85		4.79	0.038	15	5.98	23.4	0	
1427	3.85		4.81	0.045	12.3	6.00	23.4	0	
1435	3.85		4.81	0.046	230	5.99	23.5	0	
1443	3.85		4.82	0.047	227	6.01	23.5	0	
1452	3.85		4.82	0.049	230	5.98	23.5	0	
1502	3.85		4.89	0.050	150	5.98	23.3	0	4 gal purged

SIGNATURE(S): C. Dlestor

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N
Sample Location: CEF-076-~~891~~ 905
Sampled By: S. McGuire
C.O.C. No.: 0342
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 1/27/03 Time: 1430	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP (mV)	Other
Method: Low Flow Peristaltic	Clear	4.47	0.303	19.6	3.0	0.44	-71	

PURGE DATA

Date: 1/27/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic	See Low Flow Purge Sheet							
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 15'								
Static Water Level (WL): 2.86								
One Screen Volume(gal/L): 6.2								
Start Purge (hrs): 1315								
End Purge (hrs): 1420								
Total Purge Time (min): ~~80~~ 70								
Total Vol. Purged (gal/L): 24.5								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:
MS/MSD
Duplicate ID No.:

Signature(s): Scott R. McGuire

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-90S
DATE: 1/27/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. HORIBA (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	TURB NTU LAMOTTE Comments
1315	2.86		4						
1320	3.14	350	4.44	0.368	105.0	0.68	19.9	262	50
1330	3.14	350	4.46	0.341	105.0	0.53	19.6	-10	55
1340	3.14	350	4.46	0.319	78.3	0.48	19.3	-49	29
1350	3.14	350	4.47	0.315	76.3	0.47	19.4	-59	22
1400	3.14	350	4.47	0.312	78.1	0.44	19.5	-63	8.5
1410	3.14	350	4.47	0.313	29.2	0.48	19.7	-63	8.9
1420	3.14	350	4.47	0.303	103.0	0.44	19.6	-71	3.0
1430	Sample collected								

SIGNATURE(S): Scott R. McGuire

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N915-01
Sample Location: CEF-076-GW-915
Sampled By: MCF
C.O.C. No.: 0399
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 1-28-03	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Time: 1510								
Method: Low Flow Peristaltic	clear	5.63	0.202	21.0	48.8	0.48	-123	

PURGE DATA

Date: 1-28-03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 35.1 – from toc.	See Low Flow Purge Sheet							
Static Water Level (WL): 10.75								
One Screen Volume(gal/L): 3.1								
Start Purge (hrs): 1320								
End Purge (hrs): 1505								
Total Purge Time (min): 105								
Total Vol. Purged (gal/L): 15.75								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD

Duplicate ID No.: None

Signature(s): MCFraser

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076- GW-915-01
DATE: 1-28-03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments Cum volume.
1320	10.75	—	—	—	—	—	—	—	—
1330	10.75	150	5.66	0.267	214	0.71	21.1	-102	1.5 L
1345	10.75	150	5.63	0.264	117	0.52	21.0	-106	4.25 L
1355	10.75	200	5.62	0.265	81.9	0.45	21.2	-113	6.75 L
1400	10.80	200	5.63	0.267	89.2	0.43	21.3	-52	7.25 L
1410	10.80	200	5.63	0.268	80.1	0.43	21.3	-76	8.25 L
1430	10.80	200	5.63	0.268	66.6	0.39	21.3	-104	12.25 L
1440	10.80	100	5.63	0.263	64.0	0.43	21.0	-99	13.25 L
1450	10.80	100	5.63	0.264	68.3	0.47	21.1	-112	14.25 L
1505	10.80	100	5.63	0.262	48.8	0.48	21.0	-123	15.75
1510	Sampling	—	—	—	—	—	—	—	—

(TURB) Lamotte

80

60

50

SIGNATURE(S): MC Fryer

PAGE 2 OF 2

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N925-01
Sample Location: CEF-076- GW925
Sampled By: MCF
C.O.C. No.: 0399
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 1.28.03	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Time: 1115								
Method: Low Flow Peristaltic	lt. Brn.	6.50	0.169	20.1	630	0.52	-169	

PURGE DATA

Date: 1.28.03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic	See Low Flow Purge Sheet							
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material:PVC								
Total Well Depth (TD): 33.65								
Static Water Level (WL): 7.95								
One Screen Volume(gal/L): 3.1								
Start Purge (hrs): 0900								
End Purge (hrs): 1110								
Total Purge Time (min): 130								
Total Vol. Purged (gal/L): 16								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Duplicate!

Circle if Applicable:

MS/MSD

Duplicate ID No.: CEF.076.GW.DUP4.01

Signature(s): MCF

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-GW-925-01
DATE: 1.28.03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments Cum. Volume
0900	7.95	—	—	—	—	—	—	—	—
0910	7.95	200	6.54	0.179	>999	0.66	20.0	-167	2L lt Brown
0920	7.95	100	6.60	0.169	996	3.28	18.9	-141	3L
0940	7.95	100	6.65	0.173	782	0.53	19.4	-179	7L
0950	7.95	100	6.63	0.173	735	0.49	19.6	-182	8L
1005	7.95	100	6.61	0.173	719.0	0.45	19.9	-183	9.5
1015	7.95	100	6.59	0.172	706.0	0.48	20.0	-183	10.5
1030	7.95	100	6.57	0.173	685.0	0.48	20.4	-176	12.0
1040	7.95	100	6.56	0.169	648	0.48	20.5	-182	13.0
1050	7.95	100	6.52	0.167	641	0.52	20.3	-183	14.0
1100	7.95	100	6.50	0.168	635	0.50	20.2	-172	15.0
1110	7.95	100	6.50	0.169	630	0.52	20.1	-169	16.0
1115	Sampling								

Lamotte

SIGNATURE(S): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N935
Sample Location: CEF-076-935
Sampled By: MLF
C.O.C. No.: 0342
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 1.27.03	Color	pH	S.C.	Temp.	Turbidity	DO		Other
Time: 1640	Visual	Standard	mS/cm	°C	NTU	mg/l		
Method: Low Flow Peristaltic		7.45	0.286	20.9	64.8	0.53		

PURGE DATA

Date: 1.27.03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm):								
Well Casing Diameter: 2 In.								
Well Casing Material:PVC								
Total Well Depth (TD): 34.2	See Low Flow Purge Sheet							
Static Water Level (WL): 7.61								
One Screen Volume(gal/L): 3.1								
Start Purge (hrs): 1510								
End Purge (hrs): 1630								
Total Purge Time (min): 80								
Total Vol. Purged (gal/L): 10								

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	SW846 8260B	HCl	3-40ml vials	yes
#VOHs+1,2 dichloroethane+BTEX+MTBE				
PAHs	SW846 8310	None	2 - 1 liter glass ambers	
#Include 1- and 2-methylnaphthalene				
TRPH	FL-PRO	H2SO4	2 - 1 liter glass ambers	
EDB	504	None	3-40 ml vials	
Total Lead	SW846 6010B	HNO3	1 - 500 ml HDPE bottle	

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD

Duplicate ID No.: None

Signature(s): MLF

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-GW-N93S-01
DATE: 1.27.03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments Volume	Lamotte
1510	7.61	—	—	—	—	—	—	—		
1515	7.61	200	10.21	0.286	119	1.09	19.8	-143	1.0L	40
1520	7.61	200	10.00	0.250	56.8	0.60	20.5	-191	2.0L	
1530	7.61	200	9.63	0.231	51.9	0.52	20.5	-207	4.0L	
1540	7.61	200	9.34	0.225	46.9	0.48	20.7	-220	6.0L	30
1550	7.61	200	8.90	0.228	46.9	0.46	20.9	-230	8.0L	
1600	7.61	200	8.47	0.272	50.1	0.45	20.9	-229	10.0	32
1615	7.61	200	7.49	0.276	61.9	0.44	21.0	-218	13.0	45
1625	7.61	200	7.48	0.280	63.3	0.50	21.0	-213	15.0	
1630	7.61	200	7.45	0.286	64.8	0.53	20.9	-202	16.0	55
1640	Sampling									

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 945-01
Sample Location: CEF-076-945
Sampled By: S. McGuire
C.O.C. No.: 0342
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Date: 1/27/03 Time: 1800 Method: Low Flow Peristaltic	Clear	5.82	0.395	16.7	5	5.10	-144	

PURGE DATA

Date: 1/27/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm):								
Well Casing Diameter: 2 In.								
Well Casing Material:PVC								
Total Well Depth (TD): 15	See Low Flow Purge Sheet							
Static Water Level (WL): 2.95								
One Screen Volume(gal/L): 6.2								
Start Purge (hrs): 1605								
End Purge (hrs): 1750								
Total Purge Time (min): 105								
Total Vol. Purged (gal/L): 22								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
			✓
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead. SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD

Duplicate ID No.: None

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076- 945
DATE: 1/27/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. HORIBA (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	TURB NTU LAMOTTE Comments
1605	6.95	200							
1610	7.21		5.53	0.470	77.9	3.88	19.0	-132	25
1620	7.12		5.38	0.439	58.2	4.11	18.0	-122	23
1630	7.12		5.44	0.440	106.0	4.38	17.9	-125	22
1640	7.12		5.57	0.437	79.4	4.38	17.9	-127	21
1650	7.12		5.61	0.428	62.7	4.37	17.8	-135	20
1700	7.12		5.71	0.432	152.3	4.64	17.7	-140	19
1710	7.12		5.74	0.433	134.0	4.87	17.2	-140	15
1720	7.12		5.75	0.433	126.0	5.01	17.2	-141	12
1730	7.12		5.79	0.376	131.0	5.15	16.9	-143	10
1740	7.12		5.80	0.384	127.0	5.06	16.8	-144	7
1750	7.12		5.82	0.395	129.2	5.10	16.7	-144	5
1800	Sample collected								

SIGNATURE(S): Scott R. McGuire

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 955-01
Sample Location: CEF-076-955
Sampled By: Scott McGuire
C.O.C. No.: 0399
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 1/28/03	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Time: 1735								
Method: Low Flow Peristaltic	Lt Grey	5.78	0.092	16.9	171.0	1.87	-19	

PURGE DATA

Date: 1/28/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic	See Low Flow Purge Sheet							
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 17.6								
Static Water Level (WL): 6.40								
One Screen Volume(gal/L): 6.2								
Start Purge (hrs): 1355								
End Purge (hrs): 1735								
Total Purge Time (min): 220								
Total Vol. Purged (gal/L): 32								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Purged to 5 volumes, turbidity still somewhat high. The water has cleared up quite a bit.

BZ- 0ppm
BH= 0ppm

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Scott R. McGuire

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-95s
DATE: 1/28/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1355	6.40	100							
1405	6.40	100	6.05	0.125	740.0	4.71	18.5	129	
1415	6.59	100	5.84	0.131	826.0	4.35	18.1	155	
1425	6.59	100	5.80	0.132	772.0	4.03	18.0	162	
1435	6.59	100	6.15	0.123	601.0	4.24	18.0	135	
1445	6.59	100	6.02	0.116	472.0	4.25	17.6	126	
1455	6.59	100	5.87	0.114	449.0	3.91	17.6	106	
1505	6.59	100	5.80	0.112	412.0	3.82	17.6	75	
1515	6.59	100	5.84	0.110	378.0	3.72	17.8	46	
1525	6.59	100	5.91	0.108	346.0	3.59	17.8	35	
1535	6.59	100	5.92	0.103	302.0	3.31	17.7	26	
1545	6.59	100	5.94	0.104	282.0	3.06	17.7	13	
1555	6.68	200	5.95	0.103	268.0	2.99	17.7	3	increased flow rate.
1605	6.68	200	5.93	0.100	251.0	2.70	17.7	0	Just below 3/10
1615	6.68	200	5.93	0.100	240.0	2.64	17.7	-3	
1625	6.68	200	5.93	0.100	218.0	2.54	17.5	-3	
1635	6.68	5~8,200	5.85	0.098	209.0	2.32	17.3	-9	
1645	6.68	200	5.83	0.097	191.0	2.24	17.2	-10	
1655	6.68	200	5.81	0.096	188.0	2.15	17.2	-11	
1705	6.68	200	5.81	0.095	181.0	2.01	17.1	-11	
1715	6.68	200	5.80	0.094	178.0	1.95	16.9	-12	
1725	6.68	200	5.79	0.093	174.0	1.90	16.8	-15	
1735	6.68	200	5.78	0.092	171.0	1.87	16.9	-19	
1740	Sample collected								

SIGNATURE(S): Scott R. McGuire

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N960-01
Sample Location: CEF-076-960
Sampled By: MLFLYNN
C.O.C. No.: ~~2226~~ 0350 MA
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Date: 2.11.03								
Time: 1045								
Method: Low Flow Peristaltic	yellow clear	6.84	0.702	19.3	6.9	0.21	-46	

PURGE DATA

	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Date: 2.11.03								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 115 ft								
Static Water Level (WL): 3.21								
One Screen Volume(gal/L): 3.1								
Start Purge (hrs): 0900								
End Purge (hrs): 1035								
Total Purge Time (min): 95								
Total Vol. Purged (gal/L): 9.5								

See Low Flow Purge Sheet

1045 = Sample time

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead. SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

5 FOOT SCREEN.

BACKGRND (PPM) = 0.2 . BOREHOLE (PPM) = 0.0 . Breathing zone = 0.0.

