CATLIN
ENGINEERS and SCIENTISTS

Post Office Box 10279
Wilmington, NC 28404-0279
Telephone: (910) 452-5861
Fax: (910) 452-7563

August 3, 2005

NAVFAC Atlantic
North Carolina/Caribbean IPT
Code: OPCEV4
Attention: Mr. David T. Cleland, P.G.
6506 Hampton Boulevard
Norfolk, Virginia 23508-1278

Re: **Remedial Action Optimization & Revised Corrective Action Plan**
Building AS-4158
Marine Corps Air Station
New River, North Carolina
Navy Contract No. N62470-01-D-3009
Delivery Order No. 0079
CATLIN Project No. 203-063

Dear Mr. Cleland:

CATLIN Engineers and Scientists (CATLIN) are pleased to submit the FINAL Remedial Action Optimization & Revised Corrective Action Plan for the above referenced site. Please find enclosed one copy of the above referenced FINAL document. This document has been prepared to serve the dual purpose of providing both an optimization evaluation of the existing remediation system and recommendations for revising the corrective action strategy for this site. This document is intended to be submitted to the North Carolina Department of Natural Resources (NCDENR) and includes specific recommendations in order to enhance the current remedial system.

It is our understanding that Mr. Andrew Smith and yourself had no comments on the DRAFT version of this document.

CATLIN Engineers and Scientists appreciate the opportunity to continue to provide services to LANTDIV and the MCB on your environmental projects.

Sincerely,

Michael E. Mason, P.E.
CATLIN Program Manager

Jeffery K. Becken, P.E.
Project Engineer

Attachments: Remedial Action Optimization & Revised Corrective Action Plan

cc: Ms. Kathy Gillespie – Code OPC AQ4 KJG, correspondence only
Commanding General, Attn: Director I&E/EMD/EQB (1 copy)
Mr. Ronald Kenyon – Shaw Environmental & Infrastructure, Inc. (1 copy)

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REMEDIAL ACTION OPTIMIZATION
&
REVISED CORRECTIVE ACTION PLAN

BUILDING AS-4158

MARINE CORPS AIR STATION
NEW RIVER, NORTH CAROLINA

NCDENR UST INCIDENT NO. 10804
RISK CLASSIFICATION: HIGH RISK
LAND USE CLASSIFICATION: INDUSTRIAL/COMMERCIAL

AUGUST 3, 2005

Navy Contract No.: N62470-01-D-3009
Delivery Order No.: 0079
CATLIN Project No.: 203-063

Prepared by:

CATLIN Engineers and Scientists
P.O. Box 10279
Wilmington, North Carolina 28404-0279
(910) 452-5861

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LIST OF ACRONYMS

2000 Guidelines	Groundwater Section Guidelines for Investigation and Remediation of Soil and Groundwater
2001 Guidelines	Guidelines for Assessment and Corrective Action, North Carolina Underground Storage Tank Section (Effective July 1, 2001)
2L GWQS	NCAC T15A:02L Groundwater Quality Standards
ARO	Asheville Regional Office
AS	Air Sparge
AST	Aboveground Storage Tank
BDL	Below Detection Limit
BN	Base/Neutral (extractables)
BNA	Base/Neutral/Acid (extractables)
BQL	Below Quantitation Limit
BLS	Below Land Surface
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAP	Corrective Action Plan
CATLIN	CATLIN Engineers and Scientists (Formerly RC&A)
CFR	Code of Federal Regulations
Cr	Chromium
CSA	Comprehensive Site Assessment
CNP	Carbon Nitrogen Phosphorous
CPT	Cone Penetrometer Test
DEM	Division of Environmental Management
DIPE	Diisopropyl Ether
DO	Dissolved Oxygen
DOD	Department of Defense
DPT	Direct Push Technology
DWQ	Division of Water Quality
DWM	Division of Waste Management
DTW	Depth to Water
EAD	Environmental Affairs Department
EDB	Ethylene di-bromide
EMD	Environmental Management Division
EPA	Environmental Protection Agency
EPH	Extractable Petroleum Hydrocarbons
EQB	Environmental Quality Branch
Fe	Iron
FID	Flame Ionization Detector
FOD	Foreign Object Debris
FRO	Fayetteville Regional Office
FT	Feet
GCL	Gross Contaminant Level
GIS	Geographic Information System
GPS	Global Positioning System

Guidelines Vol. I	Groundwater Section Guidelines for Investigation and Remediation of Soil and Groundwater, Volume I, Sources Other Than Petroleum Underground Storage Tanks (May 1998)
Guidelines Vol. II	Groundwater Section Guidelines for Investigation and Remediation of Soil and Groundwater, Volume II, Petroleum Underground Storage Tanks (January 2, 1998)
HDPE	High Density Polyethylene
I/C	Industrial/Commercial
ID	Identification
I&E	Installations and Environment Department
IGWQS	Interim Groundwater Quality Standards
IPE	Isopropyl Ether
LSA	Limited Site Assessment
LUST	Leaking Underground Storage Tank
m-	meta
m	meter
MADEP	Massachusetts Department of Environmental Protection
MCALF	Marine Corps Auxiliary Landing Field
MCAS	Marine Corps Air Station
MCB	Marine Corps Base
MCOLF	Marine Corps Outlying Landing Field
MDL	Method Detection Limit
mg/Kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
MRO	Mooresville Regional Office
MSCC	Maximum Soil Contaminant Concentration
MSL	Mean Sea Level
MTBE	Methyl tertiary butyl ether
µg/Kg	Micrograms per Kilogram
µg/L	Micrograms per Liter
NA	Not Analyzed
N/A	Not Applicable
NAVFAC Atlantic	Naval Facilities Atlantic Division
NC	North Carolina
NCAC	North Carolina Administrative Code
NCDENR	North Carolina Department of Environment and Natural Resources
NCDOC	North Carolina Department of Corrections
NCDOT	North Carolina Department of Transportation
NCSP	North Carolina State Plane
NCSPA	North Carolina State Ports Authority
NE	None Established
NM	Not Measured
NMT	No Measurable Thickness
NS	Not Sampled
o-	ortho
OVA	Organic Vapor Analyzer

p-	para
PAH	Polynuclear Aromatic Hydrocarbons
Pb	Lead
PPB	Parts Per Billion
PPM	Parts Per Million
PID	Photo Ionization Detector
PQL	Practical Quantitation Limit
PVC	Polyvinyl chloride
RBCA	Risk-Based Corrective Action
RCRA	Resource Conservation and Recovery Act
Res	Residential
ROI	Radius of Influence
RRO	Raleigh Regional Office
SOW	Scope of Work
STGW	Soil-to-Groundwater
SVE	Soil Vapor Extraction
SVOC	Semi Volatile Organic Compound
TDHF	Toxicologically Defined Hydrocarbons Fractions
TCLP	Toxicity Characteristic Leaching Procedure
TIC	Tentatively Identified Compound
TKN	Total Kjeldahl Nitrogen
TOC	Top of Casing
TPH	Total Petroleum Hydrocarbons
US	United States
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compounds
VPH	Volatile Petroleum Hydrocarbons
WaRO	Washington Regional Office
WiRO	Wilmington Regional Office
WSRO	Winston-Salem Regional Office

REMEDIAL ACTION OPTIMIZATION
&
REVISED CORRECTIVE ACTION PLAN

BUILDING AS-4158
MARINE CORPS AIR STATION
NEW RIVER, NORTH CAROLINA

CATLIN PROJECT NO. 203-063

AUGUST 3, 2005

EXECUTIVE SUMMARY

This report is intended to provide information relevant to address and review the effectiveness of current remedial actions being conducted at the Building AS-4158 project site and to make revisions to the Corrective Action Plan (CAP) in order to move towards site closeout. The project site is located aboard the Marine Corps Air Station (MCAS), New River in Onslow County, North Carolina.

Various site assessments were completed at the Building AS-4158 project site in the early 1990s to determine the integrity of the various Underground Storage Tank (UST) systems and delineate the extent, if applicable, of soil and groundwater petroleum contamination, and the presence of free-phase product. Petroleum impact was substantiated during the assessment activities and was attributed to leaks from the former USTs and associated piping.

The results of these assessments were utilized in the preparation of a CAP dated September 11, 1995. The CAP proposed an air sparge/soil vapor extraction system to remediate the contaminated soil and groundwater at the Building AS-4158 project site. It is our understanding that the proposed air sparge/soil vapor extraction system was installed and began operation in April 1998. It is our understanding that from 1998 through January 2003, J.A. Jones Environmental Services Company (JA Jones) operated, maintained and monitored the Building AS-4158 project site. Engineering and Environment, Inc. (E&E) began system operation in September 2004 and continues to operate the system as of this report. Shaw Environmental, Inc. (Shaw) monitored and maintained the AS-4158 project site between operation by JA Jones and E&E.

A leak from an underground fuel transfer line was discovered in the vicinity of monitoring well MW-9 in January 2002. Subsequently, JA Jones performed various Aggressive Fluid Vapor Recovery (AFVR) events and passive recovery activities to attempt to remove free-phase product from monitoring well MW-9. As of January 2005, free-phase product was still present in monitoring well MW-9.

In September 2004, CATLIN Engineers and Scientists (CATLIN) completed an additional soil assessment at the Building AS-4158 project site as requested in a letter from Mr. Bruce Reed of the

North Carolina Department of Environment and Natural Resources (NCDENR). The findings were summarized in a Soil Assessment Report (SAR) dated December 16, 2004. Based on the results of this SAR, CATLIN concluded that current soil conditions exhibit no soil contamination above the laboratory quantitation limits for soils in the vicinity of the former USTs and pipelines. Therefore, CATLIN recommended no additional soil remediation activities.

Current applicable remedial requirements are defined by the Risk Based Corrective Action (RBCA) rules for USTs per 15A NCAC 2L .0115 effective date January 2, 1998 and document entitled *"Guidelines for Assessment and Corrective Action"* (2001 Guidelines) as released by the NCDENR Division of Waste Management, UST Section, effective July 1, 2001. A risk classification, as presented in the 2001 Guidelines was completed as part of this work to present the data necessary to allow NCDENR to assess the site's applicable risk classification. Based on the findings, CATLIN concludes that the subject site meets the criteria for classification as a High Risk and Industrial/Commercial (I/C) Land Use site. The High Risk classification is based on the presence of the water supply well AS-4150 located within 1,000 feet of the subject site. Please note that water supply well AS-4150 is currently not used by MCB Camp Lejeune and is not anticipated to be used in the near future.

In the event that water supply well AS-4150 is restarted then CATLIN recommends an alternative remedial technology be considered and additional monitoring activities be implemented to ensure that the water supply well is not impacted by the shallow dissolved groundwater contaminant plume. However, since Marine Corp Base (MCB) Camp Lejeune does not anticipate using this water supply well and based on the information presented within this report, CATLIN recommends a portion of the air sparge/vapor extraction system be shut down with slight modifications to the monitoring and sampling schedule. Specific recommendations are included within Section 6.0 of this report.

Based on the information presented within this report, it appears that the continual presence of free-phase product near MW-9 should be delineated and alternative recovery methods evaluated. Specific recommendations are included within Section 6.0 of this report.

REMEDIAL ACTION OPTIMIZATION
&
REVISED CORRECTIVE ACTION PLAN

BUILDING AS-4158
MARINE CORPS AIR STATION
NEW RIVER, NORTH CAROLINA

CATLIN PROJECT NO. 203-063

AUGUST 3, 2005

1.0 BACKGROUND

1.1 PURPOSE OF REPORT

The purpose of this report is to provide information relevant to address and review the effectiveness of current remedial actions being conducted at the Building AS-4158 project site located on the MCAS, New River. Additionally, this report revises the CAP and provides recommendations for continuing remediation activities in order to achieve site closure. This report has been formatted according to the Naval Facilities Engineering Command (NAVFACENGCOM) "Guidance for Optimizing Remedial Action Operation" document prepared by Radian International and dated April 2001 with the ultimate purpose to "achieve environmentally protective site closeout at the least cost."

The work conducted herein was conducted in general accordance with the Workplan titled Remediation System Optimization Plans at the Various Sites, Marine Corps Base, Camp Lejeune, North Carolina dated July 16, 2003. CATLIN was authorized to perform this investigation by the Atlantic Division (LANTDIV) NAVFACENGCOM in accordance with the Order of Supplies Contract Number N62470-01-D-3009, Delivery Order Number 0079.

1.2 SCOPE OF WORK

This Remedial Action Optimization (RAO) & Revised Corrective Action Plan (RCAP) was developed in general accordance with the NAVFACENGCOM "Guidance for Optimizing Remedial Action Operation" document dated April 2001 and the 2001 Guidelines. Specific methods utilized to develop the RAO & RCAP included a thorough collection and review of available reports and field data. Data was then reviewed and the RAO & RCAP was developed.

2.0 SITE HISTORY

The Building AS-4158 project site is located aboard the MCAS, New River in Onslow County, North Carolina. The site vicinity is presented on Figure 1. The project site has historically and is currently used to provide fuel and maintenance services for MCAS vehicles. The site layout and current remediation system layout is illustrated on Figure 2.

According to Shaw, currently, two 10,000-gallon aboveground storage tanks (ASTs) are used to store diesel fuel at the Building AS-4158 project site. The diesel fuel is transported from the ASTs to the dispensers located adjacent to the Building AS-4158 via an underground pipeline. The ASTs are replacements for three USTs that were in use prior to removal on August 18, 1992. One of the USTs was utilized to store gasoline and had a capacity of 3,000-gallons. The additional two USTs were utilized to store diesel fuel and each had a capacity of 3,000-gallons. The USTs and associated piping were reportedly excavated and removed from the subsurface or rendered unusable as reported in the UST closure report by Environmental and Regulatory Consultants, Inc. (ERC).

Additionally, a 1,000-gallon used oil AST is reportedly present at the Building AS-4158 project site.

According to the UST closure report by ERC, free-phase product was observed on the water surface during excavation of the UST system. The findings reported by ERC indicated a potential release.

Subsequently, Groundwater Technology Government Services (GTGS) performed a three well site check in March and April of 1993. The activities conducted by GTGS included the advancement of three soil borings that were converted to monitoring wells identified as MW-1, MW-2 and MW-3. Soil samples collected from these borings revealed Total Petroleum Hydrocarbon (TPH)-Diesel concentrations in MW-2 only. No concentrations of TPH-Gasoline were detected during this assessment. Groundwater samples collected from these monitoring wells by GTGS were reportedly analyzed for Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) constituents. BTEX constituents were reportedly detected in groundwater samples from each of these monitoring wells.

Law Engineering and Environmental Services, Inc. (LAW) prepared a Site Assessment Report dated October 4, 1994 that presented the findings of additional soil and groundwater investigations at the Building AS-4158 project site. The activities conducted by LAW included the installation of hydropunch groundwater sampling probes, Type II monitoring wells, Type III monitoring wells, and one 6-inch diameter pumping well to evaluate site conditions. LAW reported that the majority of the soil contamination was located within the vicinity and down gradient of the former UST product lines near monitoring well MW-9. LAW also reported the presence of groundwater contamination within the upper portion of the surficial aquifer within the Building AS-4158 project site. Additionally, free-phase product was reportedly present near monitoring well MW-9 during this investigation.

Based on the findings of the Site Assessment Report by LAW, Richard Catlin and Associates, Inc. (now known as CATLIN Engineers and Scientists (CATLIN)) prepared a Leaking Underground Storage Tank CAP dated September 11, 1995. The CAP proposed an air sparge/soil vapor extraction system to remediate contaminated soil and groundwater at the Building AS-4158 project site. JA Jones constructed and operated the remediation system from start-up in April 1998 through January 2003 as indicated. The system was temporarily shut down in December 1999 due to consistently low contaminant concentrations and post-operational monitoring was initiated. The system was restarted in February 2001 due to an increase in contaminant concentrations in MW-9, MW-11 and MW-13. Shaw prepared an Annual Monitoring Report dated January 2004 that documented JA Jones' activities between April 1998 and January 2003. E&E began system operation in September 2004 and continues to operate the remediation system. Shaw monitored and maintained the AS-4158 project site between operations by JA Jones and E&E.

According to the Annual Monitoring Report by Shaw, a leak in an underground fuel transfer line was discovered in January 2002 in the vicinity of MW-9. The release was confirmed by pressure testing and reported to NCDENR on April 20, 2002. Repairs were made to the underground fuel transfer line in November 2002. During the period from April 1998 through December 2002, approximately 110 gallons of free-phase product was recovered from MW-9. The current remedial approach utilized by E&E for free-phase product recovery is hand bailing. As of January 2005, free-phase product was still present in MW-9 and the air sparge/soil vapor extraction system remains operational.

In September 2004, CATLIN completed an additional soil assessment at the Building AS-4158 project site at the request of Mr. Bruce Reed of the NCDENR. The findings were summarized in a SAR dated December 16, 2004. Based on the results of this SAR, CATLIN concluded that current soil conditions exhibit no soil contamination above the laboratory quantitation limits for soils in the vicinity of the former USTs and pipelines. Therefore, CATLIN recommended no additional soil remediation activities.

2.1 CONCEPTUAL SITE MODEL (BASED ON 1995 CAP)

This conceptual site model is based on the information utilized in the development of the 1995 CAP.

2.1.1 Site Geology

The topography of the site is relatively flat. LAW reported that the Building AS-4158 project site was located within the Lower Coastal Plain Soil system and the Coastal Plain/Castle Hayne Limestone hydrologic area. Field observations noted during activities associated with the production of the Site Assessment Report by LAW revealed near surface soils to within approximately 11 feet Below Land Surface (BLS) generally consisting of clayey fine sands to fine sands. Fine to medium sands with organics, clayey lenses, and discontinuous peat layers of varying thickness were generally

observed between 11 and 21 feet BLS. Beneath the surficial soils an alternating layer of light gray fine sand mixed with shell fragments was observed from approximately 23 to 30 feet BLS and again at 45 feet BLS. Apparently, an olive to dark green fine sand with few small shell fragments, approximately 5 to 7 feet thick, separates this material. Cross sections by LAW detailing these findings have been included in Appendix D. This information developed by LAW was utilized in the development of the 1995 CAP.

2.1.2 Groundwater Flow Direction and Velocity

The CAP reported that groundwater at the Building AS-4158 project site flows generally to the west. Depth to groundwater at the time of the CAP was reportedly between 7.58 and 11.70 feet BLS. Average linear groundwater velocity was estimated to be approximately 1.36 ft/day, calculated from groundwater elevations and aquifer test results.

2.1.3 Potential Receptors

The potential receptors identified in the CAP included the following:

- Buildings identified in the vicinity of the former UST area were AS-4158 to the north and AS-4159 located to the south.
- A sewer lift station is located just east of the former tank basin. The CAP stated that accumulation of hydrocarbon vapors in the lift station could present an explosion hazard.
- Diesel fuel dispensing lines for the new ASTs located within the area of investigation.
- Underground electrical lines located between the former UST basin and the active ASTs.
- Abandoned fuel lines associated with the former USTs located within the area of investigation.
- The flood plain and associated marsh area of Southwest Creek located approximately 1,000 feet to the west of the site.
- Water supply wells located within a one-half mile radius of the project site. The CAP stated that the nearest of these wells was located 650 feet to the northeast and not in a downgradient direction.

2.1.4 Contaminants of Concern

The contaminants of concern reported within the CAP by CATLIN included the following:

- Soil contamination consisting of the following compounds and site rehabilitation concentrations:

  - TPH per EPA Method 5030 – 10 ppm
  - TPH per EPA Method 3550 – 40 ppm
- Free-phase product
- Groundwater contamination consisting of the following compounds and site rehabilitation concentrations:
  - Benzene – 1 µg/L
  - Ethylbenzene – 29 µg/L
  - Acenaphthene – Detection Limit
  - Anthracene – Detection Limit
  - Benzo (a) anthracene – Detection Limit
  - Chrysene – Detection Limit
  - Fluoranthene – Detection Limit
  - 1-Methylnaphthalene – Detection Limit
  - 2-Methylnaphthalene – Detection Limit
  - Bromoform – 0.19 µg/L
  - Dibromochloromethane – Detection Limit
  - Bromodichloromethane – Detection Limit
  - Chloroform – 0.19 µg/L
  - Xylenes – 530 µg/L
  - Naphthalene – 21 µg/L
  - Phenanthrene – 210 µg/L

3.0 REMEDIAL ACTION REVIEW

3.1 REMEDIAL SYSTEM OBJECTIVES

As detailed in the 1995 CAP, the remedial objectives were to remove/reduce the source of further groundwater contamination (contaminated vadose zone soil and free-phase product) and to contain and restore the dissolved-phase plume to the specified site rehabilitation goals.

3.2 RECOMMENDED REMEDIAL SYSTEM

The 1995 CAP recommended the excavation of contaminated soils and free-phase product in the vicinity of MW-9 and the use of an air sparge/soil vapor extraction system to remediate the dissolved-phase groundwater contaminant plume. The CAP recommended a hand auger investigation of soil contamination to be completed to better define the limits of excavation.

The proposed air sparge and soil vapor extraction systems were based on pilot tests and design calculations presented within the CAP. The proposed air sparge system consisted of two horizontal lines set at a depth of 33.5 feet BLS injected with air at a rate of 94 and 106 cubic feet per minute (cfm). This injection rate was estimated to produce a 20-foot lateral influence. The proposed soil vapor extraction system consisted of two horizontal lines installed within the vadose zone, which were to

extract air at a rate of 377 and 426 cfm. This extraction rate was estimated to produce a 15-foot lateral influence. An additional extraction line was proposed near Building AS-4158 to prevent vapors from entering the building.

Additionally, the CAP proposed that all monitoring wells be gauged monthly and sampled quarterly for EPA Method 602 and 610 parameters and field measurements of dissolved oxygen. Annual vapor extraction off-gas sampling was proposed. The monitoring data was to be submitted within a quarterly monitoring report.

3.3 IMPLEMENTED REMEDIAL SYSTEM

Subsequent to the CAP, JA Jones installed an air sparge/soil vapor extraction system for the remediation of the dissolved-phase groundwater contaminant plume. The air sparge/soil vapor extraction system was started April 9, 1998. CATLIN was unable to confirm the depth of the horizontal air sparge and soil vapor extraction wells during preparation of this report. Therefore, CATLIN has assumed the wells were installed as designed. However, based on a site plan obtained from Shaw's Annual Monitoring Report, an additional SVE well appears to have been installed in the vicinity of monitoring well MW-9. The proposed excavation activities do not appear to have been completed.

3.4 REMEDIAL SYSTEM STATUS

Since measurable amounts of free-phase product had not been observed since December 10, 1998 and dissolved-phase concentrations of contaminants of concern remained at very low concentrations, the air sparge/soil vapor extraction system was shut down on December 29, 1999.

Due to increases in dissolved-phase contaminant concentrations, JA Jones conducted an AFVR event on monitoring wells MW-9 and MW-13 on December 14, 2000. According to the Annual Monitoring Report by Shaw dated January 2004, approximately 10 gallons of free-phase product were recovered using AFVR techniques on December 14, 2000. Additionally, JA Jones reportedly recovered 0.2 gallons of free-phase product by use of passive skimmers in monitoring wells MW-2 and MW-3 on February 2, 2001. Subsequently, JA Jones restarted the air sparge/soil vapor extraction systems on February 13, 2001.

Currently, the air sparge/soil vapor extraction system is operated and maintained at the Building AS-4158 project site by E&E. Field reconnaissance conducted by CATLIN and E&E personnel on December 22, 2004 revealed the system to be well maintained and in good working condition.

Free-phase product was observed in monitoring well MW-9 in January 2002. Therefore, an investigation was conducted that determined that a leak occurred within an underground transfer line in the vicinity of monitoring well MW-9 in April

2002. The Shaw Annual Monitoring Report dated January 2004 indicated that free-phase product has routinely been hand bailed from MW-9. For the period from January to December 2002, approximately 67.03 gallons of free-phase product was reportedly removed by hand bailing from MW-9. Please note that since E&E has maintained the project site, free-phase product has been observed intermittently at thicknesses less than 0.10 feet. E&E personnel have indicated that free-phase product is recovered using sorbent socks and recovered volumes are not currently recorded.

3.5 MONITORING STATUS

Based on Shaw's Annual Monitoring Report dated January 2004 and data provided by E&E, it appears that laboratory samples are currently collected on a quarterly basis to monitor the effectiveness of the air sparge/soil vapor extraction system in remediation of the contaminated groundwater. E&E currently gauges all monitoring wells on a monthly basis. Groundwater samples are currently collected from selected monitoring wells (MW-1, MW-4, MW-5, MW-7, MW-8, MW-9, MW-10, MW-11, MW-13, MW-15, MW-17 and MW-18). Additionally, MW-12 appears to have been abandoned and removed from the sampling schedule. Please refer to Table 1 and 2 for the well construction information and groundwater sampling history of each individual monitoring well, respectively.

Groundwater samples are currently analyzed for Volatile Aromatic Hydrocarbons per EPA Method 602 and Polynuclear Aromatic Hydrocarbons per EPA Method 610. These quarterly sampling events are summarized in an annual monitoring report submitted to the NCDENR Wilmington Regional Office (WiRO).

4.0 REMEDIATION EFFECTIVENESS EVALUATION

4.1 CONTAMINANT LEVELS

4.1.1 Free-Phase Product

Free-phase product has historically and continues to be observed in monitoring well MW-9 at the Building AS-4158 project site. As previously stated, excavation of contaminated soils and the free-phase product plume proposed in the 1995 CAP does not appear to have been implemented. As previously noted, free-phase product was not reportedly present in the site monitoring wells between December 10, 1998 and January 2002.

As previously stated, free-phase product has intermittently been observed in monitoring well MW-9 since January 2002. According to the Annual Monitoring Report by Shaw dated January 2004, a total of approximately 67.03 gallons of free-phase product was hand bailed from MW-9 during the period from January 2002 to December 2002. As of this report, free-phase

product is still frequently observed in monitoring well MW-9 and most recently in January 2005. Please refer to Appendix C and Table 3 for historical groundwater elevations and free-phase product thicknesses. Figure 3 illustrates a comparison of CAP to current free-phase product thicknesses. As illustrated on Figure 3, the closest monitoring well to MW-9 is MW-10, which is approximately 70 feet downgradient of monitoring well MW-9. Therefore, the extent of free-phase product as of January 2005 may not be representative of actual conditions.

4.2 CONTAMINANT CONCENTRATIONS

4.2.1 Soil

Soil TPH concentrations reported in the CAP was in exceedance of the established rehabilitation goals. As previously stated, CATLIN completed an additional soil assessment as part of a SAR dated December 16, 2004 that concluded that soil contamination in the vicinity of the former USTs and pipelines had been cleaned up to below the lowest Maximum Soil Contaminant Concentration (MSCC) levels and that no additional soil remediation activities are warranted. Please refer to Appendix A for a summary of historical soil laboratory results from the CAP and SAR.

Air samples collected from the soil vapor extraction system appear to have been below the laboratory quantitation limit for BTEX constituents since April 1998. Air emission data is also a good indicator that soil contamination is not present. Refer to Appendix F for air emission data collected from the soil vapor extraction system.

4.2.2 Groundwater

Current groundwater contamination data compared to data at the time of the CAP has been provided on the attached Tables 4A and 4B. The CAP identified benzene, ethylbenzene, acenaphthene, anthracene, benzo (a) anthracene, chrysene, fluoranthene, 1-methylnaphthalene, 2-methylnaphthalene, xylenes, naphthalene, phenanthrene, bromoform, dibromochloromethane, bromodichloromethane and chloroform as the target contaminants of concern with clean-up concentrations based on the 2L Groundwater Quality Standards (GWQS). Please note that a portion of these contaminants of concern have not been analyzed since the CAP; therefore, the current status of some contaminants of concern are unknown.

The CAP did not distinguish between the shallow conditions and the deep conditions. In order to effectively evaluate the current remediation system, a discussion of the shallow conditions (Type II monitoring wells) and the deep conditions (Type III monitoring wells) is provided in the following sections.

4.2.2.1 Shallow Conditions

The most recent estimated plume boundaries of the shallow groundwater conditions from the October 2004 sampling event along with the conditions at the time of the CAP are shown for BTEX and naphthalene on Figures 4 and 5. As can be seen, the estimated horizontal extent and concentrations of shallow groundwater contamination appears to have decreased in size. Based on the October 2004 groundwater sampling data, contaminant concentrations remain in excess of the 2L GWQS at monitoring wells MW-9, MW-11 and MW-13 for benzene. Table 4A summarizes the historical groundwater contaminants of concern for the Type II shallow monitoring wells and Table 2 summarizes the last date an individual monitoring well-exhibited groundwater contaminant concentrations above the 2L GWQS. Please note that monitoring well MW-2 appears to be partially filled in with soil particles and thus has not been sampled since July 16, 2001. However, monitoring well MW-2 did not indicate groundwater concentrations in excess of 2L GWQS between May 15, 1998 and July 16, 2001. Additionally, pumping well PW-1 and monitoring well MW-3 have not been located by E&E and therefore have not been sampled since January 20, 1994 and January 14, 2003, respectively. Please note that since pumping well PW-1 and monitoring well MW-3 are located within the vicinity of monitoring wells MW-1, MW-2, MW-4 and MW-6 the shallow groundwater conditions should be considered comparable. Therefore, CATLIN has assumed that groundwater contaminant concentrations within this area of the project site are below the 2L GWQS.

4.2.2.2 Deep Conditions

Table 4B summarizes the historical groundwater contaminants of concern for the Type III deep monitoring wells and Table 2 summarizes the last date an individual monitoring well-exhibited groundwater contaminant concentrations above the 2L GWQS (which was January 1994).

4.3 SYSTEM SUITABILITY

4.3.1 Free-Phase Product

As previously stated, free-phase product has historically been reported present within MW-9. However, the only methods currently utilized to recover free-phase product consist of hand bailing. While the estimated

horizontal extent of free-phase product appears to be centered around MW-9, hand bailing does not appear to be an effective means of reducing free-phase product thickness to below the action level of 1/8-inch. Therefore, another remedial strategy should be considered. However, it is important to note that the spatial extent of free-phase product may extend beyond the limits of the influence of the hand bailing.

4.3.2 Soil

As previously stated, the SAR by CATLIN concluded that soil contamination had been cleaned up to below the lowest MSCC levels, and no additional soil remediation activities are warranted at the Building AS-4158 project site. Therefore, the remediation system appears to have been suitable in the reduction of the soil contamination.

4.3.3 Groundwater

According to the most recent groundwater analytical data (October 2004), of the wells sampled by E&E, only shallow monitoring wells MW-9, MW-11 and MW-13 currently indicate dissolved-phase groundwater contaminant concentrations above 2L GWQS. All other monitoring wells have not indicated concentrations above the 2L GWQS since January 1999. It is important to note that chloroform, chrysene, bromoform, bromodichloromethane and dibromochloromethane were reported within the CAP at concentrations above the 2L GWQS and have not been analyzed since. Therefore, the current concentration of these analytes is unknown at this time.

Based on the overall reduction in dissolved-phase groundwater contaminant concentrations, the implemented air sparge/soil vapor extraction system appears to have been effective in reducing the dissolve groundwater contamination at the Building AS-4158 project site. As previously noted free-phase product has been observed intermittently in monitoring well MW-9. The air sparge/soil vapor extraction technology is not typically considered an effective method for the removal of free-phase product.

5.0 REMEDIATION MODIFICATIONS AND ALTERNATIVES

5.1 REGULATORY FRAMEWORK EVALUATION

The remedial goals for the site were based on the regulations current at the time and presented in the CAP. Current applicable remedial requirements for the contamination associated with the Building AS-4158 project site are based on the corrective action requirements per 15A NCAC 2L.0115, which became effective on January 2, 1998 and the requirements in the NCDENR 2001 Guidelines. As such,

reclassification of the site based on current risk factors was necessary.

A Risk Classification and Land Use Form, as presented in the 2001 Guidelines was completed as part of this work to present the data necessary to allow NCDENR to assess the site's applicable risk classification. The completed form is included in Appendix E. Based on the findings of this Risk Classification and Land Use Form, CATLIN concludes that the subject site meets the criteria for classification as a High Risk and Industrial/Commercial Land Use site. The High Risk classification is based on the presence of the water supply well AS-4150 located within 1,000 feet of the subject site. Please note that water supply well AS-4150 is currently not used by MCB Camp Lejeune and is not anticipated to be used in the near future.

5.2 REVISED CONCEPTUAL SITE MODEL

5.2.1 Groundwater Depth and Flow Direction

JA Jones, Shaw and E&E obtained depth to groundwater measurements from selected Type II and Type III monitoring wells during the numerous sampling and gauging events that have been conducted at the subject site. Depth to groundwater has typically ranged between 8 to 15 feet below ground surface. Since system start-up in April 1998, groundwater elevation contours for the selected monitoring wells, as interpreted and reported by JA Jones and Shaw, have historically indicated a general groundwater flow direction toward the west-southwest. It appears that groundwater flows in a number of different directions at the site. No changes to the groundwater flow characteristics are necessary in the revised conceptual site model.

5.2.2 Potential Receptors

Potential receptors have been re-evaluated during the preparation of this RAO & RCAP using the Risk Classification and Land Use Form in Appendix E. The receptor survey performed as part of this plan identified the following receptors within 1,500 feet of the site:

- The Wellhead Protection Plan Update (2002) lists two water supply wells within 1,500 feet of the site. Water supply well AS-4150 is located approximately 500 feet east and water supply well AS-5001 is located approximately 1,500 feet south of the Building AS-4158 project site. Please note that water supply well AS-4150 is currently not used by MCB Camp Lejeune and is not anticipated to be used in the near future. It is our understanding that water supply well AS-4150 is not in use; however, it cannot be abandoned at this time. In the event that this water supply well is restarted then CATLIN recommends that the recommendations provided in Section 6.0 of this report be implemented.

- Numerous surface water bodies are located within 1,500 feet of the site. Site reconnaissance revealed standing water in a ditch along Canal Street, as well as multiple storm water detention/retention structures.
- Three primary residences and a mess hall were located within 1,500 feet of the site.
- The site is located within the Coastal Plain and recharge to an unconfined or semi-confined deeper aquifer appears to be occurring.
- Numerous underground utilities are present throughout the site.

Based on information provided by MCB, Camp Lejeune, these potential receptors are not reported to be impacted by the potentially contaminated groundwater. The potential receptors are presented on the Site Location Map on Figure 1.

5.2.3 Contaminants of Concern

A portion of the groundwater contaminants of concern (COC) as established in the CAP may still be relevant. Since a portion of the COCs have not been analyzed since the CAP, it is a possibility that a portion of the COCs could be eliminated if not detected in any of the monitoring wells currently sampled. Therefore, the COCs established within the CAP remain the same. The COCs have been summarized on Table 5.

5.3 ALTERNATIVE REGULATORY MECHANISMS

5.3.1 Revised Target Cleanup Goals

As previously stated, the SAR by CATLIN concluded that soil contamination had been cleaned up to below the lowest MSCC levels. As such, additional soil sampling for risk-based analysis is not recommended at this time.

Based on the High Risk classification, groundwater quality must be restored to levels established by 2L GWQS or as closely thereto as is economically and technologically feasible. Therefore, target clean-up concentrations of the COCs are the 2L GWQS as illustrated on Table 5.

5.3.2 Notice of Residual Petroleum

At this time, a Notice of Residual Petroleum (NRP) is not applicable for this site due to the High Risk classification.

5.4 ALTERNATIVE REMEDIAL TECHNOLOGIES

As previously stated, the implemented remedial approach of an air sparge/soil vapor

extraction system has been effective in reducing the contaminant levels for the dissolve groundwater contamination. However, the use of hand bailing free-product from MW-9 does not appear to be an effective remedial approach for the elimination of free-phase product. Therefore, an alternative remedial technology may be necessary to eliminate free-phase product. This alternative remedial technology should be based on the results of the optimization recommendations presented within Section 6.0 of this report. It is important to note that the extent of free-phase product has not bee fully delineated at the Building AS-4158 project site as of this report.

5.5 COST EFFICIENCY EVALUATION

A detailed cost efficiency evaluation was not performed for this site based on the recommendations within Section 6.0 of this report. Upon implementation of the recommendations within this report then an evaluation of alternative remedial approaches may be necessary. During this additional evaluation, a cost efficiency evaluation may be necessary.

6.0 OPTIMIZATION RECOMMENDATIONS

6.1 FREE-PHASE PRODUCT

As previously stated, the spatial extent of free-phase product has not been fully delineated around monitoring well MW-9. CATLIN recommends the following to delineate the free-phase product, if present:

- Install 4 Type II monitoring wells around monitoring well MW-9 at the locations illustrated on Figure 6. These wells are intended to only be used for delineating free-phase product; however, it may be determined in the future that these wells would be beneficial for recovery of free-phase product or monitoring of dissolved groundwater contamination.
- Gauge the proposed monitoring wells monthly for three months.
- If the free-phase product plume is not delineated from the installation of the suggested monitoring wells, then additional delineation activities should be completed. Upon delineation of the free-phase product plume, a Report of Findings (ROF) should be submitted.
- Pending the results of the delineation of the free-phase product, an appropriate remedial approach should be considered.

6.2 SOIL

As previously stated, the SAR by CATLIN concluded that soil contamination had been cleaned up to below the lowest MSCC levels. Therefore, no additional assessment or remediation activities are recommended for the soils at the Building AS-4158 project site.

6.3 GROUNDWATER

6.3.1 Shallow Conditions

As previously stated, water supply well AS-4150 is currently not used by MCB Camp Lejeune and is not anticipated to be used in the near future. However, if water supply well AS-4150 is restarted then CATLIN recommends an alternative remedial technology be considered and additional monitoring activities be implemented to ensure that the water supply well is not impacted by the shallow dissolved groundwater contaminant plume. However, since MCB Camp Lejeune does not anticipate using this water supply well and based on the Remedial Effectiveness Evaluation and the Revised Target Cleanup Concentrations discussed within Sections 4.2.2.1 and 5.3.1, respectively of this report, CATLIN recommends the following to meet the 2L GWQS:

- The current air sparge/soil vapor extraction system consists of two horizontal lines as illustrated on Figure 2. It appears that sparge line/vapor extraction line #1 may not be located within the limits of the current free-phase product and dissolved groundwater contaminant plumes (Refer to Figures 3 and 4); therefore, should be shut down.

  The monitoring wells in the vicinity of sparge line/vapor extraction line #1 (MW-4, MW-5, MW-7, MW-10, MW-14 and MW-16) should be monitored for rebound on a semi-annual basis for at least one year. In the event that rebound is observed then air sparge/soil vapor extraction line #1 may be re-started.
- Sparge line/vapor extraction line #2 is believed to be assisting with the volatilization of the free-phase product observed in the vicinity of monitoring well MW-9 and treating the dissolved groundwater contaminant plume. This portion of the air sparge/soil vapor extraction system should continue to be operated.

  The monitoring wells in the vicinity of sparge line/vapor extraction line #2 (MW-1, MW-2, MW-6, MW-8, MW-9, MW-11, MW–13 and MW-15) should be monitored on a semi-annual basis until contaminant concentrations are below 2L GWQS for one year and have remained so for one year after shut down of the air sparge/vapor extraction systems. Please note that monitoring wells MW-1, MW-2, MW-8 and MW-15 have illustrated groundwater concentrations below 2L GWQS for more than one year; therefore, it is recommended that sampling of these monitoring wells be discontinued at this time.