Circle if Applicable:
MS/MSD
Duplicate ID No.: None

Signature(s): MLFlynn

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076- ~~9D~~ 96D MD
DATE: 2-11.03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments VOL	Comments Lamotte
0900	*3.21	—	—	—	—	—	—	—	—	
0910	4.60	100	6.65	0.763	394	2.60	18.4	21	1L	
0920	5.60	100	6.63	0.736	180	1.41	19.1	-43	2L	
0930	6.29	100	6.74	0.722	44.7	0.76	18.9	-54	3L	19
0940	6.46	100	6.84	0.716	53.1	0.72	19.2	-52	4L	18
0950	6.75	100	6.87	0.706	47.4	0.67	19.2	-52	5L	15
1000	6.88	100	6.86	0.702	37.1	0.58	19.2	-51	6L	13
1020	7.00	100	6.84	0.697	24.3	0.31	19.0	-49	8L	7.8
1035	6.98	100	6.84	0.702	23.9	0.21	19.3	-46	9.5L	6.9
1045	Sample time									

* Drawdown is problem. Pumping at 100mL/min until stabilizes

SIGNATURE(S): M Gregson

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 97D-01
Sample Location: CEF-076-97D
Sampled By: S. McGuire
C.O.C. No.: 22216
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Date: 2/10/03								
Time: 1950								
Method: Low Flow Peristaltic	clear	7.02	0.043	20.50	9.1	0.00	-92	

PURGE DATA

Date: 2/10/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic	See Low Flow Purge Sheet							
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 115								
Static Water Level (WL): 7.10								
One Screen Volume(gal/L): 3.1								
Start Purge (hrs): 1650								
End Purge (hrs): 1945								
Total Purge Time (min): 115								
Total Vol. Purged (gal/L): 9.5								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

5 FOOT SCREEN

BACKGROUND (PPM) = 0. BOREHOLE (PPM) = 0. Breathing Zone (PPM) = 0

Circle if Applicable:

MS/MSD

Duplicate ID No.: None

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-97D
DATE: 2/10/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. HORIBA (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1650	7.10	50	7.24	0.684	72.5	9.94	22.11	90	
1700 ~~1655~~	7.79	50	7.09	0.675	27.0	1.19	20.96	-4	drawdown increasing
1710	8.43	50	7.08	0.673	17.4	0.69	20.70	-21	poor. recharge.
1720	8.82	50	7.05	0.660	16.1	0.37	20.63	-49	
1730	9.02	50	7.05	0.657	15.2	0.29	20.60	-52	
1740	9.15	50	7.04	0.651	14.4	0.20	20.58	-63	
1750	9.14	50	7.04	0.649	13.2	0.13	20.42	-70	
1800	9.14	50	7.03	0.646	12.8	0.08	20.29	-81	
1810	9.08	50	7.03	0.645	12.1	0.05	20.18	-81	
1820	9.03	50	7.03	0.644	11.9	0.02	20.07	-82	
1830	9.04	50	7.02	0.644	11.7	0.01	19.86	-83	
1840	9.04	50	7.02	0.643	11.3	0.00	19.72	-84	
1850	9.04	50	7.02	0.643	11.1	0.00	19.84	-84	
1900	9.04	50	7.02	0.643	10.9	0.00	19.91	-85	
1910	9.04	50	7.02	0.643	10.7	0.00	20.26	-86	
1920	9.04	50	7.02	0.643	10.5	0.00	20.48	-90	
1930	9.04	50	7.02	0.643	10.1	0.00	20.48	-90	
1940	9.04	50	7.02	0.643	9.6	0.00	20.49	-91	
1945	9.04	50	7.02	0.643	9.1	0.00	20.50	-92	
1950	Sample Collected								

SIGNATURE(S): Scott R. McGuire

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 98D-01
Sample Location: CEF-076- 98D
Sampled By: C Gleaton
C.O.C. No.: ~~2226~~ 0350 MO
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 2/11/03	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Time: 1115								
Method: Low Flow Peristaltic	Clear	6.59	0.706	18.72	0.34	1.3	0	

PURGE DATA

Date: 2/11/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 110	See Low Flow Purge Sheet							
Static Water Level (WL): 7.2								
One Screen Volume(gal/L): .82								
Start Purge (hrs): 0912								
End Purge (hrs): 1110								
Total Purge Time (min): 118								
Total Vol. Purged (gal/L): 2.6								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

5 FOOT SCREEN

BACKGROUND (PPM) = 0. Borehole (PPM) = 0. Breathing Zone (PPM) = 0.

Circle if Applicable:

MS/MSD	Duplicate ID No.: None	Signature(s): C. Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-98D
DATE: 2/11/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0912	7.20	—	—	—	—	—	—	—	
0920	8.70	83.4	6.67	0.598	0.99	2.6	18.62	4	
0925	9.25	83.4	6.65	0.636	0.33	1.8	18.38	2	
0930	9.94	83.4	6.63	0.621	0.34	1.8	18.05	0	
0940	10.84	83.4	6.60	0.643	0.32	2.1	18.72	0	
0950	11.64	83.4	6.58	0.665	0.32	2.0	18.95	0	
1000	11.97	83.4	6.58	0.695	0.34	1.8	19.14	0	
1010	11.97	83.4	6.58	0.701	0.34	1.7	18.97	0	
1020	12.03	83.4	6.59	0.753	0.32	1.6	18.81	0	
1030	12.02	83.4	6.58	0.739	0.32	1.4	18.85	0	
1040	12.04	83.4	6.58	0.731	0.33	1.4	18.64	0	
1050	12.04	83.4	6.59	0.701	0.34	1.4	18.70	0	
1100	12.04	83.4	6.60	0.705	0.34	1.4	18.72	0	
1110	12.04	83.4	6.59	0.706	0.34	1.3	18.78	0	

SIGNATURE(S): C. Vlente

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 99D-01
Sample Location: CEF-076-99D
Sampled By:
C.O.C. No.: 2226
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 2/10/03	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Time: 1920								
Method: Low Flow Peristaltic	Clear	6.94	0.628	19.52	0.36	1.3	0	

PURGE DATA

Date: 2/10/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm):								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 100	See Low Flow Purge Sheet							
Static Water Level (WL): 7.64								
One Screen Volume (gal/L): .82								
Start Purge (hrs): 1700								
End Purge (hrs): 1910								
Total Purge Time (min): 130								
Total Vol. Purged (gal/L): 2.6								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

5 FT. SCREEN

BACKGRND (PPM) = 0.0. Borehole (PPM) = 0.0. BZ (PPM) = 0.0.

Circle if Applicable:

MS/MSD

Duplicate ID No.: None

Signature(s): C D Lester

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-990
DATE: 2/10/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1706	7.64	—	—	—	—	—	—	—	
1716	8.34	75	7.03	0.643	9.82	2.8	21.93	0	
1726	8.70	75	7.01	0.641	3.69	2.0	20.87	0	
1736	8.90	75	7.00	0.636	2.45	1.9	20.62	0	
1746	8.90	75	6.99	0.638	1.44	1.8	20.07	0	
1756	8.90	75	6.96	0.632	0.94	1.7	20.98	0	
1807	8.90	75	6.96	0.630	0.80	1.6	19.83	0	
1816	8.90	75	6.95	0.630	0.62	1.5	19.79	0	
1826	8.90	75	6.95	0.629	0.57	1.5	19.72	0	
1836	8.93	75	6.95	0.628	0.52	1.4	19.60	0	
1846	8.94	75	6.94	0.631	0.33	1.3	19.54	0	
1910	8.87	75	6.94	0.628	0.36	1.3	19.52	0	

SIGNATURE(S): C. Flet

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N
Sample Location: CEF-076-1000
Sampled By:
C.O.C. No.: 03416
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 1/29/03 Time: 1245	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Method: Low Flow Peristaltic	Clear	6.89	0.461	20.7	5.1	.86	-66	

PURGE DATA

Date: 1/29/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic	See Low Flow Purge Sheet							
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 100								
Static Water Level (WL): 7.48								
One Screen Volume(gal/L): 3.1								
Start Purge (hrs): 0955/1050								
End Purge (hrs): 1035/1240								
Total Purge Time (min): 140								
Total Vol. Purged (gal/L): 14								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	
EDB 504	None	3-40 ml vials	
Total Lead. SW846 6010B	HNO3	1 - 500 ml HDPE bottle	

OBSERVATIONS / NOTES

over purged trying to get well to stabilize within 3/10'

BZ = 0 ppm
BH = 0 ppm

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Scott R. McGuire

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-100D
DATE: 1/29/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0955	7.48	~~300~~ 100							
1005	11.81	100	6.88	0.413	-3.6	1.69	20.0	25	decreased Flow Rate
1015	12.46	100	6.86	0.432	-10.0	1.08	19.7	-12	
1025	13.17	100	6.85	0.434	-10.0	1.02	19.9	-22	
1035	13.55	50	6.85	0.459	-10.0	0.99	19.8	-31	decreased Flow Rate
1040									discontinued Purging
1050	10.20	50	6.90	0.457	-9.6	1.65	19.6	-44	to let well recharge.
1100	10.50	50	6.94	0.465	-10.0	1.72	19.6	-54	* 1050 Resumed Purge
1110	10.50	50	6.94	0.467	-5.4	1.63	20.0	-67	@ 50 ml/Min stabilized
1120	10.5	50	6.97	0.471	-2.9	1.48	20.0	-62	@ 3/10' drawdown to 10.5'
1130	10.5	50	6.92	0.479	1.2	1.39	20.2	-58	
1140	10.5	50	6.87	0.473	2.1	1.24	20.6	-60	
1150	10.5	50	6.89	0.472	-03	1.01	20.6	-63	
1210	10.5	50	6.89	0.471	3.2	.92	20.7	-64	
1230	10.5	50	6.89	0.469	4.5	.89	20.7	-65	
1240	10.5	50	6.89	0.461	5.1	.86	20.7	-66	
1245	sample collected								

SIGNATURE(S): S. McGuire

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N
Sample Location: CEF-076- 1015
Sampled By: C Gleason
C.O.C. No.: 0346
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l		Other
Date: 1/29/03 Time: 1300								
Method: Low Flow Peristaltic	Brown	5.10	0.086	20.5	1000	7.26		

PURGE DATA

Date: 1/29/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 37.8	See Low Flow Purge Sheet							
Static Water Level (WL): 4.21								
One Screen Volume (gal/L): 1.62								
Start Purge (hrs): 1013								
End Purge (hrs): 1255								
Total Purge Time (min): 162								
Total Vol. Purged (gal/L): 8.1								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): C. Gleason

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-1015
DATE: 1/29/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1013	4.16	189.2							Horiba NTU
1016	4.21	189.2	5.17	0.106	712	20	13.6	106	759.0
1026	4.21	189.2	5.14	0.100	724	16.53	16.1	75	759.0
1036	4.21	189.2	5.18	0.097	1000	14.90	16.7	45	999
1045	4.21	189.2	5.17	0.096	1000	13.51	17.6	29	999
1055	4.21	189.2	5.16	0.093	1000	9.46	19.1	14	999
1105	4.21	189.2	5.13	0.093	1000	8.53	19.5	13	999
1115	4.21	189.2	5.12	0.093	1000	8.04	19.9	11	999
1124	4.21	189.2	5.13	0.091	1000	7.52	20.0	4	999
1135	4.21	189.2	5.13	0.089	1000	7.28	20.3	1	999
1145	4.21	189.2	5.12	0.088	1000	7.26	20.3	0	999
1155	4.21	189.2	5.11	0.088	1000	7.27	20.3	0	999
1205	4.21	189.2	5.12	0.087	1000	7.26	20.5	0	999
1215	4.21	189.2	5.13	0.087	1000	7.26	20.5	0	999
1225	4.21	189.2	5.11	0.087	1000	7.26	20.5	0	999
1235	4.21	189.2	5.11	0.086	1000	7.26	20.5	0	999
1245	4.21	189.2	5.10	0.086	1000	7.26	20.5	0	999
1255	4.21	189.2	5.10	0.086	1000	7.28	20.5	0	999 Purged 8.1 gal

SIGNATURE(S): C. Flecke

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 102D-01
Sample Location: CEF-076- 102D
Sampled By: S McGuire
C.O.C. No.: ~~2226~~ 0350 MD
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 2/11/03 Time: 1110	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Method: Low Flow Peristaltic	Clear	6.93	0.529	18.30	4.79	0.00	-51	

PURGE DATA

Date: 2/11/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic	See Low Flow Purge Sheet							
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 In.								
Well Casing Material:PVC								
Total Well Depth (TD): 121								
Static Water Level (WL): 6.78								
One Screen Volume(gal/L): 3.1								
Start Purge (hrs): 0855								
End Purge (hrs): 1100								
Total Purge Time (min): 125								
Total Vol. Purged (gal/L): 10								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

5 FT. SCRN

BACKGRND (ppm) = 0. Borehole (ppm) = 0. BZ (ppm) = 0.

Circle if Applicable:

MS/MSD

Duplicate ID No.: None

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-1020
DATE: 2/11/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0855	6.78	50							
0900	9.10	50	6.68	0.663	999.0	1.46	18.33	203	
0910	8.89	50	6.85	0.555	314	0.00	17.06	-1	
0920	8.65	50	6.91	0.563	156.3	0.00	17.11	-10	
0930	8.65	50	6.95	0.574	96.9	0.00	17.17	-29	
0940	8.65	50	6.94	0.570	40.3	0.00	17.18	-32	
0950	8.65	50	6.93	0.561	42.6	0.00	17.39	-37	
1000	8.65	50	6.93	0.553	49.8	0.00	17.82	-41	
1020	8.65	50 6	6.93	0.546	72.1	0.00	17.86	-46	
1040	8.68	50 8	6.93	0.535	83.5	0.00	18.02	-51	
1100	8.59	50 10	6.93	0.529	4.79	0.00	18.30	-51	Final Turbidity reading with Lamotte. 4.79
~~H20~~									
1110	Sample Collected								

SIGNATURE(S): Scott R. McGuire

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 103D-01
Sample Location: CEF-076- 103D
Sampled By: CGleaton
C.O.C. No.: 2226
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 2/10/03	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Time: 1520								
Method: Low Flow Peristaltic	Clear	7.62	0.612	22.74	8.07	1.7	0	

PURGE DATA

Date: 2/10/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm):								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 150	See Low Flow Purge Sheet							
Static Water Level (WL): 5.95								
One Screen Volume (gal/L): .82								
Start Purge (hrs): 1230								
End Purge (hrs): 1520								
Total Purge Time (min): 170								
Total Vol. Purged (gal/L): 4.2								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

5 FT. SURN

BACKGRND (PPM) = 0.0. Borehole (PPM) = 0.0. BZ (PPM) = 0.0.