- The current COCs listed in Table 5 should be sampled by the following methods: EPA Methods 601/602 targeting only BTEX, MTBE and trihalomethanes; EPA Method 625 for PAH only; and Standard Prep Method 3030C for lead.
- The groundwater samples collected for lead should be collected using low-flow sampling techniques.
- The current COCs should be re-evaluated after one year of sampling.
- The results of the semi-annual sampling should be presented within an Annual Groundwater Monitoring Report. If applicable, the site closure request should also be requested within this report.
- The status of water supply well AS-4150 is recommended for evaluation on a semi-annual basis until site closure is received.

6.3.2 Deep Conditions

As previously stated, the last date an individual monitoring well-exhibited groundwater contaminant concentrations above the 2L GWQS was in January 1994. However, if water supply well AS-4150 is restarted then CATLIN recommends an alternative remedial technology and additional monitoring activities be implemented to ensure that the water supply well and the deep groundwater conditions are not impacted by the shallow dissolved groundwater contaminant plume.

7.0 IMPLEMENTATION

7.1 IMPLEMENTATION PLAN

The following is a suggested implementation plan for obtaining site closure:

- Submittal of this RAO & RCAP to the UST Section of NCDENR for approval of recommendations.
- Initiate the investigation of the free-phase product plume.
- Preparation of a ROF. This report will include the findings of the free-phase product assessment activities.
- Pending the findings of the free-phase product assessment activities, evaluate the current and/or alternative remedial approach for the removal of free-phase product.
- Implementation of the recommended sampling and monitoring strategy for the shallow groundwater conditions.
- Preparation of the Annual Groundwater Monitoring Reports.

7.2 SCHEDULE FOR IMPLEMENTATION

Free-phase product delineation and implementation of the groundwater sampling and monitoring strategy are recommended after approval of this plan by NCDENR. The

semi-annual sampling activities are targeted to begin at the time of the next scheduled sampling event. The Annual Monitoring reports should continue to be submitted.

8.0 LIMITATIONS

The field and groundwater data evaluated as part of this report provide isolated data points and may not represent conditions at every location in the project area. Analyses and conclusions of this report, being based on interpolation between data points at the project area, may not be completely representative of all site conditions. Conclusions and recommendations from this report are based on the best available data in an effort to comply with current regulatory requirements.

9.0 REFERENCES

AH Environmental Consultants, *Final Report, Wellhead Protection Plan – 2002 Update, Marine Corps Base, Camp Lejeune.* August 2002.

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LAW Engineering and Environmental Services, Inc., *Leaking Underground Storage Tank Site Assessment Report, Volume I, Building AS-4158, Marine Corps Air Station, Camp Lejeune, North Carolina*, October 4, 1994.

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Shaw Environmental Inc., *Final Annual Monitoring Report, Soil and Groundwater Remediation, Building AS-4158, Marine Corps Air Station, New River, North* Carolina. January 2004.

TABLES

TABLE 1

WELL CONSTRUCTION DATA

REMEDIAL ACTION OPTIMIZATION & REVISED CORRECTIVE ACTION PLAN

BUILDING AS-4158 MARINE CORPS AIR STATION NEW RIVER, NORTH CAROLINA

WELL I.D.	TOP OF CASING (Feet)	TOTAL DEPTH (Feet Below TOC)	CASING INTERVAL (Feet Below TOC)	SCREEN INTERVAL (Feet Below TOC)
TYPE II MONITORING WELLS				
MW-01	UKN	20.0	0.0 - 5.0	5.0 - 20.0
MW-02*	15.51	20.0	0.0 - 5.0	5.0 - 20.0
MW-03	17.70	20.0	0.0 - 5.0	5.0 - 20.0
MW-04	22.19	16.0	0.0 - 6.0	6.0 - 16.0
MW-05	22.10	16.0	0.0 - 6.0	6.0 - 16.0
MW-06	15.55	16.0	0.0 - 6.0	6.0 - 16.0
MW-07	22.11	16.0	0.0 - 6.0	6.0 - 16.0
MW-08	16.27	16.5	0.0 - 6.5	6.5 - 16.5
MW-09	23.14	16.5	0.0 - 6.5	6.5 - 16.5
MW-10	15.73	16.0	0.0 - 6.0	6.0 - 16.0
MW-11	23.84	16.5	0.0 - 6.5	6.5 - 16.5
MW-12	22.03	16.5	0.0 - 6.5	6.5 - 16.5
MW-13	24.12	16.5	0.0 - 6.5	6.5 - 16.5
MW-14	15.73	16.0	0.0 - 6.0	6.0 - 16.0
MW-15	23.99	16.5	0.0 - 6.5	6.5 - 16.5
TYPE III MONITORING WELLS				
MW-16	22.19	50.0	0.0 - 45.0	45.0 - 50.0
MW-17	23.05	50.0	0.0 - 45.0	45.0 - 50.0
MW-18	23.88	50.0	0.0 - 45.0	45.0 - 50.0
PUMPING WELLS				
PW-01	22.80	UKN	UKN	UKN

1. Casing and screen intervals are assumed to be based on measurements from ground surface.
2. Total depth based on maximum depth of screen interval.
3. Top of casing information obtained from the Annual Monitoring Report by Shaw, dated January 2004.
4. Data for casing and screen intervals obtained from the Corrective Action Plan by CATLIN, dated September 11, 1995.
5. UKN = Unknown.
6. TOC = Top Of Casing.
7. Shading indicates well not located or abandoned. Data from these wells is from previously submitted reports.
8. * - Data per CAP, however, E&E has reported MW-2 total depth to be 7.45 feet BLS.

TABLE 2

GROUNDWATER SAMPLING HISTORY

REMEDIAL ACTION OPTIMIZATION & REVISED CORRECTIVE ACTION PLAN

BUILDING AS-4158
MARINE CORPS AIR STATION
NEW RIVER, NORTH CAROLINA

WELL I.D.	CAP	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	LAST DATE AT OR ABOVE 2L GWQS
TYPE II MONITORING WELLS												
MW-01	X				X	X	X	X	X	X	X	10/21/1998
MW-02	X				X	X	X	X				5/15/1998
MW-03	X				X	X	X	X	X	X		1/25/1999
MW-04	X				X	X	X	X	X	X	X	1/14/1994
MW-05	X				X	X	X	X	X	X	X	1/13/1994
MW-06	X											NEVER ABOVE
MW-07	X				X	X	X	X	X	X	X	1/13/1994
MW-08	X				X	X	X	X	X	X	X	NEVER ABOVE
MW-09	X					X	X	X	X	X	X	10/8/2004
MW-10	X				X	X	X	X	X	X	X	3/27/1998
MW-11	X				X	X	X	X	X	X	X	10/8/2004
MW-12	X											1/13/1994
MW-13	X				X	X	X	X	X	X	X	10/7/2004
MW-14	X				X	X	X	X	X	X	X	1/13/1994
MW-15	X				X	X	X	X	X	X	X	3/27/1998
TYPE III MONITORING WELLS												
MW-16	X											1/20/1994
MW-17	X				X	X	X	X	X	X	X	1/20/1994
MW-18	X				X	X	X	X	X		X	1/20/1994
PUMPING WELLS												
PW-01	X											1/20/1994

1. The information presented within is based on data obtained from the following reports:
   Corrective Action Plan by CATLIN, dated September 11, 1995
   Annual Monitoring Report by Shaw, dated January 2004
2. 2004 data provided by Engineering and Environment, Inc.
3. Last date above 2L GWQS = The last date in which a contaminant of concern was above the 2L GWQS for each monitoring well, based on dates sampled.
4. Shading indicates well not located or abandoned. Data from these wells is from previously submitted reports.

TABLE 3

HISTORICAL FREE-PHASE PRODUCT THICKNESS

REMEDIAL ACTION OPTIMIZATION & REVISED CORRECTIVE ACTION PLAN

BUILDING AS-4158
MARINE CORPS AIR STATION
NEW RIVER, NORTH CAROLINA

WELL ID	MAXIMUM THICKNESS (feet)								
	CAP DATA	1998	1999	2000	2001	2002	2003	2004	2005
TYPE II MONITORING WELLS									
MW-01	NMT	NMT	NMT	NMT	NMT	NMT	NM	NMT	NMT
MW-02	NMT	NMT	NMT	NMT	NMT	NMT	NM	NMT	DRY
MW-03	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NM
MW-04	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT
MW-05	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT
MW-06	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT
MW-07	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT
MW-08	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT
MW-09	**6.03**	**0.38**	NMT	NMT	NMT	**2.90**	**2.37**	**0.10**	**0.02**
MW-10	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT
MW-11	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT
MW-12	NMT	NMT	NMT	NM	NM	NM	NM	NM	NM
MW-13	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT
MW-14	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT
MW-15	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT
TYPE III MONITORING WELLS									
MW-16	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT
MW-17	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT
MW-18	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT	NMT
PUMPING WELLS									
PW-01	NMT	NMT	NM	NM	NM	NM	NM	NM	NM

1. NM = Not Measured for product thickness.
2. NMT = No Measureable Thickness.
3. CAP data obtained from the Corrective Action Plan by CATLIN, dated September 11, 1995.
4. Historical data obtained from the Annual Monitoring Report by Shaw, dated January 2004.
5. 2004 and 2005 data provided by Engineering and Environment, Inc.
6. Bold font indicates a measureable free-phase product thickness greater than 1/8 inch.
7. Shading indicates well not located or abandoned. Data from these wells is from previously submitted reports.

TABLE 4A

SUMMARY OF HISTORICAL GROUNDWATER CONTAMINANTS OF CONCERN
TYPE II MONITORING WELLS

REMEDIAL ACTION OPTIMIZATION &
REVISED CORRECTIVE ACTION PLAN

BUILDING AS-4158
MARINE CORPS AIR STATION
NEW RIVER, NORTH CAROLINA

COMPOUND	2L GWQS (µg/L)	GCL (µg/L)	MAXIMUM CONCENTRATIONS (µg/L)							
			CAP DATA	1998	1999	2000	2001	2002	2003	2004
Benzene	1	5,000	280	1,700	110	300	180	22	69	49.5
Toluene	1,000	257,500	350	1,300	7	610	67	2	66	7.3
Ethylbenzene	29	29,000	90	440	86	550	43	10	43	6.0
Total Xylenes	530	87,500	510	2,020	470	1,280	154	156	400	62.3
Methyl-tert-butyl ether	200	200,000	130	150	28	69	62	67	26	47.4
1-Methylnaphthalene	NE	NE	3.4	12	17,000	51	63	1,600	3,000	<110
2-Methylnaphthalene	28	12,500	2.9	14	90,000	23	35	2,600	3,800	<110
Acenaphthene	80	2,120	2.8	BQL	17	BQL	17	210	300	<110
Acenaphthylene	210	1,965	NA	NA	NA	NA	NA	NA	NA	<110
Anthracene	2,100	2,100	1.2	BQL	11,000	BQL	BQL	BQL	BQL	<110
Benzo (a) anthracene	0.05	22	3.4	NA	NA	NA	NA	NA	NA	<110
Chrysene	5	5	ND	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	280	280	1.9	NA	NA	NA	NA	NA	NA	<110
Fluorene	280	950	NA	BQL	89	20	BQL	400	BQL	<110
Naphthalene	21	15,500	5.8	64	68	90	54	860	1,500	<110
Phenanthrene	210	410	3.0	BQL	11,000	20	23	850	1,300	<110
Pyrene	210	210	NA	BQL	22	30	14	BQL	200	<110
Bromoform	NE	NE	ND	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NE	NE	ND	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.00019	190	2.7	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NE	NE	ND	NA	NA	NA	NA	NA	NA	NA
Lead	15	15,000	ND	NA	NA	NA	NA	NA	NA	NA

1. NE = Not established. Therefore, the 2L GWQS for the constituent is the reporting limit.
2. NA= Not Analyzed.
3. J = Estimated concentration less than reporting limit.
4. BQL = Below Quantitation Limits.
5. Shading represents concentrations at or above 2L GWQS.
6. CAP data obtained from the Corrective Action Plan by CATLIN, dated September 11, 1995.
7. Historical data obtained from the Annual Monitoring Report by Shaw, dated January 2004.
8. 2004 data provided by Engineering and Environment, Inc.
9. All other compounds analyzed were below laboratory method/quantitation detection limits or historically below 2L GWQS.
10. ND = Not Detected.

TABLE 4B

SUMMARY OF HISTORICAL GROUNDWATER CONTAMINANTS OF CONCERN
TYPE III MONITORING WELLS

REMEDIAL ACTION OPTIMIZATION &
REVISED CORRECTIVE ACTION PLAN

BUILDING AS-4158
MARINE CORPS AIR STATION
NEW RIVER, NORTH CAROLINA

COMPOUND	2L GWQS (µg/L)	GCL (µg/L)	MAXIMUM CONCENTRATIONS (µg/L)							
			CAP DATA	1998	1999	2000	2001	2002	2003	2004
Benzene	1	5,000	ND	BQL	BQL	BQL	BQL	BQL	BQL	<1.0
Toluene	1,000	257,500	0.6	BQL	BQL	BQL	BQL	BQL	BQL	<1.0
Ethylbenzene	29	29,000	1.3	BQL	BQL	BQL	BQL	BQL	BQL	<1.0
Total Xylenes	530	87,500	4.1	BQL	BQL	BQL	BQL	BQL	BQL	<3.0
Methyl-tert-butyl ether	200	200,000	ND	BQL	BQL	3	8	10	5	31.9
1-Methylnaphthalene	NE	NE	ND	BQL	BQL	BQL	BQL	BQL	BQL	<5.1
2-Methylnaphthalene	28	12,500	ND	BQL	BQL	BQL	BQL	BQL	BQL	<5.1
Acenaphthene	80	2,120	ND	BQL	BQL	BQL	BQL	BQL	BQL	<5.1
Acenaphthylene	210	1,965	NA	NA	NA	NA	NA	NA	NA	<5.1
Anthracene	2,100	2,100	ND	BQL	BQL	BQL	BQL	BQL	BQL	<5.1
Benzo (a) anthracene	0.05	22	ND	NA	NA	NA	NA	NA	NA	<5.1
Chrysene	5	5	7.0	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	280	280	ND	NA	NA	NA	NA	NA	NA	<5.1
Fluorene	280	950	NA	BQL	BQL	BQL	BQL	BQL	BQL	<5.1
Naphthalene	21	15,500	ND	BQL	BQL	BQL	BQL	BQL	BQL	<5.1
Phenanthrene	210	410	ND	BQL	BQL	BQL	BQL	BQL	BQL	<5.1
Pyrene	210	210	NA	BQL	BQL	BQL	BQL	BQL	BQL	<5.1
Bromoform	NE	NE	2.3	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NE	NE	0.7	NA	NA	NA	NA	NA	NA	NA
Chloroform	0.00019	190	ND	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NE	NE	1.6	NA	NA	NA	NA	NA	NA	NA
Lead	15	15,000	NA	NA	NA	NA	NA	NA	NA	NA

1. NE = Not established. Therefore, the 2L GWQS for the constituent is the reporting limit.
2. NA= Not Analyzed.
3. J = Estimated concentration less than reporting limit.
4. BQL = Below Quantitation Limits.
5. Shading represents concentrations at or above 2L GWQS.
6. CAP data obtained from the Corrective Action Plan by CATLIN, dated September 11, 1995.
7. Historical data obtained from the Annual Monitoring Report by Shaw, dated January 2004.
8. 2004 data provided by Engineering and Environment, Inc.
9. All other compounds analyzed were below laboratory method/quantitation detection limits or historically below 2L GWQS.
10. ND = Not Detected.

TABLE 5

REVISED TARGET CLEANUP CONCENTRATIONS

REMEDIAL ACTION OPTIMIZATION & REVISED CORRECTIVE ACTION PLAN

BUILDING AS-4158 MARINE CORPS AIR STATION NEW RIVER, NORTH CAROLINA

MEDIUM	COMPONENT	CURRENT CONDITIONS	TARGET CLEANUP
FREE-PHASE PRODUCT	Gasoline/Diesel	0.10	<1/8"
TYPE II MONITORING WELLS			
GROUNDWATER			***2L GWQS***
	Benzene	49.5	1
	Toluene	7.3	1,000
	Ethylbenzene	6.0	29
	Total Xylenes	62.3	530
	Methyl-tert-butyl ether	47.4	200
	1-Methylnaphthalene	<110	NE
	2-Methylnaphthalene	<110	28
	Acenaphthene	<110	80
	Acenaphthylene	<110	210
	Anthracene	<110	2,100
	Benzo (a) anthracene	<110	0.05
	Chrysene	NA	5
	Fluoranthene	<110	280
	Fluorene	<110	280
	Naphthalene	<110	21
	Phenanthrene	<110	210
	Pyrene	<110	210
	Bromoform	NA	NE
	Bromodichloromethane	NA	NE
	Chloroform	NA	0.00019
	Dibromochloromethane	NA	NE
	Lead	NA	15

TABLE 5

REVISED TARGET CLEANUP CONCENTRATIONS

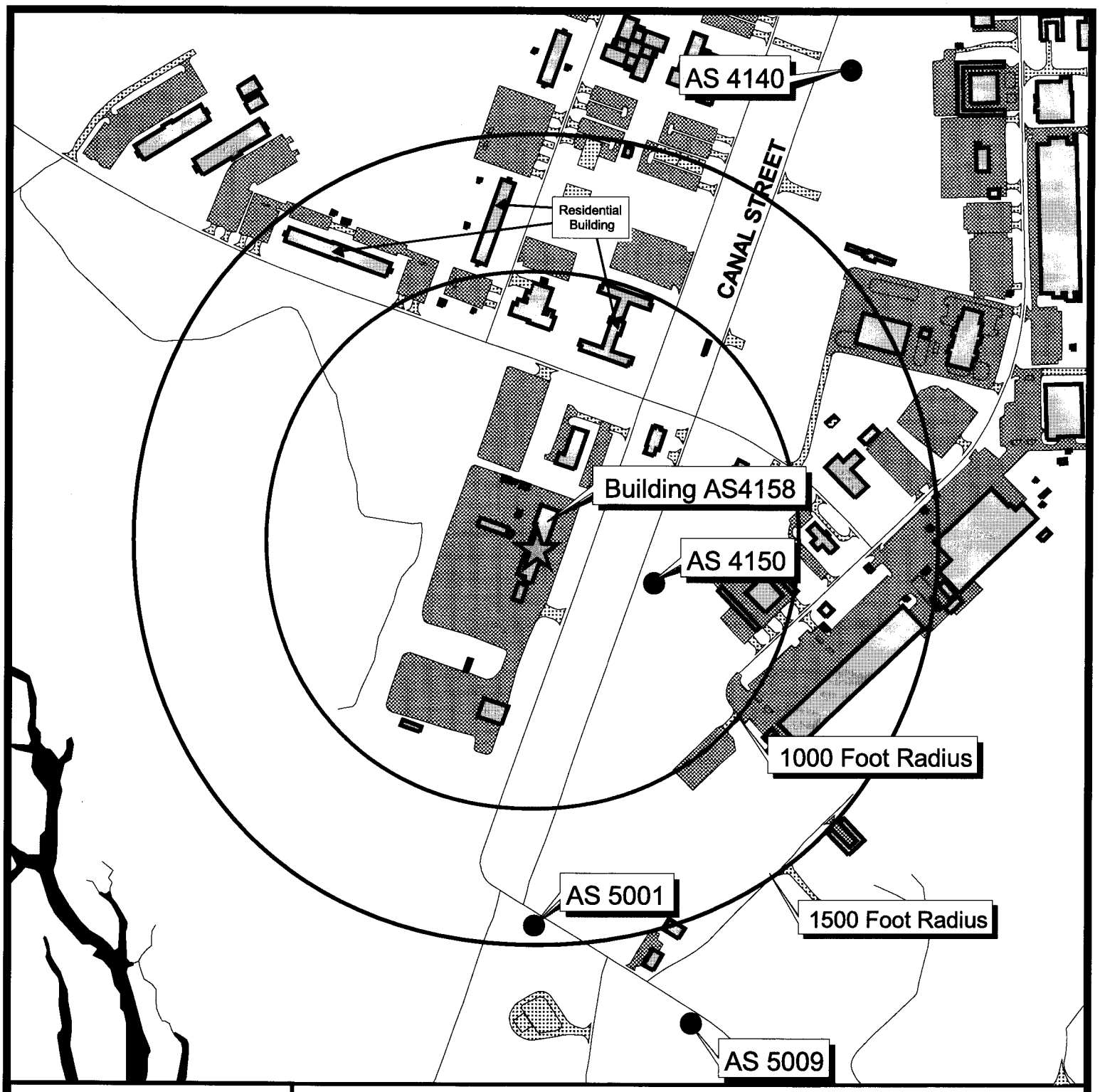
REMEDIAL ACTION OPTIMIZATION & REVISED CORRECTIVE ACTION PLAN

BUILDING AS-4158 MARINE CORPS AIR STATION NEW RIVER, NORTH CAROLINA

MEDIUM	COMPONENT	CURRENT CONDITIONS	TARGET CLEANUP
TYPE III MONITORING WELLS			
			2L GWQS
	Benzene	<1.0	1
	Toluene	<1.0	1,000
	Ethylbenzene	<1.0	29
	Total Xylenes	<3.0	530
	Methyl-tert-butyl ether	31.9	200
	1-Methylnaphthalene	<5.1	NE
	2-Methylnaphthalene	<5.1	28
	Acenaphthene	<5.1	80
	Acenaphthylene	<5.1	210
	Anthracene	<5.1	2,100
GROUNDWATER	Benzo (a) anthracene	<5.1	0.05
	Chrysene	NA	5
	Fluoranthene	<5.1	280
	Fluorene	<5.1	280
	Naphthalene	<5.1	21
	Phenanthrene	<5.1	210
	Pyrene	<5.1	210
	Bromoform	NA	NE
	Bromodichloromethane	NA	NE
	Chloroform	NA	0.00019
	Dibromochloromethane	NA	NE
	Lead	NA	15

1. NE = Not established. Therefore, the NCGWQS for the constituent is the reporting limit.
2. NA= Not Analyzed
3. Current conditions represent the most recent data as of this report provided by Engineering and Environment, Inc. (2004 data).
4. Groundwater current conditions and target cleanup concentrations are in µg/L.
5. Shading indicates concentrations at or above 2L GWQS.

FIGURES



LEGEND

Water Supply Wells
- ACTIVE
- CLOSED
- INACTIVE
- PENDING

Roads
Railroads
Recreational Horse Trail
Buildings and Structures
Parking Lots
Playgrounds
Driveways
Athletic Fields
Athletic Courts
Surface Water
Creeks
Surface Water

500 0 500 Feet

SCALE

N
W E
S

CATLIN ENGINEERS and SCIENTISTS

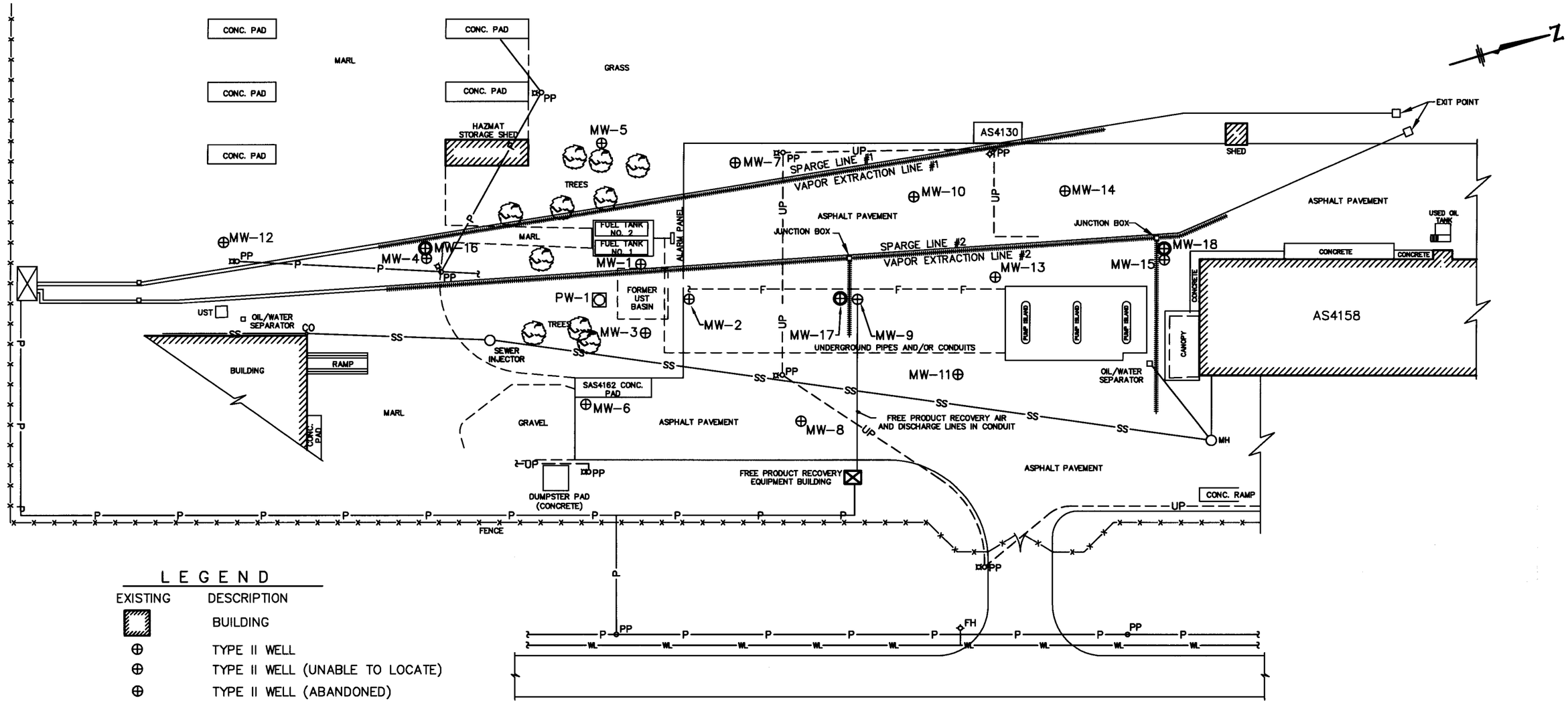
DRAWN BY:	CHECK BY:	APPROVED BY:
THW	JKB	

CATLIN PROJECT No.: 203-063

SITE LOCATION MAP

BUILDING AS-4158
1500 ft. RADIUS WITH RECEPTORS

FIGURE 1



LEGEND

EXISTING	DESCRIPTION
	BUILDING
⊕	TYPE II WELL
⊕	TYPE II WELL (UNABLE TO LOCATE)
⊕	TYPE II WELL (ABANDONED)
⊕	TYPE III WELL
	PUMPING WELL (UNABLE TO LOCATE)
	SVE WELL SCREEN
SS	SANITARY SEWER
W	WATERLINE W/VALVE
PP P	POWER LINE W/POLE
UP	UNDERGROUND POWER
F	INACTIVE FUEL LINE
FH	FIRE HYDRANT
MH	MANHOLE
	AREA LIGHT

60 30 0 60

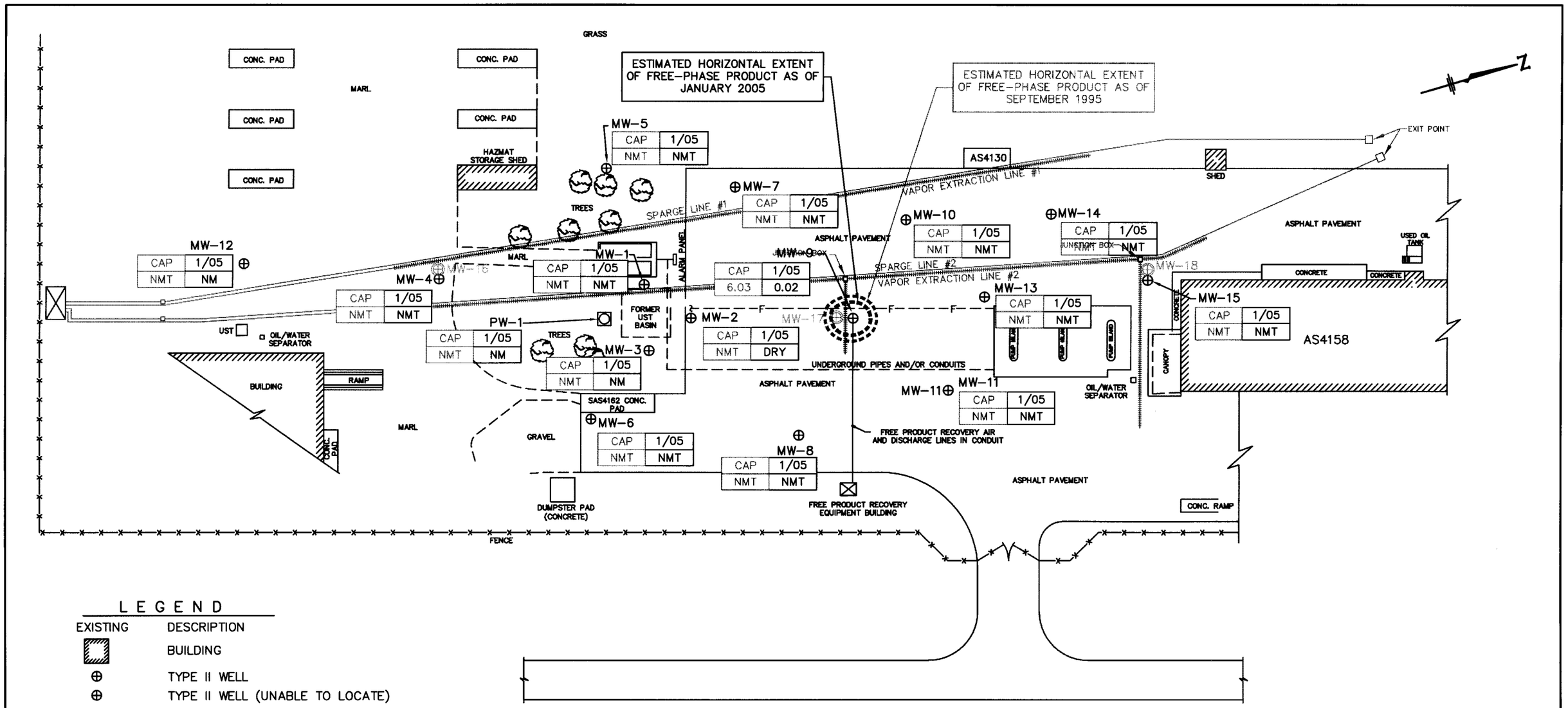
SCALE IN FEET

NOTE:
1. DRAWING ADAPTED FROM THE 2002 ANNUAL MONITORING REPORT SITE PLAN BY J.A. JONES ENVIRONMENTAL SERVICES, DATED DECEMBER 2002.

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT	BUILDING AS-4158 RAO & RCAP MARINE CORPS AIR STATION NEW RIVER, N.C.
JOB NO.	203-063
DATE:	MAR 2005
TITLE	SITE MAP WITH CURRENT REMEDIATION SYSTEM LAYOUT
SCALE:	1'=60'
DRAWN BY:	HCS
CHECKED BY:	JKB
FIGURE	2

203063-AS4158-02



LEGEND

EXISTING	DESCRIPTION
▢	BUILDING
⊕	TYPE II WELL
⊕	TYPE II WELL (UNABLE TO LOCATE)
⊕	TYPE II WELL (ABANDONED)
⊕	TYPE III WELL
▣	PUMPING WELL (UNABLE TO LOCATE)
▪▪▪▪▪	SVE WELL SCREEN
NM	NOT MEASURED
NMT	NO MEASURABLE THICKNESS

GAUGING DATE
FREE-PHASE PRODUCT THICKNESS IN FEET

60 30 0 60

SCALE IN FEET

NOTE:
1. DRAWING ADAPTED FROM THE 2002 ANNUAL MONITORING REPORT SITE PLAN BY J.A. JONES ENVIRONMENTAL SERVICES, DATED DECEMBER 2002.
2. CAP DATA OBTAINED FROM CATLIN & ASSOCIATES, INC., CAP, DATED SEPTEMBER 1995.
3. JANUARY 2005 GAUGING DATA PROVIDED BY ENGINEERING AND ENVIRONMENT.

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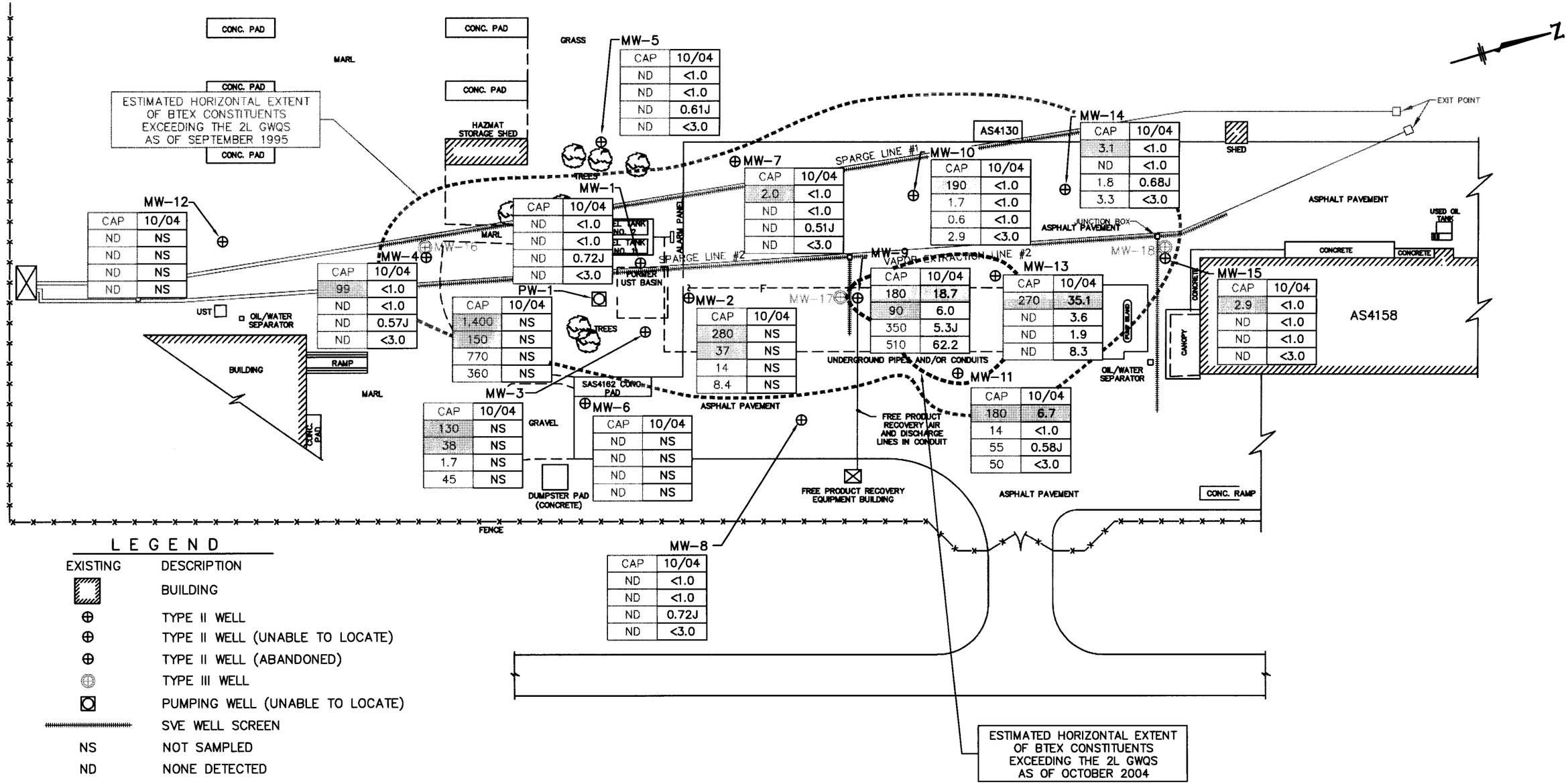
PROJECT	TITLE	FIGURE
BUILDING AS-4158 RAO & RCAP MARINE CORPS AIR STATION NEW RIVER, N.C.	FREE-PHASE PRODUCT PLUME COMPARISON MAP	3

JOB NO.	DATE	SCALE	DRAWN BY	CHECKED BY
203-063	MAR 2005	1'=60'	HCS	JKB

203063-AS4158-03



LEGEND

EXISTING	DESCRIPTION
▨	BUILDING
⊕	TYPE II WELL
⊕	TYPE II WELL (UNABLE TO LOCATE)
⊕	TYPE II WELL (ABANDONED)
⊕	TYPE III WELL
⊠	PUMPING WELL (UNABLE TO LOCATE)
▬▬▬	SVE WELL SCREEN
NS	NOT SAMPLED
ND	NONE DETECTED
J	ESTIMATED CONCENTRATION LESS THAN REPORTING LIMIT

SAMPLING DATE	2L GWQS (µg/L)
BENZENE	1
ETHYLBENZENE	29
TOLUENE	1,000
TOTAL XYLENES	530

60 30 0 60

SCALE IN FEET

NOTE:
1. DRAWING ADAPTED FROM THE 2002 ANNUAL MONITORING REPORT SITE PLAN BY J.A. JONES ENVIRONMENTAL SERVICES, DATED DECEMBER 2002.
2. CAP DATA OBTAINED FROM CATLIN & ASSOCIATES, INC., CAP, DATED SEPTEMBER 1995.
3. OCTOBER 2004 SAMPLING DATA PROVIDED BY ENGINEERING AND ENVIRONMENT, INC.
4. ALL RESULTS IN µg/L.
5. SHADED CONCENTRATIONS EXCEED 2L GQWS.

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

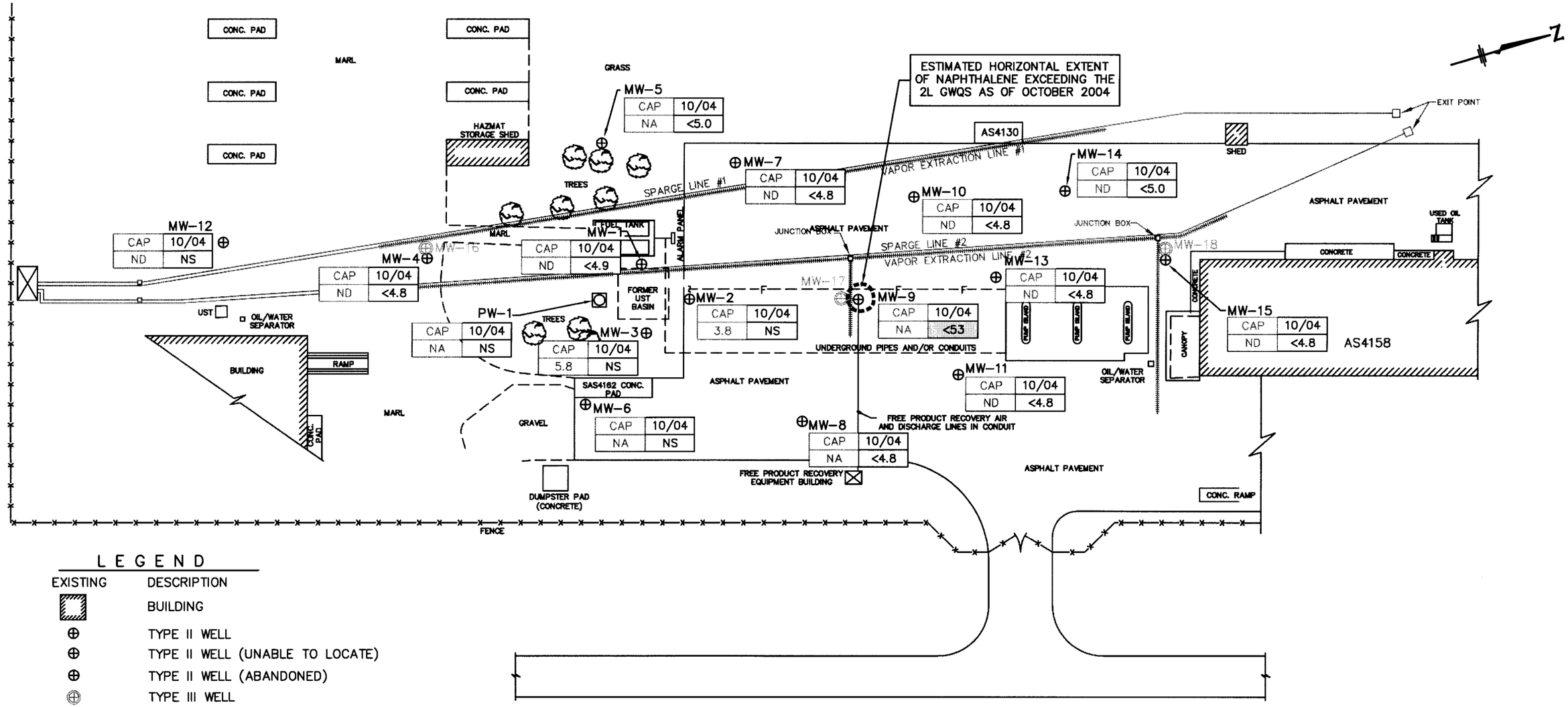
PROJECT: BUILDING AS-4158 RAO & RCAP MARINE CORPS AIR STATION NEW RIVER, N.C.

TITLE: HISTORICAL LABORATORY ANALYTICAL RESULTS – BTEX – GROUNDWATER – SHALLOW CONDITIONS

FIGURE 4

JOB NO. 203-063 | DATE: MAR 2005 | SCALE: 1'=60' | DRAWN BY: HCS | CHECKED BY: JKB

203063-AS4158-04



LEGEND

EXISTING	DESCRIPTION
	BUILDING
⊕	TYPE II WELL
⊕	TYPE II WELL (UNABLE TO LOCATE)
⊕	TYPE II WELL (ABANDONED)
⊕	TYPE III WELL
	PUMPING WELL (UNABLE TO LOCATE)
	SVE WELL SCREEN
NA	NOT ANALYZED FOR NAPHTHALENE
NS	NOT SAMPLED
ND	NOT DETECTED
J	ESTIMATED CONCENTRATION LESS THAN REPORTING LIMIT

SAMPLING DATE	2L GWQS (µg/L)
NAPHTHALENE CONCNETRATION	21

60 30 0 60

SCALE IN FEET

NOTE:
1. DRAWING ADAPTED FROM THE 2002 ANNUAL MONITORING REPORT SITE PLAN BY J.A. JONES ENVIRONMENTAL SERVICES, DATED DECEMBER 2002.
2. CAP DATA OBTAINED FROM CATLIN & ASSOCIATES, INC., CAP, DATED SEPTEMBER 1995.
3. OCTOBER 2004 SAMPLING DATA PROVIDED BY ENGINEERING AND ENVIRONMENT, INC.
4. ALL RESULTS IN µg/L.
5. SHADED CONCENTRATIONS EXCEED THE 2L GWQS.

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

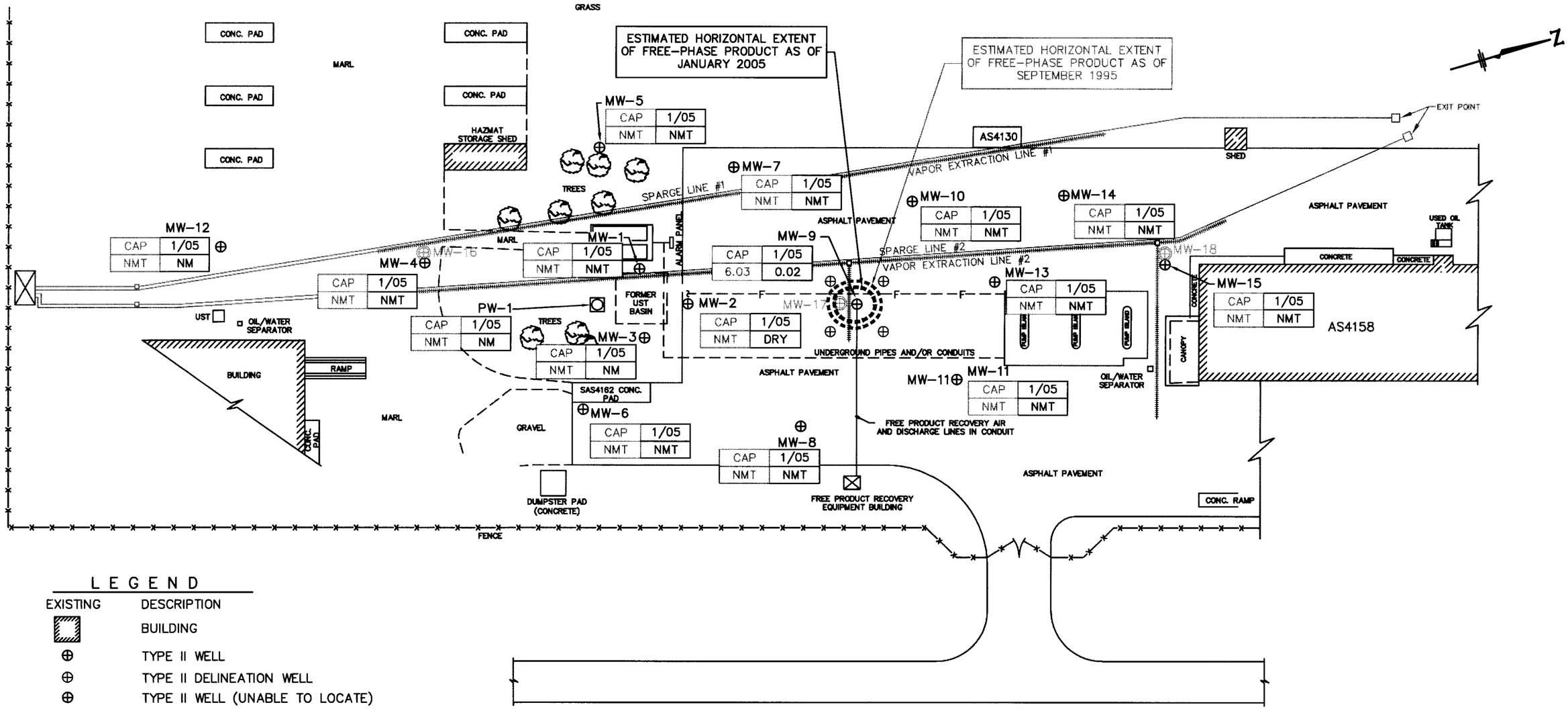
PROJECT: BUILDING AS-4158 RAO & RCAP MARINE CORPS AIR STATION NEW RIVER, N.C.

TITLE: HISTORICAL LABORATORY ANALYTICAL RESULTS – NAPHTHALENE – GROUNDWATER – SHALLOW CONDITIONS

FIGURE 5

JOB NO. 203-063 | DATE: MAR 2005 | SCALE: 1'=60' | DRAWN BY: HCS | CHECKED BY: JKB

203063-AS4158-05



LEGEND

EXISTING	DESCRIPTION
▨	BUILDING
⊕	TYPE II WELL
⊕	TYPE II DELINEATION WELL
⊕	TYPE II WELL (UNABLE TO LOCATE)
⊕	TYPE II WELL (ABANDONED)
⊕	TYPE III WELL
▣	PUMPING WELL (UNABLE TO LOCATE)
▪▪▪▪▪▪	SVE WELL SCREEN
NM	NOT MEASURED
NMT	NO MEASURABLE THICKNESS

GAUGING DATE
FREE-PHASE PRODUCT THICKNESS IN FEET

60 30 0 60

SCALE IN FEET

NOTE:
1. DRAWING ADAPTED FROM THE 2002 ANNUAL MONITORING REPORT SITE PLAN BY J.A. JONES ENVIRONMENTAL SERVICES, DATED DECEMBER 2002.
2. CAP DATA OBTAINED FROM CATLIN & ASSOCIATES, INC., CAP, DATED SEPTEMBER 1995.
3. JANUARY 2005 GAUGING DATA PROVIDED BY ENGINEERING AND ENVIRONMENT.

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT	TITLE	FIGURE
BUILDING AS-4158 RAO & RCAP MARINE CORPS AIR STATION NEW RIVER, N.C.	FREE-PHASE PRODUCT PLUME DELINEATION WELLS	6

JOB NO. 203-063 | DATE: MAR 2005 | SCALE: 1'=60' | DRAWN BY: HCS | CHECKED BY: JKB

203063-AS4158-06

APPENDIX A

SUMMARY OF HISTORICAL SOIL LABORATORY RESULTS

DATA OBTAINED FROM

CORRECTIVE ACTION PLAN

BY CATLIN

TABLE 2.1 (Page 1 of 2)
SUMMARY OF LABORATORY ANALYTICAL RESULTS -- SOIL
BUILDING AS-4158
MARINE CORPS AIR STATION
NEW RIVER, NORTH CAROLINA

SAMPLE LOCATION	SAMPLE DEPTH	LABORATORY RESULTS				
		TPH-GASOLINE (mg/ Kg)	TPH-DIESEL (mg/ Kg)	LEAD (ug/ l)	FLASH POINT (DEGREES F)	pH
MW4	3.5'-5.5'	1.2	ND	--	--	--
MW4	8.5'-10.5'	ND	ND	--	--	--
MW5	3.5'-5.5'	ND	ND	--	--	--
MW5	8.5'-10.5'	ND	ND	1.0	NF	4.75
MW6	3.5'-5.5'	ND	ND	--	--	--
MW6	8.5'-10.5'	ND	ND	--	--	--
MW6	13.5'-15.5'	--	--	--	NF	4.40
MW7	3.5'-5.5'	ND	ND	--	--	--
MW7	8.5'-10.5'	ND	ND	--	NF	5.20
MW8	3.5'-5.5'	ND	ND	--	--	--
MW8	8.5'-10.5'	ND	ND	--	--	--
MW9	3.5'-5.5'	4.3	33	--	--	--
MW9	8.5'-10.5'	180 / ND	1200 / 3400	1.5	NF	4.72
MW10	3.5'-5.5'	ND	ND	--	--	--
MW10	8.5'-10.5'	ND	ND	--	--	--
MW11	3.5'-5.5'	ND	3.0	4.0	NF	4.22
MW11	8.5'-10.5'	ND / ND	ND / 17	--	--	--

Shaded areas indicate concentration levels above NC soil remediation guidelines.
-- Sample not analyzed for this parameter.
ND Not Detected
NF No Flash (>200 ° F)

NC Action Level For:
Low Boiling Point Hydrocarbons (Gasoline) = 10 mg/Kg
Medium Boiling Point Hydrocarbons (Diesel) = 40 mg/Kg

TABLE 2.1 (Page 2 of 2)
SUMMARY OF LABORATORY ANALYTICAL RESULTS -- SOIL
BUILDING AS-4158
MARINE CORPS AIR STAION
NEW RIVER, NORTH CAROLINA

SAMPLE LOCATION	SAMPLE DEPTH	LABORATORY RESULTS				
		TPH-GASOLINE (mg/ Kg)	TPH-DIESEL (mg/ Kg)	LEAD (ug/ l)	FLASH POINT (DEGREES F)	pH
MW12	3.5'-5.5'	ND	ND	--	--	--
MW12	8.5'-10.5'	ND	ND	6.5	NF	4.53
MW13	3.5'-5.5'	0.87	ND	--	--	--
MW13	8.5'-10.5'	0.24	ND	--	NF	5.31
MW14	3.5'-5.5'	ND	ND	--	--	--
MW14	8.5'-10.5'	ND	ND	--	NF	4.80
MW15	3.5'-5.5'	ND	3.3	--	--	--
MW15	8.5'-10.5'	ND	ND	--	NF	5.49
MW16	1.5'-3.5'	ND	ND	--	--	--
MW16	6.5'-8.5'	ND	ND	--	--	--
MW17	1.5'-3.5'	ND	ND	--	--	--
MW17	6.5'-8.5'	ND | ND	5.7 | ND	--	--	--
MW18	1.5'-3.5'	ND	ND	--	--	--
MW18	6.5'-8.5'	ND | ND	ND | ND	--	--	--
PW-1	3.5'-5.5'	ND	ND	--	--	--
PW-1	8.5'-10.5'	ND	ND	--	--	--

Shaded areas indicate concentration levels above NC soil remediation guidelines.
-- Sample not analyzed for this parameter.
ND Not Detected
NF No Flash (>200 ° F)

NC Action Level For:
Low Boiling Point Hydrocarbons (Gasoline) = 10 mg/Kg
Medium Boiling Point Hydrocarbons (Diesel) = 40 mg/Kg

DATA OBTAINED FROM

SOIL ASSESSMENT REPORT

BY CATLIN

TABLE 3A SUMMARY OF SOIL LABORATORY RESULTS

Date: September 2004 Incident Number and Name: 10804- Building AS-4158 Facility ID#: N/A

Analytical Method: EPA Method 8260B/5035

Sample ID	Contaminant of Concern →		All Target Analytes
	Date Collected	Sample Depth (ft. BLS)	
Residential MSCC (mg/kg) Industrial/Commercial MSCC (mg/kg) Soil to Groundwater MSCC (mg/kg)			Varies Varies Varies
USTAS4158-SB01(3-4)	9/20/2004	(3-4)	BQL
USTAS4158-SB02(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB03(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB04(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB05(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB06(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB07(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB08(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB09(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB10(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB11(3-4)	9/20/2004	(3-4)	BQL
USTAS4158-SB12(3-4)	9/20/2004	(3-4)	BQL
USTAS4158-SB13(3-4)	9/20/2004	(3-4)	BQL
USTAS4158-SB14(3-4)	9/20/2004	(3-4)	BQL
USTAS4158-SB15(3-4)	9/20/2004	(3-4)	BQL
USTAS4158-SB16(3-4)	9/20/2004	(3-4)	BQL
USTAS4158-SB16(3-4)Dup	9/20/2004	(3-4)	BQL

All results in mg/kg.
ft. BLS = feet below land surface
BQL = Below Quantitation Limits

TABLE 3B SUMMARY OF SOIL LABORATORY RESULTS

Date: September 2004 Incident Number and Name: 10804- Building AS-4158 Facility ID#: N/A

Analytical Method: EPA Method 8270

Sample ID	Contaminant of Concern → Date Collected	Sample Depth (ft. BLS)	Benzoic Acid	All Other Target Analytes
Residential MSCC (mg/kg)			62,571	Varies
Industrial/Commercial MSCC (mg/kg)			1,635,200	Varies
Soil to Groundwater MSCC (mg/kg)			112	Varies
USTAS4158-SB01(3-4)	9/20/2004	(3-4)	<0.743	BQL
USTAS4158-SB02(3-4)	9/21/2004	(3-4)	2.99	BQL
USTAS4158-SB03(3-4)	9/21/2004	(3-4)	0.811	BQL
USTAS4158-SB04(3-4)	9/21/2004	(3-4)	1.34	BQL
USTAS4158-SB05(3-4)	9/21/2004	(3-4)	<0.674	BQL
USTAS4158-SB06(3-4)	9/21/2004	(3-4)	<0.721	BQL
USTAS4158-SB07(3-4)	9/21/2004	(3-4)	<0.741	BQL
USTAS4158-SB08(3-4)	9/21/2004	(3-4)	<0.663	BQL
USTAS4158-SB09(3-4)	9/21/2004	(3-4)	<0.817	BQL
USTAS4158-SB10(3-4)	9/21/2004	(3-4)	<0.906	BQL
USTAS4158-SB11(3-4)	9/20/2004	(3-4)	<0.686	BQL
USTAS4158-SB12(3-4)	9/20/2004	(3-4)	<0.681	BQL
USTAS4158-SB13(3-4)	9/20/2004	(3-4)	<0.851	BQL
USTAS4158-SB14(3-4)	9/20/2004	(3-4)	<0.753	BQL
USTAS4158-SB15(3-4)	9/20/2004	(3-4)	<0.805	BQL
USTAS4158-SB16(3-4)	9/20/2004	(3-4)	<0.787	BQL
USTAS4158-SB16(3-4)Dup	9/20/2004	(3-4)	<0.916	BQL

All results in mg/kg.
ft. BLS = feet below land surface
BQL = Below Qauntitation Limits

TABLE 3C SUMMARY OF SOIL LABORATORY RESULTS

Date: September 2004 Incident Number and Name: 10804- Building AS-4158 Facility ID#: N/A

Analytical Method: MADEP VPH/EPH

Sample ID	Contaminant of Concern →		C9-C18 Aliphatics	C19-C36 Aliphatics	C11-C22 Aromatics	C5-C8 Aliphatics	C9-C12 Aliphatics	C9-C10 Aromatics
	Date Collected	Sample Depth (ft. BLS)						
USTAS4158-SB01(3-4)	9/20/2004	(3-4)	<10	<10	<10	<10	<10	<10
USTAS4158-SB02(3-4)	9/21/2004	(3-4)	<10	<10	<10	<10	<10	<10
USTAS4158-SB03(3-4)	9/21/2004	(3-4)	<10	<10	<10	<10	<10	<10
USTAS4158-SB04(3-4)	9/21/2004	(3-4)	<10	<10	<10	<10	<10	<10
USTAS4158-SB05(3-4)	9/21/2004	(3-4)	<10	<10	<10	<10	<10	<10
USTAS4158-SB06(3-4)	9/21/2004	(3-4)	<10	<10	<10	<10	<10	<10
USTAS4158-SB07(3-4)	9/21/2004	(3-4)	<10	<10	<10	<10	<10	<10
USTAS4158-SB08(3-4)	9/21/2004	(3-4)	<10	<10	<10	<10	<10	<10
USTAS4158-SB09(3-4)	9/21/2004	(3-4)	<10	<10	<10	<10	<10	<10
USTAS4158-SB10(3-4)	9/21/2004	(3-4)	<10	<10	<10	<10	<10	<10
USTAS4158-SB11(3-4)	9/20/2004	(3-4)	<10	<10	<10	<10	<10	<10
USTAS4158-SB12(3-4)	9/20/2004	(3-4)	<10	<10	<10	<10	<10	<10
USTAS4158-SB13(3-4)	9/20/2004	(3-4)	<10	<10	<10	<10	<10	<10
USTAS4158-SB14(3-4)	9/20/2004	(3-4)	<10	<10	<10	<10	<10	<10
USTAS4158-SB15(3-4)	9/20/2004	(3-4)	<10	<10	<10	<10	<10	<10
USTAS4158-SB16(3-4)	9/20/2004	(3-4)	<10	<10	<10	<10	<10	<10
USTAS4158-SB16(3-4)Dup	9/20/2004	(3-4)	<10	<10	<10	<10	<10	<10

All results in mg/kg.

ft. BLS = feet below land surface

TABLE 3D SUMMARY OF SOIL LABORATORY RESULTS

Date: September 2004 Incident Number and Name: 10804- Building AS-4158 Facility ID#: N/A

Analytical Method: MADEP VPH/EPH AS COMPARED TO NCDENR MSCCs

Sample ID	Date Collected	Sample Depth (ft. BLS)	C5-C8 Aliphatics	C9-C18 Aliphatics	C19-C36 Aliphatics	C9-C22 Aromatics
Contaminant of Concern →						
Residential MSCC (mg/kg)			939	9,386	93,860	469
Industrial/Commercial MSCC (mg/kg)			24,528	245,280	#	12,264
Soil to Groundwater MSCC (mg/kg)			72	3,255	##	34
USTAS4158-SB01(3-4)	9/20/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB02(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB03(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB04(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB05(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB06(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB07(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB08(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB09(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB10(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB11(3-4)	9/20/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB12(3-4)	9/20/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB13(3-4)	9/20/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB14(3-4)	9/20/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB15(3-4)	9/20/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB16(3-4)	9/20/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB16(3-4)Dup	9/20/2004	(3-4)	<10	<20	<10	<20

All results in mg/kg.
ft. BLS = feet below land surface
Health based level > 100%
Considered immoble

APPENDIX B

SUMMARY OF HISTORICAL GROUNDWATER LABORATORY RESULTS

DATA OBTAINED FROM

CORRECTIVE ACTION PLAN

BY CATLIN

TABLE 2.2 (Page 1 of 3)

SUMMARY OF LABORATORY ANALYTICAL RESULTS
GROUND WATER (MONITORING WELLS)
BUILDING AS-4158
MARINE CORPS AIR STATION
NEW RIVER, NORTH CAROLINA

PARAMETER	WELL #	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	N.C. GROUNDWATER STANDARDS (ug/ l)
	SCREENED INTERVAL (FT.)	5.0'-20.0'	5.0'-20.0'	5.0'-20.0'	6.0'-16.0'	6.0'-16.0	6.0'-16.0'	6.0'-16.0'	
	DATE SAMPLED	1/13/94	1/14/94	1/14/94	1/14/94 - 12/28/93	1/13/94- 12/28/93	1/13/94 - 12/28/93	1/13/94	
EPA METHOD 601									
Bromoform		--	--	--	ND	ND	ND	ND	0.19
Dibromochloromethane		--	--	--	ND	ND	ND	ND	**
Bromodichloromethane		--	--	--	ND	ND	ND	ND	**
Chloroform		--	--	--	ND	2.7	ND	ND	0.19
EPA METHOD 602									
Benzene		ND	280	130	99	ND	ND	2.0	1
Toluene		ND	14	1.7	ND	ND	ND	ND	1000
Ethylbenzene		ND	37	38	ND	ND	ND	ND	29
Xylenes (Total)		ND	8.4	45	ND	ND	ND	ND	530
MTBE		*	10	7.2	*	*	*	ND	200
EPA METHOD 610									
Acenaphthene		ND	ND	ND	ND	--	--	ND	**
Anthracene		ND	1.2	ND	ND	--	--	ND	**
Benzo (a) anthracene		ND	ND	ND	ND	--	--	ND	**
Chrysene		ND	ND	ND	ND	--	--	ND	**
Fluoranthene		ND	ND	ND	ND	--	--	ND	**
1-Methylnaphthalene		ND	3.4	ND	ND	--	--	ND	**
2-Methylnaphthalene		ND	2.9	1.8	ND	--	--	ND	**
Naphthalene		ND	3.8	5.8	ND	--	--	ND	21
Phenanthrene		ND	3.0	2.1	ND	--	--	ND	210
Lead		--	ND	--	ND	--	--	--	15

All results in ug/L (ppb)
* Not Analyzed; MTBE is not included in on-site laboratory 602 Analysis
ND = Not Detected

Shaded areas indicated concentrations levels above NC Groundwater Standards
** NC Standard - Laboratory Detection Limit
-- Sample not analyzed for this parameter.

TABLE 2.2 (Page 2 of 3)

SUMMARY OF LABORATORY ANALYTICAL RESULTS
GROUND WATER (MONITORING WELLS)
BUILDING AS-4158
MARINE CORPS AIR STATION
NEW RIVER, NORTH CAROLINA

PARAMETER	WELL #	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-14	N.C. GROUNDWATER STANDARDS (ug/ l)
	SCREENED INTERVAL (FT.)	6.5'-16.5'	6.5'-16.5'	6.0'-16.0'	6.5'-16.5'	5.5'-15.5'	6.5'-16.5'	6.0'-16.0'	
	DATE SAMPLED	12/28/93	1/14/94	1/13/94	1/13/94	1/13/94	1/13/94	1/13/94	
EPA METHOD 601									
Bromoform		ND	ND	ND	ND	ND	ND	ND	0.19
Dibromochloromethane		ND	ND	ND	ND	ND	ND	ND	**
Bromodichloromethane		ND	ND	ND	ND	ND	ND	ND	**
Chloroform		ND	ND	ND	ND	ND	ND	ND	0.19
EPA METHOD 602									
Benzene		ND	180	190	180	ND	270	3.1	1
Toluene		ND	350	.06	55	ND	9.7	1.8	1000
Ethylbenzene		ND	90	1.7	14	ND	ND	ND	29
Xylenes (Total)		ND	510	2.9	50	ND	440	3.3	530
MTBE		*	130	ND	ND	*	*	*	200
EPA METHOD 610									
Acenaphthene		--	--	ND	ND	ND	2.8	2.4	**
Anthracene		--	--	ND	ND	ND	ND	ND	**
Benzo (a) anthracene		--	--	ND	ND	2.9	ND	ND	**
Chrysene		--	--	ND	ND	ND	ND	ND	**
Fluoranthene		--	--	ND	ND	ND	ND	ND	**
1-Methylnaphthalene		--	--	ND	ND	ND	ND	ND	**
2-Methylnaphthalene		--	--	ND	ND	ND	ND	ND	**
Naphthalene		--	--	ND	ND	ND	ND	ND	21
Phenanthrene		--	--	ND	ND	ND	ND	ND	210
Lead		--	--	--	--	ND	ND	ND	15

All results in ug/L (ppb)
* Not Analyzed; MTBE is not included in on-site laboratory 602 Analysis
ND = Not Detected

Shaded areas indicated concentrations levels above NC Groundwater Standards
** NC Standard - Laboratory Detection Limit
-- Sample not analyzed for this parameter.

TABLE 2.2 (Page 3 of 3)

SUMMARY OF LABORATORY ANALYTICAL RESULTS
GROUND WATER (MONITORING WELLS)
BUILDING AS-4158
MARINE CORPS AIR STATION
NEW RIVER, NORTH CAROLINA

PARAMETER	WELL #	MW-15	MW-16	MW-17	MW-18	PW-1	N.C. GROUNDWATER STANDARDS (ug/ l)
	SCREENED INTERVAL (FT.)	6.5'-16.5'	45.0'-50.0'	45.0'-50.0'	45.0'-50.0'		
	DATE SAMPLED	1/13/94	1/20/94	1/20/94	1/20/94	1/20/94	
EPA METHOD 601							
Bromoform		ND	1.4	ND	2.3	--	0.19
Dibromochloromethane		ND	0.6	ND	1.6	--	**
Bromodichloromethane		ND	ND	ND	0.7	--	**
Chloroform		ND	ND	ND	ND	--	0.19
EPA METHOD 602							
Benzene		2.9	ND	ND	ND	1400	1
Toluene		ND	ND	0.6	ND	770	1000
Ethylbenzene		ND	1.3	ND	ND	150	29
Xylenes (Total)		ND	4.1	1.1	ND	360	530
MTBE		*	ND	ND	ND	91	200
EPA METHOD 610							
Acenaphthene		2.4	ND	ND	ND	--	**
Anthracene		0.9	ND	ND	ND	--	**
Benzo (a) anthracene		3.4	ND	ND	ND	--	**
Chrysene		ND	3.3	7.0	ND	--	**
Fluoranthene		1.9	ND	ND	ND	--	**
1-Methylnaphthalene		ND	ND	ND	ND	--	**
2-Methylnaphthalene		ND	ND	ND	ND	--	**
Naphthalene		ND	ND	ND	ND	--	21
Phenanthrene		1.5	ND	ND	ND	--	210
Lead		ND	--	--	--	--	15

All results in ug/L (ppb)
* Not Analyzed; MTBE is not included in on-site laboratory 602 Analysis
ND = Not Detected

Shaded areas indicated concentrations levels above NC Groundwater Standards
** NC Standard - Laboratory Detection Limit
-- Sample not analyzed for this parameter.

TABLE 2.3 (Page 1 of 2)

SUMMARY OF LABORATORY ANALYTICAL RESULTS
GROUND WATER (HYDROPUNCHES)

BUILDING AS-4158
MARINE CORPS AIR STATION
NEW RIVER, NORTH CAROLINA

PARAMETER	HYDROPUNCH #	HP-1	HP-2	HP-3	HP-4	HP-5	HP-6	N.C. GROUNDWATER STANDARDS (ug/ l)
	SAMPLE DEPTH (FT.)	10.5'-14.5'	10.5'-14.5'	10.5'-14.0'	11.5'-15.5'	14.5'-17.5'	26.0'-30.0'	
	DATE SAMPLED	12/9/93	12/9/93	12/9/93	12/9/93	12/9/93	12/9/93	
EPA METHOD 602								
Benzene		1700	4.7	1.7	140	25	38	1
Toluene		620	1.8	5.5	0.7	0.8	0.6	1000
Ethylbenzene		130	0.5	ND	ND	ND	0.5	29
Xylenes (Total)		710	1.5	ND	37	4.9	0.9	530
EPA METHOD 610								
Naphthalene		2.9	ND	ND	3.6	ND	ND	21
Fluoranthene		ND	2.7	ND	1.3	ND	ND	*
Benzo (a) anthracene		ND	ND	18	ND	ND	ND	*
Chrysene		ND	3.9	ND	4.0	ND	ND	*
Benzo (g,h,i) perylene		ND	ND	ND	ND	ND	ND	*

All results in ug/L (ppb)
ND = Not Detected
Shaded areas indicate concentration levels above NC Groundwater Standards
* NC Standard = Laboratory Detection Limit

TABLE 2.3 (Page 2 of 2)

SUMMARY OF LABORATORY ANALYTICAL RESULTS
GROUND WATER (HYDROPUNCHES)

BUILDING AS-4158
MARINE CORPS AIR STATION
NEW RIVER, NORTH CAROLINA

PARAMETER	HYDROPUNCH #	HP-7	HP-8	HP-9	HP-10	RINSATE-1	N.C. GROUNDWATER STANDARDS (ug/ l)
	SAMPLE DEPTH (FT.)	13.5'-17.5'	13.5'-17.5'	13.5'-17.5'	13.5'-17.5'		
	DATE SAMPLED	12/9/93	12/10/93	12/10/93	12/10/93	12/10/93	
EPA METHOD 602							
Benzene		ND	76	ND	ND	ND	1
Toluene		0.6	9.3	ND	ND	ND	1000
Ethylbenzene		ND	5.5	ND	ND	ND	29
Xylenes (Total)		ND	20	ND	ND	ND	530
EPA METHOD 610							
Naphthalene		ND	16	ND	ND	ND	21
Fluoranthene		ND	ND	ND	ND	ND	*
Benzo (a) anthracene		ND	ND	ND	ND	ND	*
Chrysene		ND	ND	ND	ND	ND	*
Benzo (g,h,i) perylene		3.0	ND	ND	ND	ND	*

All results in ug/L (ppb)
ND = Not Detected
Shaded areas indicate concentration levels above NC Groundwater Standards
* NC Standard = Laboratory Detection Limit

DATA OBTAINED FROM

ANNUAL MONITORING REPORT

BY SHAW

Table 3-1 (co[redacted]ed)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-1					
		Sample ID	USTAS4158-MW01-03A	USTAS4158-MW01-02B	USTAS4158-MW01-01D	USTAS4158-MW01-01C	USTAS4158-MW01-01B	USTAS4158-MW01-00D
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	1/14/2003 *#	4/15/2002 *#	10/16/2001 #	7/16/2001 *	4/17/2001 *#	10/18/2000 *
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-1					
		Sample ID	USTAS4158-MW01-00C	USTAS4158-MW01-00A	USTAS4158-MW01-99C	USTAS4158-MW01-99B	USTAS4158-MW01-98D	USTAS4158-MW01-98C1
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	7/26/2000	1/12/2000 *#	7/30/1999 #	4/19/1999 #	10/21/1998	7/23/1998
Benzene	1		BQL	BQL	BQL	BQL	[illegible]	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (co[illegible]d)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-1		MW-2			
		Sample ID	USTAS4158-MW01-98B2	USTAS4158-MW01-98B1	USTAS4158-MW02-01C	USTAS4158-MW02-01B	USTAS4158-MW02-00D	USTAS4158-MW02-00C
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	5/15/1998	3/27/1998	7/16/2001	4/17/2001	10/18/2000 *	7/27/2000
Benzene	1		1	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (co[illegible]ed)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-2					MW-3
		Sample ID	USTAS4158-MW02-00B	USTAS4158-MW02-99B	USTAS4158-MW02-99A	USTAS4158-MW02-98B2	USTAS4158-MW02-98B1	USTAS4158-MW03-03A
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	4/25/2000 *#	5/7/1999 *#	1/25/1999 *#	5/15/1998	3/27/1998	1/14/2003 *#
Benzene	1		BQL	BQL	BQL	**23**	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	**320**	**240**	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	**140**	**140**	BQL
Total Xylenes	530		BQL	BQL	BQL	**1,100**	**1,020**	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	NA	**18**	**14**	BQL
Acenaphthene	80		BQL	BQL	NA	BQL	BQL	BQL
Fluorene	280		BQL	BQL	NA	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	NA	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	NA	BQL	BQL	BQL
Pyrene	210		BQL	BQL	NA	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	NA	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	NA	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (co[illegible]d)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-3					
		Sample ID	USTAS4158-MW03-02D	USTAS4158-MW03-02C	USTAS4158-MW03-02B	USTAS4158-MW03-02A	USTAS4158-MW03-01D	USTAS4158-MW03-01C
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	10/22/2002 *#	7/15/2002 *#	4/15/2002 *#	1/15/2002 *#	10/16/2001 #	7/16/2001 *
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-3					
		Sample ID	USTAS4158-MW03-01B	USTAS4158-MW03-01A	USTAS4158-MW03-00D	USTAS4158-MW03-00C	USTAS4158-MW03-00B	USTAS4158-MW03-00A
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	4/17/2001 *#	1/4/2001 *#	10/18/2000 *	7/27/2000	4/25/2000 *#	1/12/2000 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	13	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-3					
		Sample ID	USTAS4158-MW03-99D	USTAS4158-MW03-99C	USTAS4158-MW03-99B	USTAS4158-MW03-99A	USTAS4158-MW03-98D	USTAS4158-MW03-98C1
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	10/20/1999 *#	7/14/1999 *#	4/19/1999 *#	1/25/1999 *#	10/21/1998	7/23/1998
Benzene	1		BQL	BQL	BQL	1	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methyln aphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-3			MW-4		
		Sample ID	USTAS4158-MW03-98B3	USTAS4158-MW03-98B2	USTAS4158-MW03-98B1	USTAS4158-MW04-03A	USTAS4158-MW04-02D	USTAS4158-MW04-02C
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	6/24/1998	5/15/1998	3/27/1998	1/14/2003 *#	10/23/2002 *#	7/15/2002 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-4					
		Sample ID	USTAS4158-MW04-02B	USTAS4158-MW04-02A	USTAS4158-MW04-01D	USTAS4158-MW04-01C	USTAS4158-MW04-01B	USTAS4158-MW04-01A
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	4/15/2002 *#	1/15/2002 *#	10/15/2001 #	7/16/2001 *	4/17/2001 *#	1/4/2001 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-4					
		Sample ID	USTAS4158-MW04-00D	USTAS4158-MW04-00C	USTAS4158-MW04-00B	USTAS4158-MW04-00A	USTAS4158-MW04-99D	USTAS4158-MW04-99C
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	10/18/2000 *	7/26/2000 *	4/24/2000 *#	1/12/2000 *#	10/20/1999 *#	7/14/1999 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		**2**	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-4					
		Sample ID	USTAS4158-MW04-99B	USTAS4158-MW04-99A	USTAS4158-MW04-98D	USTAS4158-MW04-98C1	USTAS4158-MW04-98B3	USTAS4158-MW04-98B2
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	4/19/1999 *#	1/25/1999 *#	10/21/1998	7/23/1998	6/24/1998	5/15/1998
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (co[illegible]ed)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-4	MW-5				
		Sample ID	USTAS4158-MW04-98B1	USTAS4158-MW05-03A	USTAS4158-MW05-02C	USTAS4158-MW05-02C	USTAS4158-MW05-02B	USTAS4158-MW05-02A
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	3/27/1998	1/14/2003 *#	10/22/2002 *#	7/15/2002 *#	4/15/2002 *#	1/15/2002 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (co[redacted]d)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-5					
		Sample ID	USTAS4158-MW05-01D	USTAS4158-MW05-01C	USTAS4158-MW05-01B	USTAS4158-MW05-01A	USTAS4158-MW05-00D	USTAS4158-MW05-00C
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	10/16/2001 #	7/16/2001 *	4/17/2001 *#	1/4/2001 *#	10/18/2000 *	7/27/2000
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-5					
		Sample ID	USTAS4158-MW05-00B	USTAS4158-MW05-00A	USTAS4158-MW05-99D	USTAS4158-MW05-99C	USTAS4158-MW05-99B	USTAS4158-MW05-99A
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	4/24/2000 *#	3/23/2000 *#	10/20/1999 *#	7/14/1999 *#	4/19/1999 *#	1/25/1999 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-5	MW-7				
		Sample ID	USTAS4158-MW05-98D	USTAS4158-MW07-03A	USTAS4158-MW07-02D	USTAS4158-MW07-02C	USTAS4158-MW07-02B	USTAS4158-MW07-02A
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	10/21/1998	1/14/2003 *#	10/22/2002 *#	7/15/2002 *#	4/15/2002 *#	1/15/2002 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (co[illegible]ed)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-7					
		Sample ID	USTAS4158-MW07-01C	USTAS4158-MW07-01C	USTAS4158-MW07-01A	USTAS4158-MW07-00D	USTAS4158-MW07-00C	USTAS4158-MW07-00B
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	7/16/2001 *	4/17/2001 *#	1/4/2001 *#	10/18/2000 *	7/27/2000	4/24/2000 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-7					
		Sample ID	USTAS4158-MW07-00A	USTAS4158-MW07-99D	USTAS4158-MW07-99C	USTAS4158-MW07-99B	USTAS4158-MW07-99A	USTAS4158-MW07-98D
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	1/12/2000 *#	10/20/1999 *#	7/14/1999 *#	4/19/1999 *#	1/25/1999 *#	10/21/1998
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-7				MW-8	
		Sample ID	USTAS4158-MW07-98C1	USTAS4158-MW07-98B3	USTAS4158-MW07-98B2	USTAS4158-MW07-98B1	USTAS4158-MW08-03A	USTAS4158-MW08-02D
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	7/23/1998	6/24/1998	5/15/1998	3/27/1998	1/14/2003 *#	10/23/2002 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (co[redacted]d)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-8					
		Sample ID	USTAS4158-MW08-02C	USTAS4158-MW08-02B	USTAS4158-MW08-02A	USTAS4158-MW08-01D	USTAS4158-MW08-01C	USTAS4158-MW08-01B
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	7/15/2002 *#	4/15/2002 *#	1/15/2002 *#	10/15/2001 #	7/16/2001 *	4/17/2001 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-8					
		Sample ID	USTAS4158-MW08-01A	USTAS4158-MW08-00D	USTAS4158-MW08-00C	USTAS4158-MW08-00B	USTAS4158-MW08-00A	USTAS4158-MW08-99D
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	1/4/2001 *#	10/18/2000 *	7/26/2000 *	4/25/2000 *#	1/12/2000 *#	10/20/1999 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-8					
		Sample ID	USTAS4158-MW08-99C	USTAS4158-MW08-99B	USTAS4158-MW08-99A	USTAS4158-MW08-98D	USTAS4158-MW08-98C1	USTAS4158-MW08-98B3
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	7/14/1999 *#	4/19/1999 *#	1/25/1999 *#	10/21/1998	7/23/1998	6/24/1998
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-8	
		Sample ID	USTAS4158-MW08-98B2	USTAS4158-MW08-98B1
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	5/15/1998	3/27/1998
Benzene	1		BQL	BQL
Ethylbenzene	29		BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL
Toluene	1000		BQL	BQL
Total Xylenes	530		BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L				
Naphthalene	21		BQL	BQL
Acenaphthene	80		BQL	BQL
Fluorene	280		BQL	BQL
Phenanthrene	210		BQL	BQL
Anthracene	2100		BQL	BQL
Pyrene	210		BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL
2-Methylnaphthalene	28		BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-9					
		Sample ID	USTAS4158-MW09-03A	USTAS4158-MW09-02D	USTAS4158-MW09-01D	USTAS4158-MW09-01C	USTAS4158-MW09-01B	USTAS4158-MW09-01A
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	1/14/2003 *#	10/23/2002 *#	10/15/2001 #	7/16/2001 *	4/17/2001 *#	1/4/2001 *#
Benzene	1		69	79	BQL	51	180	160
Ethylbenzene	29		43	10	BQL	1	13	10
Methyl-tert-butyl ether (MTBE)	200		13	17	2	6	BQL	BQL
Toluene	1000		66	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		400	156	BQL	2	24	32
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		1500	860	BQL	BQL	25	25
Acenaphthene	80		300	210	BQL	BQL	17	BQL
Fluorene	280		BQL	400	BQL	BQL	BQL	BQL
Phenanthrene	210		1300	850	BQL	BQL	BQL	23
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		200	BQL	BQL	BQL	BQL	14
1-Methylnaphthalene	Detection Limit		3000	1600	BQL	BQL	13	63
2-Methylnaphthalene	28		3800	2600	BQL	BQL	13	35