Circle if Applicable:

MS/MSD

Duplicate ID No.: None

Signature(s): C. Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-103D
DATE: 2/10/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1020	5.55	—	—	—	—	—	—	—	
~~1625~~									
1230	5.55	93.5	8.05	0.302	22.5	9.2	20.56	161	
1240	6.05	93.5	7.96	0.304	19.7	8.4	20.62	158	
1250	6.10	93.5	7.96	0.299	17.3	7.7	20.10	156	
1300	6.10	93.5	7.68	0.523	20.2	3.2	21.3	0	
1315	6.10	93.5	7.63	0.604	17.5	2.3	23.27	0	
1321	6.10	93.5	7.62	0.607	17.7	2.2	23.48	0	
1330	6.10	93.5	7.61	0.610	17.3	2.2	23.51	0	
1340	6.10	93.5	7.61	0.611	16.7	2.1	24.0	0	
1350	6.10	93.5	7.60	0.610	16.5	2.1	23.81	0	
1403	6.10	93.5	7.62	0.614	15.2	2.1	23.26	0	
1410	6.10	93.5	7.62	0.614	14.4	1.9	23.10	0	
1420	6.10	93.5	7.62	0.614	13.4	1.8	22.98	0	
1433	6.10	93.5	7.63	0.610	12.2	1.7	22.84	0	
1441	6.10	93.5	7.63	0.609	12.1	1.7	22.79	0	
1450	6.10	93.5	7.63	0.611	12.0	1.7	22.70	0	
1500	6.10	93.5	7.62	0.612	8.37	1.7	22.67	0	
1510	6.10	93.5	7.62	0.612	8.02	1.7	22.69	0	
1520	6.10	93.5	7.62	0.612	8.07	1.7	22.74	0	

SIGNATURE(S): C [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E ~~07~~ 75 MD -02
Sample Location: CEF-076- 07
Sampled By: C Gleason
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Date: 5/23/03								
Time: 0925								
Method: Low Flow Peristaltic	Clear	6.10	0.140	22.53	10	1.30	146	

PURGE DATA

Date: 5/23/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material:PVC								
Total Well Depth (TD): 15.1	See Low Flow Purge Sheet							
Static Water Level (WL): ~~7.34~~ 4.56								
One Screen Volume(gal/L): 6.2								
Start Purge (hrs): 0750								
End Purge (hrs): 920								
Total Purge Time (min): 90								
Total Vol. Purged (gal/L): 18.0								

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE				
PAHs	SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene				
TRPH	FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB	504	HCl ~~None~~	3-40 ml vials	✓
Total Lead	SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): C Gleason

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm SARA Investigation
PROJECT NUMBER: N3996JG0050325

WELL ID.: CEF-076- 07
DATE: 5/23/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum.Vol. (liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0750	4.65	—	—	6.25	0.144	70	6.32	22.21	113	
0755	4.65	200	1.0	6.14	0.143	34	1.99	22.20	134	
0800	4.65	200	2.0	6.16	0.142	30	1.93	22.25	134	
0805	4.65	200	3.0	6.15	0.142	28	1.86	22.28	135	
0810	4.65	200	4.0	6.14	0.141	26	1.82	22.31	136	
0815	4.65	200	5.0	6.13	0.140	23	1.73	22.31	137	
0820	4.65	200	6.0	6.13	0.140	22	1.71	22.32	137	
0825	4.65	200	7.0	6.13	0.140	22	1.70	22.32	137	
0830	4.65	200	8.0	6.13	0.140	21	1.74	22.31	138	
0835	4.65	200	9.0	6.12	0.140	19	1.74	22.31	138	
0840	4.65	200	10.0	6.12	0.140	17	1.75	22.30	140	
0845	4.65	200	11.0	6.11	0.140	14	1.65	22.36	141	
0850	4.65	200	12.0	6.11	0.140	14	1.61	22.31	144	
0855	4.65	200	13.0	6.11	0.140	12	1.62	22.54	148	
0900	4.65	200	14.0	6.11	0.140	12	1.43	22.54	146	
0905	4.65	200	15.0	6.11	0.140	10	1.44	22.55	146	
0910	4.65	200	16.0	6.10	0.140	10	1.28	22.57	146	
0915	4.65	200	17.0	6.10	0.140	11	1.29	22.55	146	
0920	4.65	200	18.0	6.10	0.140	10	1.30	22.53	146	

SIGNATURE(S): C Dlest

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E 53I-01
Sample Location: CEF-076- 53I
Sampled By: C.Gleaton
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 5/23/03 Time: 1150	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Method: Low Flow Peristaltic	Clear	5.67	0.050	20.71	0.10	4.03	188	

PURGE DATA

Date: 5/23/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic	See Low Flow Purge Sheet							
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material:PVC								
Total Well Depth (TD):								
Static Water Level (WL): 4.36								
One Screen Volume(gal/L): 3.1								
Start Purge (hrs): 1115								
End Purge (hrs): 1145								
Total Purge Time (min): 30								
Total Vol. Purged (gal/L): 10.5								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	HCl ~~None~~	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): C Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm SARA Investigation
PROJECT NUMBER: N3996JG0050325

WELL ID.: CEF-076- 58I
DATE: 5/23/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum.Vol. (liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1120	4.38	350	1.75	6.27	0.053	1.7	4.37	21.12	149	
1125	4.38	350	3.50	5.80	0.053	0.25	4.09	20.73	171	
1130	4.38	350	5.25	5.75	0.053	0.25	4.03	20.74	171	
1135	4.38	350	7.0	5.69	0.052	0.15	4.09	20.76	175	
1140	4.38	350	8.75	5.68	0.052	0.10	4.05	20.75	177	
1145	4.38	350	10.5	5.67	0.050	0.10	4.03	20.71	188	

SIGNATURE(S): C Dlesta

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 104D-01
Sample Location: CEF-076- 104D
Sampled By: C Gleaton
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Date: 5/22/03								
Time: 1040								
Method: Low Flow Peristaltic	Clear	6.33	0.209	21.79	16	0.19	-235	

PURGE DATA

	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Date: 5/22/03								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material:PVC								
Total Well Depth (TD): 133.94	See Low Flow Purge Sheet							
Static Water Level (WL): 7.67								
One Screen Volume(gal/L): 3.1								
Start Purge (hrs): 0945								
End Purge (hrs): 1035								
Total Purge Time (min): 50								
Total Vol. Purged (gal/L): 15.5								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	HCl ~~None~~	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): C Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm SARA Investigation
PROJECT NUMBER: N3996JG0050325

WELL ID.: CEF-076- 104D
DATE: 5/22/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum.Vol. (liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0950	7.96	400	2.0	0.257 ⇐	8.85	150	5.86	22.16	-120	
0955	7.96	400	4.0	6.39	0.201	130	0.81	21.86	-147	
1000	7.96	400	5.0	6.29	0.196	100	0.41	21.83	-172	
1005	7.96	400	6.0	6.28	0.198	70	0.22	21.81	-185	
1010	7.96	400	8.0	6.28	0.202	51	0.23	21.83	-210	
1015	7.96	400	10.0	6.29	0.205	37	0.25	21.82	-202	
1020	7.96	400	12.0	6.30	0.208	22	0.24	21.79	-217	
1025	7.96	400	14.0	6.31	0.208	24	0.21	21.81	-227	
1030	7.91	200	15.0	6.33	0.207	17	0.20	21.77	-232	
1035	7.87	100	15.5	6.33	0.206	16	0.19	21.79	-235	

SIGNATURE(S): C Wlcek

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 105I-01
Sample Location: CEF-076-105I
Sampled By: C Gleaton
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 5/21/03	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Time: 1615								
Method: Low Flow Peristaltic	L+Gray	7.21	0.245	22.21	227	1.26	-234	

PURGE DATA

Date: 5/21/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic	See Low Flow Purge Sheet							
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 in.								
Well Casing Material: PVC								
Total Well Depth (TD): 55.09								
Static Water Level (WL): 4.85								
One Screen Volume (gal/L): 3.1								
Start Purge (hrs): 1525								
End Purge (hrs): 1610								
Total Purge Time (min): 45								
Total Vol. Purged (gal/L): 17.5								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane-BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	None	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

BH 0.0 ppm
B2 0.0 ppm

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): C Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-105T
DATE: 5/21/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1530	4.88	400	7.01	0.257	340	2.15	22.27	-57.2	
1535	4.92	600	7.20	0.252	240	1.42	22.19	-145	
1540	4.92	600	7.23	0.250	220	1.39	22.20	-153	
1545	4.92	600	7.25	0.250	210	1.33	22.21	-160	
1550	4.92	600	7.23	0.247	210	1.34	22.20	-178	
1555	4.86	250	7.21	0.246	210	1.31	22.18	-192	
1600	4.86	250	7.24	0.245	210	1.29	22.19	-200	
1605	4.86	250	7.25	0.245	215	1.27	22.23	-221	
1610	4.86	250	7.21	0.245	227	1.26	22.21	-234	

SIGNATURE(S): C Dlent

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 1065-01
Sample Location: CEF-076- 1065
Sampled By: CGleaton
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Date: 5/22/03 Time: 1550 Method: Low Flow Peristaltic	Brown	5.02	0.090	21.89	948	0.07	-50.1	

PURGE DATA

Date: 5/22/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material:PVC								
Total Well Depth (TD): 33.48	See Low Flow Purge Sheet							
Static Water Level (WL): 7.8								
One Screen Volume(gal/L): 3.1								
Start Purge (hrs): 1500								
End Purge (hrs): 1545								
Total Purge Time (min): 45								
Total Vol. Purged (gal/L): 15.75								

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE				
PAHs	SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene				
TRPH	FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB	504	None	3-40 ml vials	✓
Total Lead	SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): C Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm SARA Investigation
PROJECT NUMBER: N3996JG0050325

WELL ID.: CEF-076- 1065
DATE: 5/22/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum.Vol. (liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1505	7.96	350	1.75	6.71	0.107	1100	0.92	22.48	-21	
1510	7.96	350	3.5	5.35	0.102	<1100	0.14	21.96	0.4	
1515	7.96	350	5.25	5.27	0.096	1100	0.11	21.91	-9.3	
1520	7.96	350	7.0	5.24	0.094	1100	0.10	21.87	-18.8	
1525	7.96	350	8.75	5.20	0.092	1100	0.09	21.85	-30	
1530	7.96	350	10.5	5.07	0.090	940	0.08	21.89	-27.1	
1535	7.96	350	12.25	5.04	0.094	950	0.08	21.90	-37.8	
1540	7.96	350	14.0	5.01	0.091	935	0.07	21.90	-48.3	
1545	7.96	350	15.75	5.02	0.090	948	0.07	21.89	-50.1	

C Blatt

SIGNATURE(S): C Blatt

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 1085-01
Sample Location: CEF-076-1085
Sampled By: [illegible]
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 5/22/03	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Time: 1450								
Method: Low Flow Peristaltic	LT. TAN	4.71	0.115	23.41	10.3	0.03	77.6	

PURGE DATA

Date: 5/22/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material:PVC								
Total Well Depth (TD): 17.6	See Low Flow Purge Sheet							
Static Water Level (WL): 7.00								
One Screen Volume(gal): 6.2								
Start Purge (hrs): 1335								
End Purge (hrs): 1440								
Total Purge Time (min): 65								
Total Vol. Purged (gal): 19.5								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	HCl ~~None~~	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD

Duplicate ID No.: CEF-076-GW-DUP6-01

Signature(s): [illegible]

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm SARA Investigation
PROJECT NUMBER: N3996JG0050325

WELL ID.: CEF-076- 1085
DATE: 5/20/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum.Vol. (liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1335	7.00	300	—	—	—	—	—	—	—	START PURGE
1340	7.20	300	1.5	4.81	0.110	122	0.25	23.25	112.2	
1350	7.21	300	4.5	4.73	0.103	30.5	0.10	23.26	106.2	
1400	7.21	300	7.5	4.72	0.108	24.8	0.09	23.29	99.7	
1410	7.21	300	10.5	4.72	0.110	19.4	0.08	23.28	95.0	
1420	7.21	300	13.5	4.72	0.112	16.6	0.06	23.24	91.3	
1430	7.21	300	16.5	4.71	0.114	14.1	0.05	23.27	86.4	
1435	7.21	300	18.0	4.71	0.115	13.7	0.04	23.17	84.4	
1440	7.21	300	19.5	4.71	0.115	10.3	0.03	23.41	77.6	
	SAMPLE TIME 1450									

SIGNATURE(S): [illegible]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 1095-01
Sample Location: CEF-076- 1095
Sampled By: P Lefebvre
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 5/22/03	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Time: 1300								
Method: Low Flow Peristaltic	CLEAR	4.41	0.174	23.68	8.4	0.29	232.8	