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-9					
		Sample ID	USTAS4158-MW09-00D	USTAS4158-MW09-00C	USTAS4158-MW09-00B	USTAS4158-MW09-00A	USTAS4158-MW09-99D	USTAS4158-MW09-99C
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	10/18/2000 *	7/26/2000 *	4/24/2000 *#	1/12/2000 *#	10/20/1999 *#	7/14/1999 *#
Benzene	1		100	89	65	17	0	5
Ethylbenzene	29		BQL	BQL	BQL	1	BQL	1
Methyl-tert-butyl ether (MTBE)	200		11	16	23	23	13	28
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	9	8	55
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	13	16	68
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	17
Fluorene	280		BQL	BQL	BQL	20	22	89
Phenanthrene	210		11	BQL	17	20	29	160
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	20
Pyrene	210		13	30	BQL	BQL	BQL	22
1-Methylnaphthalene	Detection Limit		BQL	BQL	12	51	6	240
2-Methylnaphthalene	28		11	BQL	BQL	23	9	360

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (co[illegible]ed)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-9		MW-10			
		Sample ID	USTAS4158-MW09-99B	USTAS4158-MW09-99B	USTAS4158-MW10-03A	USTAS4158-MW10-02D	USTAS4158-MW10-02C	USTAS4158-MW10-02B
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	5/7/1999 *#	2/16/1999 *#	1/14/2003 *#	10/23/2002 *#	7/15/2002 *#	4/15/2002 *#
Benzene	1		13	116	BQL	BQL	BQL	BQL
Ethylbenzene	29		61	44	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		23	26	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		321	470	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		56	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		26	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		37	11,000 *	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	11,000	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		120	17,000	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		120	90,000	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
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BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-10					
		Sample ID	USTAS4158-MW10-02A	USTAS4158-MW10-01D	USTAS4158-MW10-01C	USTAS4158-MW10-01B	USTAS4158-MW10-01A	USTAS4158-MW10-00D
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	1/15/2002 *#	10/15/2001 #	7/16/2001 *	4/17/2001 *#	1/4/2001 *#	10/18/2000 *
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-10					
		Sample ID	USTAS4158-MW10-00C	USTAS4158-MW10-00B	USTAS4158-MW10-00A	USTAS4158-MW10-99D	USTAS4158-MW10-99B	USTAS4158-MW10-99A
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	7/26/2000 *	4/25/2000 *#	1/12/2000 *#	10/20/1999 *#	4/19/1999 *#	1/25/1999 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-10					MW-11
		Sample ID	USTAS4158-MW10-98D	USTAS4158-MW10-98C1	USTAS4158-MW10-98B3	USTAS4158-MW10-98B2	USTAS4158-MW10-98B1	USTAS4158-MW11-03A
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	10/21/1998	7/23/1998	6/24/1998	5/15/1998	3/27/1998	1/14/2003 *#
Benzene	1		BQL	BQL	BQL	BQL	530	
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	9
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	76	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	32	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	14	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-11					
		Sample ID	USTAS4158-MW11-02D	USTAS4158-MW11-02	USTAS4158-MW11-02B	USTAS4158-MW11-02A	USTAS4158-MW11-01D	USTAS4158-MW11-01C
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	10/23/2002 *#	7/15/2002 *#	4/15/2002 *#	1/15/2002 *#	10/15/2001 #	7/16/2001 *
Benzene	1		5	3	BQL	2	1	2
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		7	11	7	13	12	8
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-11					
		Sample ID	USTAS4158-MW11-01B	USTAS4158-MW11-01A	USTAS4158-MW11-00D	USTAS4158-MW11-00C	USTAS4158-MW11-00B	USTAS4158-MW11-00A
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	4/17/2001 *#	1/4/2001 *#	10/18/2000 *	7/26/2000 *	4/25/2000 *#	1/12/2000 *#
Benzene	1		**2**	**10**	**1**	**15**	**5**	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		**5**	**4**	**7**	**9**	**9**	**7**
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-11					
		Sample ID	USTAS4158-MW11-99D	USTAS4158-MW11-99C	USTAS4158-MW11-99B	USTAS4158-MW11-99A	USTAS4158-MW11-98D	USTAS4158-MW11-98C1
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	10/20/1999 *#	7/14/1999 *#	4/19/1999 *#	1/25/1999 *#	10/21/1998	7/23/1998
Benzene	1							
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		**6**	**13**	**8**	**12**	**40**	**10**
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (c[illegible]ed)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-11			MW-13		
		Sample ID	USTAS4158-MW11-98B3	USTAS4158-MW11-98B2	USTAS4158-MW11-98B1	USTAS4158-MW13-03A	USTAS4158-MW13-02D	USTAS4158-MW13-02C
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	6/24/1998	5/15/1998	3/27/1998	1/14/2003 *#	10/23/2002 *#	7/15/2002 *#
Benzene	1		**250**	**20**	**90**	BQL	BQL	**22**
Ethylbenzene	29		BQL	BQL	**4**	BQL	BQL	**3**
Methyl-tert-butyl ether (MTBE)	200		**26**	**7**	**130**	**26**	**17**	**67**
Toluene	1000		BQL	BQL	**24**	BQL	BQL	**2**
Total Xylenes	530		BQL	BQL	**56**	BQL	BQL	**6**
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-13					
		Sample ID	USTAS4158-MW13-02B	USTAS4158-MW13-02A	USTAS4158-MW13-01D	USTAS4158-MW13-01C	USTAS4158-MW13-01B	USTAS4158-MW13-01A.
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	4/15/2002 *#	1/15/2002 *#	10/15/2001 #	7/16/2001 *	4/17/2001 *#	1/4/2001 *#
Benzene	1		[redacted]	[redacted]	BQL	[redacted]	[redacted]	[redacted]
Ethylbenzene	29		BQL	BQL	BQL	BQL	3	[redacted]
Methyl-tert-butyl ether (MTBE)	200		**34**	**15**	**42**	**62**	**52**	**35**
Toluene	1000		BQL	BQL	BQL	BQL	**7**	**67**
Total Xylenes	530		BQL	BQL	BQL	BQL	**13**	**154**
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	**11**
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-13					
		Sample ID	USTAS4158-MW13-00D	USTAS4158-MW13-00C	USTAS4158-MW13-00B	USTAS4158-MW13-00A	USTAS4158-MW13-99D	USTAS4158-MW13-99B
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	10/18/2000 *	7/26/2000 *	4/25/2000 *#	1/12/2000 *#	10/20/1999 *#	4/19/1999 *#
Benzene	1		500	80	180	BQL	2	34
Ethylbenzene	29		430	BQL	40	BQL	1	3
Methyl-tert-butyl ether (MTBE)	200		BQL	55	69	17	16	18
Toluene	1000		610	26	190	BQL	BQL	7
Total Xylenes	530		1280	19	290	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		90	BQL	13	BQL	BQL	24
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		14	BQL	BQL	BQL	BQL	29
2-Methylnaphthalene	28		13	BQL	BQL	BQL	BQL	32

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (co[illegible]d)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-13				
		Sample ID	USTAS4158-MW13-99A	USTAS4158-MW13-98C1	USTAS4158-MW13-98B3	USTAS4158-MW13-98B2	USTAS4158-MW13-98B1
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	2/16/1999 *#	7/23/1998	6/24/1998	5/15/1998	3/27/1998
Benzene	1		1	[illegible]	1,200	140	1700
Ethylbenzene	29		BQL	7	440	19	220
Methyl-tert-butyl ether (MTBE)	200		7	56	150	BQL	BQL
Toluene	1000		BQL	BQL	1,500	BQL	270
Total Xylenes	530		BQL	10	2,020	BQL	380
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L							
Naphthalene	21		BQL	BQL	54	BQL	220
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	10	BQL	11

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-14					
		Sample ID	USTAS4158-MW14-03A	USTAS4158-MW14-02D	USTAS4158-MW14-02C	USTAS4158-MW14-02B	USTAS4158-MW14-02A	USTAS4158-MW14-01D
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	1/14/2003 *#	10/23/2002 *#	7/15/2002 *#	4/15/2002 *#	1/15/2002 *#	10/15/2001 #
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-14					
		Sample ID	USTAS4158-MW14-01C	USTAS4158-MW14-01B	USTAS4158-MW14-01A	USTAS4158-MW14-00D	USTAS4158-MW14-00C	USTAS4158-MW14-00B
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	7/16/2001 *	4/17/2001 *#	1/4/2001 *#	10/18/2000 *	7/26/2000 *	4/25/2000 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-14					
		Sample ID	USTAS4158-MW14-00A	USTAS4158-MW14-99D	USTAS4158-MW14-99C	USTAS4158-MW14-99B	USTAS4158-MW14-99A	USTAS4158-MW14-98D
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	1/12/2000 *#	10/20/1999 *#	7/14/1999 *#	4/19/1999 *#	1/25/1999 *#	10/21/1998
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-14				MW-15	
		Sample ID	USTAS4158-MW14-98C1	USTAS4158-MW14-98B3	USTAS4158-MW14-98B2	USTAS4158-MW14-98B1	USTAS4158-MW15-03A	USTAS4158-MW15-02D
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	7/23/1998	6/24/1998	5/15/1998	3/27/1998	1/14/2003 *#	10/23/2002 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-15					
		Sample ID	USTAS4158-MW15-02C	USTAS4158-MW15-02B	USTAS4158-MW15-02A	USTAS4158-MW15-01D	USTAS4158-MW15-01C	USTAS4158-MW15-01B
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	7/15/2002 *#	4/15/2002 *#	1/15/2002 *#	10/15/2001 #	7/16/2001 *	4/17/2001 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	**2**
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	**1**
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	**6**
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-15					
		Sample ID	USTAS4158-MW15-01A	USTAS4158-MW15-00D	USTAS4158-MW15-00C	USTAS4158-MW15-00B	USTAS4158-MW15-00A	USTAS4158-MW15-99D
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	1/4/2001 *#	10/18/2000 *	7/26/2000 *	4/25/2000 *#	1/12/2000 *#	10/20/1999 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (co ed)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-15					
		Sample ID	USTAS4158-MW15-99C	USTAS4158-MW15-99B	USTAS4158-MW15-99A	USTAS4158-MW15-98D	USTAS4158-MW15-98C1	USTAS4158-MW15-98B3
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	7/14/1999 *#	4/19/1999 *#	1/25/1999 *#	10/21/1998	7/23/1998	6/24/1998
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (c[illegible]ed)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-15		MW-17			
		Sample ID	USTAS4158-MW15-98B2	USTAS4158-MW15-98B1	USTAS4158-MW17-03A	USTAS4158-MW17-02D	USTAS4158-MW17-02C	USTAS4158-MW17-02B
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	5/15/1998	3/27/1998	1/14/2003 *#	10/23/2002 *#	7/15/2002 *#	4/15/2002 *#
Benzene	1		BQL	1	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	5	5	9	9
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-17					
		Sample ID	USTAS4158-MW17-02A	USTAS4158-MW17-01D	USTAS4158-MW17-01C	USTAS4158-MW17-01B	USTAS4158-MW17-01A	USTAS4158-MW17-00D
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	1/15/2002 *#	10/15/2001 #	7/16/2001 *	4/17/2001 *#	1/4/2001 *#	10/18/2000 *
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		**10**	**8**	**8**	**8**	**3**	**3**
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-17					
		Sample ID	USTAS4158-MW17-00C	USTAS4158-MW17-00B	USTAS4158-MW17-00A	USTAS4158-MW17-99D	USTAS4158-MW17-99C	USTAS4158-MW17-99B
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	Regulatory Limit	Sample Date	7/26/2000 *	4/24/2000 *#	1/12/2000 *#	10/20/1999 *#	7/14/1999 *#	4/19/1999 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		3	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (c ed)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-17					
		Sample ID	USTAS4158-MW17-99A	USTAS4158-MW17-98D	USTAS4158-MW17-98C1	USTAS4158-MW17-98B3	USTAS4158-MW17-98B2	USTAS4158-MW17-98B1
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	1/25/1999 *#	10/21/1998	7/23/1998	6/24/1998	5/15/1998	3/27/1998
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-18					
		Sample ID	USTAS4158-MW18-02D	USTAS4158-MW18-02C	USTAS4158-MW18-02B	USTAS4158-MW18-02A	USTAS4158-MW18-01D	USTAS4158-MW18-01B
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	10/23/2002 *#	7/15/2002 *#	4/15/2002 *#	1/15/2002 *#	10/15/2001 #	4/17/2001 *#
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L								
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

Table 3-1 (continued)
Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building AS-4158
Marine Corps Air Station
New River, North Carolina

Parameter	NCDENR	Sample Location	MW-18			
		Sample ID	USTAS4158-MW18-00B	USTAS4158-MW18-99C	USTAS4158-MW18-99B	USTAS4158-MW18-98A
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L	**Regulatory Limit**	**Sample Date**	4/25/2000 *#	7/14/1999	4/19/1999 *#	3/27/1998
Benzene	1		BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL
Polynuclear Aromatic Hydrocarbons by USEPA Method 625/8270C, ug/L						
Naphthalene	21		BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL
Fluorene	280		BQL	BQL	BQL	BQL
Phenanthrene	210		BQL	BQL	BQL	BQL
Anthracene	2100		BQL	BQL	BQL	BQL
Pyrene	210		BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL

Notes:
Detected concentrations are indicated in boldface type.
Detected concentrations above the regulatory limits are indicated by shading.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package
# verified with electronic data deliverables

DATA PROVIDED BY

ENGINEERING AND ENVIRONMENT, INC.

Table 1
Summary of Laboratory Analyses for Groundwater
Building AS-4158
April 2004

Sample Location	**NCGWQS**	**MW-4**	**MW-5**	**MW-7**	**MW-8**	**MW-9***	**MW-10**
Date Sampled		04/14/04	04/14/04	04/14/04	04/15/04	04/16/04	04/16/04
EPA 602 (µg/L)							
Benzene	1	<1.0	<1.0	<1.0	<1.0	**20.3**	<1.0
Ethylbenzene	29	<1.0	<1.0	<1.0	<1.0	**5.2**	<1.0
Toluene	1000	<1.0	<1.0	<1.0	<1.0	**7.3**	<1.0
Xylenes (total)	530	<3.0	<3.0	<3.0	<3.0	**62.3**	<3.0
Methyl Tert Butyl Ether	200	<1.0	<1.0	<1.0	<1.0	**2.2**	<1.0
Total BTEX		**ND**	**ND**	**ND**	**ND**	**95.1**	**ND**
EPA 610 (µg/L)							
Acenaphthene	80	<5.2	<5.2	<5.2	<5.2	<110	<5.0
Acenaphthylene	210	<5.2	<5.2	<5.2	<5.2	<110	<5.0
Anthracene	2100	<5.2	<5.2	<5.2	<5.2	<110	<5.0
Benzo(a)anthracene	0.05	<5.2	<5.2	<5.2	<5.2	<110	<5.0
Fluoranthene	280	<5.2	<5.2	<5.2	<5.2	<110	<5.0
Fluorene	280	<5.2	<5.2	<5.2	<5.2	<110	<5.0
1-Methylnaphthalene	RL	<5.2	<5.2	<5.2	<5.2	<110	<5.0
2-Methylnaphthalene	14	<5.2	<5.2	<5.2	<5.2	<110	<5.0
Naphthalene	21	<5.2	<5.2	<5.2	<5.2	<110	<5.0
Phenanthrene	210	<5.2	<5.2	<5.2	<5.2	<110	<5.0
Pyrene	210	<5.2	<5.2	<5.2	<5.2	<110	<5.0

Sample Location	**NCGWQS**	**MW-11**	**MW-13***	**MW-14**	**MW-17**	**MW-18**	**DUP****
Date Sampled		04/15/04	04/15/04	04/16/04	04/16/04	04/15/04	04/15/04
EPA 602 (µg/L)							
Benzene	1	**2.5**	**49.5**	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	29	<1.0	**4.5**	<1.0	<1.0	<1.0	<1.0
Toluene	1000	<1.0	**1.1**	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	530	<3.0	**9.7**	<3.0	<3.0	<3.0	<3.0
Methyl Tert Butyl Ether	200	**6.8**	**47.4**	<1.0	**31.9**	<1.0	<1.0
Total BTEX		**2.5**	**64.8**	**ND**	**ND**	**ND**	**ND**
EPA 610 (µg/L)							
Acenaphthene	80	<5.0	<20	<5.1	<5.0	<5.0	<5.1
Acenaphthylene	210	<5.0	<20	<5.1	<5.0	<5.0	<5.1
Anthracene	2100	<5.0	<20	<5.1	<5.0	<5.0	<5.1
Benzo(a)anthracene	0.05	<5.0	<20	<5.1	<5.0	<5.0	<5.1
Fluoranthene	280	<5.0	<20	<5.1	<5.0	<5.0	<5.1
Fluorene	280	<5.0	<20	<5.1	<5.0	<5.0	<5.1
1-Methylnaphthalene	RL	<5.0	<20	<5.1	<5.0	<5.0	<5.1
2-Methylnaphthalene	14	<5.0	<20	<5.1	<5.0	<5.0	<5.1
Naphthalene	21	<5.0	<20	<5.1	<5.0	<5.0	<5.1
Phenanthrene	210	<5.0	<20	<5.1	<5.0	<5.0	<5.1
Pyrene	210	<5.0	<20	<5.1	<5.0	<5.0	<5.1

* Polynuclear aromtaic hydrocarbons exhibited elevated reporting limits due to matrix interference effects

** DUP is a duplicate sample collected at well MW-18

ND: None detected; no benzene, toluene, ethylbenzene, or xylene isomers were detected

NCGWQS: North Carolina Groundwater Quality Standard

RL: Reporting Limit, no NCGWQS established for the consitituent; thereffore, the NCGWQS for the constituent is the reporting limit

µg/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than reporting limit

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentration above the North Carolina Groundwater Quality Standards

Table 1
Summary of Laboratory Analyses for Groundwater
Building AS-4158
July 2004

Sample Location	**NCGWQS**	**MW-4**	**MW-5**	**MW-7**	**MW-8**	**MW-10**	**MW-11**
Date Sampled		07/12/04	07/12/04	07/12/04	07/13/04	07/12/04	07/13/04
EPA 602 (µg/L)							
Benzene	1	<1.0	<1.0	<1.0	<1.0	<1.0	**2.7**
Ethylbenzene	29	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	1000	**1.3**	**1.1**	**0.83 J**	<1.0	**0.79 J**	<1.0
Xylenes (total)	530	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Methyl Tert Butyl Ether	200	<1.0	<1.0	<1.0	<1.0	<1.0	**7.0**
Total BTEX		**1.3**	**1.1**	**0.83**	**ND**	**0.79**	**2.7**
EPA 610 (µg/L)							
Acenaphthene	80	<4.8	<4.9	<4.8	<4.9	<4.9	<4.8
Acenaphthylene	210	<4.8	<4.9	<4.8	<4.9	<4.9	<4.8
Anthracene	2100	<4.8	<4.9	<4.8	<4.9	<4.9	<4.8
Benzo(a)anthracene	0.05	<4.8	<4.9	<4.8	<4.9	<4.9	<4.8
Fluoranthene	280	<4.8	<4.9	<4.8	<4.9	<4.9	<4.8
Fluorene	280	<4.8	<4.9	<4.8	<4.9	<4.9	<4.8
1-Methylnaphthalene	RL	<4.8	<4.9	<4.8	<4.9	<4.9	<4.8
2-Methylnaphthalene	14	<4.8	<4.9	<4.8	<4.9	<4.9	<4.8
Naphthalene	21	<4.8	<4.9	<4.8	<4.9	<4.9	<4.8
Phenanthrene	210	<4.8	<4.9	<4.8	<4.9	<4.9	<4.8
Pyrene	210	<4.8	<4.9	<4.8	<4.9	<4.9	<4.8

Sample Location	**NCGWQS**	**MW-13**	**MW-14**	**MW-15**	**MW-17**	**MW-18**	**DUP****
Date Sampled		07/13/04	07/12/04	07/12/04	07/13/04	07/12/04	07/12/04
EPA 602 (µg/L)							
Benzene	1	**1.9**	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	29	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	1000	<1.0	**1.4**	**0.98 J**	<1.0	<1.0	<1.0
Xylenes (total)	530	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Methyl Tert Butyl Ether	200	**35.7**	<1.0	<1.0	**30.2**	<1.0	<1.0
Total BTEX		**1.9**	**1.4**	**0.98**	**ND**	**ND**	**ND**
EPA 610 (µg/L)							
Acenaphthene	80	<5.1	<4.9	<4.9	<4.8	<4.8	<4.8
Acenaphthylene	210	<5.1	<4.9	<4.9	<4.8	<4.8	<4.8
Anthracene	2100	<5.1	<4.9	<4.9	<4.8	<4.8	<4.8
Benzo(a)anthracene	0.05	<5.1	<4.9	<4.9	<4.8	<4.8	<4.8
Fluoranthene	280	<5.1	<4.9	<4.9	<4.8	<4.8	<4.8
Fluorene	280	<5.1	<4.9	<4.9	<4.8	<4.8	<4.8
1-Methylnaphthalene	RL	<5.1	<4.9	<4.9	<4.8	<4.8	<4.8
2-Methylnaphthalene	14	<5.1	<4.9	<4.9	<4.8	<4.8	<4.8
Naphthalene	21	<5.1	<4.9	<4.9	<4.8	<4.8	<4.8
Phenanthrene	210	<5.1	<4.9	<4.9	<4.8	<4.8	<4.8
Pyrene	210	<5.1	<4.9	<4.9	<4.8	<4.8	<4.8

** DUP is a duplicate sample collected at well MW-18

ND: None detected; no benzene, toluene, ethylbenzene, or xylene isomers were detected

NCGWQS: North Carolina Groundwater Quality Standard

RL: Reporting Limit, no NCGWQS established for the consitituent; thereffore, the NCGWQS for the constituent is the reporting limit

µg/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than reporting limit

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentration above the North Carolina Groundwater Quality Standards

Table 1
Summary of Laboratory Analyses for Groundwater
Building AS-4158
October 2004

Sample Location	NCGWQS	MW-1	MW-4	MW-5	MW-7	MW-8	MW-9	MW-10
Date Sampled		10/07/04	10/07/04	10/07/04	10/07/04	10/08/04	10/08/04	10/07/04
EPA 602 (µg/L)								
Benzene	1	<1.0	<1.0	<1.0	<1.0	<1.0	**18.7**	<1.0
Ethylbenzene	29	<1.0	<1.0	<1.0	<1.0	<1.0	**6.0**	<1.0
Toluene	1000	**0.72 J**	**0.57 J**	**0.61 J**	**0.51 J**	**0.72 J**	**5.3 J**	<1.0
Xylenes (total)	530	<3.0	<3.0	<3.0	<3.0	<3.0	**62.2**	<3.0
Methyl Tert Butyl Ether	200	<1.0	<1.0	<1.0	<1.0	<1.0	**1.2**	<1.0
Total BTEX		**0.72**	**0.57**	**0.61**	**0.51**	**0.72**	**92.2**	**ND**
EPA 610 (µg/L)								
Acenaphthene	80	<4.9	<4.8	<5.0	<4.8	<4.8	<53	<4.8
Acenaphthylene	210	<4.9	<4.8	<5.0	<4.8	<4.8	<53	<4.8
Anthracene	2100	<4.9	<4.8	<5.0	<4.8	<4.8	<53	<4.8
Benzo(a)anthracene	0.05	<4.9	<4.8	<5.0	<4.8	<4.8	<53	<4.8
Fluoranthene	280	<4.9	<4.8	<5.0	<4.8	<4.8	<53	<4.8
Fluorene	280	<4.9	<4.8	<5.0	<4.8	<4.8	<53	<4.8
1-Methylnaphthalene	RL	<4.9	<4.8	<5.0	<4.8	<4.8	<53	<4.8
2-Methylnaphthalene	14	<4.9	<4.8	<5.0	<4.8	<4.8	<53	<4.8
Naphthalene	21	<4.9	<4.8	<5.0	<4.8	<4.8	<53	<4.8
Phenanthrene	210	<4.9	<4.8	<5.0	<4.8	<4.8	<53	<4.8
Pyrene	210	<4.9	<4.8	<5.0	<4.8	<4.8	<53	<4.8

Sample Location	NCGWQS	MW-11	MW-13	MW-14	MW-15	MW-17	MW-18	DUP*
Date Sampled		10/08/04	10/07/04	10/07/04	10/07/04	10/08/04	10/07/04	10/07/04
EPA 602 (µg/L)								
Benzene	1	**6.7**	**35.1**	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	29	<1.0	**3.6**	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	1000	**0.58 J**	**1.9**	**0.68 J**	<1.0	<1.0	<1.0	<1.0
Xylenes (total)	530	<3.0	**8.3**	<3.0	<3.0	<3.0	<3.0	<3.0
Methyl Tert Butyl Ether	200	**3.3**	**38.4**	<1.0	<1.0	**28.1**	<1.0	<1.0
Total BTEX		**7.28**	**48.9**	**0.68**	**ND**	**ND**	**ND**	**ND**
EPA 610 (µg/L)								
Acenaphthene	80	<4.8	<4.8	<5.0	<4.8	<4.8	<4.8	<4.8
Acenaphthylene	210	<4.8	<4.8	<5.0	<4.8	<4.8	<4.8	<4.8
Anthracene	2100	<4.8	<4.8	<5.0	<4.8	<4.8	<4.8	<4.8
Benzo(a)anthracene	0.05	<4.8	<4.8	<5.0	<4.8	<4.8	<4.8	<4.8
Fluoranthene	280	<4.8	<4.8	<5.0	<4.8	<4.8	<4.8	<4.8
Fluorene	280	<4.8	<4.8	<5.0	<4.8	<4.8	<4.8	<4.8
1-Methylnaphthalene	RL	<4.8	<4.8	<5.0	<4.8	<4.8	<4.8	<4.8
2-Methylnaphthalene	14	<4.8	<4.8	<5.0	<4.8	<4.8	<4.8	<4.8
Naphthalene	21	<4.8	<4.8	<5.0	<4.8	<4.8	<4.8	<4.8
Phenanthrene	210	<4.8	<4.8	<5.0	<4.8	<4.8	<4.8	<4.8
Pyrene	210	<4.8	<4.8	<5.0	<4.8	<4.8	<4.8	<4.8

* DUP is a duplicate sample collected at well MW-18

ND: None detected; no benzene, toluene, ethylbenzene, or xylene isomers were detected

NCGWQS: North Carolina Groundwater Quality Standard

RL: Reporting Limit, no NCGWQS established for the consitituent; thereffore, the NCGWQS for the constituent is the reporting limit

µg/L: micrograms per liter

<#: not detected at the indicated reporting limit

J: estimated concentration less than reporting limit

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentration above the North Carolina Groundwater Quality Standards

APPENDIX C

SUMMARY OF HISTORICAL GROUNDWATER ELEVATIONS

AND FREE-PHASE PRODUCT THICKNESS

(Please note that groundwater elevation and free-phase product thickness data at the time of the CAP was presented on a figure that is included in Appendix D of this report)

DATA OBTAINED FROM

ANNUAL MONITORING REPORT

BY SHAW

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	1/14/2003			11/20/2002			10/22/2002			9/11/2002		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			Not Measured			Not Measured			5.55			Not Measured	
MW-2	15.51		Not Measured			Not Measured			6.18	9.33		Dry	
MW-3	17.70		9.69	8.01		7.24	10.46		9.90	7.80		8.57	9.13
MW-4	22.19		9.96	12.23		10.50	11.69		10.29	11.90		9.63	12.56
MW-5	22.10		10.00	12.10		10.72	11.38		10.39	11.71		9.20	12.90
MW-6	15.55		10.10	5.45		9.66	5.89		10.59	4.96		9.65	5.90
MW-7	22.11		10.49	11.62		11.77	10.34		10.65	11.46		9.28	12.83
MW-8	16.27		10.97	5.30		11.31	4.96		11.09	5.18		10.38	5.89
MW-9 (Prod. Recovery Well)	23.14	10.46	12.83	10.31	11.36	12.57	10.57	11.67	12.70	10.44	9.77	9.92	13.22
MW-10	15.73		11.63	4.10		14.14	1.59		12.00	3.73		9.99	5.74
MW-11	23.84		11.92	11.92		12.75	11.09		12.20	11.64		11.06	12.78
MW-12	22.03		Not Measured			Not Measured			Not Measured			Not Measured	
MW-13	24.12		12.38	11.74		14.35	9.77		12.59	11.53		10.99	13.13
MW-14	15.73		10.65	5.08		10.80	4.93		10.68	5.05		10.44	5.29
MW-15	23.99		11.94	12.05		11.74	12.25		11.76	12.23		11.14	12.85
MW-16	22.19		10.73	11.46		11.87	10.32		10.99	11.20		9.95	12.24
MW-17	23.05		11.60	11.45		12.38	10.67		11.80	11.25		10.88	12.17
MW-18	23.88		12.41	11.47		13.32	10.56		12.61	11.27		11.75	12.13
PW-1	22.80		Not Measured			Not Measured			Not Measured			Not Measured	

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measured. The product-water interface probe was being repaired.

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	8/20/2002			7/15/2002			5/13/2002			4/15/2002		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			Not Measured			Not Measured			9.46			Not Measured	
MW-2	15.51		Dry			Dry			Dry			Dry	
MW-3	17.70		9.70	8.00		7.70	10.00		9.90	7.80		9.86	7.84
MW-4	22.19		10.35	11.84		11.03	11.16		10.54	11.65		10.37	11.82
MW-5	22.10		10.28	11.82		10.28	11.82		10.40	11.70		10.23	11.87
MW-6	15.55		10.80	4.75		11.16	4.39		10.68	4.87		10.57	4.98
MW-7	22.11		10.41	11.70		11.01	11.10		10.60	11.51		10.60	11.51
MW-8	16.27		11.20	5.07		11.60	4.67		11.22	5.05		11.11	5.16
MW-9 (Prod. Recovery Well)	23.14	11.77	12.85	10.29	11.77	12.46		*	12.20		10.88	11.68	11.46
MW-10	15.73		10.90	4.83		12.25			11.74			11.83	3.90
MW-11	23.84		11.96	11.88		12.80	11.04		12.15	11.69		12.12	11.72
MW-12	22.03		Not Measured			Not Measured			Not Measured			Not Measured	
MW-13	24.12		10.85	13.27		13.01			12.41			12.45	11.67
MW-14	15.73		10.12	5.61		10.97	4.76		10.75	4.98		10.70	5.03
MW-15	23.99		10.61	13.38		12.60	11.39		12.01	11.98		11.86	12.13
MW-16	22.19		11.20	10.99		11.83	10.36		10.92	11.27		10.81	11.38
MW-17	23.05		1.65	21.40		12.23	10.82		11.81	11.24		11.72	11.33
MW-18	23.88		12.70	11.18		12.96	10.92		12.60	11.28		12.50	11.38
PW-1	22.80		Not Measured			Not Measured			Not Measured			Not Measured	

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measure

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	3/19/2002			2/12/2002		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			Not Measured			Not Measured	
MW-2	15.51		Dry			Dry	
MW-3	17.70		6.92	10.78		9.30	8.40
MW-4	22.19		10.21	11.98		9.82	12.37
MW-5	22.10		9.83	12.27		10.84	11.26
MW-6	15.55		10.01	5.54		9.82	5.73
MW-7	22.11		10.43	11.68		10.93	11.18
MW-8	16.27		11.05	5.22		11.60	4.67
MW-9 (Prod. Recovery Well)	23.14	11.59	13.12	10.02	11.49	13.99	9.15
MW-10	15.73		11.69			11.40	4.33
MW-11	23.84		12.12	11.72		13.44	10.40
MW-12	22.03		Not Measured			Not Measured	
MW-13	24.12		12.45	11.67		Dry	
MW-14	15.73		10.71	5.02		11.01	4.72
MW-15	23.99		11.78	12.21		13.49	10.50
MW-16	22.19		10.76	11.43		12.10	10.09
MW-17	23.05		11.58	11.47		12.67	10.38
MW-18	23.88		12.34	11.54		13.15	10.73
PW-1	22.80		Not Measured			Not Measured	

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measure

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	1/15/2002			12/17/2001			11/5/2001		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			Not Measured			8.53			9.38	
MW-2	15.51		Dry			Dry			Dry	
MW-3	17.70		7.95	9.75		9.50	8.20		9.78	7.92
MW-4	22.19		10.96	11.23		9.58	12.61		10.11	12.08
MW-5	22.10		10.88	11.22		9.90	12.20		10.29	11.81
MW-6	15.55		11.16	4.39		9.95	5.60		10.32	5.23
MW-7	22.11		11.80	10.31		9.48	12.63		10.88	11.23
MW-8	16.27		12.40	3.87		11.03	5.24		10.85	5.42
MW-9 (Prod. Recovery Well)	23.14	12.28	15.18	7.96		10.10	13.04		10.20	12.94
MW-10	15.73		Not Measured			9.90	5.83		Not Measured	
MW-11	23.84		13.69	10.15		11.83	12.01		11.83	12.01
MW-12	22.03		Not Measured			Not Measured			Not Measured	
MW-13	24.12		15.45	8.67		13.35	10.77		11.88	12.24
MW-14	15.73		10.70	5.03		9.95	5.78		9.48	6.25
MW-15	23.99		14.20	9.79		10.55	13.44		10.15	13.84
MW-16	22.19		11.63	10.56		10.89	11.30		10.89	11.30
MW-17	23.05		12.50	10.55		11.57	11.48		11.78	11.27
MW-18	23.88		13.64	10.24		12.50	11.38		12.69	11.19
PW-1	22.80		Not Measured			Not Measured			Not Measured	

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measure

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	10/15/2001			9/24/2001			7/16/2001		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			9.17			9.20			8.50	
MW-2	15.51		Dry			Not Measured			Not Measured	
MW-3	17.70		9.48	8.22		9.25	8.45		8.68	9.02
MW-4	22.19		9.79	12.40		9.48	12.71		8.98	13.21
MW-5	22.10		9.98	12.12		9.99	12.11		9.50	12.60
MW-6	15.55		10.07	5.48		9.65	5.90		9.22	6.33
MW-7	22.11		Not Measured			Not Measured			10.94	11.17
MW-8	16.27		10.28	5.99		10.82	5.45		10.20	6.07
MW-9 (Prod. Recovery Well)	23.14		10.35	12.79		12.16	10.98		10.63	12.51
MW-10	15.73		11.45	4.28		13.85	1.88		13.18	2.55
MW-11	23.84		11.81	12.03		13.40	10.44		12.76	11.08
MW-12	22.03		Not Measured			Not Measured			Not Measured	
MW-13	24.12		12.17	11.95		16.17	7.95		16.33	7.79
MW-14	15.73		10.01	5.72		10.28	5.45		9.87	5.86
MW-15	23.99		10.63	13.36		11.29	12.70		10.35	13.64
MW-16	22.19		10.65	11.54		10.78	11.41		10.46	11.73
MW-17	23.05		11.61	11.44		11.45	11.60		11.57	11.48
MW-18	23.88		12.33	11.55		12.71	11.17		12.41	11.47
PW-1	22.80		Not Measured			Not Measured			Not Measured	

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measure

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	5/14/2001			4/17/2001			3/16/2001		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			6.30			7.83			Not Measured	
MW-2	15.51		8.30	7.21		8.43	7.08		7.06	8.45
MW-3	17.70		7.80	9.90		7.85	9.85		6.54	11.16
MW-4	22.19		8.90	13.29		8.40	13.79		8.18	14.01
MW-5	22.10		9.10	13.00		8.60	13.50		6.75	15.35
MW-6	15.55		8.98	6.57		8.70	6.85		7.80	7.75
MW-7	22.11		9.59	12.52		9.00	13.11		8.82	13.29
MW-8	16.27		10.27	6.00		9.23	7.04		9.31	6.96
MW-9 (Prod. Recovery Well)	23.14		10.23	12.91		9.28	13.86		9.45	13.69
MW-10	15.73		12.91	2.82		9.80	5.93		10.26	5.47
MW-11	23.84		12.70	11.14		10.70	13.14		10.75	13.09
MW-12	22.03		Not Measured			Not Measured			Not Measured	
MW-13	24.12		15.83	8.29		11.14	12.98		11.22	12.90
MW-14	15.73		9.90	5.83		9.50	6.23		9.68	6.05
MW-15	23.99		10.55	13.44		10.14	13.85		10.30	13.69
MW-16	22.19		10.17	12.02		9.12	13.07		9.13	13.06
MW-17	23.05		11.36	11.69		10.33	12.72		10.20	12.85
MW-18	23.88		12.30	11.58		11.31	12.57		11.19	12.69
PW-1	22.80		Not Measured			Not Measured			Not Measured	