PURGE DATA

Date: 5/22/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 17.4	See Low Flow Purge Sheet							
Static Water Level (WL): 6.35								
One Screen Volume(gal): 6.2								
Start Purge (hrs): 1155								
End Purge (hrs): ~~1255~~ PL 1257								
Total Purge Time (min): ~~60~~ PL 62								
Total Vol. Purged (gal): 10.5								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	HCl ~~None~~	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

476-7609

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm SARA Investigation
PROJECT NUMBER: N3996JG0050325

WELL ID.: CEF-076- 1095
DATE: 5/22/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum.Vol. (liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1155	6.35	300	—	—	—	—	—	—	—	START PURGE
1200	6.61	300	1.5	4.35	0.176	137	0.21	23.74	273.5	
1210	6.62	300	4.5	4.37	0.177	93.2	0.25	23.80	270.2	
1220	6.62	300	7.5	4.38	0.176	41.6	0.28	23.82	264.7	
1230	6.62	300	10.5	4.40	0.174	21.3	0.31	23.76	251.0	
1240	6.62	300	13.5	4.41	0.174	15.5	0.32	23.73	239.5	
1245	6.62	300	15.0	4.41	0.174	9.8	0.29	23.68	236.0	
1250	6.62	300	16.5	4.41	0.174	8.7	0.29	23.63	234.3	
1257	6.62	300	18.5	4.41	0.174	8.4	0.29	23.68	232.8	
	SAMPLE TIME 1300									

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 110D-01
Sample Location: CEF-076-110D
Sampled By: C Gleaton
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Date: 5/22/03								
Time: 1305								
Method: Low Flow Peristaltic	Brown	6.00	0.192	22.76	950	0.08	-221	

PURGE DATA

Date: 5/22/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 114.77	See Low Flow Purge Sheet							
Static Water Level (WL): ~~9.60~~ 10.09								
One Screen Volume(gal/L): 3.1								
Start Purge (hrs): 1200								
End Purge (hrs): 1300								
Total Purge Time (min): 60								
Total Vol. Purged (gal/L): 18								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	HCl ~~None~~	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

BZ = 0.0
BHS 0.0

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): C Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm SARA Investigation
PROJECT NUMBER: N3996JG0050325

WELL ID.: CEF-076- 1100
DATE: 5/22/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum.Vol. (liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1205	10.35	300	1.5	6.35	0.214	>1000	3.95	23.11	-83	
1210	10.35	300	3.0	6.04	0.193	>1000	0.93	23.04	-124	
1215	10.35	300	4.5	6.01	0.191	1000	0.38	23.05	-167	
1220	10.35	300	6.0	6.03	0.193	850	0.19	22.94	-188	
1225	10.35	300	7.5	6.04	0.195	650	0.13	22.89	-194	
1230	10.35	300	9.0	6.03	0.195	600	0.10	22.82	-211	
1235	10.35	300	10.5	6.02	0.195	550	0.10	22.79	-223	
1240	10.35	300	12.0	6.01	0.194	550	0.09	22.75	-234	
1245	10.28	150	12.75	6.01	0.192	550	0.08	22.78	-250	
1250	10.28	150	13.50	6.01	0.192	550	0.08	22.76	-253	
1255	10.34	300	15.00	6.00	0.191	500	0.08	22.77	-241	
1300	10.34	300	18.00	6.00	0.192	450	0.08	22.76	-221	

SIGNATURE(S): C. Weeks

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 111I-01
Sample Location: CEF-076- 111I
Sampled By: P Lewinski
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 5/22/03 Time: 1055	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Method: Low Flow Peristaltic	Lt. Tan	5.36	0.111	25.37	220	0.73	29.3	

PURGE DATA

Date: 5/22/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0								
Well Casing Diameter: 2 In.								
Well Casing Material:PVC								
Total Well Depth (TD): 74.9	See Low Flow Purge Sheet							
Static Water Level (WL): 8.51								
One Screen Volume(gal/L): 3.1								
Start Purge (hrs): 0915								
End Purge (hrs): 1045								
Total Purge Time (min): 90								
Total Vol. Purged (gal/L) 15.5								

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE				
PAHs	SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene				
TRPH	FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB	504	HCl ~~None~~	3-40 ml vials	✓
Total Lead	SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:
MS/MSD
Duplicate ID No.: CEF-076-GW-DUP7-01

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm SARA Investigation
PROJECT NUMBER: N3996JG0050325

WELL ID.: CEF-076- 111I
DATE: 5/22/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum.Vol. (liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0915	8.51	400	—	—	—	—	—	—	—	START PURGE
0920	8.60	400	2.0	6.52	0.283	66.0	5.59	25.00	103.0	
0930	8.60	400	6.0	6.30	0.250	74.8	5.76	25.08	100.8	
0940	8.58	300	9.0	6.24	0.241	81.0	5.47	25.09	91.5	
0950	8.57	100	10.0	6.15	0.242	134	5.48	25.30	77.7	
1000	8.57	100	11.0	6.08	0.197	185	4.04	25.28	57.4	
1010	8.57	100	12.0	5.95	0.183	200	3.19	25.33	41.6	
1020	8.57	100	13.0	5.49	0.124	249	1.16	25.41	40.7	
1030	8.57	100	14.0	5.43	0.117	229	0.76	25.48	37.7	
1040	8.57	100	15.0	5.38	0.114	224	0.75	25.23	32.2	
1045	8.57	100	15.5	5.36	0.111	220	0.73	25.37	29.3	
	SAMPLE TIME 1055									

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 112I-01
Sample Location: CEF-076- 112I
Sampled By: C Gleaton
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 5/22/03 Time: 1435	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Method: Low Flow Peristaltic	Clear	11.29	0.828	22.99	3.1	2.31	-170	

PURGE DATA

Date: 5/22/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0.0	See Low Flow Purge Sheet							
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 59.56								
Static Water Level (WL): 7.46								
One Screen Volume(gal/L): 3.1								
Start Purge (hrs): 1400								
End Purge (hrs): 1430								
Total Purge Time (min): 30								
Total Vol. Purged (gal/L): 10.5								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	HCl ~~None~~	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): C Gleaton

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm SARA Investigation
PROJECT NUMBER: N3996JG0050325

WELL ID.: CEF-076- 1/2I
DATE: 5/22/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum.Vol. (liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1405	7.65	350	1.75	11.47	0.826	6.8	6.28	22.97	-167	
1410	7.65	350	3.5	11.39	0.818	5.3	3.10	22.99	-171	
1415	7.65	350	5.25	11.34	0.841	3.3	2.55	22.95	-171	
1420	7.65	350	7.0	11.33	0.832	3.5	2.47	22.99	-173	
1425	7.65	350	8.75	11.32	0.831	3.4	2.35	22.97	-177	
1430	7.65	350	10.5	11.29	0.828	3.1	2.31	22.99	-170	

SIGNATURE(S): C. Villanueva

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 1135-01
Sample Location: CEF-076- 1135
Sampled By: D LOVRETTE
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 5/23/03 Time: 1030	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Method: Low Flow Peristaltic	CLEAR	6.27	0.372	23.52	39.8	0.33	125.1	

PURGE DATA

Date: 5/23/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic	See Low Flow Purge Sheet							
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 In.								
Well Casing Material:PVC								
Total Well Depth (TD): 43.9								
Static Water Level (WL): 6.98								
One Screen Volume(gal): 3.1								
Start Purge (hrs): 0855								
End Purge (hrs): 1020								
Total Purge Time (min): 85								
Total Vol. Purged (gal): 16.0								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	HCl ~~None~~	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable: MS/MSD

MS/MSD ✓ ~~Duplicate~~ ID No.: CEF-076-GW-~~MW~~ N1135-01

Signature(s):

476-7609

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm SARA Investigation
PROJECT NUMBER: N3996JG0050325

WELL ID.: CEF-076- 1135
DATE: 5/23/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum.Vol. (liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0855	6.98	400	—	—	—	—	—	—	—	START PURGE
0900	7.07	400	2.0	8.69	0.301	72.9	2.85	23.32	-108.9	
0910	7.08	400	6.0	6.43	0.371	70.4	0.18	23.02	-119.6	
0920	7.08	400	10.0	6.41	0.377	125.3	0.13	22.95	-126.7	
0930	7.04	100	11.0	6.38	0.391	137.6	0.35	23.22	-120.9	
0940	7.04	100	12.0	6.36	0.389	143.0	0.32	23.18	-119.7	
0950	7.04	100	13.0	6.35	0.390	147.4	0.38	23.19	-122.4	
1000	7.04	100	14.0	6.30	0.378	55.3	0.26	23.52	-127.6	
1010	7.04	100	15.0	6.28	0.375	47.2	0.37	23.54	-126.3	
1020	7.04	100	16.0	6.27	0.372	39.8	0.33	23.52	-125.1	
	SAMPLE TIME 1030									

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc. **GROUNDWATER SAMPLE LOG SHEET**

Project Site Name: North Fuel Farm, Cecil Field
Project No.: ~~3998.JG0050325~~ 0039DS005G120

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 1075-01 (F)
Sample Location: CEF-076- 1075
Sampled By: D Lewelette
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Date: 6/2/03 Time: 1825								
Method: Low Flow Peristaltic	Lt. Brown	5.53	1.20	24.25	41.1	0.46	209.6	

PURGE DATA

	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Date: 6/2/03								
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 in.								
Well Casing Material: PVC								
Total Well Depth (TD): 17.30	See Low Flow Purge Sheet							
Static Water Level (WL): 7.30								
One Screen Volume(gal): 6.2								
Start Purge (hrs): 1500								
End Purge (hrs): 1820								
Total Purge Time (min): 200								
Total Vol. Purged (gal): 31.0								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	NO
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	NO
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	NO
EDB 504	None	3-40 ml vials	NO
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓
Filtered Lead SW846 6010B	HNO_3	1-500ml HDPE bottle	✓

OBSERVATIONS / NOTES

PLACE "F" AS suffix on Label I.D. of filtered sample.
Filtered with 1-micron filter.

Circle if Applicable:

MS/MSD ✓ Duplicate ID No.: CEF-076-GW-DUP8-01

Signature(s): [signature]

CEF-076-GW-MD5-01

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm SARA Investigation
PROJECT NUMBER: N3996JG0050325

WELL ID.: CEF-076- 1075
DATE: 6/2/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum.Vol. (liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1500	7.30	300	–	–	–	–	–	–	–	START PURGE
1505	7.51	300	1.5	5.94	0.137	27.4	2.70	24.84	153.6	
1515	7.53	300	4.5	5.64	0.123	89.6	1.55	24.16	163.4	
1525	7.53	300	7.5	5.63	0.124	147.0	1.52	23.92	165.8	
1535	7.53	300	10.5	5.59	0.119	217.0	1.41	24.24	162.0	
1545	7.50	200	12.5	5.60	0.122	218.0	1.28	24.38	170.8	
1555	7.50	200	14.5	5.59	0.121	182.0	0.98	24.43	173.1	
1605	7.50	200	16.5	5.59	0.120	168.0	0.95	24.50	177.9	
1615	7.50	200	18.5	5.57	0.120	143.0	0.79	24.80	175.0	
1625	7.47	100	19.5	5.57	0.120	128.3	0.82	25.36	175.7	
1635	7.47	100	20.5	5.56	0.120	117.0	0.86	25.67	175.9	
1645	7.47	100	21.5	5.56	0.119	99.0	0.74	25.62	176.7	
1655	7.47	100	22.5	5.55	0.118	[illegible]	0.61	25.51	178.1	
1705	7.47	100	23.5	5.56	0.118	80.7	0.56	25.37	180.2	
1715	7.47	100	24.5	5.56	0.119	74.3	0.55	25.18	183.6	
1725	7.47	100	25.5	5.55	0.119	67.2	0.58	24.91	187.3	
1735	7.47	100	26.5	5.54	0.119	58.4	0.57	24.72	191.7	
1745	7.47	100	27.5	5.54	0.119	53.2	0.53	24.55	196.1	
1755	7.47	100	28.5	5.54	0.121	48.2	0.53	24.36	199.7	
1805	7.47	100	29.5	5.53	0.120	44.6	0.49	24.28	203.5	
1815	7.47	100	30.5	5.54	0.120	42.3	0.46	24.27	207.1	
1820	7.47	100	31.0	5.53	0.120	41.1	0.46	24.25	209.6	END PURGE
	SAMPLE TIME		1825							

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-E21-01
Sample Location: CEF-076- E21
Sampled By: P LEVERETTE
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 6/3/03	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Time: 1020								
Method: Low Flow Peristaltic	CLEAR	5.60	0.172	23.96	3.73	0.11	1085	

PURGE DATA

Date: 6/3/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 In.								
Well Casing Material:PVC								
Total Well Depth (TD): 11.8	See Low Flow Purge Sheet							
Static Water Level (WL): 3.75								
One Screen Volume(gal): 4.9								
Start Purge (hrs): 0920								
End Purge (hrs): 1010								
Total Purge Time (min): 50								
Total Vol. Purged (gal): 15.0								

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Select VOCs SW846 8260B	HCl	3-40ml vials	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE			
PAHs SW846 8310	None	2 - 1 liter glass ambers	✓
#Include 1- and 2-methylnaphthalene			
TRPH FL-PRO	H2SO4	2 - 1 liter glass ambers	✓
EDB 504	HCl	3-40 ml vials	✓
Total Lead SW846 6010B	HNO3	1 - 500 ml HDPE bottle	✓

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm Cecil Field
PROJECT NUMBER: 3996.JG0050325

WELL ID.: CEF-076-21
DATE: 6/3/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0920	3.75	300	–	–	–	–	–	–	START PURGE
0925	4.03	300 1.5	5.62	0.173	33.8	1.12	24.06	188.0	
0935	4.04	300 4.5	5.61	0.175	12.6	0.36	24.00	111.4	
0945	4.04	300 7.5	5.60	0.177	8.50	0.19	23.93	123.7	
0955	4.04	300 10.5	5.60	0.176	6.42	0.15	23.95	113.7	
1005	4.04	300 13.5	5.60	0.173	5.31	0.13	24.03	111.1	
1010	4.04	300 15.0	5.60	0.172	3.73	0.11	23.96	108.5	
		SAMPLE TIME		1020					

SIGNATURE(S): [signature]

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 1145-01
Sample Location: CEF-076-1145
Sampled By: S. McGuire
C.O.C. No.: 2324
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 7/9/03	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1615	Visual	Standard	mS/cm	°C	NTU	mg/l		
Method: Low Flow Peristaltic	Lt Brn	5.86	0.114	24.52	999	0.17	-157	

PURGE DATA

Date: 7/9/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic	See Low Flow Purge Sheet							
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 40								
Static Water Level (WL): 5.1								
One Casing Volume(gal/L): 3.1								
Start Purge (hrs): 1410								
End Purge (hrs): 1610								
Total Purge Time (min): 120								
Total Vol. Purged (gal/L): 16								

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	SW-846 8260B	4C/HCl	3 - 40 ml vials with teflon septum	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE				
PAHs	SW-846 8310	4C	2 - 1 liter glass ambers	✓
TRPH	FL-PRO	4C/H2SO4	2 - 1 liter glass ambers	✓
Total Lead	SW846 6010B	4C/HNO3	1 - 500 ml HDPE	✓
EDB	EPA 504.1	4C/HCl	3 - 40 ml vials with teflon septum	✓

OBSERVATIONS / NOTES

Well began clear then went bad
Purged 5 well vol's per Merv Dale.

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Scott R McG

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm SARA Investigation
PROJECT NUMBER: N3996JG0050325

WELL ID.: CEF-076- 1145
DATE: 7/9/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum.Vol. (liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1410	5.10	300								
1415	5.26	300	1.5	10.81	0.953	4.75	2.81	23.37	-149	
1420	5.26	300	3.0	11.17	0.936	4.86	2.72	22.87	-178	
1425	5.26	300	4.5	10.76	0.407	4.13	1.99	22.78	-207	
1430	5.26	300	6.0	6.11	0.160	Er 3	0.48	23.60	-117	water getting dirty
1440	5.19	100	7.0	6.01	0.124	Er3	0.36	23.64	-129	slowed to 100 ml/min
1450	5.19	100	8.0	6.01	0.123	Er 3	0.34	23.71	-131	
1500	5.19	100	9.0	5.91	0.112	Er3	0.30	23.70	-127	
1520	5.19	100	11.0	5.79	0.115	Er3	0.27	24.11	-134	
1540	5.19	100	13.0	5.94	0.116	Er 3	0.26	24.43	-149	
1600	5.19	100	15.0	5.94	0.118	Er3	0.19	24.44	-158	
1610	5.19	100	16.0	5.86	0.114	Er3	0.17	24.62	-157	

SIGNATURE(S): Scott R. McGuire

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N 1150-01
Sample Location: CEF-076-
Sampled By:
C.O.C. No.: 2324
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 7/10/03	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Time: 1025								
Method: Low Flow Peristaltic	Clear	7.26	0.403	27.32	3.1	0.15	-178.9	

PURGE DATA

Date: 7/10/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic								
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 In.								
Well Casing Material: PVC								
Total Well Depth (TD): 110	See Low Flow Purge Sheet							
Static Water Level (WL): 8.34								
One Casing Volume(gal/L): 3.1								
Start Purge (hrs): 0845								
End Purge (hrs): 1020								
Total Purge Time (min): 95								
Total Vol. Purged (gal/L): 9.5								

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	SW-846 8260B	4C/HCl	3 - 40 ml vials with teflon septum	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE				
PAHs	SW-846 8310	4C	2 - 1 liter glass ambers	✓
TRPH	FL-PRO	4C/H2SO4	2 - 1 liter glass ambers	✓
Total Lead	SW846 6010B	4C/HNO3	1 - 500 ml HDPE	✓
EDB	EPA 504.1	4C/HCl	3 - 40 ml vials with teflon septum	✓

OBSERVATIONS / NOTES

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Scott R. McGlin

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm SARA Investigation
PROJECT NUMBER: N3996JG0050325

WELL ID.: CEF-076- 115D
DATE: 7/10/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum.Vol. (liters)	pH (S.U.)	Cond. (mS/cm)	Turb. LAMOTTE (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
0845	8.34	100								
0850	8.55	100	.5	8.50	0.339	41.4	0.51	25.31	-77.3	
0855	8.55	100	1.0	8.37	0.342	50.2	0.42	25.36	-99.6	
0900	8.55	100	1.5	8.29	0.348	42.4	0.38	25.42	-140.2	
0905	8.55	100	2.0	8.22	0.354	39.7	0.26	25.49	-198.7	
0910	8.55	100	2.5	8.03	0.367	32.1	0.24	25.45	-213.7	
0915	8.55	100	3.0	7.62	0.386	30.9	0.23	25.44	-212.7	
0920	8.55	100	3.5	7.44	0.393	18.8	0.25	25.59	-189.2	
0925	8.55	100	4.0	7.38	0.398	18.6	0.30	25.58	-191.1	
0930	8.55	100	4.5	7.46	0.399	18.1	0.33	26.01	-196.8	
0935	8.55	100	5.0	7.50	0.402	17.4	0.39	26.75	-201.3	
0940	8.55	100	5.5	7.50	0.402	16.9	0.36	26.78	-202.2	
0945	8.55	100	6.0	7.50	0.403	15.1	0.35	26.77	-204.1	
0950	8.55	100	6.5	7.50	0.403	14.5	0.33	26.74	-205.5	
0955	8.55	100	7.0	7.50	0.403	12.1	0.29	26.73	-204.7	
1000	8.55	100	7.5	7.42	0.402	9.8	0.21	26.71	-207.6	
1005	8.55	100	8.0	7.38	0.402	7.4	0.19	26.68	-201.1	
1010	8.55	100	8.5	7.32	0.402	4.5	0.18	27.09	-189.1	
1015	8.55	100	9.0	7.29	0.402	3.8	0.17	27.19	-180.2	
1020	8.55	100	9.5	7.26	0.403	3.1	0.15	27.32	-178.9	
1025	Sample collected									

SIGNATURE(S): Scott R. McGuire

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N116D-01
Sample Location: CEF-076- 116D
Sampled By: S. McGuire
C.O.C. No.: 2324
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

Date: 7/10/03	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	Other
Time: 1335	Visual	Standard	mS/cm	°C	NTU	mg/l		
Method: Low Flow Peristaltic	Chalky	6.11	0.193	25.37	54.2	1.70	4.0	

PURGE DATA

Date: 7/10/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO		ORP
Method: Low Flow Peristaltic	See Low Flow Purge Sheet							
Monitor Reading (ppm): 0								
Well Casing Diameter: 2 In.								
Well Casing Material:PVC								
Total Well Depth (TD): 110								
Static Water Level (WL): 9.93								
One Casing Volume(gal/L): 3.1								
Start Purge (hrs): 1145								
End Purge (hrs): 1330								
Total Purge Time (min): 100								
Total Vol. Purged (~~gal~~/L): 16								

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	SW-846 8260B	4C/HCl	3 - 40 ml vials with teflon septum	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE				
PAHs	SW-846 8310	4C	2 - 1 liter glass ambers	✓
TRPH	FL-PRO	4C/H2SO4	2 - 1 liter glass ambers	✓
Total Lead	SW846 6010B	4C/HNO3	1 - 500 ml HDPE	✓
EDB	EPA 504.1	4C/HCl	3 - 40 ml vials with teflon septum	✓

OBSERVATIONS / NOTES

Duplicate collected.
Lots of Suspended solids

Circle if Applicable:

MS/MSD	Duplicate ID No.: CEF-076-GW-DUP8-01

Signature(s): Scott R. McGuire

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm SARA Investigation
PROJECT NUMBER: N3996JG0050325

WELL ID.: CEF-076- 116D
DATE: 7/10/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum.Vol. (liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
~~1135~~	9.93	200								
1150	10.00	200	1	6.84	0.165	56.4	8.06	25.49	-3.7	
1200	10.0	200	3	6.51	0.198	41.4	6.81	24.62	-1.2	
1210	10.0	200	5	6.37	0.246	35.2	2.94	23.84	5.3	Lots of TSS
1220	10.0	200	7	6.32	0.235	59.9	2.53	24.19	1.4	More Suspended Solids
1230	10.0	200	9	6.32	0.235	61.2	2.57	24.43	1.9	
1240	10.0	200	11	6.30	0.235	85.6	2.60	24.64	2.6	Slowed flow rate
1250	10.0	100	12	6.32	0.233	87.3	2.54	25.01	0.7	
1300	10.0	100	13	6.25	0.224	82.4	2.40	25.72	1.0	
1310	10.0	100	14	6.19	0.212	80.6	2.19	26.61	3.0	
1320	10.0	100	15	6.15	0.201	61.5	1.82	25.48	4.6	
1330	10.0	100	16	6.11	0.193	64.2	1.70	25.37	4.0	
1335	Sample collected									

SIGNATURE(S): Scott R McG

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: North Fuel Farm, Cecil Field
Project No.: 3996.JG0050325

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:
[ ] QA Sample Type:

Sample ID No.: CEF-076-GW-N1170-01
Sample Location: CEF-076-
Sampled By: S. McGuire
C.O.C. No.: 2324
Type of Sample:
[X] Low Concentration
[ ] High Concentration

SAMPLING DATA

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP	Other
Date: 7/10/03								
Time: 1705								
Method: Low Flow Peristaltic	Cloudy	~~6.07~~	~~0.197~~	~~24.72~~	~~86.4~~	~~2.44~~	~~-46.7~~	

PURGE DATA

Date: 7/10/03	Time	pH	S.C.	Temp (°C)	Turbidity	DO	ORP	~~ORP~~
Method: Low Flow Peristaltic		6.07	0.197	24.72	86.4	2.48	-56.4	
Monitor Reading (ppm):								
Well Casing Diameter: 2 In.								
Well Casing Material:PVC								
Total Well Depth (TD): 110'	See Low Flow Purge Sheet							
Static Water Level (WL): 9.09								
One Casing Volume(gal/L): 3.1								
Start Purge (hrs): 1655								
End Purge (hrs): 1700								
Total Purge Time (min): 65								
Total Vol. Purged (gal/L):								

SAMPLE COLLECTION INFORMATION

Analysis		Preservative	Container Requirements	Collected
Select VOCs	SW-846 8260B	4C/HCl	3 - 40 ml vials with teflon septum	✓
#VOHs+1,2 dichloroethane+BTEX+MTBE				
PAHs	SW-846 8310	4C	2 - 1 liter glass ambers	✓
TRPH	FL-PRO	4C/H2SO4	2 - 1 liter glass ambers	✓
Total Lead	SW846 6010B	4C/HNO3	1 - 500 ml HDPE	✓
EDB	EPA 504.1	4C/HCl	3 - 40 ml vials with teflon septum	✓

OBSERVATIONS / NOTES

H_2O Cloudy with suspended solids

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s): Scott R. McG

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: North Fuel Farm SARA Investigation
PROJECT NUMBER: N3996JG0050325

WELL ID.: CEF-076- 117D
DATE: 7/10/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	Cum.Vol. (liters)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	ORP (mV)	Comments
1555	~~9.13~~ 9.09	100								
1600	9.13	100	1.0	6.46	0.230	70.3	7.48	23.77	-49.3	
1610	9.16	100	2.0	6.32	0.228	59.5	5.24	23.54	-54.4	Suspended solids
1620	9.16	300	5	6.21	0.219	78.0	4.06	24.18	-52.4	low flow has no effect
1630	9.29	300	8	6.14	0.202	97.1	3.11	24.47	-54.5	on suspended solids
1640	9.29	300	11	6.02	0.184	86.4	2.14	24.72	-46.7	Increased flow to 300
1650	9.29	300	14	6.04	0.189	86.4	2.24	24.73	-49.1	to cont purge 5 volumes
1700	9.29	300	17	6.07	0.197	86.4	2.48	24.72	-56.4	
1705	Sample collected									

SIGNATURE(S): Scott R. McG

APPENDIX J

SURFACE WATER AND SEDIMENT LABORATORY REPORT

Southeast
ACCUTEST
Laboratories

09/12/03

Technical Report for

Tetra Tech, NUS

Cecil Field CTO168

WORK RELEASE 168CF-4 Site 076(NFF)

Accutest Job Number: F10852

Report to:

Tetra-Tech, NUS

OlsonB@ttnus.com

ATTN: Bill Olson

Total number of pages in report: 50

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Harry Behzadi, Ph.D.
Laboratory Director

Certifications: FL (DOH E83510), NC (573), NJ (FL002), MA (FL946), IA (366), LA (03051), KS (E-10327), SC, AK

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Sample Summary

Tetra Tech, NUS

Job No: F10852

Cecil Field CTO168
Project No: WORK RELEASE 168CF-4 Site 076(NFF)