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measure

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	2/15/2001			2/14/2001			2/13/2001		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			Not Measured			Not Measured			Not Measured	
MW-2	15.51		7.10	8.41		5.59	9.92		5.72	9.79
MW-3	17.70		6.80	10.90		5.46	12.24		6.05	11.65
MW-4	22.19		8.16	14.03		7.79	14.40		7.84	14.35
MW-5	22.10		7.82	14.28		6.86	15.24		6.30	15.80
MW-6	15.55		8.06	7.49		7.81	7.74		8.50	7.05
MW-7	22.11		7.31	14.80		6.65	15.46		4.85	17.26
MW-8	16.27		9.00	7.27		8.54	7.73		8.81	7.46
MW-9 (Prod. Recovery Well)	23.14		8.74	14.40		8.35	14.79		7.68	15.46
MW-10	15.73		6.31	9.42		5.45	10.28		3.50	12.23
MW-11	23.84		8.80	15.04		8.10	15.74		9.95	13.89
MW-12	22.03		Not Measured			Not Measured			Not Measured	
MW-13	24.12		7.86	16.26		7.65	16.47		7.53	16.59
MW-14	15.73		8.77	6.96		8.79	6.94		8.94	6.79
MW-15	23.99		9.65	14.34		9.65	14.34		9.70	14.29
MW-16	22.19		8.91	13.28		7.78	14.41		4.04	18.15
MW-17	23.05		9.77	13.28		8.79	14.26		5.68	17.37
MW-18	23.88		10.62	13.26		9.62	14.26		7.86	16.02
PW-1	22.80		Not Measured			Not Measured			Not Measured	

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measure

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	1/4/2001				12/14/00[3]		12/14/00[2]		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			Not Measured			Not Measured			Not Measured	
MW-2	15.51		Not Measured			7.35	8.16		5.73	9.78
MW-3	17.70		8.04	9.66		7.10	10.60		6.07	11.63
MW-4	22.19		8.70	13.49		8.27	13.92		8.38	13.81
MW-5	22.10		8.71	13.39		8.04	14.06		8.02	14.08
MW-6	15.55		8.98	6.57		8.27	7.28		8.28	7.27
MW-7	22.11		9.20	12.91		8.81	13.30		9.87	12.24
MW-8	16.27		9.30	6.97		9.05	7.22		9.12	7.15
MW-9 (Prod. Recovery Well)	23.14		9.48	13.66		14.18	8.96		9.36	13.78
MW-10	15.73		10.45	5.28		9.82	5.91		9.74	5.99
MW-11	23.84		10.71	13.13		10.72	13.12		10.56	13.28
MW-12	22.03		Not Measured			Not Measured			Not Measured	
MW-13	24.12		11.13	12.99		Dry			10.95	13.17
MW-14	15.73		9.60	6.13		9.72	6.01		9.60	6.13
MW-15	23.99		10.39	13.60		10.23	13.76		10.26	13.73
MW-16	22.19		9.35	12.84		9.47	12.72		8.54	13.65
MW-17	23.05		10.56	12.49		10.14	12.91		10.22	12.83
MW-18	23.88		11.45	12.43		11.04	12.84		11.08	12.80
PW-1	22.80		Not Measured			Not Measured			Not Measured	

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measured

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	10/18/00[1]			7/26/00[1]			4/25/00[1]		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			7.56			Not Measured			Not Measured	
MW-2	15.51		7.99	7.52		5.70	9.81		6.97	8.54
MW-3	17.70		7.51	10.19		5.12	12.58		7.56	10.14
MW-4	22.19		8.10	14.09		5.75	16.44		8.10	14.09
MW-5	22.10		8.25	13.85		6.75	15.35		8.25	13.85
MW-6	15.55		8.72	6.83		7.06	8.49		8.17	7.38
MW-7	22.11		8.68	13.43		8.56	13.55		8.14	13.97
MW-8	16.27		8.34	7.93		9.83	6.44		8.93	7.34
MW-9 (Prod. Recovery Well)	23.14		8.97	14.17		9.55	13.59		9.28	13.86
MW-10	15.73		9.23	6.50		10.27	5.46		9.75	5.98
MW-11	23.84		10.18	13.66		10.89	12.95		10.08	13.76
MW-12	22.03		Not Measured			Not Measured			Not Measured	
MW-13	24.12		10.62	13.50		11.42	12.70		10.47	13.65
MW-14	15.73		9.02	6.71		9.50	6.23		9.16	6.57
MW-15	23.99		9.41	14.58		10.10	13.89		9.70	14.29
MW-16	22.19		8.87	13.32		8.93	13.26		8.80	13.39
MW-17	23.05		10.08	12.97		10.23	12.82		9.94	13.11
MW-18	23.88		10.96	12.92		11.10	12.78		10.72	13.16
PW-1	22.80		Not Measured			Not Measured			Not Measured	

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measure

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	1/12/00[1]			12/20/1999			11/22/1999		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			7.46			Not Measured			Not Measured	
MW-2	15.51		Not Measured			Not Measured			5.92	9.59
MW-3	17.70		8.31	9.39		8.13	9.57		6.50	11.20
MW-4	22.19		8.36	13.83		7.53	14.66		6.84	15.35
MW-5	22.10		Not Measured			Not Measured			7.37	14.73
MW-6	15.55		9.29	6.26		8.50	7.05		7.56	7.99
MW-7	22.11		9.28	12.83		Not Measured			4.76	17.35
MW-8	16.27		9.63	6.64		8.82	7.45		7.45	8.82
MW-9 (Prod. Recovery Well)	23.14		11.01	12.13		Not Measured			9.91	13.23
MW-10	15.73		10.51	5.22		Not Measured			4.82	10.91
MW-11	23.84		10.83	13.01		10.41	13.43		9.23	14.61
MW-12	22.03		Not Measured			6.43	15.60		7.19	14.84
MW-13	24.12		11.38	12.74		11.12	13.00		9.35	14.77
MW-14	15.73		9.20	6.53		8.93	6.80		7.64	8.09
MW-15	23.99		9.66	14.33		9.51	14.48		8.30	15.69
MW-16	22.19		9.38	12.81		10.16	12.03		8.30	13.89
MW-17	23.05		10.51	12.54		10.61	12.44		9.62	13.43
MW-18	23.88		11.45	12.43		10.44	13.44		10.68	13.20
PW-1	22.80		Not Measured			Not Measured			Not Measured	

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measure

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	10/20/99[1]			9/23/1999			8/19/1999		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			Not Measured			Not Measured			Not Measured	
MW-2	15.51		Not Measured			5.56	9.95		5.66	9.85
MW-3	17.70		5.29	12.41		Not Measured			6.14	11.56
MW-4	22.19		5.53	16.66		4.46	17.73		6.40	15.79
MW-5	22.10		6.34	15.76		5.96	16.14		7.91	14.19
MW-6	15.55		5.50	10.05		4.43	11.12		9.63	5.92
MW-7	22.11		7.04	15.07		6.26	15.85		6.00	16.11
MW-8	16.27		7.23	9.04		6.65	9.62		8.64	7.63
MW-9 (Prod. Recovery Well)	23.14		10.66	12.48		6.54	16.60		8.56	14.58
MW-10	15.73		8.61	7.12		10.75	4.98		3.65	12.08
MW-11	23.84		9.07	14.77		8.29	15.55		7.91	15.93
MW-12	22.03		9.21	12.82		7.15	14.88		8.22	13.81
MW-13	24.12		9.72	14.40		7.69	16.43		5.30	18.82
MW-14	15.73		8.98	6.75		7.82	7.91		9.40	6.33
MW-15	23.99		9.35	14.64		9.32	14.67		9.58	14.41
MW-16	22.19		10.63	11.56		6.57	15.62		7.00	15.19
MW-17	23.05		7.99	15.06		7.63	15.42		7.90	15.15
MW-18	23.88		8.67	15.21		8.64	15.24		9.24	14.64
PW-1	22.80		Not Measured			Not Measured			Not Measured	

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measured

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	7/14/99[1]			5/24/99[3]			5/24/99[2]		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			Not Measured			6.65			9.03	
MW-2	15.51		Not Measured			Not Measured			Not Measured	
MW-3	17.70		9.54	8.16		7.82	9.88		9.34	8.36
MW-4	22.19		9.22	12.97		8.82	13.37		8.85	13.34
MW-5	22.10		10.63	11.47		8.06	14.04		9.89	12.21
MW-6	15.55		9.39	6.16		9.27	6.28		9.29	6.26
MW-7	22.11		11.91	10.20		10.25	11.86		10.25	11.86
MW-8	16.27		11.12	5.15		10.75	5.52		10.72	5.55
MW-9 (Prod. Recovery Well)	23.14		12.63	10.51		11.85	11.29		10.72	12.42
MW-10	15.73		15.36	0.37		13.26	2.47		14.48	1.25
MW-11	23.84		14.18	9.66		14.09	9.75		14.12	9.72
MW-12	22.03		10.38	11.65		6.70	15.33		9.54	12.49
MW-13	24.12		16.40	7.72		16.22	7.90		16.18	7.94
MW-14	15.73		9.60	6.13		9.01	6.72		9.47	6.26
MW-15	23.99		9.80	14.19		9.51	14.48		9.49	14.50
MW-16	22.19		Not Measured			6.81	15.38		10.76	11.43
MW-17	23.05		12.94	10.11		8.46	14.59		11.94	11.11
MW-18	23.88		13.61	10.27		11.71	12.17		12.78	11.10
PW-1	22.80		Not Measured			Not Measured			Not Measured	

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measured

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	5/10/99[3]			5/10/99[2]			4/22/99[3]		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			5.49			9.47			11.97	
MW-2	15.51		7.52	7.99		Not Measured			Not Measured	
MW-3	17.70		6.94	10.76		9.82	7.88		11.33	6.37
MW-4	22.19		7.96	14.23		9.20	12.99		8.81	13.38
MW-5	22.10		7.09	15.01		10.52	11.58		11.32	10.78
MW-6	15.55		8.90	6.65		8.99	6.56		8.96	6.59
MW-7	22.11		6.38	15.73		12.42	9.69		13.66	8.45
MW-8	16.27		10.27	6.00		10.62	5.65		12.74	3.53
MW-9 (Prod. Recovery Well)	23.14		12.62	10.52		10.94	12.20		14.24	8.90
MW-10	15.73		8.15	7.58		15.13	0.60		14.83	0.90
MW-11	23.84		11.98	11.86		13.81	10.03		12.06	11.78
MW-12	22.03		6.48	15.55		9.72	12.31		11.46	10.57
MW-13	24.12		11.45	12.67		15.64	8.48		13.26	10.86
MW-14	15.73		8.46	7.27		9.42	6.31		9.32	6.41
MW-15	23.99		9.31	14.68		9.49	14.50		9.46	14.53
MW-16	22.19		6.03	16.16		10.72	11.47		13.58	8.61
MW-17	23.05		7.62	15.43		10.81	12.24		14.21	8.84
MW-18	23.88		10.23	13.65		12.94	10.94		14.24	9.64
PW-1	22.80		Not Measured			Not Measured			Not Measured	

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measure

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	4/22/99[2]			4/8/99[3]			4/8/99[2]		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			12.03			4.92			4.19	
MW-2	15.51		Not Measured			6.99	8.52		7.08	8.43
MW-3	17.70		11.35	6.35		6.84	10.86		6.82	10.88
MW-4	22.19		9.56	12.63		6.59	15.60	Trace	6.60	15.59
MW-5	22.10		11.49	10.61		6.19	15.91		6.10	16.00
MW-6	15.55		8.94	6.61		7.81	7.74		7.89	7.66
MW-7	22.11		13.67	8.44		5.32	16.79		5.00	17.11
MW-8	16.27		10.74	5.53		8.36	7.91		8.32	7.95
MW-9 (Prod. Recovery Well)	23.14		11.26	11.88		10.29	12.85		7.95	15.19
MW-10	15.73		14.84	0.89		4.51	11.22		4.33	11.40
MW-11	23.84		12.96	10.88		7.62	16.22		7.58	16.26
MW-12	22.03		11.62	10.41		7.17	14.86		7.00	15.03
MW-13	24.12		13.00	11.12		6.29	17.83		6.19	17.93
MW-14	15.73		9.33	6.40		8.44	7.29		8.39	7.34
MW-15	23.99		9.43	14.56		9.21	14.78		9.16	14.83
MW-16	22.19		13.71	8.48		5.99	16.20		5.70	16.49
MW-17	23.05		14.33	8.72		6.94	16.11		6.64	16.41
MW-18	23.88		14.31	9.57		8.28	15.60		8.06	15.82
PW-1	22.80		Not Measured			Not Measured			Not Measured	

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measure

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	3/8/99[1]			2/5/99[1]			1/25/99[1]		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			Not Measured			Not Measured			Not Measured	
MW-2	15.51		Well Dry			8.52	6.99		7.95	7.56
MW-3	17.70		8.82	8.88		9.12	8.58		4.96	12.74
MW-4	22.19		8.68	13.51		8.40	13.79		6.30	15.89
MW-5	22.10		9.45	12.65		9.55	12.55		9.14	12.96
MW-6	15.55		8.61	6.94		8.70	6.85		7.60	7.95
MW-7	22.11		9.83	12.28		11.62	10.49		4.52	17.59
MW-8	16.27		9.18	7.09		10.65	5.62		10.20	6.07
MW-9 (Prod. Recovery Well)	23.14		9.81	13.33		11.35	11.79		10.16	12.98
MW-10	15.73		11.04	4.69		15.20	0.53		11.76	3.97
MW-11	23.84		11.60	12.24		15.98	7.86		12.65	11.19
MW-12	22.03		8.79	13.24		9.50	12.53		9.33	12.70
MW-13	24.12		12.27	11.85		16.20	7.92		16.12	8.00
MW-14	15.73		9.44	6.29		9.58	6.15		9.52	6.21
MW-15	23.99		9.86	14.13		9.78	14.21		10.00	13.99
MW-16	22.19		10.00	12.19		10.92	11.27		9.90	12.29
MW-17	23.05		9.65	13.40		12.20	10.85		10.84	12.21
MW-18	23.88		12.41	11.47		12.92	10.96		11.95	11.93
PW-1	22.80		Not Measured			Not Measured			9.05	13.75

Notes:
[1] System not operational during water level survey
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[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measured

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	12/10/1998			11/16/1998			10/20/1998		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			Not Measured			6.91			8.20	
MW-2	15.51		8.20	7.31		7.87	7.64		8.51	7.00
MW-3	17.70		7.12	10.58		7.41	10.29		8.09	9.61
MW-4	22.19		7.69	14.50		7.58	14.61		7.89	14.30
MW-5	22.10		7.25	14.85		8.61	13.49		8.76	13.34
MW-6	15.55		9.21	6.34		8.55	7.00		8.89	6.66
MW-7	22.11		6.17	15.94		7.73	14.38		9.38	12.73
MW-8	16.27		9.81	6.46		8.57	7.70		9.30	6.97
MW-9 (Prod. Recovery Well)	23.14	8.78	8.80	14.34		8.78	14.36	9.23	9.32	13.91
MW-10	15.73		6.35	9.38		4.55	11.18		10.86	4.87
MW-11	23.84		11.12	12.72		8.39	15.45		12.42	11.42
MW-12	22.03		Not Measured			8.91	13.12		8.31	13.72
MW-13	24.12		6.44	17.68		7.50	16.62		16.21	7.91
MW-14	15.73		8.51	7.22		8.41	7.32		8.74	6.99
MW-15	23.99		9.19	14.80		9.09	14.90		9.31	14.68
MW-16	22.19		7.33	14.86		8.48	13.71		9.42	12.77
MW-17	23.05		8.27	14.78		9.41	13.64		10.68	12.37
MW-18	23.88		10.75	13.13		10.59	13.29		11.58	12.30
PW-1	22.80		Not Measured			7.59	15.21		9.06	13.74

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measure

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	9/3/1998			8/13/1998			7/31/1998		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			Not Measured			Not Measured			4.30	
MW-2	15.51		7.43	8.08		7.70	7.81		5.95	9.56
MW-3	17.70		7.00	10.70		7.45	10.25		5.29	12.41
MW-4	22.19		7.79	14.40		8.17	14.02		5.99	16.20
MW-5	22.10		6.89	15.21		7.25	14.85		10.55	11.55
MW-6	15.55		8.29	7.26		8.69	6.86		6.39	9.16
MW-7	22.11		6.98	15.13		7.35	14.76		7.30	14.81
MW-8	16.27		9.29	6.98		9.65	6.62		7.15	9.12
MW-9 (Prod. Recovery Well)	23.14	9.13	9.15	14.01	9.55	9.59	13.59	7.03	7.12	16.11
MW-10	15.73		9.99	5.74		10.31	5.42		Not Measured	
MW-11	23.84		13.09	10.75		13.54	10.30		7.75	16.09
MW-12	22.03		5.39	16.64		5.75	16.28		6.22	15.81
MW-13	24.12		15.39	8.73		15.53	8.59		6.84	17.28
MW-14	15.73		7.69	8.04		8.04	7.69		7.25	8.48
MW-15	23.99		8.71	15.28		9.03	14.96		8.01	15.98
MW-16	22.19		6.91	15.28		7.30	14.89		6.35	15.84
MW-17	23.05		9.61	13.44		9.90	13.15		8.73	14.32
MW-18	23.88		11.43	12.45		11.83	12.05		10.01	13.87
PW-1	22.80		Not Measured			Not Measured			Not Measured	

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measure

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	5/15/1998			4/24/1998		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			6.14			4.18	
MW-2	15.51		7.84	7.67		7.55	7.96
MW-3	17.70		6.84	10.86		6.31	11.39
MW-4	22.19		7.07	15.12		7.85	14.34
MW-5	22.10		7.64	14.46		7.14	14.96
MW-6	15.55		7.44	8.11		7.06	8.49
MW-7	22.11		8.17	13.94		7.69	14.42
MW-8	16.27		7.89	8.38		7.78	8.49
MW-9 (Prod. Recovery Well)	23.14		Not Measured			Not Measured	
MW-10	15.73		9.35	6.38		9.48	6.25
MW-11	23.84		11.21	12.63		9.58	14.26
MW-12	22.03		7.41	14.62		7.06	14.97
MW-13	24.12		14.06	10.06		9.27	14.85
MW-14	15.73		8.37	7.36		8.14	7.59
MW-15	23.99		8.82	15.17		8.71	15.28
MW-16	22.19		8.53	13.66		6.75	15.44
MW-17	23.05		9.79	13.26		9.13	13.92
MW-18	23.88		10.91	12.97		10.46	13.42
PW-1	22.80		7.98	14.82		Not Measured	

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measure

Table 1-1
Building AS 4158
Camp Lejeune, North Carolina
Water Level Measurement Summary

Sample Point	Top of Casing Elevation (ft., msl)	7/23/1998			7/7/1998			6/24/1998		
		Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)	Depth to Hydrocarbon Product (ft. below toc)	Depth to Groundwater (ft. below toc)	Groundwater Elevation (ft., msl)
MW-1			8.63			3.94			Not Measured	
MW-2	15.51		7.91	7.60		6.30	9.21		7.38	8.13
MW-3	17.70		7.97	9.73		5.82	11.88		7.13	10.57
MW-4	22.19		7.84	14.35		5.99	16.20		7.57	14.62
MW-5	22.10		9.45	12.65		Not Measured			8.43	13.67
MW-6	15.55		7.91	7.64		6.68	8.87		8.11	7.44
MW-7	22.11		10.75	11.36		7.05	15.06		8.74	13.37
MW-8	16.27		8.77	7.50		7.82	8.45		8.56	7.71
MW-9 (Prod. Recovery Well)	23.14		9.01	14.13	7.44	7.78	15.70	8.90	9.28	14.24
MW-10	15.73		12.06	3.67		Not Measured			9.54	6.19
MW-11	23.84		10.82	13.02		9.34	14.50		10.30	13.54
MW-12	22.03		9.56	12.47		7.59	14.44		8.01	14.02
MW-13	24.12		10.74	13.38		8.93	15.19		10.56	13.56
MW-14	15.73		8.49	7.24		Not Measured			Not Measured	
MW-15	23.99		8.92	15.07		8.63	15.36		8.93	15.06
MW-16	22.19		10.63	11.56		8.72	13.47		9.12	13.07
MW-17	23.05		11.69	11.36		9.82	13.23		10.27	12.78
MW-18	23.88		12.63	11.25		10.92	12.96		11.35	12.53
PW-1	22.80		Not Measured			7.73	15.07		Not Measured	

Notes:
[1] System not operational during water level survey
[2] Groundwater elevation measurements same day prior to AFVR event
[3] Groundwater elevation measurements same day after AFVR event
ft = feet
toc = top of casing elevation
msl = mean sea level
* Indicates that the depth to hydrocarbon product could not be measured

DATA PROVIDED BY

ENGINEERING AND ENVIRONMENT, INC.

ENGINEERING AND ENVIRONMENT, INC.

BLD. 4158 Water Levels **Date** **4/13/2004**

Well ID	MW01	Depth to Bottom	16.35	Depth to Product		Depth to Water	no access
Well ID	MW02	Depth to Bottom	7.45	Depth to Product		Depth to Water	dry
Well ID	MW03	Depth to Bottom		Depth to Product		Depth to Water	no access
Well ID	MW04	Depth to Bottom	16.10	Depth to Product		Depth to Water	6.95
Well ID	MW05	Depth to Bottom	15.37	Depth to Product		Depth to Water	7.60
Well ID	MW06	Depth to Bottom	15.65	Depth to Product		Depth to Water	6.63
Well ID	MW07	Depth to Bottom	15.00	Depth to Product		Depth to Water	8.22
Well ID	MW08	Depth to Bottom	16.33	Depth to Product		Depth to Water	8.87
Well ID	MW09	Depth to Bottom	18.80	Depth to Product		Depth to Water	8.62
Well ID	MW10	Depth to Bottom	15.93	Depth to Product		Depth to Water	9.55
Well ID	MW11	Depth to Bottom	16.40	Depth to Product		Depth to Water	10.81
Well ID	MW12	Depth to Bottom		Depth to Product		Depth to Water	
Well ID	MW13	Depth to Bottom	16.72	Depth to Product		Depth to Water	10.49
Well ID	MW14	Depth to Bottom	15.93	Depth to Product		Depth to Water	9.30
Well ID	MW15	Depth to Bottom	16.43	Depth to Product		Depth to Water	8.43
Well ID	MW16	Depth to Bottom	48.68	Depth to Product		Depth to Water	8.35
Well ID	MW17	Depth to Bottom	49.60	Depth to Product		Depth to Water	9.69
Well ID	MW18	Depth to Bottom	49.79	Depth to Product		Depth to Water	10.64

* well appears to be abandoned

no access - well underwater, covered by vehicle or equipment, etc.

ENGINEERING AND ENVIRONMENT, INC.

BLD. 4158 Water Levels **Date** **5/6/2004**

Well ID	MW01	Depth to Bottom	16.35	Depth to Product		Depth to Water	no access
Well ID	MW02	Depth to Bottom	7.45	Depth to Product		Depth to Water	6.82
Well ID	MW03	Depth to Bottom		Depth to Product		Depth to Water	no access
Well ID	MW04	Depth to Bottom	16.10	Depth to Product		Depth to Water	no access
Well ID	MW05	Depth to Bottom	15.37	Depth to Product		Depth to Water	no access
Well ID	MW06	Depth to Bottom	15.65	Depth to Product		Depth to Water	5.97
Well ID	MW07	Depth to Bottom	15.00	Depth to Product		Depth to Water	7.77
Well ID	MW08	Depth to Bottom	16.33	Depth to Product		Depth to Water	8.20
Well ID	MW09	Depth to Bottom	18.80	Depth to Product	8.48	Depth to Water	8.49
Well ID	MW10	Depth to Bottom	15.93	Depth to Product		Depth to Water	9.13
Well ID	MW11	Depth to Bottom	16.40	Depth to Product		Depth to Water	9.81
Well ID	MW12*	Depth to Bottom		Depth to Product		Depth to Water	
Well ID	MW13	Depth to Bottom	16.72	Depth to Product		Depth to Water	10.17
Well ID	MW14	Depth to Bottom	15.93	Depth to Product		Depth to Water	9.21
Well ID	MW15	Depth to Bottom	16.43	Depth to Product		Depth to Water	9.18
Well ID	MW16	Depth to Bottom	48.68	Depth to Product		Depth to Water	7.68
Well ID	MW17	Depth to Bottom	49.60	Depth to Product		Depth to Water	8.98
Well ID	MW18	Depth to Bottom	49.79	Depth to Product		Depth to Water	10.03

* well appears to be abandoned

no access - well underwater, covered by vehicle or equipment, etc.

ENGINEERING AND ENVIRONMENT, INC.

BLD. 4158 Water Levels **Date** **6/9/2004**

Well ID	MW01	Depth to Bottom	16.35	Depth to Product		Depth to Water	no access
Well ID	MW02	Depth to Bottom	7.45	Depth to Product		Depth to Water	dry
Well ID	MW03	Depth to Bottom		Depth to Product		Depth to Water	no access
Well ID	MW04	Depth to Bottom	16.10	Depth to Product		Depth to Water	8.05
Well ID	MW05	Depth to Bottom	15.37	Depth to Product		Depth to Water	8.43
Well ID	MW06	Depth to Bottom	15.65	Depth to Product		Depth to Water	8.72
Well ID	MW07	Depth to Bottom	15.00	Depth to Product		Depth to Water	8.80
Well ID	MW08	Depth to Bottom	16.33	Depth to Product		Depth to Water	9.13
Well ID	MW09	Depth to Bottom	18.80	Depth to Product		Depth to Water	8.70
Well ID	MW10	Depth to Bottom	15.93	Depth to Product		Depth to Water	9.56
Well ID	MW11	Depth to Bottom	16.40	Depth to Product		Depth to Water	10.43
Well ID	MW12*	Depth to Bottom		Depth to Product		Depth to Water	
Well ID	MW13	Depth to Bottom	16.72	Depth to Product		Depth to Water	10.78
Well ID	MW14	Depth to Bottom	15.93	Depth to Product		Depth to Water	9.18
Well ID	MW15	Depth to Bottom	16.43	Depth to Product		Depth to Water	10.70
Well ID	MW16	Depth to Bottom	48.68	Depth to Product		Depth to Water	8.92
Well ID	MW17	Depth to Bottom	49.60	Depth to Product		Depth to Water	10.21
Well ID	MW18	Depth to Bottom	49.79	Depth to Product		Depth to Water	11.28

* well appears to be abandoned

no access - well underwater, covered by vehicle or equipment, etc.

ENGINEERING AND ENVIRONMENT, INC.

BLD. 4158 Water Levels **Date** **7/12/2004**

Well ID	MW01	Depth to Bottom	16.35	Depth to Product		Depth to Water	no access
Well ID	MW02	Depth to Bottom	7.45	Depth to Product		Depth to Water	dry
Well ID	MW03	Depth to Bottom		Depth to Product		Depth to Water	no access
Well ID	MW04	Depth to Bottom	16.10	Depth to Product		Depth to Water	8.32
Well ID	MW05	Depth to Bottom	15.37	Depth to Product		Depth to Water	8.85
Well ID	MW06	Depth to Bottom	15.65	Depth to Product		Depth to Water	8.23
Well ID	MW07	Depth to Bottom	15.00	Depth to Product		Depth to Water	9.22
Well ID	MW08	Depth to Bottom	16.33	Depth to Product		Depth to Water	9.85
Well ID	MW09	Depth to Bottom	18.80	Depth to Product	9.08	Depth to Water	9.18
Well ID	MW10	Depth to Bottom	15.93	Depth to Product		Depth to Water	10.08
Well ID	MW11	Depth to Bottom	16.40	Depth to Product		Depth to Water	10.81
Well ID	MW12*	Depth to Bottom		Depth to Product		Depth to Water	
Well ID	MW13	Depth to Bottom	16.72	Depth to Product		Depth to Water	11.11
Well ID	MW14	Depth to Bottom	15.93	Depth to Product		Depth to Water	9.59
Well ID	MW15	Depth to Bottom	16.43	Depth to Product		Depth to Water	10.29
Well ID	MW16	Depth to Bottom	48.68	Depth to Product		Depth to Water	9.38
Well ID	MW17	Depth to Bottom	49.60	Depth to Product		Depth to Water	10.43
Well ID	MW18	Depth to Bottom	49.79	Depth to Product		Depth to Water	10.50

* well appears to be abandoned

no access - well underwater, covered by vehicle or equipment, etc.

ENGINEERING AND ENVIRONMENT, INC.

BLD. 4158 Water Levels **Date** **8/12/2004**

Well ID	MW01	Depth to Bottom	16.35	Depth to Product		Depth to Water	7.60
Well ID	MW02	Depth to Bottom	7.45	Depth to Product		Depth to Water	no access
Well ID	MW03	Depth to Bottom		Depth to Product		Depth to Water	7.62
Well ID	MW04	Depth to Bottom	16.10	Depth to Product		Depth to Water	8.23
Well ID	MW05	Depth to Bottom	15.37	Depth to Product		Depth to Water	8.52
Well ID	MW06	Depth to Bottom	15.65	Depth to Product		Depth to Water	8.21
Well ID	MW07	Depth to Bottom	15.00	Depth to Product		Depth to Water	8.90
Well ID	MW08	Depth to Bottom	16.33	Depth to Product		Depth to Water	9.08
Well ID	MW09	Depth to Bottom	18.80	Depth to Product		Depth to Water	9.17
Well ID	MW10	Depth to Bottom	15.93	Depth to Product		Depth to Water	9.45
Well ID	MW11	Depth to Bottom	16.40	Depth to Product		Depth to Water	9.62
Well ID	MW12*	Depth to Bottom		Depth to Product		Depth to Water	
Well ID	MW13	Depth to Bottom	16.72	Depth to Product		Depth to Water	10.95
Well ID	MW14	Depth to Bottom	15.93	Depth to Product		Depth to Water	9.60
Well ID	MW15	Depth to Bottom	16.43	Depth to Product		Depth to Water	10.25
Well ID	MW16	Depth to Bottom	48.68	Depth to Product		Depth to Water	9.15
Well ID	MW17	Depth to Bottom	49.60	Depth to Product		Depth to Water	10.32
Well ID	MW18	Depth to Bottom	49.79	Depth to Product		Depth to Water	11.20

* well appears to be abandoned

no access - well underwater, covered by vehicle or equipment, etc.

ENGINEERING AND ENVIRONMENT, INC.

BLD. 4158 Water Levels **Date** **9/21/2004**

Well ID	MW01	Depth to Bottom	16.35	Depth to Product		Depth to Water	5.58
Well ID	MW02	Depth to Bottom	7.45	Depth to Product		Depth to Water	5.60
Well ID	MW03	Depth to Bottom		Depth to Product		Depth to Water	no access
Well ID	MW04	Depth to Bottom	16.10	Depth to Product		Depth to Water	6.20
Well ID	MW05	Depth to Bottom	15.37	Depth to Product		Depth to Water	6.82
Well ID	MW06	Depth to Bottom	15.65	Depth to Product		Depth to Water	
Well ID	MW07	Depth to Bottom	15.00	Depth to Product		Depth to Water	7.32
Well ID	MW08	Depth to Bottom	16.33	Depth to Product		Depth to Water	7.19
Well ID	MW09	Depth to Bottom	18.80	Depth to Product		Depth to Water	9.82
Well ID	MW10	Depth to Bottom	15.93	Depth to Product		Depth to Water	7.98
Well ID	MW11	Depth to Bottom	16.40	Depth to Product		Depth to Water	8.30
Well ID	MW12*	Depth to Bottom		Depth to Product		Depth to Water	
Well ID	MW13	Depth to Bottom	16.72	Depth to Product		Depth to Water	9.87
Well ID	MW14	Depth to Bottom	15.93	Depth to Product		Depth to Water	8.73
Well ID	MW15	Depth to Bottom	16.43	Depth to Product		Depth to Water	9.50
Well ID	MW16	Depth to Bottom	48.68	Depth to Product		Depth to Water	7.43
Well ID	MW17	Depth to Bottom	49.60	Depth to Product		Depth to Water	8.74
Well ID	MW18	Depth to Bottom	49.79	Depth to Product		Depth to Water	9.83

* well appears to be abandoned

no access - well underwater, covered by vehicle or equipment, etc.

ENGINEERING AND ENVIRONMENT, INC.

BLD. 4158 Water Levels **Date** **10/1/2004**

Well ID	MW01	Depth to Bottom	16.35	Depth to Product		Depth to Water	4.00
Well ID	MW02	Depth to Bottom	7.45	Depth to Product		Depth to Water	4.98
Well ID	MW03	Depth to Bottom		Depth to Product		Depth to Water	no access
Well ID	MW04	Depth to Bottom	16.10	Depth to Product		Depth to Water	7.34
Well ID	MW05	Depth to Bottom	15.37	Depth to Product		Depth to Water	7.41
Well ID	MW06	Depth to Bottom	15.65	Depth to Product		Depth to Water	7.39
Well ID	MW07	Depth to Bottom	15.00	Depth to Product		Depth to Water	7.44
Well ID	MW08	Depth to Bottom	16.33	Depth to Product		Depth to Water	7.81
Well ID	MW09	Depth to Bottom	18.80	Depth to Product		Depth to Water	8.37
Well ID	MW10	Depth to Bottom	15.93	Depth to Product		Depth to Water	8.95
Well ID	MW11	Depth to Bottom	16.40	Depth to Product		Depth to Water	4.83
Well ID	MW12	Depth to Bottom		Depth to Product		Depth to Water	covered
Well ID	MW13	Depth to Bottom	16.72	Depth to Product		Depth to Water	10.22
Well ID	MW14	Depth to Bottom	15.93	Depth to Product		Depth to Water	9.01
Well ID	MW15	Depth to Bottom	16.43	Depth to Product		Depth to Water	9.49
Well ID	MW16	Depth to Bottom	48.68	Depth to Product		Depth to Water	8.38
Well ID	MW17	Depth to Bottom	49.60	Depth to Product		Depth to Water	9.13
Well ID	MW18	Depth to Bottom	49.79	Depth to Product		Depth to Water	10.36

* well appears to be abandoned

no access - well underwater, covered by vehicle or equipment, etc.

ENGINEERING AND ENVIRONMENT, INC.

BLD. 4158 Water Levels **Date** **11/4/2004**

Well ID	MW01	Depth to Bottom	16.35	Depth to Product		Depth to Water	7.77
Well ID	MW02	Depth to Bottom	7.45	Depth to Product		Depth to Water	dry
Well ID	MW03	Depth to Bottom		Depth to Product		Depth to Water	no access
Well ID	MW04	Depth to Bottom	16.10	Depth to Product		Depth to Water	8.25
Well ID	MW05	Depth to Bottom	15.37	Depth to Product		Depth to Water	8.40
Well ID	MW06	Depth to Bottom	15.65	Depth to Product		Depth to Water	8.88
Well ID	MW07	Depth to Bottom	15.00	Depth to Product		Depth to Water	8.59
Well ID	MW08	Depth to Bottom	16.33	Depth to Product		Depth to Water	9.16
Well ID	MW09	Depth to Bottom	18.80	Depth to Product		Depth to Water	8.56
Well ID	MW10	Depth to Bottom	15.93	Depth to Product		Depth to Water	10.09
Well ID	MW11	Depth to Bottom	16.40	Depth to Product		Depth to Water	10.38
Well ID	MW12*	Depth to Bottom		Depth to Product		Depth to Water	
Well ID	MW13	Depth to Bottom	16.72	Depth to Product		Depth to Water	10.69
Well ID	MW14	Depth to Bottom	15.93	Depth to Product		Depth to Water	9.27
Well ID	MW15	Depth to Bottom	16.43	Depth to Product		Depth to Water	9.88
Well ID	MW16	Depth to Bottom	48.68	Depth to Product		Depth to Water	8.90
Well ID	MW17	Depth to Bottom	49.60	Depth to Product		Depth to Water	10.20
Well ID	MW18	Depth to Bottom	49.79	Depth to Product		Depth to Water	11.21

* well appears to be abandoned

no access - well underwater, covered by vehicle or equipment, etc.

ENGINEERING AND ENVIRONMENT, INC.

BLD. 4158 Water Levels **Date** **12/9/2004**

Well ID	MW01	Depth to Bottom	16.35	Depth to Product		Depth to Water	8.33
Well ID	MW02	Depth to Bottom	7.45	Depth to Product		Depth to Water	dry
Well ID	MW03	Depth to Bottom		Depth to Product		Depth to Water	no access
Well ID	MW04	Depth to Bottom	16.10	Depth to Product		Depth to Water	8.58
Well ID	MW05	Depth to Bottom	15.37	Depth to Product		Depth to Water	8.95
Well ID	MW06	Depth to Bottom	15.65	Depth to Product		Depth to Water	9.38
Well ID	MW07	Depth to Bottom	15.00	Depth to Product		Depth to Water	8.95
Well ID	MW08	Depth to Bottom	16.33	Depth to Product		Depth to Water	9.90
Well ID	MW09	Depth to Bottom	18.80	Depth to Product		Depth to Water	9.30
Well ID	MW10	Depth to Bottom	15.93	Depth to Product		Depth to Water	10.70
Well ID	MW11	Depth to Bottom	16.40	Depth to Product		Depth to Water	11.01
Well ID	MW12*	Depth to Bottom		Depth to Product		Depth to Water	
Well ID	MW13	Depth to Bottom	16.72	Depth to Product		Depth to Water	11.28
Well ID	MW14	Depth to Bottom	15.93	Depth to Product		Depth to Water	9.49
Well ID	MW15	Depth to Bottom	16.43	Depth to Product		Depth to Water	10.56
Well ID	MW16	Depth to Bottom	48.68	Depth to Product		Depth to Water	uw
Well ID	MW17	Depth to Bottom	49.60	Depth to Product		Depth to Water	10.65
Well ID	MW18	Depth to Bottom	49.79	Depth to Product		Depth to Water	11.70

* well appears to be abandoned

no access - well underwater, covered by vehicle or equipment, etc.

ENGINEERING AND ENVIRONMENT, INC.