Sample Number	Collected Date	Time By	Received	Matrix Code	Matrix Type	Client Sample ID
F10852-1	09/06/01	09:40 JZ	09/07/01	AQ	Surface Water	CEF076SWW00101
F10852-2	09/06/01	10:15 JZ	09/07/01	AQ	Surface Water	CEF076SWW00201
F10852-3	09/06/01	10:55 JZ	09/07/01	AQ	Surface Water	CEF076SWW00301
F10852-4	09/06/01	11:35 JZ	09/07/01	AQ	Surface Water	CEF076SWW00401
F10852-5	09/06/01	09:40 JZ	09/07/01	AQ	Surface Water	CEF076MDW01
F10852-6	09/06/01	09:40 JZ	09/07/01	SO	Soil	CEF076SDC00101
F10852-7	09/06/01	10:15 JZ	09/07/01	SO	Soil	CEF076SDC00201
F10852-8	09/06/01	10:55 JZ	09/07/01	SO	Soil	CEF076SDC00301
F10852-9	09/06/01	11:35 JZ	09/07/01	SO	Soil	CEF076SDC00401
F10852-10	09/06/01	00:00 JZ	09/07/01	SO	Soil	CEF076DUC01
F10852-11	09/06/01	11:35 JZ	09/07/01	SO	Soil	CEF076MDC01

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Report of Analysis

Client Sample ID:	CEF076SWW00101		
Lab Sample ID:	F10852-1	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H013433.D	1	09/18/01	NAF	n/a	n/a	VH407
Run #2							

VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78 87 5	1,2 Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00101		
Lab Sample ID:	F10852-1	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Cecil Field CTO168		

VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		80-120%
2037-26-5	Toluene-D8	99%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00101		
Lab Sample ID:	F10852-1	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	EPA 504.1 EPA 504	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD03021.D	1	09/11/01	SKW	09/11/01	OP3828	GDD111
Run #2							

CAS No.	Compound	Result	RL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00101		
Lab Sample ID:	F10852-1	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	EPA 8310 SW846 3510C	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA008711.D	1	09/12/01	MRE	09/11/01	OP3824	GAA373
Run #2							

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	4.4	ug/l	
208-96-8	Acenaphthylene	ND	4.4	ug/l	
120-12-7	Anthracene	ND	2.2	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.22	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.22	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.22	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.22	ug/l	
218-01-9	Chrysene	ND	2.2	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.22	ug/l	
206-44-0	Fluoranthene	ND	2.2	ug/l	
86-73-7	Fluorene	ND	2.2	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.22	ug/l	
91-20-3	Naphthalene	ND	2.2	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.2	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.2	ug/l	
85-01-8	Phenanthrene	ND	2.2	ug/l	
129-00-0	Pyrene	ND	2.2	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	97%		33-141%
92-94-4	p-Terphenyl	102%		31-122%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00101		
Lab Sample ID:	F10852-1	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	FLORIDA-PRO SW846 3510C	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP17065.D	1	09/13/01	SKW	09/12/01	OP3829	GOP659
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	0.688	0.25	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	88%		55-130%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00101		
Lab Sample ID:	F10852-1	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
		Percent Solids:	n/a
Project:	Cecil Field CTO168		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	1.2 U	5.0	1.2	ug/l	1	09/14/01	09/24/01 JK	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	CEF076SWW00201		
Lab Sample ID:	F10852-2	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H013434.D	1	09/18/01	NAF	n/a	n/a	VH407
Run #2							

VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00201		
Lab Sample ID:	F10852-2	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Cecil Field CTO168		

VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		80-120%
17060-07-0	1,2-Dichloroethane-D4	99%		80-120%
2037-26-5	Toluene-D8	117%		80-120%
460-00-4	4-Bromofluorobenzene	101%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00201		
Lab Sample ID:	F10852-2	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	EPA 504.1 EPA 504	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD03025.D	1	09/11/01	SKW	09/11/01	OP3828	GDD111
Run #2							

CAS No.	Compound	Result	RL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00201		
Lab Sample ID:	F10852-2	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	EPA 8310 SW846 3510C	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA008712.D	1	09/12/01	MRE	09/11/01	OP3824	GAA373
Run #2							

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	4.0	ug/l	
208-96-8	Acenaphthylene	ND	4.0	ug/l	
120-12-7	Anthracene	ND	2.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.20	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.20	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.20	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.20	ug/l	
218-01-9	Chrysene	ND	2.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.20	ug/l	
206-44-0	Fluoranthene	ND	2.0	ug/l	
86-73-7	Fluorene	ND	2.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.20	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.0	ug/l	
85-01-8	Phenanthrene	ND	2.0	ug/l	
129-00-0	Pyrene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	97%		33-141%
92-94-4	p-Terphenyl	98%		31-122%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00201		
Lab Sample ID:	F10852-2	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	FLORIDA-PRO SW846 3510C	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP17066.D	1	09/13/01	SKW	09/12/01	OP3829	GOP659
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	0.715	0.25	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	96%		55-130%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00201		
Lab Sample ID:	F10852-2	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
		Percent Solids:	n/a
Project:	Cecil Field CTO168		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	1.2 U	5.0	1.2	ug/l	1	09/14/01	09/24/01 JK	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	CEF076SWW00301		
Lab Sample ID:	F10852-3	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H013435.D	1	09/18/01	NAF	n/a	n/a	VH407
Run #2							

VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00301		
Lab Sample ID:	F10852-3	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Cecil Field CTO168		

VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		80-120%
2037-26-5	Toluene-D8	117%		80-120%
460-00-4	4-Bromofluorobenzene	100%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00301		
Lab Sample ID:	F10852-3	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	EPA 504.1 EPA 504	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD03026.D	1	09/11/01	SKW	09/11/01	OP3828	GDD111
Run #2							

CAS No.	Compound	Result	RL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00301		
Lab Sample ID:	F10852-3	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	EPA 8310 SW846 3510C	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA008713.D	1	09/12/01	MRE	09/11/01	OP3824	GAA373
Run #2							

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	4.0	ug/l	
208-96-8	Acenaphthylene	ND	4.0	ug/l	
120-12-7	Anthracene	ND	2.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.20	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.20	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.20	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.20	ug/l	
218-01-9	Chrysene	ND	2.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.20	ug/l	
206-44-0	Fluoranthene	ND	2.0	ug/l	
86-73-7	Fluorene	ND	2.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.20	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.0	ug/l	
85-01-8	Phenanthrene	ND	2.0	ug/l	
129-00-0	Pyrene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	74%		33-141%
92-94-4	p-Terphenyl	58%		31-122%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00301		
Lab Sample ID:	F10852-3	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	FLORIDA-PRO SW846 3510C	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP17067.D	1	09/13/01	SKW	09/12/01	OP3829	GOP659
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	0.312	0.25	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	81%		55-130%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00301		
Lab Sample ID:	F10852-3	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
		Percent Solids:	n/a
Project:	Cecil Field CTO168		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	2.2 B	5.0	1.2	ug/l	1	09/14/01	09/24/01 JK	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	CEF076SWW00401		
Lab Sample ID:	F10852-4	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H013438.D	1	09/18/01	NAF	n/a	n/a	VH407
Run #2							

VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00401		
Lab Sample ID:	F10852-4	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Cecil Field CTO168		

VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	100%		80-120%
2037-26-5	Toluene-D8	101%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00401		
Lab Sample ID:	F10852-4	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	EPA 504.1 EPA 504	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD03027.D	1	09/11/01	SKW	09/11/01	OP3828	GDD111
Run #2							

CAS No.	Compound	Result	RL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00401		
Lab Sample ID:	F10852-4	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	EPA 8310 SW846 3510C	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA008714.D	1	09/12/01	MRE	09/11/01	OP3824	GAA373
Run #2							

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	4.0	ug/l	
208-96-8	Acenaphthylene	ND	4.0	ug/l	
120-12-7	Anthracene	ND	2.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.20	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.20	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.20	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.20	ug/l	
218-01-9	Chrysene	ND	2.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.20	ug/l	
206-44-0	Fluoranthene	ND	2.0	ug/l	
86-73-7	Fluorene	ND	2.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.20	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.0	ug/l	
85-01-8	Phenanthrene	ND	2.0	ug/l	
129-00-0	Pyrene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	72%		33-141%
92-94-4	p-Terphenyl	56%		31-122%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00401		
Lab Sample ID:	F10852-4	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	FLORIDA-PRO SW846 3510C	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP17068.D	1	09/13/01	SKW	09/12/01	OP3829	GOP659
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	0.308	0.25	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	84%		55-130%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SWW00401		
Lab Sample ID:	F10852-4	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
		Percent Solids:	n/a
Project:	Cecil Field CTO168		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	3.5 B	5.0	1.2	ug/l	1	09/14/01	09/24/01 JK	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	CEF076MDW01		
Lab Sample ID:	F10852-5	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	H013439.D	1	09/18/01	NAF	n/a	n/a	VH407
Run #2							

VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	50	ug/l	
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	2.0	ug/l	
75-25-2	Bromoform	ND	2.0	ug/l	
108-90-7	Chlorobenzene	ND	2.0	ug/l	
75-00-3	Chloroethane	ND	5.0	ug/l	
67-66-3	Chloroform	ND	2.0	ug/l	
75-15-0	Carbon disulfide	ND	10	ug/l	
56-23-5	Carbon tetrachloride	ND	2.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	2.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	2.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	2.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	ug/l	
124-48-1	Dibromochloromethane	ND	2.0	ug/l	
75-71-8	Dichlorodifluoromethane	ND	5.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	2.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	2.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	2.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	2.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	2.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	2.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	ug/l	
591-78-6	2-Hexanone	ND	10	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	10	ug/l	
74-83-9	Methyl bromide	ND	5.0	ug/l	
74-87-3	Methyl chloride	ND	5.0	ug/l	
75-09-2	Methylene chloride	ND	5.0	ug/l	
78-93-3	Methyl ethyl ketone	ND	10	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	2.0	ug/l	
100-42-5	Styrene	ND	2.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ug/l	
127-18-4	Tetrachloroethylene	ND	2.0	ug/l	
108-88-3	Toluene	ND	2.0	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076MDW01		
Lab Sample ID:	F10852-5	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	SW846 8260B	Percent Solids:	n/a
Project:	Cecil Field CTO168		

VOA TCL List

CAS No.	Compound	Result	RL	Units	Q
79-01-6	Trichloroethylene	ND	2.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	5.0	ug/l	
75-01-4	Vinyl chloride	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	6.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	99%		80-120%
17060-07-0	1,2-Dichloroethane-D4	101%		80-120%
2037-26-5	Toluene-D8	116%		80-120%
460-00-4	4-Bromofluorobenzene	99%		80-120%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076MDW01		
Lab Sample ID:	F10852-5	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	EPA 504.1 EPA 504	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	DD03028.D	1	09/11/01	SKW	09/11/01	OP3828	GDD111
Run #2							

CAS No.	Compound	Result	RL	Units	Q
106-93-4	1,2-Dibromoethane	ND	0.020	ug/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076MDW01		
Lab Sample ID:	F10852-5	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	EPA 8310 SW846 3510C	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	AA008715.D	1	09/12/01	MRE	09/11/01	OP3824	GAA373
Run #2							

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	4.0	ug/l	
208-96-8	Acenaphthylene	ND	4.0	ug/l	
120-12-7	Anthracene	ND	2.0	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.20	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.20	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.20	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.20	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.20	ug/l	
218-01-9	Chrysene	ND	2.0	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.20	ug/l	
206-44-0	Fluoranthene	ND	2.0	ug/l	
86-73-7	Fluorene	ND	2.0	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.20	ug/l	
91-20-3	Naphthalene	ND	2.0	ug/l	
90-12-0	1-Methylnaphthalene	ND	2.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	2.0	ug/l	
85-01-8	Phenanthrene	ND	2.0	ug/l	
129-00-0	Pyrene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	92%		33-141%
92-94-4	p-Terphenyl	96%		31-122%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076MDW01		
Lab Sample ID:	F10852-5	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
Method:	FLORIDA-PRO SW846 3510C	Percent Solids:	n/a
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP17070.D	1	09/13/01	SKW	09/12/01	OP3829	GOP659
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	0.704	0.28	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	91%		55-130%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076MDW01		
Lab Sample ID:	F10852-5	Date Sampled:	09/06/01
Matrix:	AQ - Surface Water	Date Received:	09/07/01
		Percent Solids:	n/a
Project:	Cecil Field CTO168		

Metals Analysis

Analyte	Result	RL	IDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Lead	1.5 B	5.0	1.2	ug/l	1	09/18/01	09/24/01 JK	SW846 6010B	SW846 3010A

RL = Reporting Limit
IDL = Instrument Detection Limit

U = Indicates a result < IDL
B = Indicates a result > = IDL but < RL

Report of Analysis

Client Sample ID:	CEF076SDC00101		
Lab Sample ID:	F10852-6	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	SW846 8260B	Percent Solids:	66.3
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	K006692.D	1	09/14/01	NAF	n/a	n/a	VK215
Run #2							

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	7.4	ug/kg	
108-88-3	Toluene	ND	7.4	ug/kg	
100-41-4	Ethylbenzene	ND	7.4	ug/kg	
1330-20-7	Xylene (total)	ND	22	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	7.4	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		75-125%
2037-26-5	Toluene-D8	98%		75-125%
460-00-4	4-Bromofluorobenzene	102%		72-137%
17060-07-0	1,2-Dichloroethane-D4	104%		68-125%

(a) Sample introduction performed using method 5030A.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SDC00101		
Lab Sample ID:	F10852-6	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	EPA 8310 SW846 3550B	Percent Solids:	66.3
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE004933.D	1	09/13/01	MRE	09/12/01	OP3833	GEE231
Run #2							

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	1000	ug/kg	
208-96-8	Acenaphthylene	ND	1000	ug/kg	
120-12-7	Anthracene	ND	500	ug/kg	
56-55-3	Benzo(a)anthracene	ND	500	ug/kg	
50-32-8	Benzo(a)pyrene	ND	100	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	100	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	100	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	100	ug/kg	
218-01-9	Chrysene	ND	500	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	100	ug/kg	
206-44-0	Fluoranthene	ND	500	ug/kg	
86-73-7	Fluorene	ND	500	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	100	ug/kg	
91-20-3	Naphthalene	ND	500	ug/kg	
90-12-0	1-Methylnaphthalene	ND	500	ug/kg	
91-57-6	2-Methylnaphthalene	ND	500	ug/kg	
85-01-8	Phenanthrene	ND	500	ug/kg	
129-00-0	Pyrene	ND	500	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	80%		37-158%
92-94-4	p-Terphenyl	83%		59-149%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SDC00101		
Lab Sample ID:	F10852-6	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	FLORIDA-PRO SW846 3550B	Percent Solids:	66.3
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP17044.D	1	09/12/01	SKW	09/12/01	OP3830	GOP658
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	76.0	12	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	92%		66-130%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SDC00201		
Lab Sample ID:	F10852-7	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	SW846 8260B	Percent Solids:	76.8
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	K006696.D	50	09/14/01	NAF	n/a	n/a	VK215
Run #2							

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	290	ug/kg	
108-88-3	Toluene	ND	290	ug/kg	
100-41-4	Ethylbenzene	ND	290	ug/kg	
1330-20-7	Xylene (total)	ND	880	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	290	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		75-125%
2037-26-5	Toluene-D8	95%		75-125%
460-00-4	4-Bromofluorobenzene	97%		72-137%
17060-07-0	1,2-Dichloroethane-D4	97%		68-125%

(a) Dilution required due to matrix interference (non-target analytes present above calibration range). Sample introduction performed using method 5030A.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SDC00201		
Lab Sample ID:	F10852-7	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	EPA 8310 SW846 3550B	Percent Solids:	76.8
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE004934.D	1	09/13/01	MRE	09/12/01	OP3833	GEE231
Run #2							

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	840	ug/kg	
208-96-8	Acenaphthylene	ND	840	ug/kg	
120-12-7	Anthracene	ND	420	ug/kg	
56-55-3	Benzo(a)anthracene	ND	420	ug/kg	
50-32-8	Benzo(a)pyrene	ND	84	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	84	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	84	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	84	ug/kg	
218-01-9	Chrysene	ND	420	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	84	ug/kg	
206-44-0	Fluoranthene	ND	420	ug/kg	
86-73-7	Fluorene	ND	420	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	84	ug/kg	
91-20-3	Naphthalene	ND	420	ug/kg	
90-12-0	1-Methylnaphthalene	ND	420	ug/kg	
91-57-6	2-Methylnaphthalene	ND	420	ug/kg	
85-01-8	Phenanthrene	ND	420	ug/kg	
129-00-0	Pyrene	ND	420	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	89%		37-158%
92-94-4	p-Terphenyl	93%		59-149%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SDC00201		
Lab Sample ID:	F10852-7	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	FLORIDA-PRO SW846 3550B	Percent Solids:	76.8
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP17058.D	8	09/13/01	SKW	09/12/01	OP3830	GOP659
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	427	86	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	95%		66-130%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SDC00301		
Lab Sample ID:	F10852-8	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	SW846 8260B	Percent Solids:	68.9
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	K006693.D	1	09/14/01	NAF	n/a	n/a	VK215
Run #2							

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	7.1	ug/kg	
108-88-3	Toluene	5.0	7.1	ug/kg	J
100-41-4	Ethylbenzene	ND	7.1	ug/kg	
1330-20-7	Xylene (total)	ND	21	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	7.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		75-125%
2037-26-5	Toluene-D8	96%		75-125%
460-00-4	4-Bromofluorobenzene	102%		72-137%
17060-07-0	1,2-Dichloroethane-D4	105%		68-125%

(a) Sample introduction performed using method 5030A.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SDC00301		
Lab Sample ID:	F10852-8	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	EPA 8310 SW846 3550B	Percent Solids:	68.9
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE004935.D	1	09/13/01	MRE	09/12/01	OP3833	GEE231
Run #2							

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	950	ug/kg	
208-96-8	Acenaphthylene	ND	950	ug/kg	
120-12-7	Anthracene	ND	480	ug/kg	
56-55-3	Benzo(a)anthracene	ND	480	ug/kg	
50-32-8	Benzo(a)pyrene	ND	95	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	95	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	95	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	95	ug/kg	
218-01-9	Chrysene	ND	480	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	95	ug/kg	
206-44-0	Fluoranthene	ND	480	ug/kg	
86-73-7	Fluorene	ND	480	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	95	ug/kg	
91-20-3	Naphthalene	ND	480	ug/kg	
90-12-0	1-Methylnaphthalene	ND	480	ug/kg	
91-57-6	2-Methylnaphthalene	ND	480	ug/kg	
85-01-8	Phenanthrene	ND	480	ug/kg	
129-00-0	Pyrene	ND	480	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	71%		37-158%
92-94-4	p-Terphenyl	75%		59-149%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SDC00301		
Lab Sample ID:	F10852-8	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	FLORIDA-PRO SW846 3550B	Percent Solids:	68.9
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP17059.D	2	09/13/01	SKW	09/12/01	OP3830	GOP659
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	93.0	24	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	104%		66-130%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SDC00401		
Lab Sample ID:	F10852-9	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	SW846 8260B	Percent Solids:	69.3
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	K006694.D	1	09/14/01	NAF	n/a	n/a	VK215
Run #2							

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	7.1	ug/kg	
108-88-3	Toluene	ND	7.1	ug/kg	
100-41-4	Ethylbenzene	ND	7.1	ug/kg	
1330-20-7	Xylene (total)	ND	21	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	7.1	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		75-125%
2037-26-5	Toluene-D8	97%		75-125%
460-00-4	4-Bromofluorobenzene	102%		72-137%
17060-07-0	1,2-Dichloroethane-D4	106%		68-125%

(a) Sample introduction performed using method 5030A.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SDC00401		
Lab Sample ID:	F10852-9	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	EPA 8310 SW846 3550B	Percent Solids:	69.3
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	EE004944.D	1	09/13/01	MRE	09/12/01	OP3833	GEE231
Run #2							

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	920	ug/kg	
208-96-8	Acenaphthylene	ND	920	ug/kg	
120-12-7	Anthracene	ND	460	ug/kg	
56-55-3	Benzo(a)anthracene	ND	460	ug/kg	
50-32-8	Benzo(a)pyrene	ND	92	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	92	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	92	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	92	ug/kg	
218-01-9	Chrysene	ND	460	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	92	ug/kg	
206-44-0	Fluoranthene	ND	460	ug/kg	
86-73-7	Fluorene	ND	460	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	92	ug/kg	
91-20-3	Naphthalene	ND	460	ug/kg	
90-12-0	1-Methylnaphthalene	ND	460	ug/kg	
91-57-6	2-Methylnaphthalene	ND	460	ug/kg	
85-01-8	Phenanthrene	ND	460	ug/kg	
129-00-0	Pyrene	ND	460	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	86%		37-158%
92-94-4	p-Terphenyl	93%		59-149%

(a) Confirmed by GC/MS

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076SDC00401		
Lab Sample ID:	F10852-9	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	FLORIDA-PRO SW846 3550B	Percent Solids:	69.3
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP17060.D	4	09/13/01	SKW	09/12/01	OP3830	GOP659
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	142	48	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	87%		66-130%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076DUC01		
Lab Sample ID:	F10852-10	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	SW846 8260B	Percent Solids:	70.0
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	K006714.D	1	09/16/01	NAF	n/a	n/a	VK216
Run #2							

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	7.2	ug/kg	
108-88-3	Toluene	9.9	7.2	ug/kg	
100-41-4	Ethylbenzene	ND	7.2	ug/kg	
1330-20-7	Xylene (total)	ND	21	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	7.2	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%		75-125%
2037-26-5	Toluene-D8	98%		75-125%
460-00-4	4-Bromofluorobenzene	113%		72-137%
17060-07-0	1,2-Dichloroethane-D4	104%		68-125%

(a) Sample introduction performed using method 5030A.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076DUC01		
Lab Sample ID:	F10852-10	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	EPA 8310 SW846 3550B	Percent Solids:	70.0
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	EE004937.D	1	09/13/01	MRE	09/12/01	OP3833	GEE231
Run #2							

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	960	ug/kg	
208-96-8	Acenaphthylene	ND	960	ug/kg	
120-12-7	Anthracene	ND	480	ug/kg	
56-55-3	Benzo(a)anthracene	ND	480	ug/kg	
50-32-8	Benzo(a)pyrene	ND	96	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	96	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	96	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	96	ug/kg	
218-01-9	Chrysene	ND	480	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	96	ug/kg	
206-44-0	Fluoranthene	ND	480	ug/kg	
86-73-7	Fluorene	ND	480	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	96	ug/kg	
91-20-3	Naphthalene	ND	480	ug/kg	
90-12-0	1-Methylnaphthalene	ND	480	ug/kg	
91-57-6	2-Methylnaphthalene	ND	480	ug/kg	
85-01-8	Phenanthrene	ND	480	ug/kg	
129-00-0	Pyrene	ND	480	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	86%		37-158%
92-94-4	p-Terphenyl	92%		59-149%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076DUC01		
Lab Sample ID:	F10852-10	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	FLORIDA-PRO SW846 3550B	Percent Solids:	70.0
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP17049.D	1	09/12/01	SKW	09/12/01	OP3830	GOP658
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	54.7	12	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	92%		66-130%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076MDC01		
Lab Sample ID:	F10852-11	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	SW846 8260B	Percent Solids:	58.0
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	K006695.D	1	09/14/01	NAF	n/a	n/a	VK215
Run #2							

Purgeable Aromatics, MTBE

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	8.4	ug/kg	
108-88-3	Toluene	ND	8.4	ug/kg	
100-41-4	Ethylbenzene	ND	8.4	ug/kg	
1330-20-7	Xylene (total)	ND	25	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	8.4	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		75-125%
2037-26-5	Toluene-D8	95%		75-125%
460-00-4	4-Bromofluorobenzene	101%		72-137%
17060-07-0	1,2-Dichloroethane-D4	105%		68-125%

(a) Sample introduction performed using method 5030A.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076MDC01		
Lab Sample ID:	F10852-11	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	EPA 8310 SW846 3550B	Percent Solids:	58.0
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	EE004945.D	1	09/13/01	MRE	09/12/01	OP3833	GEE231
Run #2							

Polynuclear Aromatic Hydrocarbons

CAS No.	Compound	Result	RL	Units	Q
83-32-9	Acenaphthene	ND	1100	ug/kg	
208-96-8	Acenaphthylene	ND	1100	ug/kg	
120-12-7	Anthracene	ND	570	ug/kg	
56-55-3	Benzo(a)anthracene	ND	570	ug/kg	
50-32-8	Benzo(a)pyrene	ND	110	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	110	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	110	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	110	ug/kg	
218-01-9	Chrysene	ND	570	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	110	ug/kg	
206-44-0	Fluoranthene	ND	570	ug/kg	
86-73-7	Fluorene	ND	570	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	110	ug/kg	
91-20-3	Naphthalene	ND	570	ug/kg	
90-12-0	1-Methylnaphthalene	ND	570	ug/kg	
91-57-6	2-Methylnaphthalene	ND	570	ug/kg	
85-01-8	Phenanthrene	ND	570	ug/kg	
129-00-0	Pyrene	ND	570	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	79%		37-158%
92-94-4	p-Terphenyl	82%		59-149%

(a) Confirmed by GC/MS

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	CEF076MDC01		
Lab Sample ID:	F10852-11	Date Sampled:	09/06/01
Matrix:	SO - Soil	Date Received:	09/07/01
Method:	FLORIDA-PRO SW846 3550B	Percent Solids:	58.0
Project:	Cecil Field CTO168		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	OP17061.D	2	09/13/01	SKW	09/12/01	OP3830	GOP659
Run #2							

CAS No.	Compound	Result	RL	Units	Q
	TPH (C8-C40)	115	29	mg/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	86%		66-130%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

TETRA TECH NUS, INC. CHAIN OF CUSTODY | NUMBER [illegible] | PAGE 1 OF 1

PROJECT NO:	SITE NAME:	PROJECT MANAGER AND PHONE NUMBER	LABORATORY NAME AND CONTACT:
3796	Site 076 (NFF)	P. Collison 8503859899	Accutest L. Williams
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER AND PHONE NUMBER: M. Dale 904281 0400	ADDRESS: 4405 Vineland Rd C-15
		CARRIER/WAYBILL NUMBER	CITY, STATE: Orlando FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 9/6/01	TIME	SAMPLE ID	MATRIX	GRAB (G) COMP (C)	No. OF CONTAINERS	PPVO (82603)	PAH (8310)	TRPH (FL-PRO)	EDB (EPA504)	Total Pb (6010B)	BTEX, MTBE (8260B)	TRPH (FL-PRO)	PAH (8310)	COMMENTS
CONTAINER TYPE PLASTIC (P) or GLASS (G)						G	G	G	G	P	G			
PRESERVATIVE USED						HCl	1	+H2SO4	HCl	HNO3	1			
1	0940	CEF076SWW00101	SW	G	11	3	2	2	3	1				
2	1015	CEF076SWW00201				3	2	2	3	1				
3	1055	CEF076SWW00301				3	2	2	3	1				
4	1135	CEF076SWW00401				3	2	2	3	1				
5	0940	CEF076MDW01				3	2	2	3	1				
6	0940	CEF076SDC00101	SD	G	2						2			
7	1015	CEF076SDC00201									2			
8	1055	CEF076SDC00301									2			
9	1135	CEF076SDC00401									2			
10	0000	CEF076DUC01									2			
11	1135	CEF076MDC01									2			

WR-168CF-4

1. RELINQUISHED BY	DATE	TIME	1. RECEIVED BY	DATE	TIME
	9/6/01	1830	9/7/01 1000 4.2°C		
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

APPENDIX K

MOBILE LABORATORY DATA REPORT

KB LABS, INC.