BLD. 4158 Water Levels **Date** **1/4/2005**

Well ID	MW01	Depth to Bottom	16.35	Depth to Product		Depth to Water	8.45
Well ID	MW02	Depth to Bottom	7.45	Depth to Product		Depth to Water	dry
Well ID	MW03	Depth to Bottom		Depth to Product		Depth to Water	no access
Well ID	MW04	Depth to Bottom	16.10	Depth to Product		Depth to Water	8.90
Well ID	MW05	Depth to Bottom	15.37	Depth to Product		Depth to Water	9.20
Well ID	MW06	Depth to Bottom	15.65	Depth to Product		Depth to Water	9.52
Well ID	MW07	Depth to Bottom	15.00	Depth to Product		Depth to Water	9.40
Well ID	MW08	Depth to Bottom	16.33	Depth to Product		Depth to Water	10.21
Well ID	MW09	Depth to Bottom	18.80	Depth to Product	9.31	Depth to Water	9.33
Well ID	MW10	Depth to Bottom	15.93	Depth to Product		Depth to Water	10.93
Well ID	MW11	Depth to Bottom	16.40	Depth to Product		Depth to Water	11.28
Well ID	MW12*	Depth to Bottom		Depth to Product		Depth to Water	
Well ID	MW13	Depth to Bottom	16.72	Depth to Product		Depth to Water	11.56
Well ID	MW14	Depth to Bottom	15.93	Depth to Product		Depth to Water	9.88
Well ID	MW15	Depth to Bottom	16.43	Depth to Product		Depth to Water	10.83
Well ID	MW16	Depth to Bottom	48.68	Depth to Product		Depth to Water	9.85
Well ID	MW17	Depth to Bottom	49.60	Depth to Product		Depth to Water	10.98
Well ID	MW18	Depth to Bottom	49.79	Depth to Product		Depth to Water	11.83

* well appears to be abandoned

no access - well underwater, covered by vehicle or equipment, etc.

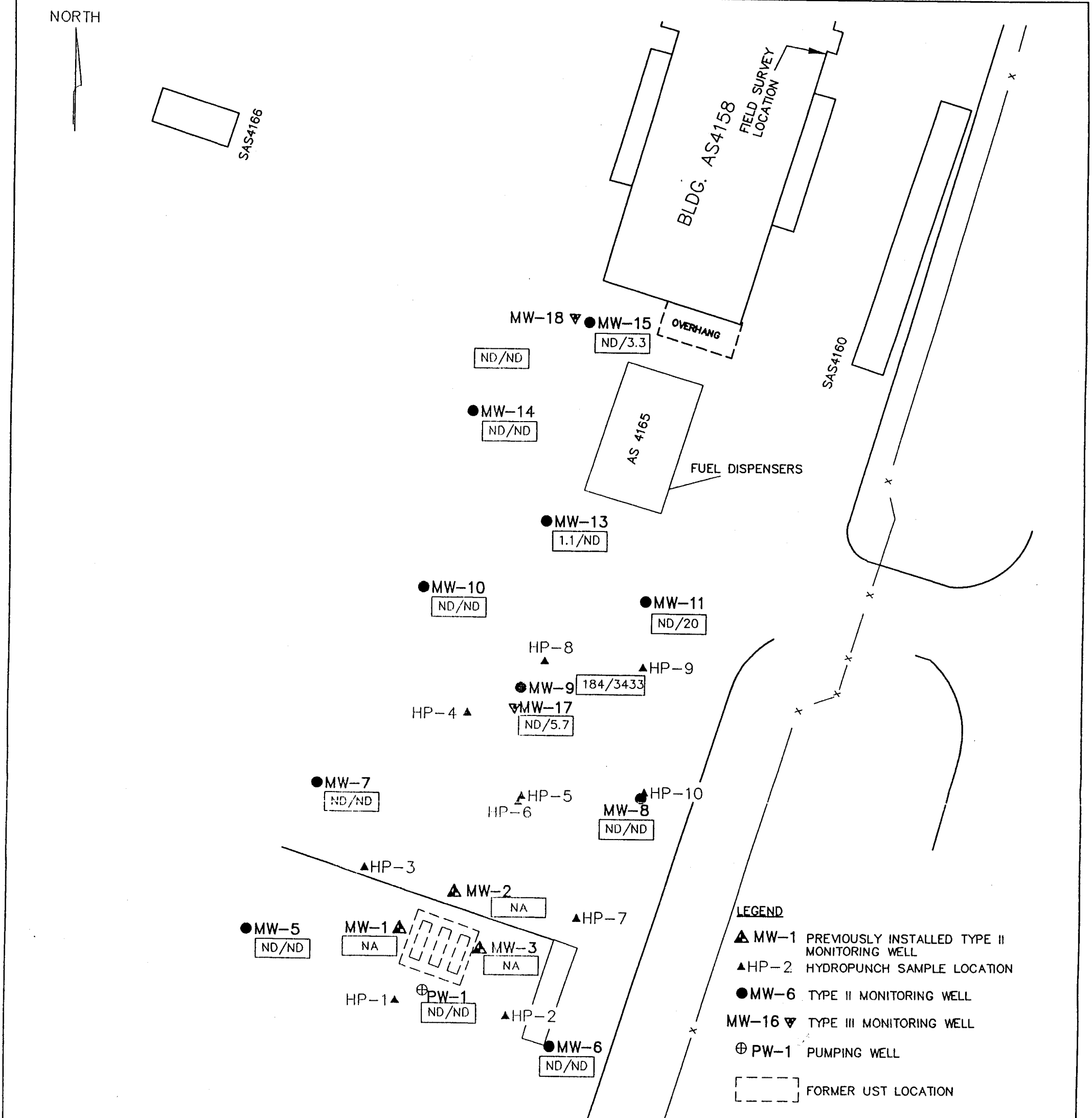
APPENDIX D

SELECTED FIGURES FROM VARIOUS REPORTS

DATA OBTAINED FROM

CORRECTIVE ACTION PLAN

BY CATLIN



NOTES:

1. VERTICAL DATUM IS BASED ON EXISTING CONCRETE MONUMENT PW-4 WITH A GIVEN ELEVATION OF 21.75 FEET.
2. ALL ELEVATIONS ON MONITORING WELLS WERE TAKEN AT THE TOP OF THE PVC CASING.
3. ALL ELEVATIONS ON HYDROPUNCHES WERE TAKEN ON THE GROUND.
4. HORIZONTAL DATUM BASED ON CONCRETE MONUMENT PW-4 AND PW-5 ESTABLISHED BY DAVIS AND FLOYD, INC.
5. ALL LOCATIONS OF BUILDINGS, STREETS, AND PARKING AREA WERE TAKEN FROM A CAMP LEJEUNE BASE MAP AUTOCAD.DWG FILE SUPPLIED BY LAW ENGINEERING UNLESS OTHERWISE NOTED.
6. THE MONITORING WELLS, HYDROPUNCHES, PUMPING WELL AND THE CORNERS OF BUILDING AS4158 WERE THE ONLY POINTS LOCATED IN THE FIELD BY THIS SURVEY. ALL OTHER LOCATIONS WERE TAKEN FROM THE ABOVE REFERENCED FILE, AND MAY OR MAY NOT BE SHOWN CORRECTLY.

NOTE:
REFERENCE DWG 4.5 FROM LEAKING UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT 10/4/94 BY: LAW ENGINEERING RALEIGH, N.C.

J9192T03

Richard Catlin & Associates, Inc. ENVIRONMENTAL ENGINEERS AND HYDROGEOLOGISTS RC&A WILMINGTON, NC CHARLESTON, SC ATLANTA, GA MOORESVILLE, NC	PROJECT BLDG. AS-4158 MARINE CORPS AIR STATION NEW RIVER, N.C.	TITLE TPH CONCENTRATIONS (SOIL)			FIGURE 1.2
	JOB NO. 94133	DATE: APRIL 1995	SCALE: 1"=50'	DRAWN BY:	CHECKED BY: BW

NORTH

SAS4166

BLDG. AS4158

FIELD SURVEY LOCATION

OVERHANG

SAS4160

MW-18 ND

MW-15 2.9

MW-14 3.1

AS 4165

FUEL DISPENSERS

MW-13 270

MW-10 190

MW-11 180

HP-8 76

HP-9 ND

MW-9 190

HP-4 140

MW-17 ND

MW-7 2.0

HP-5

HP-6 25

38

HP-10

MW-8 ND

ND

1.7

HP-3

MW-2 280

HP-7 ND

MW-5 ND

MW-1 ND

MW-3 130

HP-1 1700

PW-1 1400

HP-2 4.7

MW-6 ND

MW-16 ND

MW-4 99

MW-12 ND

1

10

100

200

1000

?

x

LEGEND

- MW-1 PREVIOUSLY INSTALLED TYPE II MONITORING WELL
- HP-2 HYDROPUNCH SAMPLE LOCATION
- MW-6 TYPE II MONITORING WELL
- MW-16 TYPE III MONITORING WELL
- PW-1 PUMPING WELL
- FORMER UST LOCATION
- x FENCE
- ND NON-DETECT ABOVE LABORATORY QUANTITATION LIMIT
- 25 CONCENTRATION OF BENZENE
- BENZENE ISOPLETH (CONCENTRATIONS IN ug/L)

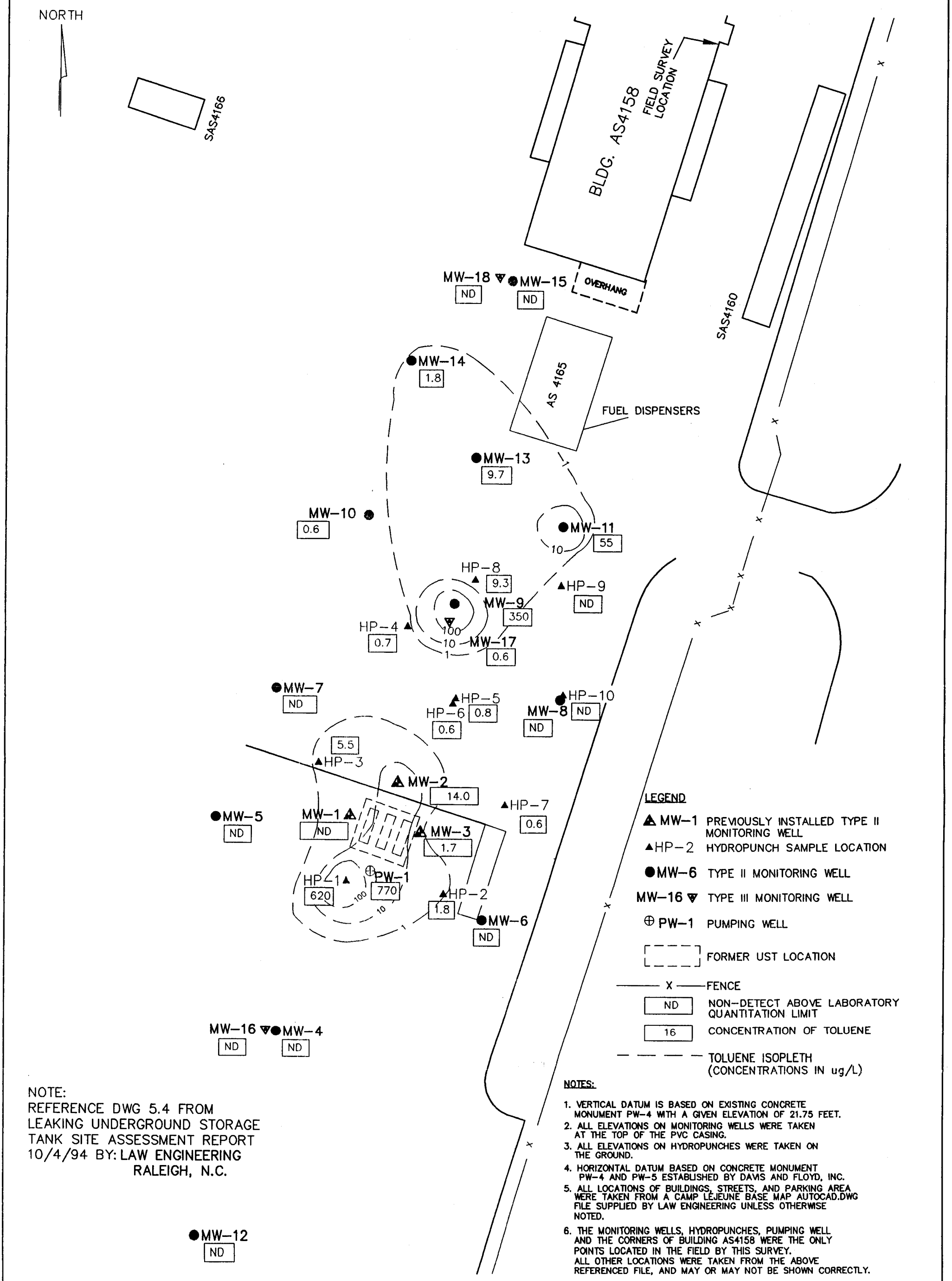
NOTES:

1. VERTICAL DATUM IS BASED ON EXISTING CONCRETE MONUMENT PW-4 WITH A GIVEN ELEVATION OF 21.75 FEET.
2. ALL ELEVATIONS ON MONITORING WELLS WERE TAKEN AT THE TOP OF THE PVC CASING.
3. ALL ELEVATIONS ON HYDROPUNCHES WERE TAKEN ON THE GROUND.
4. HORIZONTAL DATUM BASED ON CONCRETE MONUMENT PW-4 AND PW-5 ESTABLISHED BY DAVIS AND FLOYD, INC.
5. ALL LOCATIONS OF BUILDINGS, STREETS, AND PARKING AREA WERE TAKEN FROM A CAMP LEJEUNE BASE MAP AUTOCAD.DWG FILE SUPPLIED BY LAW ENGINEERING UNLESS OTHERWISE NOTED.
6. THE MONITORING WELLS, HYDROPUNCHES, PUMPING WELL AND THE CORNERS OF BUILDING AS4158 WERE THE ONLY POINTS LOCATED IN THE FIELD BY THIS SURVEY. ALL OTHER LOCATIONS WERE TAKEN FROM THE ABOVE REFERENCED FILE, AND MAY OR MAY NOT BE SHOWN CORRECTLY.

NOTE:
REFERENCE DWG 5.3 FROM
LEAKING UNDERGROUND STORAGE
TANK SITE ASSESSMENT REPORT
10/4/94 BY: LAW ENGINEERING
RALEIGH, N.C.

J9192T06

Richard Catlin & Associates, Inc. ENVIRONMENTAL ENGINEERS AND HYDROGEOLOGISTS RC&A WILMINGTON, NC CHARLESTON, SC ATLANTA, GA MOORESVILLE, NC	PROJECT BLDG. AS-4158 MARINE CORPS AIR STATION NEW RIVER, N.C.	TITLE BENZENE CONCENTRATIONS (WATER) – ISOPLETH MAP			FIGURE 1.3
	JOB NO. 94133	DATE: SEPT 1995	SCALE: 1"=50'	DRAWN BY:	CHECKED BY: BW



NOTE:
REFERENCE DWG 5.4 FROM
LEAKING UNDERGROUND STORAGE
TANK SITE ASSESSMENT REPORT
10/4/94 BY: LAW ENGINEERING
RALEIGH, N.C.

NOTES:

1. VERTICAL DATUM IS BASED ON EXISTING CONCRETE MONUMENT PW-4 WITH A GIVEN ELEVATION OF 21.75 FEET.
2. ALL ELEVATIONS ON MONITORING WELLS WERE TAKEN AT THE TOP OF THE PVC CASING.
3. ALL ELEVATIONS ON HYDROPUNCHES WERE TAKEN ON THE GROUND.
4. HORIZONTAL DATUM BASED ON CONCRETE MONUMENT PW-4 AND PW-5 ESTABLISHED BY DAVIS AND FLOYD, INC.
5. ALL LOCATIONS OF BUILDINGS, STREETS, AND PARKING AREA WERE TAKEN FROM A CAMP LEJEUNE BASE MAP AUTOCAD.DWG FILE SUPPLIED BY LAW ENGINEERING UNLESS OTHERWISE NOTED.
6. THE MONITORING WELLS, HYDROPUNCHES, PUMPING WELL AND THE CORNERS OF BUILDING AS4158 WERE THE ONLY POINTS LOCATED IN THE FIELD BY THIS SURVEY. ALL OTHER LOCATIONS WERE TAKEN FROM THE ABOVE REFERENCED FILE, AND MAY OR MAY NOT BE SHOWN CORRECTLY.

J9192T07

Richard Catlin & Associates, Inc. ENVIRONMENTAL ENGINEERS AND HYDROGEOLOGISTS RC&A WILMINGTON, NC CHARLESTON, SC ATLANTA, GA MOORESVILLE, NC	PROJECT BLDG. AS-4158 MARINE CORPS AIR STATION NEW RIVER, N.C.	TITLE TOLUENE CONCENTRATIONS (WATER) – ISOPLETH MAP			FIGURE 1.4
	JOB NO. 94133	DATE: SEPT 1995	SCALE: 1"=50'	DRAWN BY:	CHECKED BY: BW

NORTH

SAS4166

BLDG. AS4158

FIELD SURVEY LOCATION

OVERHANG

SAS4160

MW-18 ND

MW-15 ND

MW-14 ND

AS 4165

FUEL DISPENSERS

MW-13 ND

MW-10 1.7

MW-11 14

10

HP-8 5.5

HP-9 ND

MW-9 90

HP-4 ND

10

MW-17 ND

1

MW-7 ND

HP-5 ND

HP-6 0.5

MW-8 ND

HP-10 ND

ND

HP-3

MW-2 37

HP-7 ND

MW-5 ND

MW-1 ND

MW-3 38

PW-1

HP-1 130

100

150

10

1

HP-2 0.5

MW-6 ND

MW-16 1.3

MW-4 ND

MW-12 ND

NOTE:
REFERENCE DWG 5.5 FROM
LEAKING UNDERGROUND STORAGE
TANK SITE ASSESSMENT REPORT
10/4/94 BY: LAW ENGINEERING
RALEIGH, N.C.

LEGEND

- MW-1 — PREVIOUSLY INSTALLED TYPE II MONITORING WELL
- HP-2 — HYDROPUNCH SAMPLE LOCATION
- MW-6 — TYPE II MONITORING WELL
- MW-16 — TYPE III MONITORING WELL
- PW-1 — PUMPING WELL
- FORMER UST LOCATION
- FENCE
- ND — NON-DETECT ABOVE LABORATORY QUANTITATION LIMIT
- ETHYLBENZENE ISOPLETH (CONCENTRATIONS IN ug/L)

NOTES:

1. VERTICAL DATUM IS BASED ON EXISTING CONCRETE MONUMENT PW-4 WITH A GIVEN ELEVATION OF 21.75 FEET.
2. ALL ELEVATIONS ON MONITORING WELLS WERE TAKEN AT THE TOP OF THE PVC CASING.
3. ALL ELEVATIONS ON HYDROPUNCHES WERE TAKEN ON THE GROUND.
4. HORIZONTAL DATUM BASED ON CONCRETE MONUMENT PW-4 AND PW-5 ESTABLISHED BY DAVIS AND FLOYD, INC.
5. ALL LOCATIONS OF BUILDINGS, STREETS, AND PARKING AREA WERE TAKEN FROM A CAMP LEJEUNE BASE MAP AUTOCAD.DWG FILE SUPPLIED BY LAW ENGINEERING UNLESS OTHERWISE NOTED.
6. THE MONITORING WELLS, HYDROPUNCHES, PUMPING WELL AND THE CORNERS OF BUILDING AS4158 WERE THE ONLY POINTS LOCATED IN THE FIELD BY THIS SURVEY. ALL OTHER LOCATIONS WERE TAKEN FROM THE ABOVE REFERENCED FILE, AND MAY OR MAY NOT BE SHOWN CORRECTLY.

J9192T08

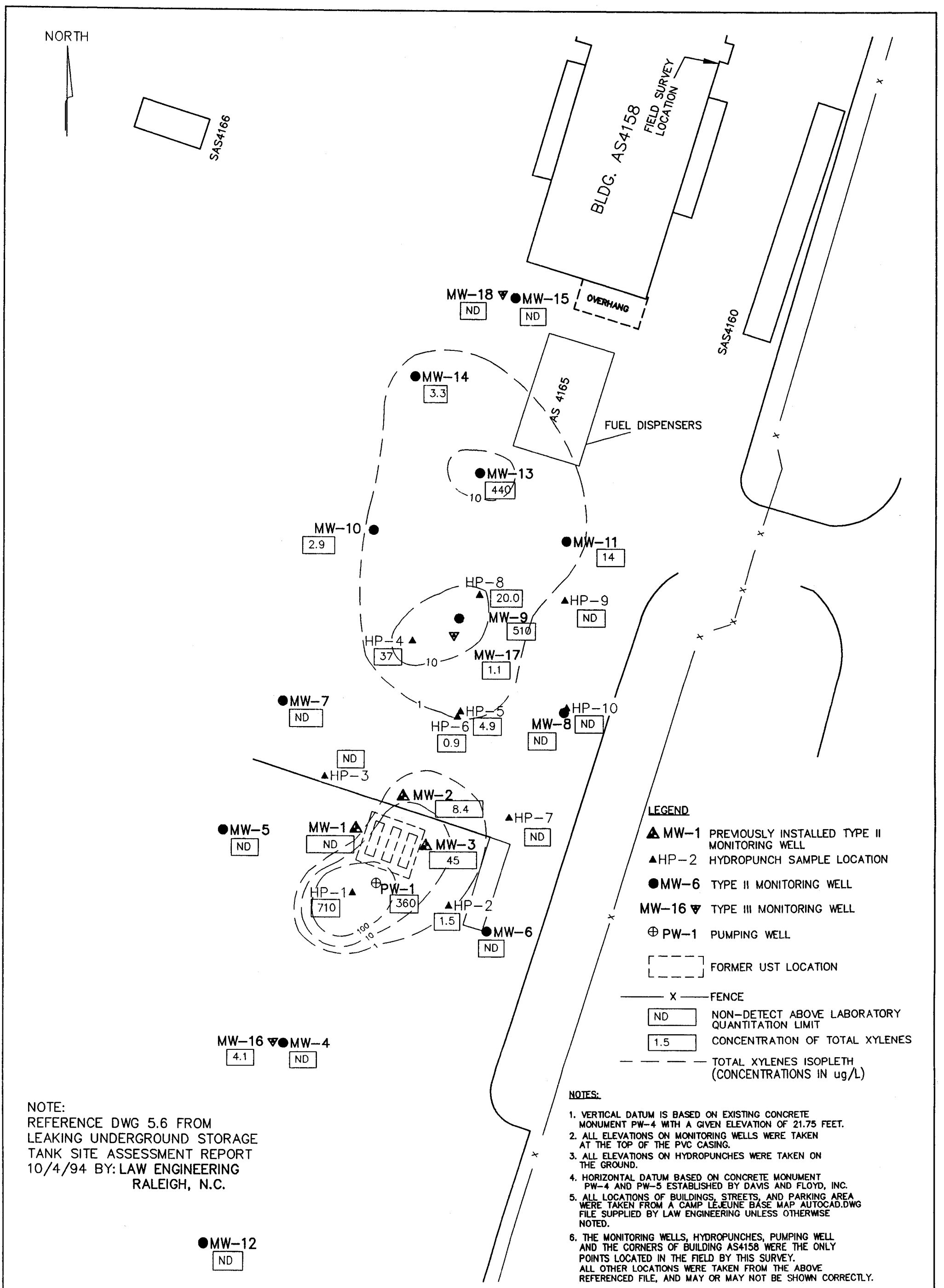
Richard Catlin & Associates, Inc.
ENVIRONMENTAL ENGINEERS AND HYDROGEOLOGISTS RC&A
WILMINGTON, NC CHARLESTON, SC ATLANTA, GA MOORESVILLE, NC

PROJECT
BLDG. AS-4158
MARINE CORPS AIR STATION
NEW RIVER, N.C.

TITLE
ETHYLBENZENE CONCENTRATIONS
(WATER) - ISOPLETH MAP

FIGURE
1.5

JOB NO. 94133 | DATE: SEPT 1995 | SCALE: 1"=50' | DRAWN BY: | CHECKED BY: BW



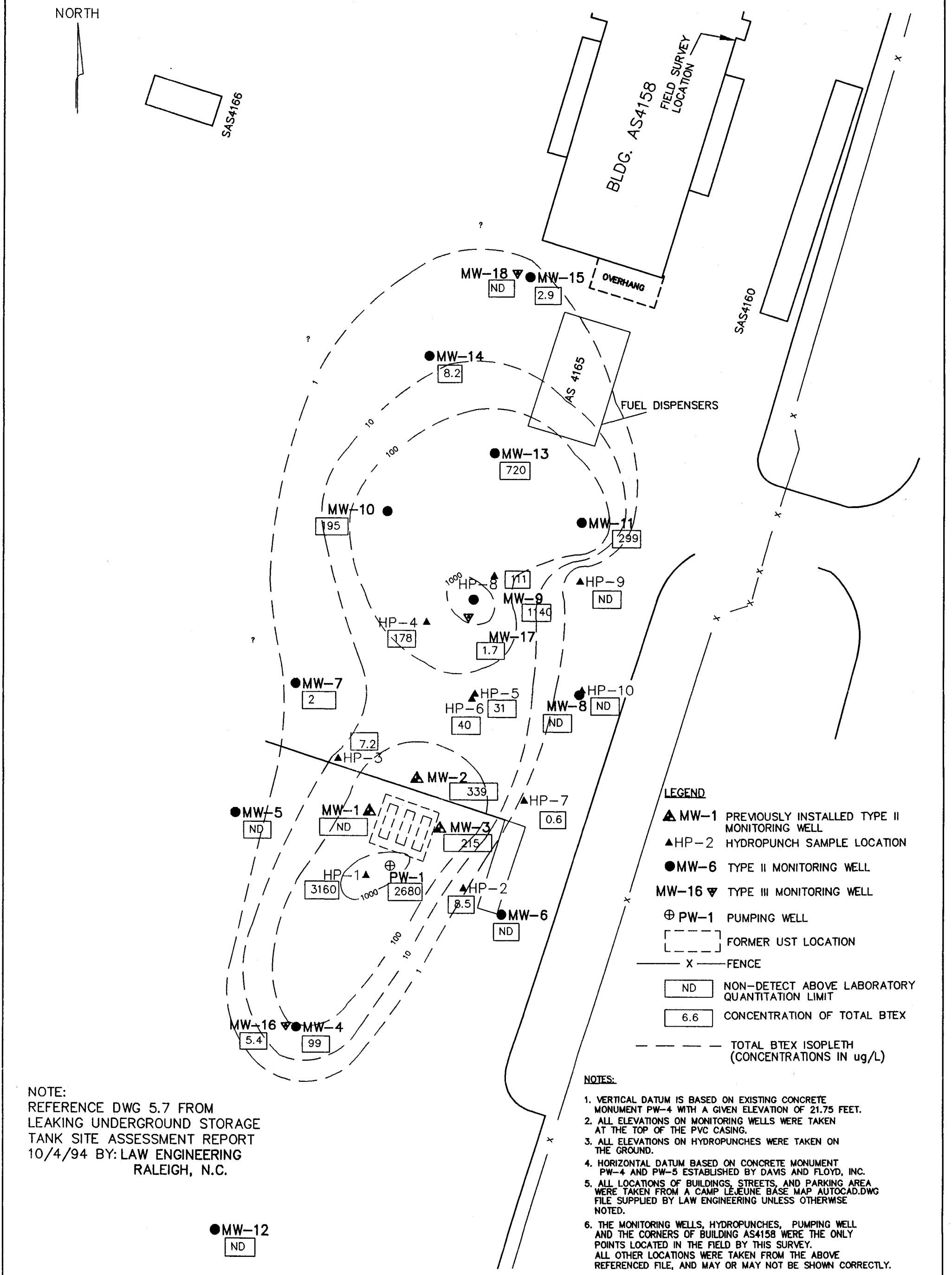
NOTE:
REFERENCE DWG 5.6 FROM
LEAKING UNDERGROUND STORAGE
TANK SITE ASSESSMENT REPORT
10/4/94 BY: LAW ENGINEERING
RALEIGH, N.C.

NOTES:

1. VERTICAL DATUM IS BASED ON EXISTING CONCRETE MONUMENT PW-4 WITH A GIVEN ELEVATION OF 21.75 FEET.
2. ALL ELEVATIONS ON MONITORING WELLS WERE TAKEN AT THE TOP OF THE PVC CASING.
3. ALL ELEVATIONS ON HYDROPUNCHES WERE TAKEN ON THE GROUND.
4. HORIZONTAL DATUM BASED ON CONCRETE MONUMENT PW-4 AND PW-5 ESTABLISHED BY DAVIS AND FLOYD, INC.
5. ALL LOCATIONS OF BUILDINGS, STREETS, AND PARKING AREA WERE TAKEN FROM A CAMP LEJEUNE BASE MAP AUTOCAD.DWG FILE SUPPLIED BY LAW ENGINEERING UNLESS OTHERWISE NOTED.
6. THE MONITORING WELLS, HYDROPUNCHES, PUMPING WELL AND THE CORNERS OF BUILDING AS4158 WERE THE ONLY POINTS LOCATED IN THE FIELD BY THIS SURVEY. ALL OTHER LOCATIONS WERE TAKEN FROM THE ABOVE REFERENCED FILE, AND MAY OR MAY NOT BE SHOWN CORRECTLY.

J9192T09

Richard Catlin & Associates, Inc. ENVIRONMENTAL ENGINEERS AND HYDROGEOLOGISTS RC&A WILMINGTON, NC CHARLESTON, SC ATLANTA, GA MOORESVILLE, NC	PROJECT BLDG. AS-4158 MARINE CORPS AIR STATION NEW RIVER, N.C.	TITLE TOTAL XYLENES CONCENTRATIONS (WATER) – ISOPLETH MAP			FIGURE 1.6
	JOB NO. 94133	DATE: SEPT 1995	SCALE: 1"=50'	DRAWN BY:	CHECKED BY: BW



NOTE:
REFERENCE DWG 5.7 FROM
LEAKING UNDERGROUND STORAGE
TANK SITE ASSESSMENT REPORT
10/4/94 BY: LAW ENGINEERING
RALEIGH, N.C.

MW-12
ND

NOTES:

1. VERTICAL DATUM IS BASED ON EXISTING CONCRETE MONUMENT PW-4 WITH A GIVEN ELEVATION OF 21.75 FEET.
2. ALL ELEVATIONS ON MONITORING WELLS WERE TAKEN AT THE TOP OF THE PVC CASING.
3. ALL ELEVATIONS ON HYDROPUNCHES WERE TAKEN ON THE GROUND.
4. HORIZONTAL DATUM BASED ON CONCRETE MONUMENT PW-4 AND PW-5 ESTABLISHED BY DAVIS AND FLOYD, INC.
5. ALL LOCATIONS OF BUILDINGS, STREETS, AND PARKING AREA WERE TAKEN FROM A CAMP LEJEUNE BASE MAP AUTOCAD.DWG FILE SUPPLIED BY LAW ENGINEERING UNLESS OTHERWISE NOTED.
6. THE MONITORING WELLS, HYDROPUNCHES, PUMPING WELL AND THE CORNERS OF BUILDING AS4158 WERE THE ONLY POINTS LOCATED IN THE FIELD BY THIS SURVEY. ALL OTHER LOCATIONS WERE TAKEN FROM THE ABOVE REFERENCED FILE, AND MAY OR MAY NOT BE SHOWN CORRECTLY.

J9192T10

Richard Catlin & Associates, Inc. ENVIRONMENTAL ENGINEERS AND HYDROGEOLOGISTS RC&A WILMINGTON, NC CHARLESTON, SC ATLANTA, GA MOORESVILLE, NC	PROJECT BLDG. AS-4158 MARINE CORPS AIR STATION NEW RIVER, N.C.	TITLE BTEX CONCENTRATIONS SUMMARY			FIGURE 1.7
	JOB NO. 94133	DATE: SEPT 1995	SCALE: 1"=50'	DRAWN BY:	CHECKED BY: BW

NORTH

SAS4166

BLDG. AS4158

FIELD SURVEY LOCATION

OVERHANG

SAS4160

MW-18 ND

MW-15 10.1

MW-14 2.4

AS 4165

FUEL DISPENSERS

MW-13 2.8

MW-10 ND

MW-11 ND

HP-8 16

MW-9 NA

HP-9 ND

HP-4 8.9

MW-17 7.0

MW-7 ND

HP-5

HP-6 ND

MW-8 NA

HP-10 ND

18

HP-3

MW-2 14.3

HP-7 3.0

MW-5 NA

MW-1 ND

MW-3 9.7

PW-1 NA

HP-1 2.9

HP-2 6.6

MW-6 NA

MW-16 3.3

MW-4 ND

MW-12 2.9

NOTE:
REFERENCE DWG 5.8 FROM LEAKING UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT 10/4/94 BY: LAW ENGINEERING RALEIGH, N.C.

LEGEND

- MW-1 PREVIOUSLY INSTALLED TYPE II MONITORING WELL
- HP-2 HYDROPUNCH SAMPLE LOCATION
- MW-6 TYPE II MONITORING WELL
- MW-16 TYPE III MONITORING WELL
- PW-1 PUMPING WELL
- FORMER UST LOCATION
- X FENCE
- ND NON-DETECT ABOVE LABORATORY QUANTITATION LIMIT
- NA NOT ANALYZED DURING LAW ENGINEERING COMPREHENSIVE SITE ASSESSMENT
- 6.6 CONCENTRATION OF TOTAL PAH
- TOTAL PAH ISOPLETH (CONCENTRATIONS IN ug/L)

NOTES:

1. VERTICAL DATUM IS BASED ON EXISTING CONCRETE MONUMENT PW-4 WITH A GIVEN ELEVATION OF 21.75 FEET.
2. ALL ELEVATIONS ON MONITORING WELLS WERE TAKEN AT THE TOP OF THE PVC CASING.
3. ALL ELEVATIONS ON HYDROPUNCHES WERE TAKEN ON THE GROUND.
4. HORIZONTAL DATUM BASED ON CONCRETE MONUMENT PW-4 AND PW-5 ESTABLISHED BY DAVIS AND FLOYD, INC.
5. ALL LOCATIONS OF BUILDINGS, STREETS, AND PARKING AREA WERE TAKEN FROM A CAMP LEJEUNE BASE MAP AUTOCAD.DWG FILE SUPPLIED BY LAW ENGINEERING UNLESS OTHERWISE NOTED.
6. THE MONITORING WELLS, HYDROPUNCHES, PUMPING WELL AND THE CORNERS OF BUILDING AS4158 WERE THE ONLY POINTS LOCATED IN THE FIELD BY THIS SURVEY. ALL OTHER LOCATIONS WERE TAKEN FROM THE ABOVE REFERENCED FILE, AND MAY OR MAY NOT BE SHOWN CORRECTLY.

J9192T11

Richard Catlin & Associates, Inc.
ENVIRONMENTAL ENGINEERS AND HYDROGEOLOGISTS RC&A
WILMINGTON, NC CHARLESTON, SC ATLANTA, GA MOORESVILLE, NC

PROJECT
BLDG. AS-4158
MARINE CORPS AIR STATION
NEW RIVER, N.C.

TITLE
TOTAL PAH CONCENTRATIONS (WATER) - ISOPLETH MAP

FIGURE
1.8

JOB NO. 94133 | DATE: APRIL 1995 | SCALE: 1"=50' | DRAWN BY: | CHECKED BY: BW

NORTH

SAS4166

BLDG. AS4158

FIELD SURVEY LOCATION

OVERHANG

SAS4160

MW-18 4.6

MW-15 ND

MW-14 ND

AS 4165

FUEL DISPENSERS

MW-13 ND

MW-10 ND

MW-11 ND

HP-8 NA

MW-9 ND

HP-9 NA

HP-4 NA

MW-17 ND

MW-7 ND

HP-5 NA

HP-6 NA

MW-8 ND

HP-10 NA

NA HP-3

MW-2 NA

HP-7 NA

MW-5 2.7

MW-1 NA

MW-3 NA

HP-1 NA

PW-1 NA

HP-2 NA

MW-6 ND

MW-16 2.0

MW-4 ND

MW-12 ND

NOTE:
REFERENCE DWG 5.9 FROM LEAKING UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT 10/4/94 BY: LAW ENGINEERING RALEIGH, N.C.

LEGEND

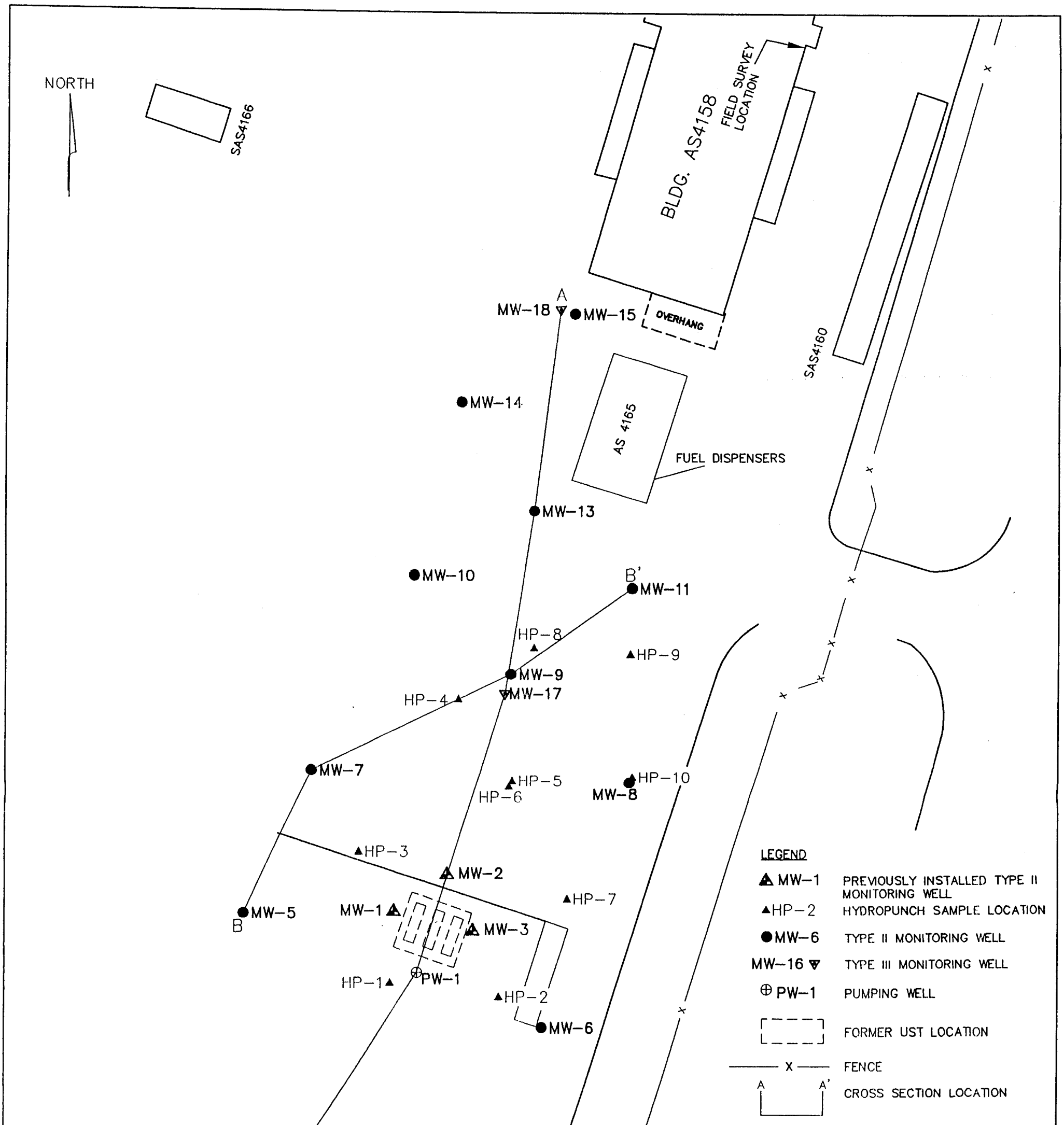
- MW-1 PREVIOUSLY INSTALLED TYPE II MONITORING WELL
- HP-2 HYDROPUNCH SAMPLE LOCATION
- MW-6 TYPE II MONITORING WELL
- MW-16 TYPE III MONITORING WELL
- PW-1 PUMPING WELL
- FORMER UST LOCATION
- X FENCE
- ND NON-DETECT ABOVE LABORATORY QUANTITATION LIMIT
- NA NOT ANALYZED DURING LAW ENGINEERING COMPREHENSIVE SITE ASSESSMENT
- 2.7 CONCENTRATION OF TOTAL 601 COMPOUND ANALYSIS (ug/L)

NOTES:

1. VERTICAL DATUM IS BASED ON EXISTING CONCRETE MONUMENT PW-4 WITH A GIVEN ELEVATION OF 21.75 FEET.
2. ALL ELEVATIONS ON MONITORING WELLS WERE TAKEN AT THE TOP OF THE PVC CASING.
3. ALL ELEVATIONS ON HYDROPUNCHES WERE TAKEN ON THE GROUND.
4. HORIZONTAL DATUM BASED ON CONCRETE MONUMENT PW-4 AND PW-5 ESTABLISHED BY DAVIS AND FLOYD, INC.
5. ALL LOCATIONS OF BUILDINGS, STREETS, AND PARKING AREA WERE TAKEN FROM A CAMP LEJEUNE BASE MAP AUTOCAD.DWG FILE SUPPLIED BY LAW ENGINEERING UNLESS OTHERWISE NOTED.
6. THE MONITORING WELLS, HYDROPUNCHES, PUMPING WELL AND THE CORNERS OF BUILDING AS4158 WERE THE ONLY POINTS LOCATED IN THE FIELD BY THIS SURVEY. ALL OTHER LOCATIONS WERE TAKEN FROM THE ABOVE REFERENCED FILE, AND MAY OR MAY NOT BE SHOWN CORRECTLY.

J9192T12

Richard Catlin & Associates, Inc. ENVIRONMENTAL ENGINEERS AND HYDROGEOLOGISTS RC&A WILMINGTON, NC CHARLESTON, SC ATLANTA, GA MOORESVILLE, NC	PROJECT BLDG. AS-4158 MARINE CORPS AIR STATION NEW RIVER, N.C.	TITLE TOTAL 601 COMPOUND CONCENTRATIONS (WATER)			FIGURE 1.9
	JOB NO. 94133	DATE: APRIL 1995	SCALE: 1"=50'	DRAWN BY:	CHECKED BY: BW



J9192T02

Richard Catlin & Associates, Inc. / RC&A ENVIRONMENTAL ENGINEERS AND HYDROGEOLOGISTS WILMINGTON, NC CHARLESTON, SC ATLANTA, GA MOORESVILLE, NC	PROJECT BLDG. AS-4158 MARINE CORPS AIR STATION NEW RIVER, N.C.	TITLE CROSS SECTION PLAN VIEW			FIGURE 1.10
	JOB NO. 94133	DATE: APRIL 1995	SCALE: 1"=50'	DRAWN BY:	CHECKED BY: BW

A — A'

ELEVATION (FEET)

30.0
20.0
10.0
0
-10.0
-20.0
-30.0

MW-12 AS-4158 EL 22.03'
MW-16 AS-4158 EL 22.19'
MW-4 AS-4158 EL 22.19'
PW-1 AS-4158 EL 22.80'
MW-17 AS-4158 EL 23.05'
MW-9 AS-4158 EL 23.14'
MW-13 AS-4158 EL 24.12'
MW-18 AS-4158 EL 23.88'
MW-15 AS-4158 EL 23.99'

LIGHT GRAY TO BROWN TO ORANGE FINE TO MEDIUM SAND WITH SOME CLAY AND PEAT (sp-sc-sw)

LIGHT TO DARK GRAY FINE SAND WITH SOME CLAY AND PEAT (sp-pt)

DARK BROWN TO GRAY TO ORANGE FINE SAND WITH SOME CLAY (sp-sc)

LIGHT GRAY TO ORANGE TO DARK BROWN SAND TO SANDY PEAT WITH SOME CLAY LENSES (sp-sc-pt)

EL 11.70' EL 12.68' EL 12.81' EL 12.35' EL 12.56'

TD=16.0' TD=16.0' TD=30.0' TD=17.0' TD=17.0'

LIGHT GRAY TO DARK BROWN FINE TO MEDIUM SAND WITH SHELL FRAGMENTS (sp)

LIGHT GRAY TO DARK BROWN FINE TO MEDIUM SAND WITH SHELL FRAGMENTS (sp)

DARK TO OLIVE GREEN FINE SAND WITH SOME SHELL FRAGMENTS (sp)

DARK GREEN FINE SAND WITH SOME SHELL FRAGMENTS (sp)

LIGHT GRAY FINE SAND MIXED WITH AN ABUNDANT AMOUNT OF SHELL FRAGMENTS (sp) (DEPTH OF STRATA UNKNOWN)

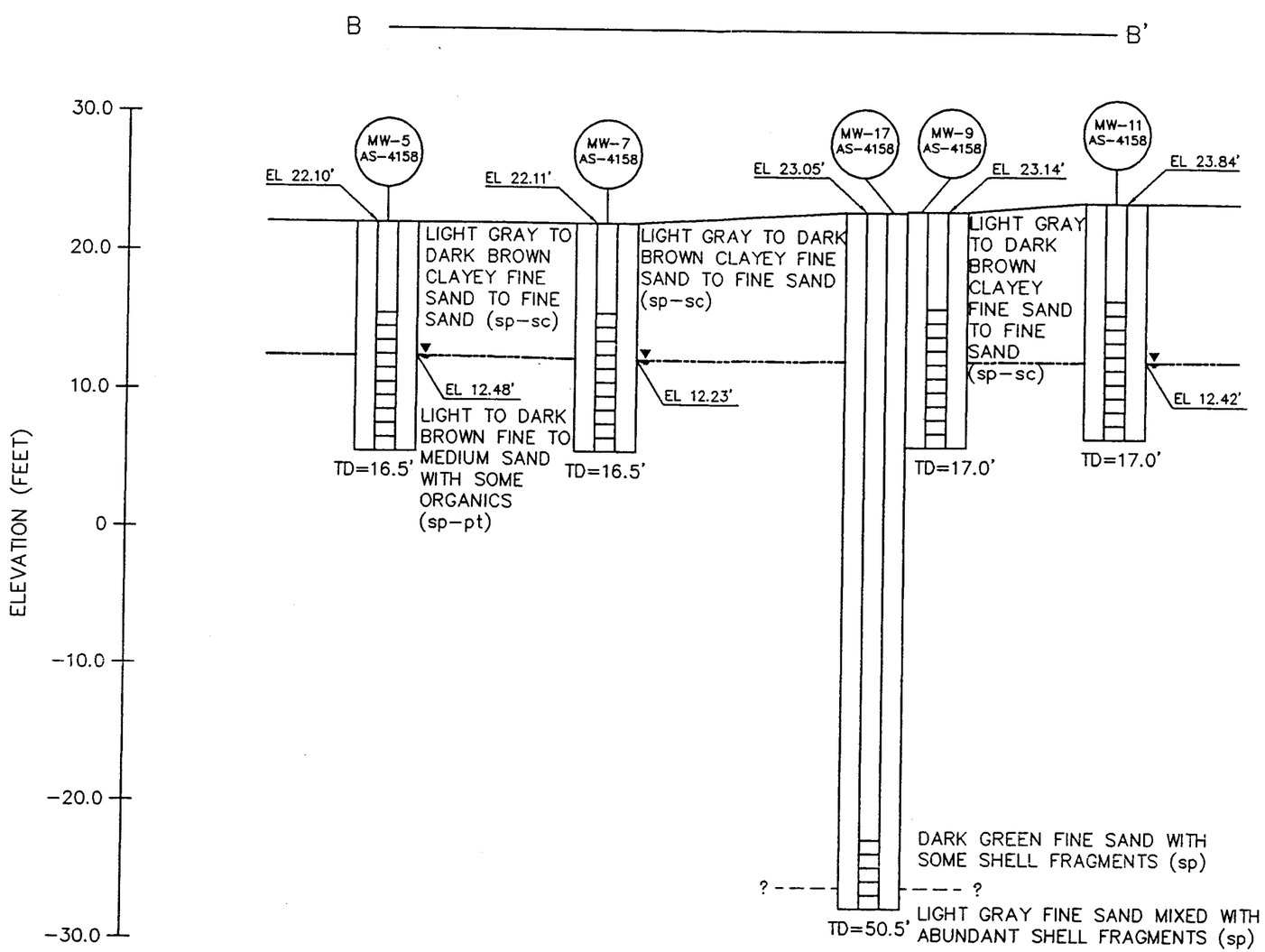
TD=50.5' TD=50.5' TD=50.5'

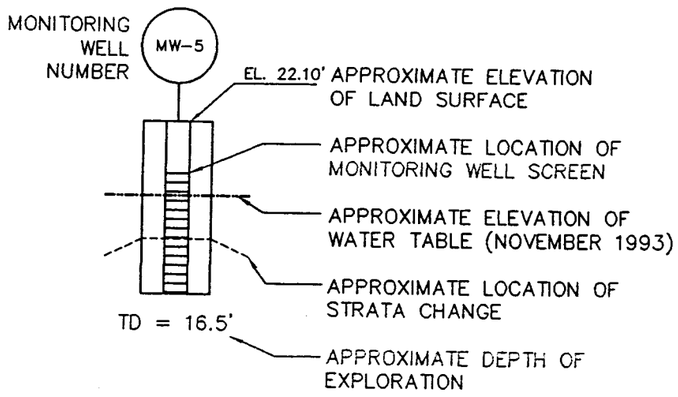
MONITORING WELL NUMBER — MW-12
EL. 22.03' APPROXIMATE ELEVATION OF LAND SURFACE
APPROXIMATE LOCATION OF MONITORING WELL SCREEN
APPROXIMATE ELEVATION OF WATER TABLE (NOVEMBER 1993)
APPROXIMATE LOCATION OF STRATA CHANGE
TD = 16.0'
APPROXIMATE DEPTH OF EXPLORATION

NOTE:
REFERENCE DWG. 4.3 FROM LEAKING UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT 6/12/94 **BY: LAW ENGINEERING RALEIGH, N.C.**

J9193T01

Richard Catlin & Associates, Inc. — Environmental Engineers and Hydrogeologists — RC&A — Wilmington, NC Charleston, SC Atlanta, GA Mooresville, NC	PROJECT: BUILDING AS-4158 MARINE CORPS AIR STATION NEW RIVER, N.C.	TITLE: CROSS SECTION A-A'	FIGURE 1.11
	JOB NO. 94133 DATE: APRIL 1995	SCALE: AS SHOWN DRAWN BY: CHECKED BY: MEM	

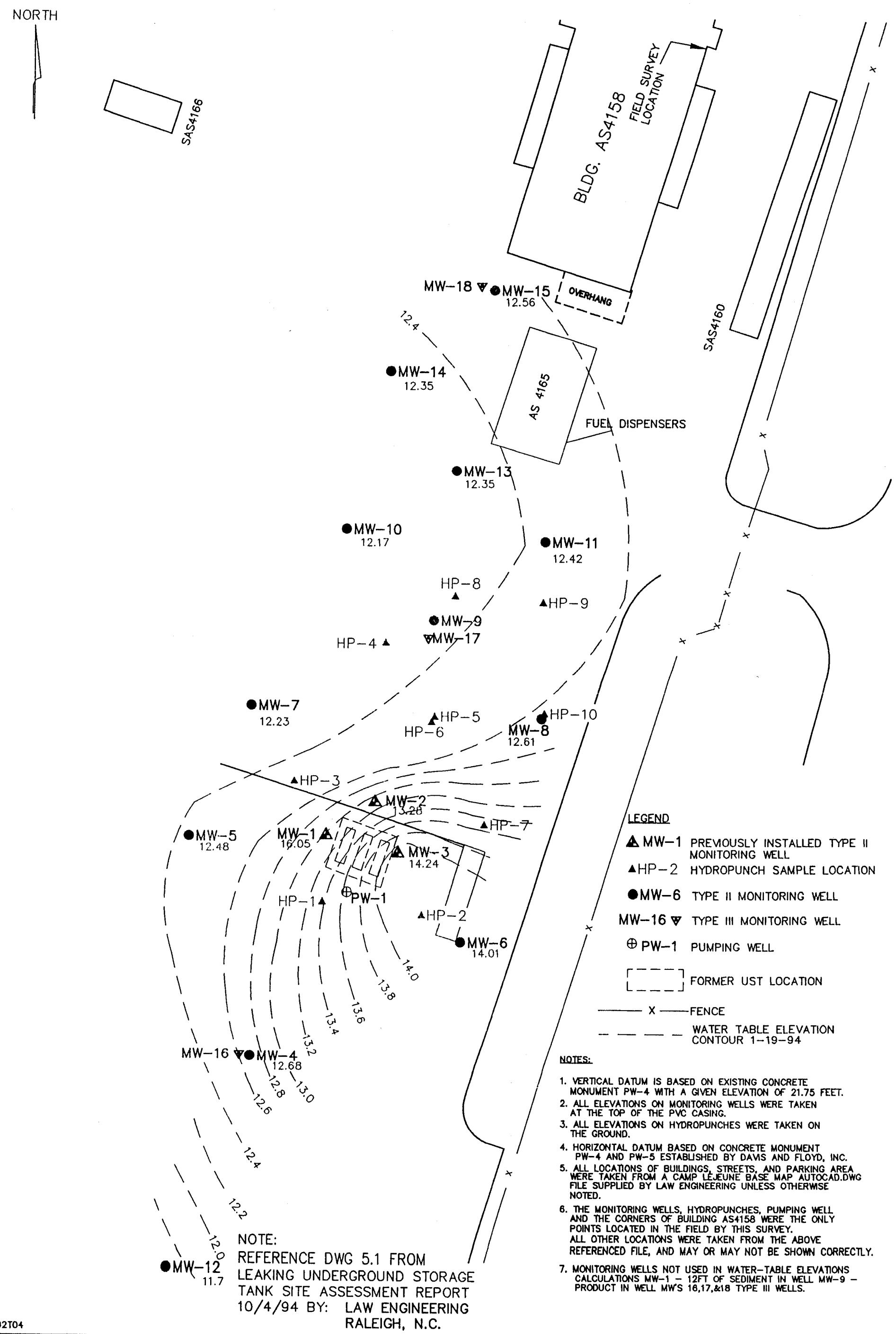




NOTE:
REFERENCE DWG. 4.4 FROM
LEAKING UNDERGROUND STORAGE
TANK SITE ASSESSMENT REPORT
6/12/94 **BY: LAW ENGINEERING**
RALEIGH, N.C.

J9193T02

Richard Catlin & Associates, Inc. — Environmental Engineers and Hydrogeologists — RC&A — Wilmington, NC Charleston, SC Atlanta, GA Mooresville, NC	PROJECT: BUILDING AS-4158 MARINE CORPS AIR STATION NEW RIVER, N.C.	TITLE: CROSS SECTION B-B'	FIGURE 1.12
	JOB NO. 94133 · DATE: APRIL 1995	SCALE: AS SHOWN · DRAWN BY: · CHECKED BY: MEM	

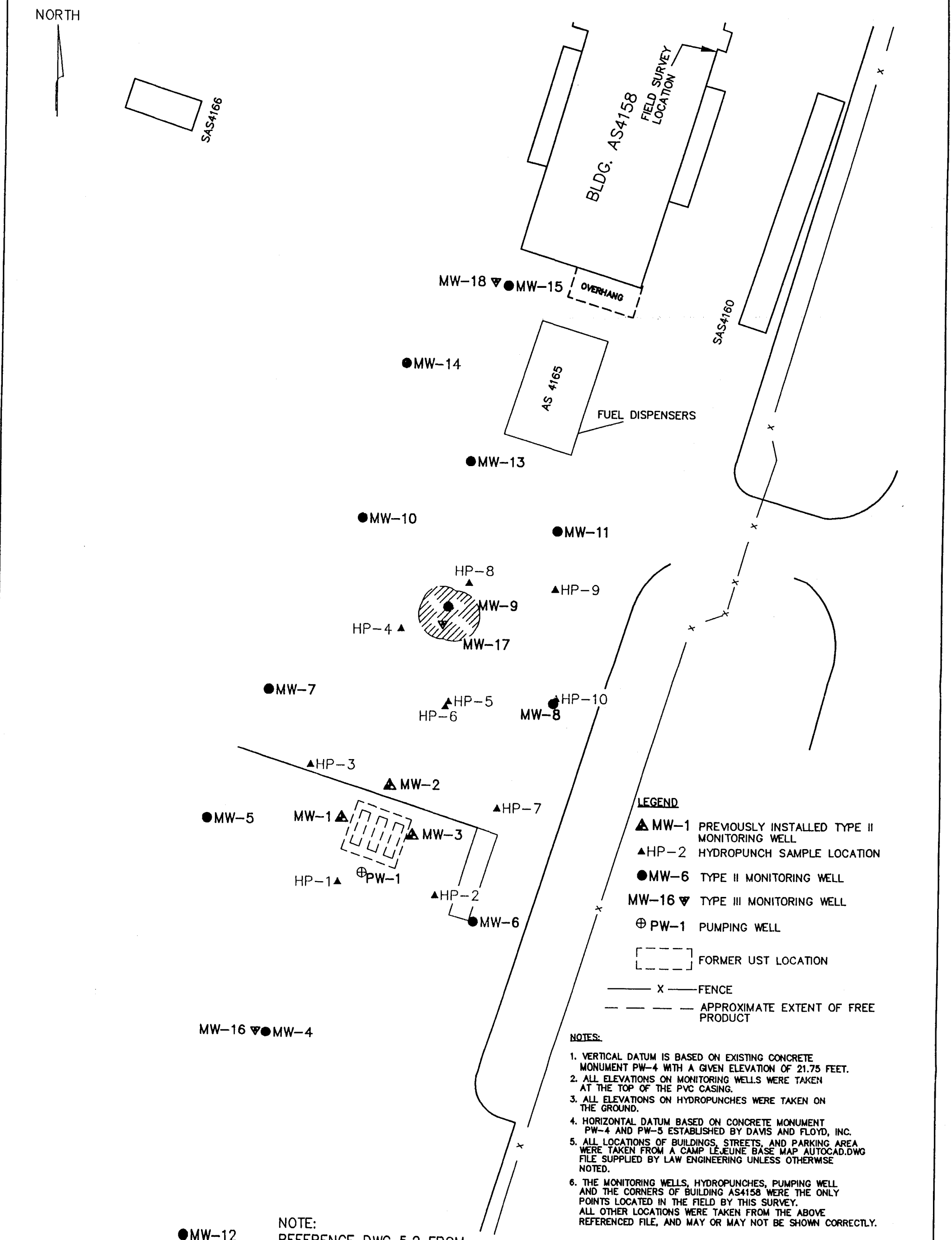


NOTES:

1. VERTICAL DATUM IS BASED ON EXISTING CONCRETE MONUMENT PW-4 WITH A GIVEN ELEVATION OF 21.75 FEET.
2. ALL ELEVATIONS ON MONITORING WELLS WERE TAKEN AT THE TOP OF THE PVC CASING.
3. ALL ELEVATIONS ON HYDROPUNCHES WERE TAKEN ON THE GROUND.
4. HORIZONTAL DATUM BASED ON CONCRETE MONUMENT PW-4 AND PW-5 ESTABLISHED BY DAVIS AND FLOYD, INC.
5. ALL LOCATIONS OF BUILDINGS, STREETS, AND PARKING AREA WERE TAKEN FROM A CAMP LEJEUNE BASE MAP AUTOCAD.DWG FILE SUPPLIED BY LAW ENGINEERING UNLESS OTHERWISE NOTED.
6. THE MONITORING WELLS, HYDROPUNCHES, PUMPING WELL AND THE CORNERS OF BUILDING AS4158 WERE THE ONLY POINTS LOCATED IN THE FIELD BY THIS SURVEY. ALL OTHER LOCATIONS WERE TAKEN FROM THE ABOVE REFERENCED FILE, AND MAY OR MAY NOT BE SHOWN CORRECTLY.
7. MONITORING WELLS NOT USED IN WATER-TABLE ELEVATIONS CALCULATIONS MW-1 - 12FT OF SEDIMENT IN WELL MW-9 - PRODUCT IN WELL MW'S 16,17,&18 TYPE III WELLS.

J9192T04

Richard Catlin & Associates, Inc. ENVIRONMENTAL ENGINEERS AND HYDROGEOLOGISTS RC&A WILMINGTON, NC CHARLESTON, SC ATLANTA, GA MOORESVILLE, NC	PROJECT BLDG. AS-4158 MARINE CORPS AIR STATION NEW RIVER, N.C.	TITLE WATER TABLE CONTOUR MAP			FIGURE 1.13
	JOB NO. 94133	DATE: APRIL 1995	SCALE: 1"=50'	DRAWN BY:	CHECKED BY: BW



NOTES:

1. VERTICAL DATUM IS BASED ON EXISTING CONCRETE MONUMENT PW-4 WITH A GIVEN ELEVATION OF 21.75 FEET.
2. ALL ELEVATIONS ON MONITORING WELLS WERE TAKEN AT THE TOP OF THE PVC CASING.
3. ALL ELEVATIONS ON HYDROPUNCHES WERE TAKEN ON THE GROUND.
4. HORIZONTAL DATUM BASED ON CONCRETE MONUMENT PW-4 AND PW-5 ESTABLISHED BY DAVIS AND FLOYD, INC.
5. ALL LOCATIONS OF BUILDINGS, STREETS, AND PARKING AREA WERE TAKEN FROM A CAMP LEJEUNE BASE MAP AUTOCAD.DWG FILE SUPPLIED BY LAW ENGINEERING UNLESS OTHERWISE NOTED.
6. THE MONITORING WELLS, HYDROPUNCHES, PUMPING WELL AND THE CORNERS OF BUILDING AS4158 WERE THE ONLY POINTS LOCATED IN THE FIELD BY THIS SURVEY. ALL OTHER LOCATIONS WERE TAKEN FROM THE ABOVE REFERENCED FILE, AND MAY OR MAY NOT BE SHOWN CORRECTLY.

NOTE:
REFERENCE DWG 5.2 FROM
LEAKING UNDERGROUND STORAGE
TANK SITE ASSESSMENT REPORT
10/4/94 BY: LAW ENGINEERING
RALEIGH, N.C.

J9192T05

Richard Catlin & Associates, Inc.
ENVIRONMENTAL ENGINEERS AND HYDROGEOLOGISTS RC&A
WILMINGTON, NC CHARLESTON, SC ATLANTA, GA MOORESVILLE, NC

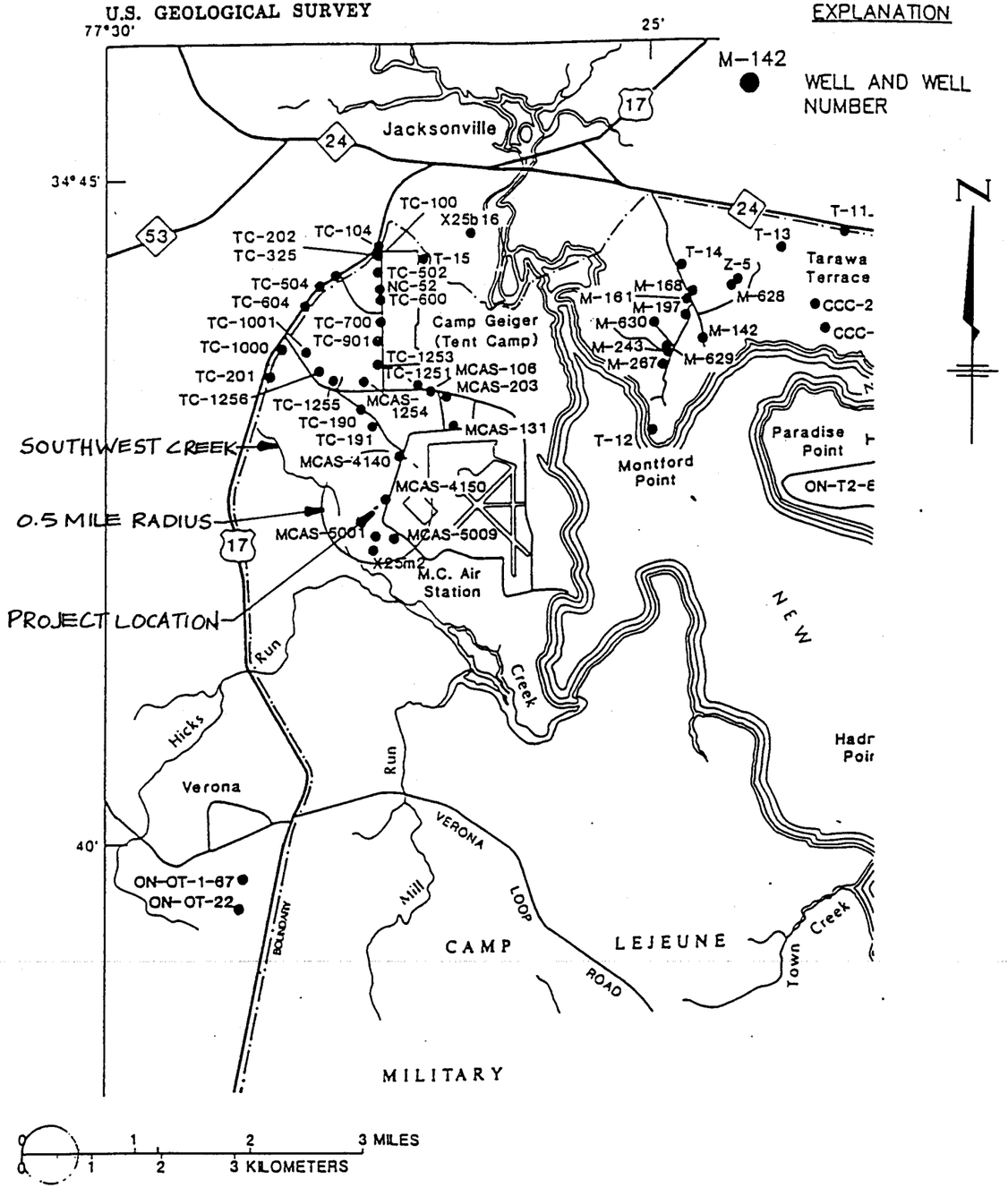
PROJECT
BLDG. AS-4158
MARINE CORPS AIR STATION
NEW RIVER, N.C.

TITLE
FREE PRODUCT SPATIAL EXTENT MAP

FIGURE
1.14

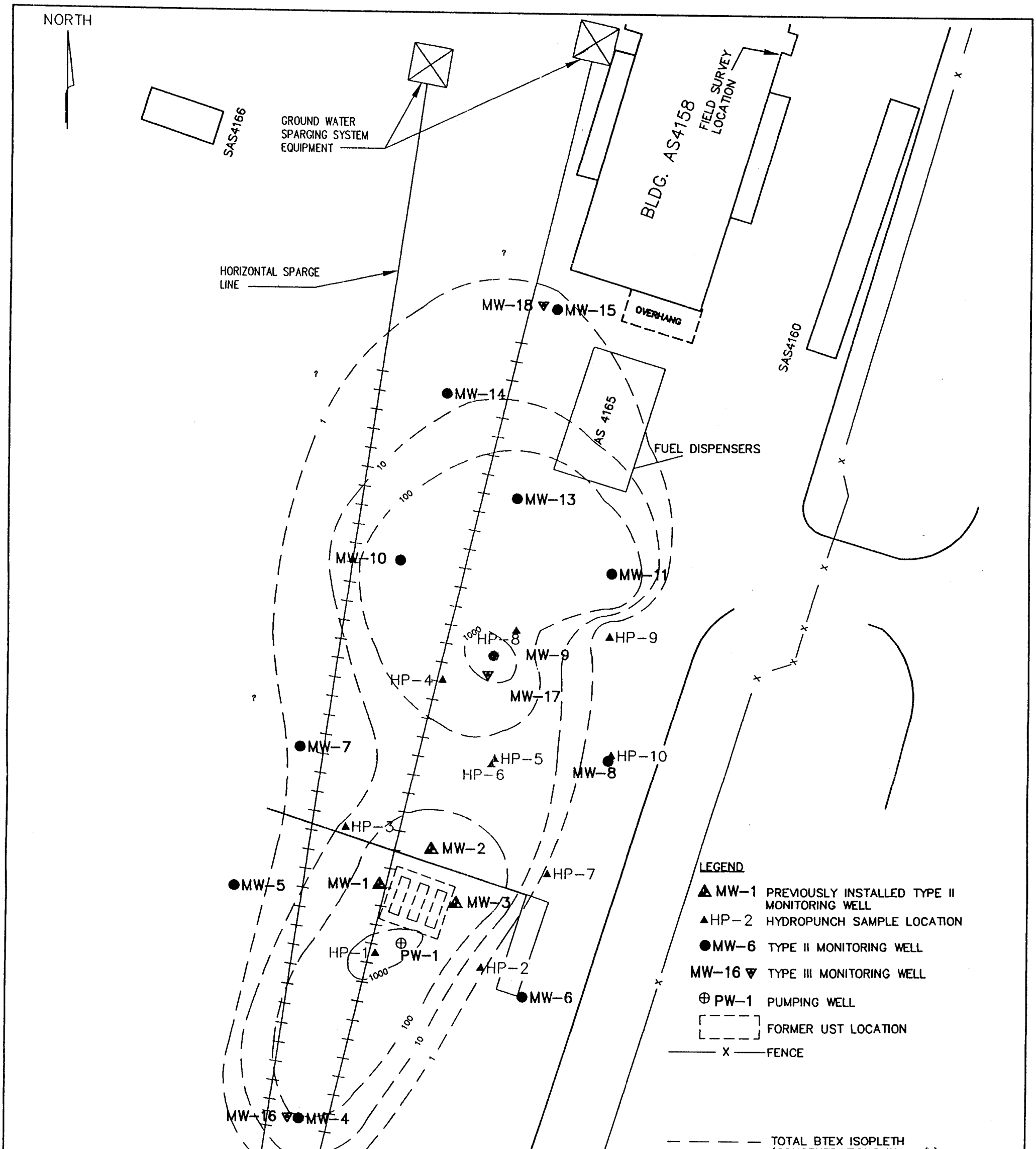
JOB NO. 94133 | DATE: APRIL 1995 | SCALE: 1"=50' | DRAWN BY: | CHECKED BY: BW

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

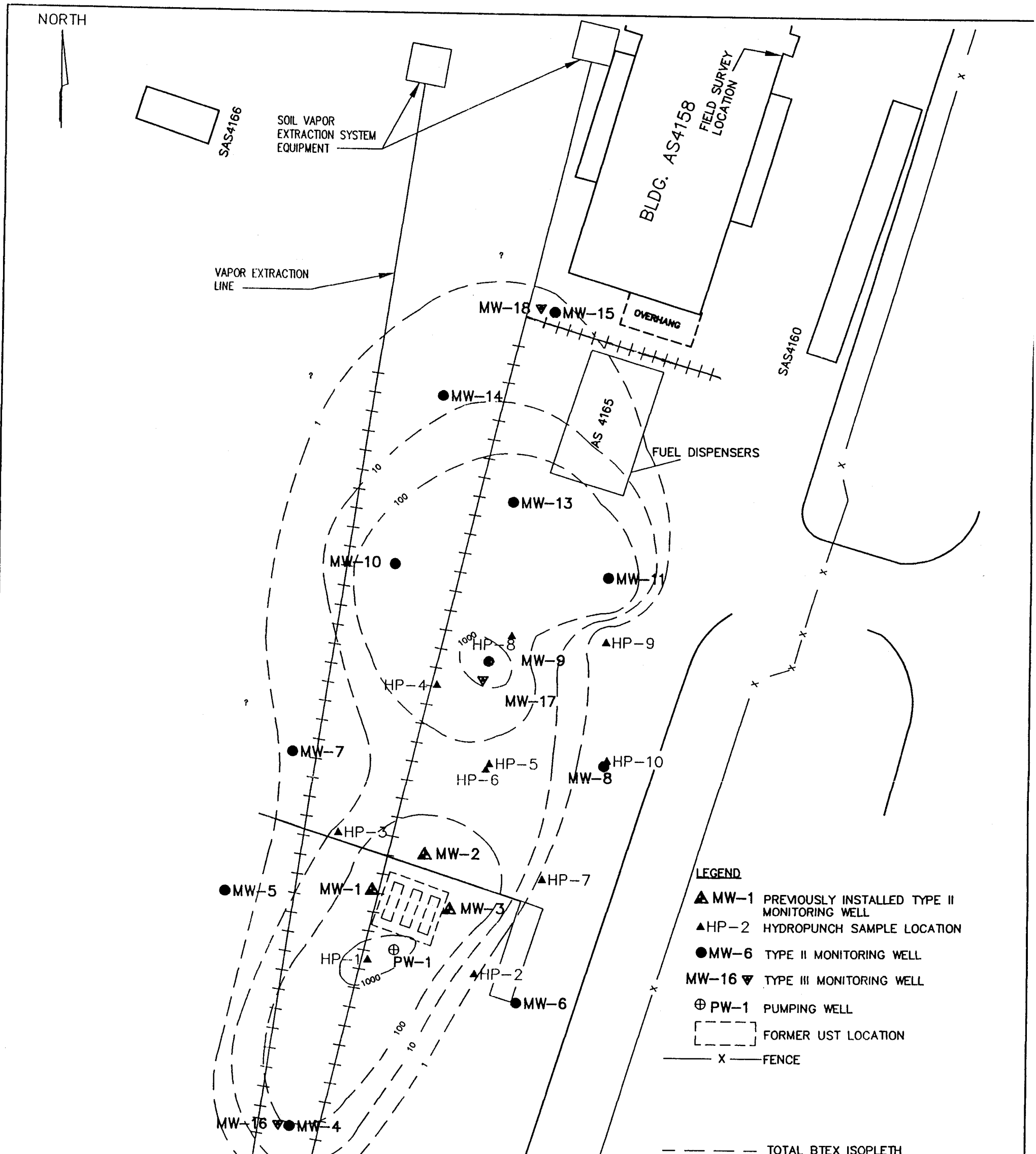


REFERENCE: U.S. MARINE CORPS BASE U.S. GEOLOGICAL SURVEY 1989.

Richard Catlin & Associates, Inc. ENVIRONMENTAL ENGINEERS AND HYDROGEOLOGISTS RC&A WILMINGTON, NC CHARLESTON, SC ATLANTA, GA MOORESVILLE, NC	PROJECT: BUILDING AS-4158 MARINE CORPS AIR STATION NEW RIVER, N.C.	TITLE: WATER SUPPLY WELL LOCATION MAP	FIGURE 2.1
	JOB NO: 94133 DATE: MAY 1995	SCALE: AS SHOWN DRAWN BY: WHW CHECKED BY: BW	



Richard Catlin & Associates, Inc. ENVIRONMENTAL ENGINEERS AND HYDROGEOLOGISTS RC&A WILMINGTON, NC CHARLESTON, SC ATLANTA, GA MOORESVILLE, NC	PROJECT BLDG. AS-4158 MARINE CORPS AIR STATION NEW RIVER, N.C.	TITLE LAYOUT OF PROPOSED AIR SPARGING SYSTEM			FIGURE 5.1
	JOB NO. 94133	DATE: APRIL 1995	SCALE: 1"=50'	DRAWN BY:	CHECKED BY: BW



NOTE:
DRAWING MODIFIED FROM DWG 5.7 FROM LEAKING UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT 10/4/94 BY: LAW ENGINEERING RALEIGH, N.C.

NOTES:

1. VERTICAL DATUM IS BASED ON EXISTING CONCRETE MONUMENT PW-4 WITH A GIVEN ELEVATION OF 21.75 FEET.
2. ALL ELEVATIONS ON MONITORING WELLS WERE TAKEN AT THE TOP OF THE PVC CASING.
3. ALL ELEVATIONS ON HYDROPUNCHES WERE TAKEN ON THE GROUND.
4. HORIZONTAL DATUM BASED ON CONCRETE MONUMENT PW-4 AND PW-5 ESTABLISHED BY DAVIS AND FLOYD, INC.
5. ALL LOCATIONS OF BUILDINGS, STREETS, AND PARKING AREA WERE TAKEN FROM A CAMP LEJEUNE BASE MAP AUTOCAD.DWG FILE SUPPLIED BY LAW ENGINEERING UNLESS OTHERWISE NOTED.
6. THE MONITORING WELLS, HYDROPUNCHES, PUMPING WELL AND THE CORNERS OF BUILDING AS4158 WERE THE ONLY POINTS LOCATED IN THE FIELD BY THIS SURVEY. ALL OTHER LOCATIONS WERE TAKEN FROM THE ABOVE REFERENCED FILE, AND MAY OR MAY NOT BE SHOWN CORRECTLY.