Final Data Report
Cecil Field CEF 076

Prepared for: Tetra Tech NUS

Well ID	Matrix	Date Sampled	Benzene	Toluene	Ethylbenzene	o-Xylene	m- & p-Xylene	DRO	Naphthalene
a3-12'	Water	8/27/01	380	29.6	160	180	160	<1	78
a3-27	Water	8/27/01	140	69	230	260	330	<1	250
A3 56	Water	8/27/01	340	71	480	540	1400	<1	33
A7 12'	Water	8/28/01	11.6	18.9	15.3	36.5	120	<1	35
A7 49'	Water	8/28/01	5.2	9.2	5.1	42.6	74.6	<1	<20
AA2 12	Water	8/27/01	490	93.7	52.7	66.9	28	<1	<20
AA4-19'	Water	8/27/01	10.4	<1	1.7	1.4	1.6	<1	<20
AA4 50'	Water	8/28/01	270	16.3	5.4	640	1700	<1	<20
AA4 60'	Water	8/28/01	92.4	21.1	490	490	1400	<1	<20
B2 12'	Water	8/29/01	7.8	14.4	310	17.4	530	<1	98
c2-12'	Water	8/27/01	4900	130	540	1090	730	<1	260
c2-17'	Water	8/27/01	2600	31.8	260	520	390	<1	270
c2-24'	Water	8/27/01	4100	32.2	370	590	540	<1	280
C2 -42'	Water	8/29/01	52.4	12.6	14.2	54.8	160	<1	<20
C4 -28'	Water	8/28/01	2000	4200	1400	1500	4400	<1	100
C4 40'	Water	8/28/01	4800	280	560	830	1800	<1	<20
C4 -50'	Water	8/28/01	10000	300	1000	1400	3100	<1	43
C4 -67'	Water	8/28/01	6100	530	660	1200	2600	<1	<20
C7 -22'	Water	8/29/01	11.8	9.1	14.8	11.8	31.1	<1	<20
C7 -53'	Water	8/29/01	240	16.5	45	170	240	<1	<20
C7-62'	Water	8/29/01	980	10.8	<1	240	230	<1	<20
D2 -27'	Water	8/28/01	740	440	470	1300	2400	<1	220
E1 22'	Water	8/29/01	5.3	<1	<1	<1	2.9	<1	<20
E1 42'	Water	8/29/01	9.7	14.7	19.7	59.8	280	<1	<20
E1 62'	Water	8/30/01	2.9	4.1	<1	2.0	<1	<1	<20
E2 18'	Water	8/28/01	1.0	1.5	1.5	3.0	4.2	<1	<20
E2 27'	Water	8/29/01	5.6	<1	<1	4.5	3.2	<1	<20
E7-14'	Water	8/29/01	11.2	18.2	1.7	3.7	5.8	<2.2	<44
E7 - 19'	Water	8/29/01	6.9	13.2	3.7	<1	5.8	<1	<20
E7 53'	Water	8/29/01	54.4	12.6	6.8	170	500	<1	<20
F2 12'	Water	8/30/01	<1	1.5	<1	1.6	<1	<1	<20
F2-56'	Water	8/30/01	1500	16.6	330	490	1500	<1	<20
F2 -66'	Water	8/30/01	260	14.1	<1	230	460	<1	<20
F7 -10	Water	8/30/01	3.6	1.0	<1	1.5	3.0	<1	110
H5-32'	Water	8/30/01	7.3	10.1	<1	2.8	3.6	<1	<20
AB2 - 12'	Water	9/4/01	6.3	6.3	<1	6.8	<1	<1	<20
AB2 - 22'	Water	9/4/01	7.4	12.0	<1	<1	<1	<1	<20

Reporting units for waters is: mg/L for DRO; ug/L for all other analytes

KB LABS, INC.

Final Data Report
Cecil Field CEF 076

Prepared for: Tetra Tech NUS

Well ID	Matrix	Date Sampled	Benzene	Toluene	Ethylbenzene	o-Xylene	m- & p-Xylene	DRO	Naphthalene
AB2 - 32'	Water	9/4/01	**1.4**	<1	<1	**1.5**	**2.2**	<1	<20
AB4 - 22	Water	9/4/01	<1	<1	<1	**2.6**	**1.8**	<1	<20
AB4 - 52'	Water	9/4/01	**5.7**	**10.2**	<1	<1	<1	<1	<20
AB7 - 12'	Water	9/5/01	**3.8**	<1	**1.8**	<1	**6.5**	<1	<20
AB7 - 52'	Water	9/5/01	**4.1**	<1	<1	**6.4**	**27.6**	NA	NA
AC2 14'	Water	9/6/01	<1	<1	<1	<1	<1	<1	<20
AC2 24'	Water	9/6/01	<1	<1	<1	**1.2**	<1	<1	<20
AC2 34'	Water	9/6/01	<1	**1.2**	<1	<1	**1.3**	<1	<20
AC3 14'	Water	9/6/01	**1.7**	**1.2**	<1	<1	**1.5**	<1	<20
AC3 24'	Water	9/6/01	**1.3**	**1.5**	<1	<1	**1.6**	<1	<20
AC1 -14'	Water	9/7/01	**3.9**	<1	<1	<1	**2.9**	<1	<20
AC1 - 24'	Water	9/7/01	<1	<1	**1.0**	<1	<1	<1	<20
AB3 52'	Water	9/10/01	<1	<1	<1	<1	<1	<1	<20
AB5 -52'	Water	9/10/01	<1	<1	**10.5**	**42.4**	**70.0**	<1	<20
AC4 -52	Water	9/10/01	<1	<1	<1	<1	<1	<1	<20
M2 -37	Water	9/10/01	<1	<1	<1	**1.6**	**3.4**	<1	<20
M2-53	Water	9/10/01	**1.4**	<1	<1	**1.1**	**1.4**	<1	<20
K1 -17	Water	9/10/01	<1	<1	<1	<1	<1	<1	<20
A8-12'	Water	9/12/01	<1	**1.5**	<1	<1	**1.1**	<1	<20
A8-49'	Water	9/12/01	**1.8**	**2.2**	<1	**1.3**	**1.2**	<1	<20
C8 22'	Water	9/13/01	<1	<1	<1	<1	<1	<1	<20
C8 53'	Water	9/13/01	**260**	**2.7**	**1.2**	**2.7**	**3.6**	NA	NA
C8 62'	Water	9/13/01	**6.6**	**1.4**	<1	**1.0**	**1.3**	<1	<20
E8 14'	Water	9/13/01	<1	<1	<1	<1	<1	<1	<20
E8 53'	Water	9/13/01	**2.0**	**3.1**	<1	**1.6**	**2.1**	NA	NA

Reporting units for waters is: mg/L for DRO; ug/L for all other analytes

APPENDIX L

GROUNDWATER LABORATORY DATA REPORTS CD

Please see attached CD for Appendix L.

APPENDIX M

VERTICAL GRADIENT DATA

Monitoring Well Identification (CEF-076-)	Screen Interval (ft, bls)	Well Depth (ft, btoc)	Zone	Top-of-Casing Elevation (ft, msl)	Bottom Screen Elevation	Top Screen Elevation	June 11, 2003		Change in GW Elevation	Difference in Screen Elevation	Vertical Gradient
							Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)			
106S	25 - 30	33.35	UI	81.85	48.5	53.5	7.16	74.69	0.02	19.94	0.00
112I	50 - 55	58	LI	81.56	23.56	28.56	6.89	74.67			
90S	5 - 15	15	WT	77.58	62.58	72.58	2.14	75.44	0.7	34.98	0.02
89I	50 - 55	55	LI	77.6	22.6	27.6	2.86	74.74	0.31	55.09	0.01
96D	110 - 115	115	DP	77.51	-37.49	-32.49	3.08	74.43			
95S	5 - 15	18.01	WT	80.88	62.87	72.87	5.64	75.24	0.59	84.97	0.01
97D	100 - 105	108	DP	80.9	-27.1	-22.1	6.25	74.65			
88S	5 - 15	17.99	WT	78.5	60.51	70.51	4.32	74.18	-0.37	30.48	-0.012
86S	45 - 50	53.32	UI	78.35	25.03	30.03	3.8	74.55			
72S	30 - 35	37.5	UI	77.2	39.7	44.7	2.82	74.38	0.02	25.08	0.00
73I	60 - 65	67.4	LI	77.02	9.62	14.62	2.66	74.36	0.08	35.56	0.00
74D	100 - 110	113	DP	77.06	-35.94	-25.94	2.78	74.28			
4	5 - 15	12.93	WT	80.15	67.22	77.22	6.65	73.5	-1.21	44.02	-0.03
85I	55 - 60	63.3	LI	81.5	18.2	23.2	6.79	74.71			
21	2 - 12	11.76	WT	78.28	66.52	76.52	2.98	75.3	0.64	12.82	0.05
92S	25 - 30	33.18	UI	81.88	48.7	53.7	7.22	74.66	-0.03	15.51	0.00
X2S	45 - 50	51.81	UI	80	28.19	33.19	5.31	74.69	0.01	0.37	0.03
39D	55 - 65	60	LI	77.82	17.82	27.82	3.14	74.68	0.26	13.43	0.02
X2D	75 - 80	80.6	LI	79.99	-0.61	4.39	5.57	74.42	0.02	0.84	0.02
28D	80 - 90	89.5	DP	78.05	-11.45	-1.45	3.65	74.4	0.07	15.43	0.00
41D	108.5 - 118.5	115	DP	78.12	-36.88	-26.88	3.79	74.33			
69S	30 - 35	38	UI	78.21	40.21	50.21	3.75	74.46	0.09	29.8	0.00
70I	65 - 70	72.8	LI	78.21	5.41	10.41	3.84	74.37	0.11	10.01	0.01
71D	80 - 85	87.64	DP	78.04	-9.6	-4.6	3.78	74.26			

Monitoring Well Identification (CEF-076-)	Screen Interval (ft, bls)	Well Depth (ft, btoc)	Zone	Top-of-Casing Elevation (ft, msl)	Bottom Screen Elevation	Top Screen Elevation	June 11, 2003		Change in GW Elevation	Difference in Screen Elevation	Vertical Gradient
							Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)			
7	5 - 15	15	WT	79.46	64.46	74.46	3.79	75.67	1.29	54.53	0.02
27D	66 - 76	79.5	LI	79.43	-0.07	9.93	5.05	74.38			
60S	35 - 40	42.73	UI	80.93	38.2	43.2	6.5	74.43	0.04	24.78	0.00
61I	65 - 70	72.7	LI	81.12	8.42	13.42	6.73	74.39	0.27	35.02	0.01
62D	105 - 110	112.58	DP	80.98	-31.6	-26.6	6.86	74.12			
49S	45 - 50	52.8	LI	78.14	25.34	30.34	4.1	74.04	-0.02	24.97	0.00
50I	75 - 80	82.8	LI	78.17	-4.63	0.37	4.11	74.06	0	20.07	0.00
51D	100 - 110	112.79	DP	78.09	-34.7	-24.7	4.03	74.06			
57S	30 - 35	37.44	UI	77.74	40.3	45.3	3.47	74.27	0.01	30.34	0.00
58I	65 - 70	72.7	LI	77.66	4.96	9.96	3.4	74.26	0.21	30.06	0.01
59D	100 - 110	112.73	DP	77.63	-35.1	-25.1	3.58	74.05			
43S	35 - 40	42	UI	77.68	35.68	40.68	3.08	74.6	0.03	25.88	0.00
44I	65 - 70	72.9	LI	77.7	4.8	9.8	3.13	74.57			
46S	37 - 42	44.81	UI	77.31	32.5	37.5	3.1	74.21	0	22.89	0.00
47I	65 - 70	72.7	LI	77.31	4.61	9.61	3.1	74.21	0.21	16.76	0.01
48D	100 - 110	100	DP	77.85	-22.15	-12.15	3.85	74			
101S	30 - 35	38.24	UI	77.64	39.4	44.4	3.64	74	-0.03	45.1	0.00
29B 55I	80 - 85	87.79	DP	77.09	-10.7	-5.7	3.06	74.03			
X2S	45 - 50	51.81	UI	80	28.19	33.19	5.31	74.69	0.27	23.8	0.01
X2D	75 - 80	80.6	LI	79.99	-0.61	4.39	5.57	74.42			
87S	45 - 50	53.33	UI	81.53	28.2	33.2	6.72	74.81	0.38	45.11	0.01
99D	95 - 100	103.6	DP	81.69	-21.91	-16.91	7.26	74.43			

Monitoring Well Identification (CEF-076-)	Screen Interval (ft, bls)	Well Depth (ft, btoc)	Zone	Top-of-Casing Elevation (ft, msl)	Bottom Screen Elevation	Top Screen Elevation	June 11, 2003		Change in GW Elevation	Difference in Screen Elevation	Vertical Gradient
							Depth to Water (ft, btoc)	Water-Level Elevation (ft, msl)			
94S	5 - 15	18.22	WT	81.59	63.37	73.37	6.76	74.83	-0.79	10.07	-0.08
93S	25 - 30	33.29	UI	81.59	48.3	53.3	5.97	75.62			
56I	70 - 75	38	UI	80.91	42.91	47.91	6.72	74.19	0.37	69.82	0.01
98D	105 - 110	113.3	DP	81.39	-31.91	-26.91	7.57	73.82			