J9192T10

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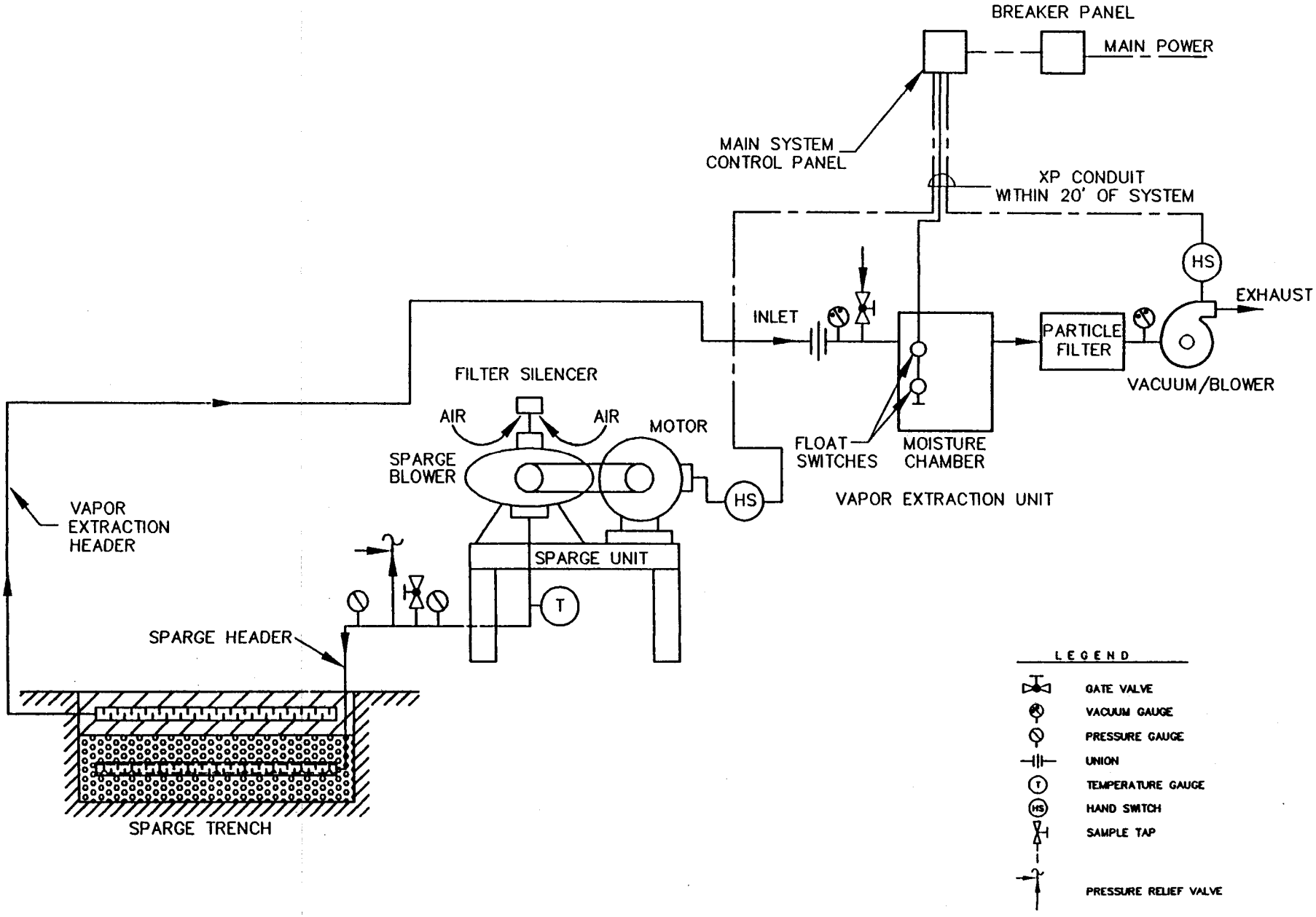
ENVIRONMENTAL ENGINEERS AND HYDROGEOLOGISTS RC&A
WILMINGTON, NC CHARLESTON, SC ATLANTA, GA MOORESVILLE, NC

PROJECT
BLDG. AS-4158
MARINE CORPS AIR STATION
NEW RIVER, N.C.

TITLE
LAYOUT OF PROPOSED SOIL VAPOR EXTRACTION SYSTEM

FIGURE
5.2

JOB NO. 94133 | DATE: APRIL 1995 | SCALE: 1"=50' | DRAWN BY: | CHECKED BY: BW



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RC&A
WILMINGTON, NC CHARLESTON, SC ATLANTA, GA MOORESVILLE, NC

JOB NO. 94133
DATE: MAY 1995
SCALE: NTS
DRAWN BY: WHW
CHECKED BY: BW

PROJECT
BUILDING AS-4158
MARINE CORPS AIR STATION
NEW RIVER, N.C.

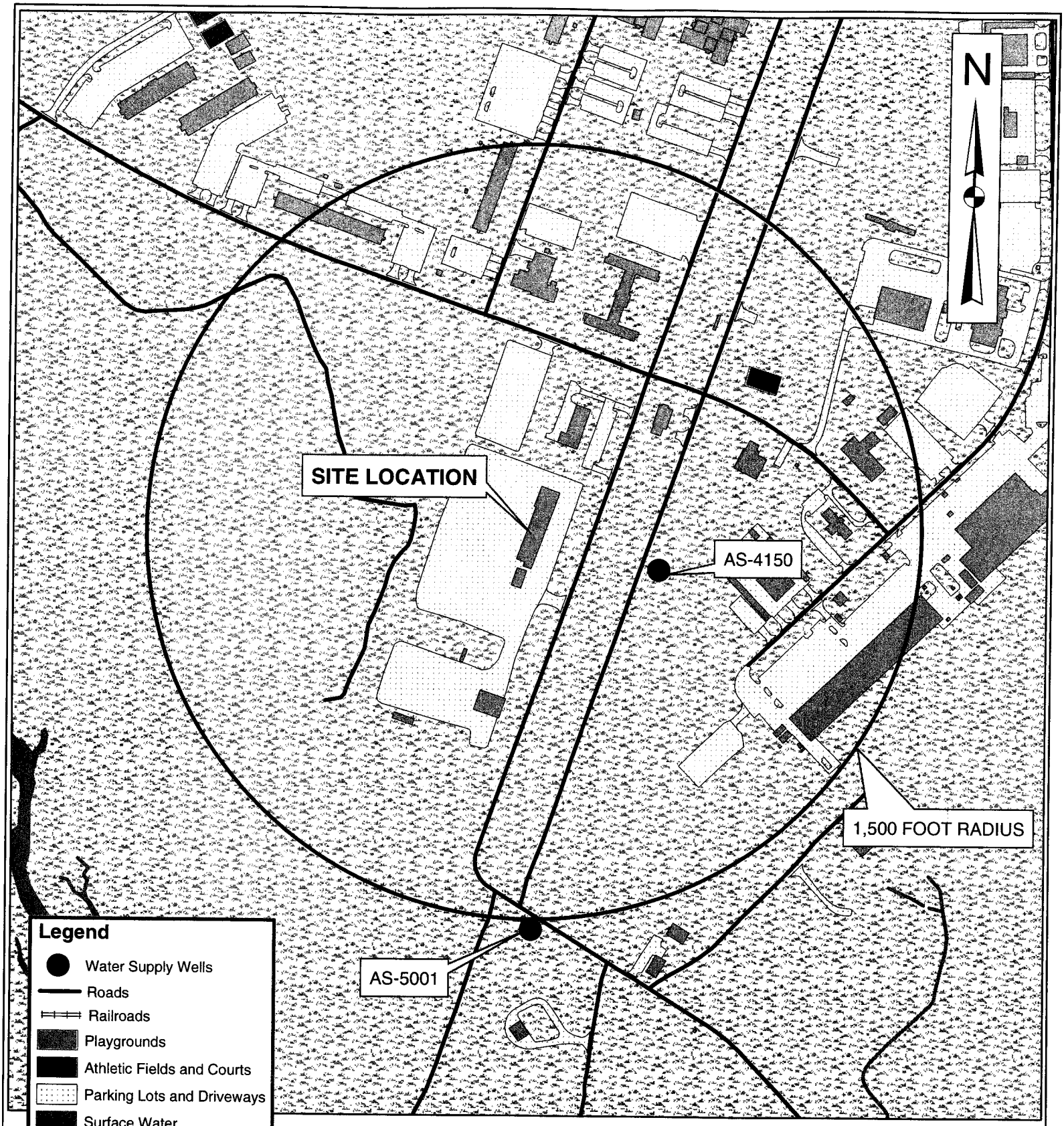
TITLE
CORORECTIVE ACTION SYSTEM
SCHEMATIC

FIGURE
5.3

DATA OBTAINED FROM

SOIL ASSESSMENT REPORT

BY CATLIN



Data Sources: Data Layers provided by MCB Camp Lejeune GIS Office.

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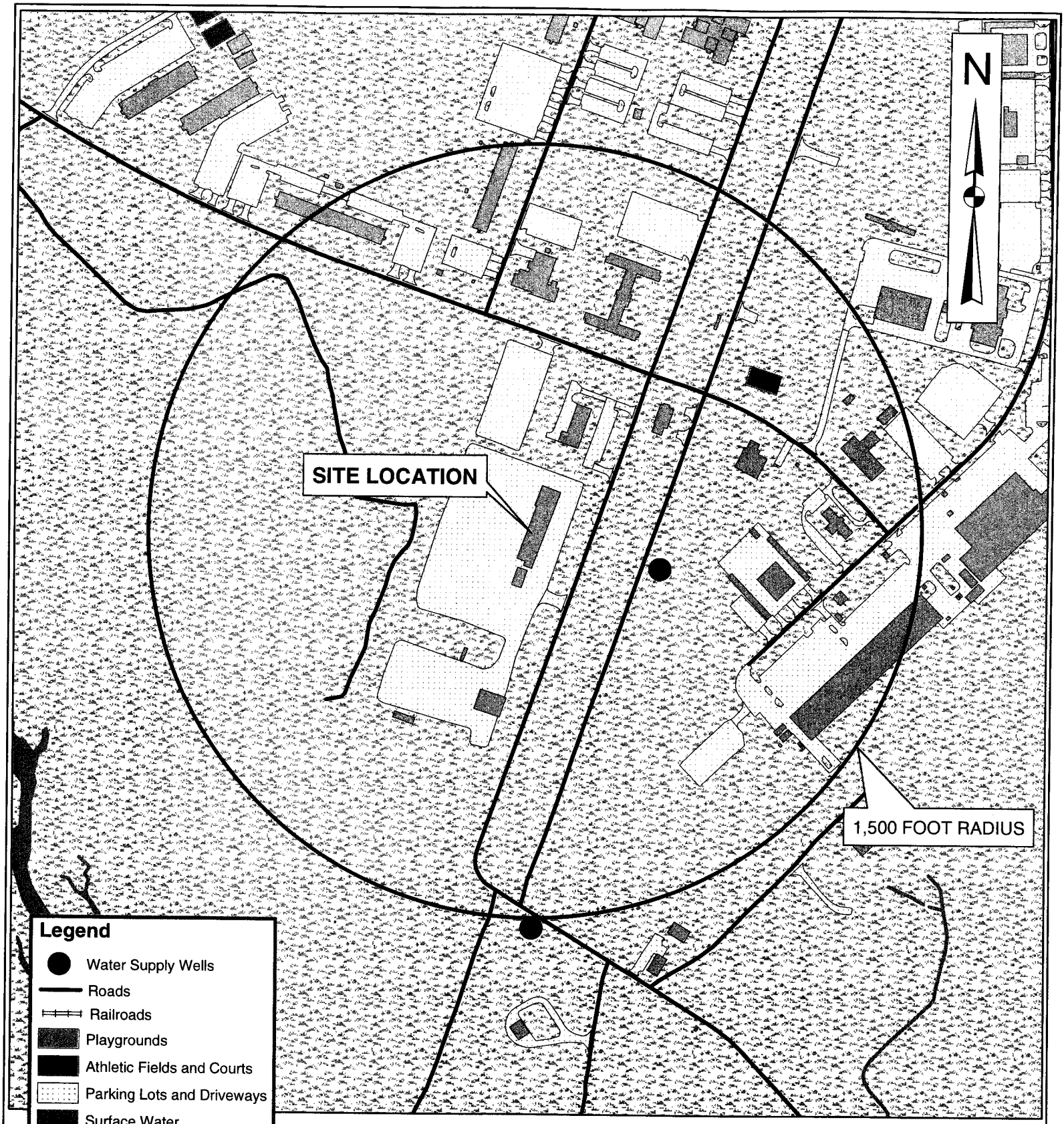
WILMINGTON, NORTH CAROLINA

PROJECT	TITLE	FIGURE
BUILDING AS-4158 SOIL ASSESSMENT REPORT MARINE CORPS BASE CAMP LEJEUNE, NC	SITE LOCATION AND WATER SURVEY	1

JOB NO.	DATE	SCALE	DRAWN BY	CHECKED BY
204-037	OCT 2004	AS SHOWN	SAC	JKB



Data Sources: Data Layers provided by MCB Camp Lejeune GIS Office.

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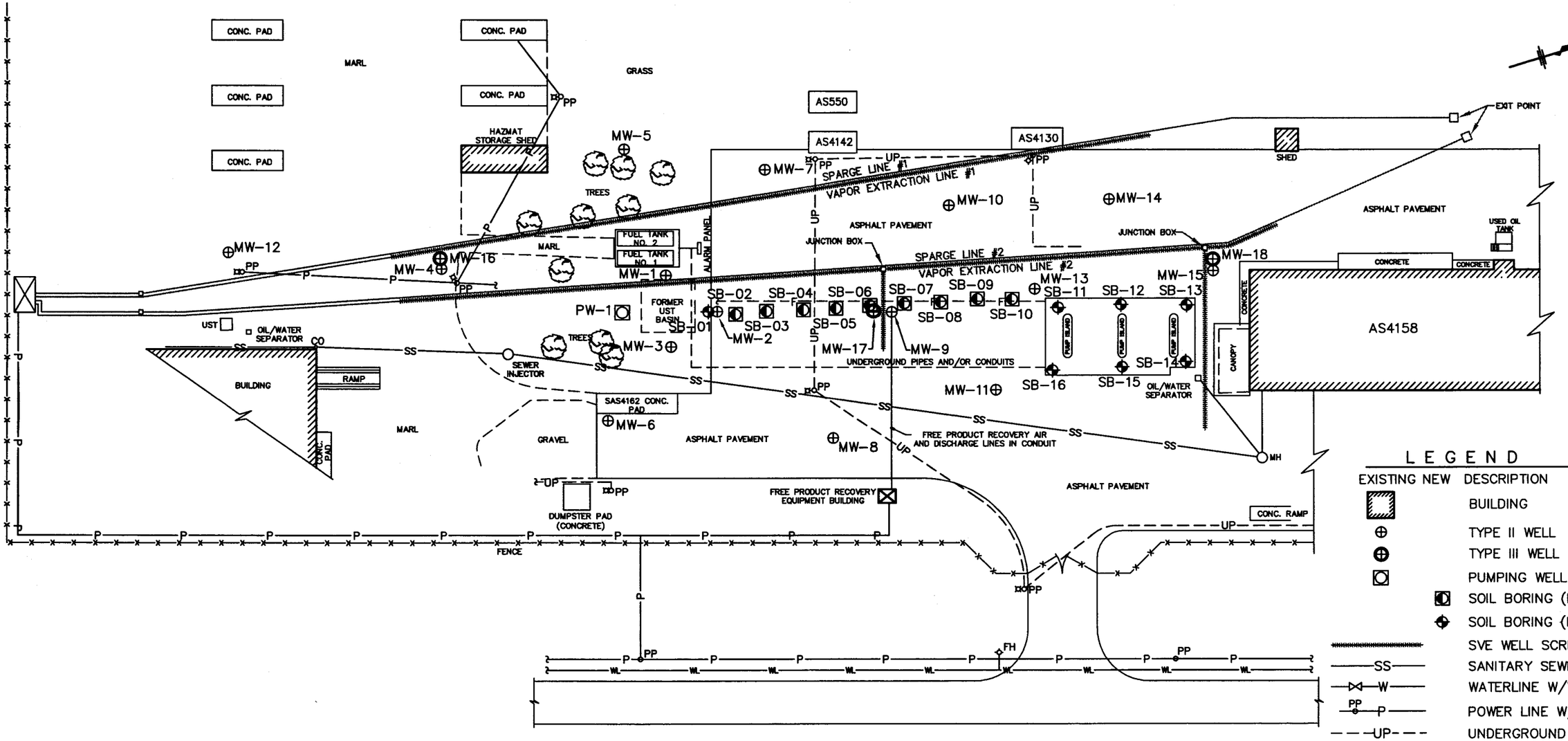
PROJECT
BUILDING AS-4158
SOIL ASSESSMENT REPORT
MARINE CORPS BASE
CAMP LEJEUNE, NC

TITLE
SITE LOCATION WITH
PLACES OF PUBLIC ASSEMBLY

FIGURE
2

JOB NO.	DATE	SCALE	DRAWN BY	CHECKED BY
204-037	OCT 2004	AS SHOWN	SAC	JKB



LEGEND

EXISTING	NEW	DESCRIPTION
		BUILDING
		TYPE II WELL
		TYPE III WELL
		PUMPING WELL
		SOIL BORING (DPT)
		SOIL BORING (HAND AUGER)
		SVE WELL SCREEN
		SANITARY SEWER
		WATERLINE W/VALVE
		POWER LINE W/POLE
		UNDERGROUND POWER
		INACTIVE FUEL LINE
		FIRE HYDRANT
		MANHOLE
		AREA LIGHT

60 30 0 60

SCALE IN FEET

NOTE:
1. DRAWING ADAPTED FROM THE 2002 ANNUAL MONITORING REPORT SITE PLAN BY J.A. JONES ENVIRONMENTAL SERVICES, DATED DECEMBER 2002.
2. SOIL BORING LOCATIONS SB-12 AND SB-13 ARE APPROXIMATE.
3. ALL DIRECT PUSH BORING IDs "SB-" ARE PRECEDED BY "USTAS4158-".

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT: BUILDING AS-4158 MARINE CORPS BASE CAMP LEJEUNE, N.C.

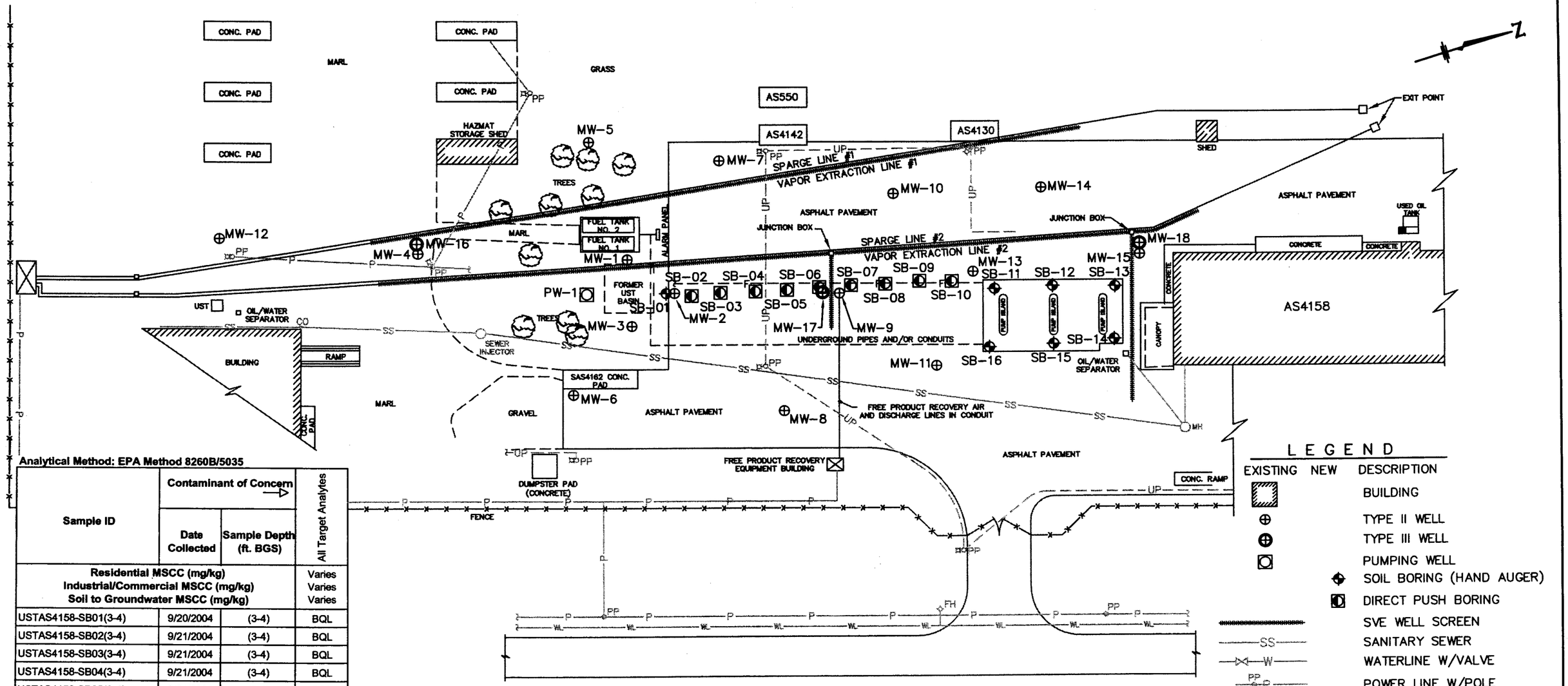
JOB NO. 204-037 | DATE: OCT 2004

TITLE: SITE PLAN WITH UTILITIES

SCALE: 1'=60' | DRAWN BY: HCS | CHECKED BY: JKB

FIGURE 3

204037-2041-03



Analytical Method: EPA Method 8260B/5035

Sample ID	Contaminant of Concern → Date Collected	Sample Depth (ft. BGS)	All Target Analytes
Residential MSCC (mg/kg)			Varies
Industrial/Commercial MSCC (mg/kg)			Varies
Soil to Groundwater MSCC (mg/kg)			Varies
USTAS4158-SB01(3-4)	9/20/2004	(3-4)	BQL
USTAS4158-SB02(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB03(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB04(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB05(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB06(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB07(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB08(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB09(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB10(3-4)	9/21/2004	(3-4)	BQL
USTAS4158-SB11(3-4)	9/20/2004	(3-4)	BQL
USTAS4158-SB12(3-4)	9/20/2004	(3-4)	BQL
USTAS4158-SB13(3-4)	9/20/2004	(3-4)	BQL
USTAS4158-SB14(3-4)	9/20/2004	(3-4)	BQL
USTAS4158-SB15(3-4)	9/20/2004	(3-4)	BQL
USTAS4158-SB16(3-4)	9/20/2004	(3-4)	BQL
USTAS4158-SB16(3-4)Dup	9/20/2004	(3-4)	BQL

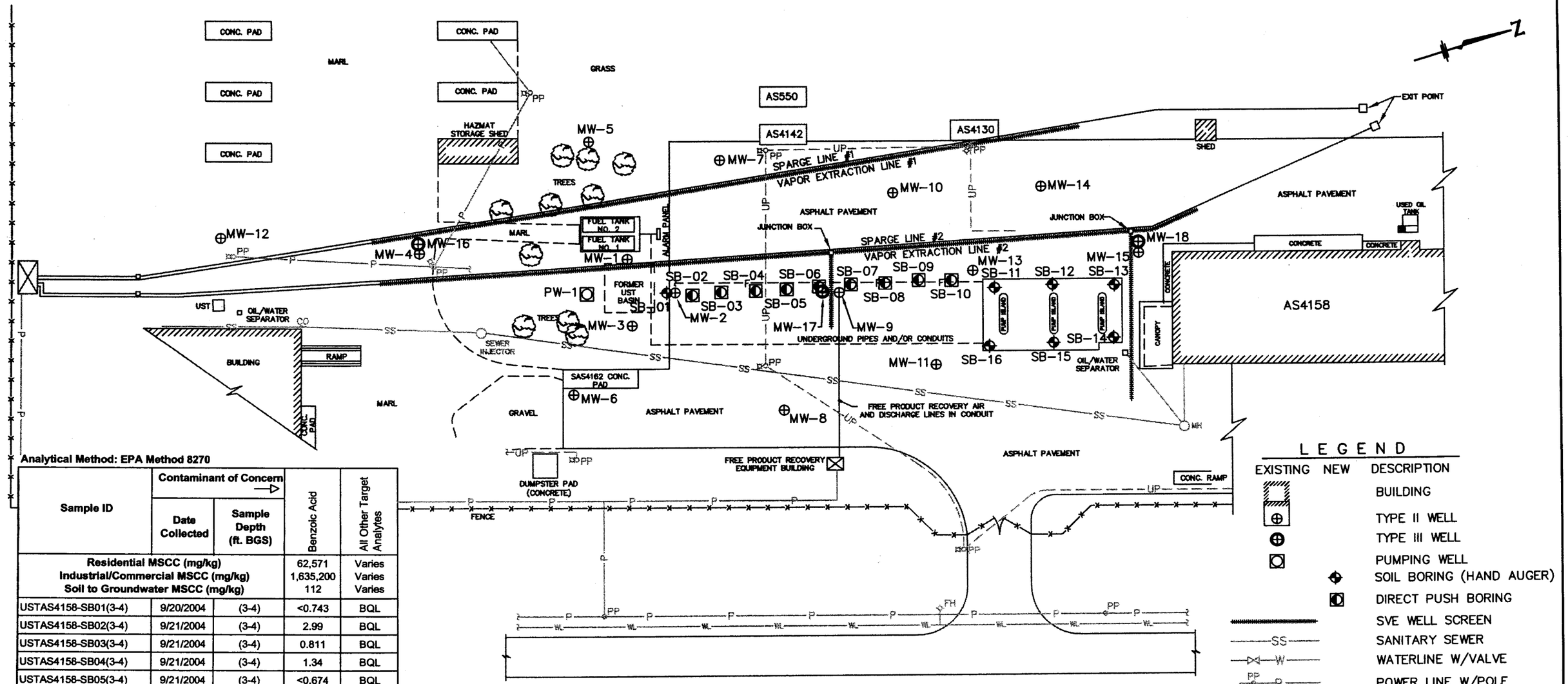
NOTE:
1. DRAWING ADAPTED FROM THE 2002 ANNUAL MONITORING REPORT SITE PLAN BY J.A. JONES ENVIRONMENTAL SERVICES, DATED DECEMBER 2002.
2. SOIL BORING LOCATIONS SB-12 AND SB-13 ARE APPROXIMATE.
3. ALL DIRECT PUSH BORING IDs "SB-" ARE PRECEDED BY "USTAS4158-".
4. ALL RESULTS IN mg/Kg.

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT	TITLE	FIGURE
BUILDING AS-4158 MARINE CORPS BASE CAMP LEJEUNE, N.C.	SITE PLAN WITH SOIL LABORATORY RESULTS - EPA METHOD 8260B/5035	4A

JOB NO. 204-037 | DATE: OCT 2004 | SCALE: 1"=60' | DRAWN BY: HCS | CHECKED BY: JKB

204037-2041-04A



Analytical Method: EPA Method 8270

Sample ID	Date Collected	Sample Depth (ft. BGS)	Benzoic Acid	All Other Target Analytes
Residential MSCC (mg/kg)			62,571	Varies
Industrial/Commercial MSCC (mg/kg)			1,635,200	Varies
Soil to Groundwater MSCC (mg/kg)			112	Varies
USTAS4158-SB01(3-4)	9/20/2004	(3-4)	<0.743	BQL
USTAS4158-SB02(3-4)	9/21/2004	(3-4)	2.99	BQL
USTAS4158-SB03(3-4)	9/21/2004	(3-4)	0.811	BQL
USTAS4158-SB04(3-4)	9/21/2004	(3-4)	1.34	BQL
USTAS4158-SB05(3-4)	9/21/2004	(3-4)	<0.674	BQL
USTAS4158-SB06(3-4)	9/21/2004	(3-4)	<0.721	BQL
USTAS4158-SB07(3-4)	9/21/2004	(3-4)	<0.741	BQL
USTAS4158-SB08(3-4)	9/21/2004	(3-4)	<0.663	BQL
USTAS4158-SB09(3-4)	9/21/2004	(3-4)	<0.817	BQL
USTAS4158-SB10(3-4)	9/21/2004	(3-4)	<0.906	BQL
USTAS4158-SB11(3-4)	9/20/2004	(3-4)	<0.686	BQL
USTAS4158-SB12(3-4)	9/20/2004	(3-4)	<0.681	BQL
USTAS4158-SB13(3-4)	9/20/2004	(3-4)	<0.851	BQL
USTAS4158-SB14(3-4)	9/20/2004	(3-4)	<0.753	BQL
USTAS4158-SB15(3-4)	9/20/2004	(3-4)	<0.805	BQL
USTAS4158-SB16(3-4)	9/20/2004	(3-4)	<0.787	BQL
USTAS4158-SB16(3-4)Dup	9/20/2004	(3-4)	<0.916	BQL

LEGEND

EXISTING	NEW	DESCRIPTION
		BUILDING
⊕		TYPE II WELL
⊕		TYPE III WELL
⊡		PUMPING WELL
	⊕	SOIL BORING (HAND AUGER)
	⊡	DIRECT PUSH BORING
		SVE WELL SCREEN
SS		SANITARY SEWER
W		WATERLINE W/VALVE
P		POWER LINE W/POLE
UP		UNDERGROUND POWER
F		INACTIVE FUEL LINE
FH		FIRE HYDRANT
MH		MANHOLE
⌑		AREA LIGHT
BQL		BELOW QUANTITATION LIMIT

60 30 0 60

SCALE IN FEET

NOTE:
1. DRAWING ADAPTED FROM THE 2002 ANNUAL MONITORING REPORT SITE PLAN BY J.A. JONES ENVIRONMENTAL SERVICES, DATED DECEMBER 2002.
2. SOIL BORING LOCATIONS SB-12 AND SB-13 ARE APPROXIMATE.
3. ALL DIRECT PUSH BORING IDs "SB-" ARE PRECEDED BY "USTAS4158-".
4. ALL RESULTS IN mg/Kg.

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

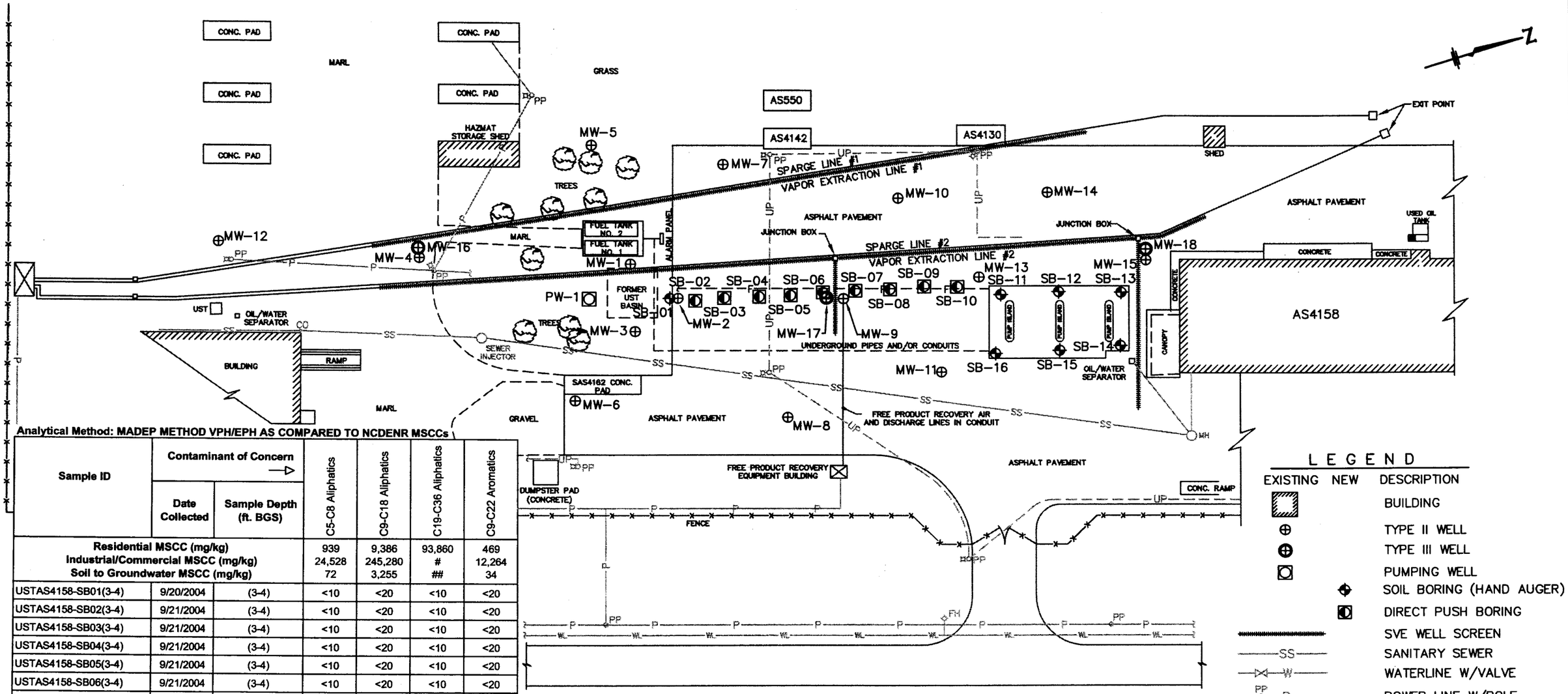
PROJECT: BUILDING AS-4158 MARINE CORPS BASE CAMP LEJEUNE, N.C.

TITLE: SITE PLAN WITH SOIL LABORATORY RESULTS - EPA METHOD 8270

FIGURE: 4B

JOB NO. 204-037 | DATE: OCT 2004 | SCALE: 1'=60' | DRAWN BY: HCS | CHECKED BY: JKB

204037-2041-048



Analytical Method: MADEP METHOD VPH/EPH AS COMPARED TO NCDENR MSCCs

Sample ID	Contaminant of Concern → Date Collected	Sample Depth (ft. BGS)	C5-C8 Aliphatics	C9-C18 Aliphatics	C19-C36 Aliphatics	C9-C22 Aromatics
Residential MSCC (mg/kg)			939	9,386	93,860	469
Industrial/Commercial MSCC (mg/kg)			24,528	245,280	#	12,264
Soil to Groundwater MSCC (mg/kg)			72	3,255	##	34
USTAS4158-SB01(3-4)	9/20/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB02(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB03(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB04(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB05(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB06(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB07(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB08(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB09(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB10(3-4)	9/21/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB11(3-4)	9/20/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB12(3-4)	9/20/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB13(3-4)	9/20/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB14(3-4)	9/20/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB15(3-4)	9/20/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB16(3-4)	9/20/2004	(3-4)	<10	<20	<10	<20
USTAS4158-SB16(3-4)Dup	9/20/2004	(3-4)	<10	<20	<10	<20

NOTE:
1. DRAWING ADAPTED FROM THE 2002 ANNUAL MONITORING REPORT SITE PLAN BY J.A. JONES ENVIRONMENTAL SERVICES, DATED DECEMBER 2002.
2. SOIL BORING LOCATIONS SB-12 AND SB-13 ARE APPROXIMATE.
3. ALL DIRECT PUSH BORING IDs "SB-" ARE PRECEDED BY "USTAS4158-".
4. ALL RESULTS IN mg/Kg.
5. # HEALTH BASED LEVEL > 100%.
6. ## CONSIDERED IMMOBLE.

LEGEND

EXISTING	NEW	DESCRIPTION
		BUILDING
⊕		TYPE II WELL
⊕		TYPE III WELL
		PUMPING WELL
		SOIL BORING (HAND AUGER)
		DIRECT PUSH BORING
		SVE WELL SCREEN
		SANITARY SEWER
		WATERLINE W/VALVE
		POWER LINE W/POLE
		UNDERGROUND POWER
		INACTIVE FUEL LINE
		FIRE HYDRANT
		MANHOLE
		AREA LIGHT

60 30 0 60
SCALE IN FEET

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT: BUILDING AS-4158 MARINE CORPS BASE CAMP LEJEUNE, N.C.

TITLE: SITE PLAN WITH SOIL LABORATORY RESULTS - MADEP EPH/VPH AS COMPARED TO NCDENR MSCCs

FIGURE: 4C

JOB NO. 204-037 | DATE: OCT 2004 | SCALE: 1"=60' | DRAWN BY: HCS | CHECKED BY: JKB

204037-2041-04C

APPENDIX E

RISK CLASSIFICATION AND LAND USE FORM

A. RISK CHARACTERIZATION

Submit the following questionnaire in its entirety. Answer all questions completely. Attach additional pages as needed to fully explain answers. Base answers/explanations on information known or required to be obtained during the Limited Site Assessment.

NOTE: *Source area means point of release from a UST system.*

Limited Site Assessment Risk Classification and Land Use Form

Part I - Groundwater/Surface Water/Vapor Impacts
High Risk

1. *Has the release contaminated any water supply well including any used for non-drinking purposes?* YES **NO**

   No. According to MCB Camp Lejeune and the latest Wellhead Protection Plan Update (2002), the closest water supply well is AS-4150, located approximately 500 feet east/southeast of the source area and does not have known contamination. Please note that water supply well AS-4150 is currently not used by MCB Camp Lejeune and is not anticpate to be used in the near future.

2. *Is a water supply well used for drinking water located within 1,000 feet of the source area of the discharge or release?* **YES** NO

   Yes. Field reconnaissance and GIS data for the MCB Camp Lejeune confirmed the presence of water supply well AS-4150 located within 1,000 feet of the subject site.

3. *Is a water supply well not used for drinking water (e.g., irrigation, washing cars, industrial cooling water, filling swimming pools) located within 250 feet of the source area of the release?* YES **NO**

   No. Wells were not located within 250 feet of the source area of release.

4. *Does groundwater within 500 feet of the source area of the release have the potential for future use (there is no other source of water supply other than the groundwater)?* **YES** NO

   Yes. Water supply well AS-4150 is located approximately 500 feet east-southeast of the source area. Therefore, the groundwater within 500 feet of the source area of the release has the potential for future use. However, this well is currently not used nor anticipated to be used in the near future.

5. *Do vapors from the release pose a threat of explosion because of accumulation of the vapors in a confined space or pose any other serious threat to public health, public safety or the environment?* YES **NO**
   If YES describe.

No. There has been no evidence to suggest an accumulation of vapors and no evidence of accumulation has been reported. Please note that a soil vapor extraction system is currently active within the area of the soil and groundwater contamination. This system should remain active while air sparging activities are operational at the project site in order to remove any potential vapors created by the air sparging activities.

6. *Are there any other factors that would cause the discharge or release to pose an imminent danger to public health, public safety, or the environment?* YES **NO**
If YES describe.

No. Data collected during this investigation does not provide evidence to suggest other factors that would cause an imminent danger to public health, public safety or the environment.

Intermediate Risk

7. *Is a surface water body located within 500 feet of the source area of the discharge or release?* **YES** NO
*If **YES**, does the maximum groundwater contaminant concentration exceed the surface water quality standards and criteria found in 15A NCAC 2B.0200 by a factor of 10?* YES **NO**

Field reconnaissance revealed surface water within 500 feet of the source area in a large ditch along Canal Street. As illustrated on Table 5, the latest analytical data as of this report indicates that no contaminant concentrations exceed surface water quality standards by a factor of 10. However, free-phase product has historically been present at the site. The most recent date that free-phase product has been observed was in January 2005, which is the latest gauging data presented within this report.

8. *Is the source area of the discharge or release located within an approved or planned wellhead protection area as defined in 42 USC 300h-7(e)?* **YES** NO
If YES describe.

Wellhead protection areas defined by USC 200h-7(e) have not, as of this report, been designed by NCDENR for MCB Camp Lejeune. However, MCB Camp Lejeune has identified wellhead protection areas on the base. Based on the most recent Wellhead Protection Plan Update (2002) performed for MCB Camp Lejeune, the site is located within the 10-year capture zone under maximum pumping conditions.

9. *Is the release located in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985?* **YES** NO
If YES, is the source area of the release located in an area in which there is recharge to an unconfined or semi-confined deeper aquifer that is being used or may be used as a source of drinking water? **YES** NO
If YES describe.

Based on aquifer testing results between Type II and Type III well pairs at the Building AS-4158 project site, a downward vertical gradient exists and recharge to a deep aquifer appears to be occurring. Please note the deeper Type III monitoring wells located on site have not exhibited groundwater contaminant levels above the 2L GWQS since 1994.

10. *Do the levels of groundwater contamination for any contaminant exceed the gross contamination levels established by the Department?* **YES** NO

During the April 1999 sampling event, contaminant concentrations for MW-13 exceeded established GCLs for 2-methylnaphthalene, anthracene and phenanthrene. The most recent data as of this report indicates that all contaminants concentrations are below the GCLs. However, free-phase product has historically been present at the site.

Part II - Land Use

Property Containing Source Area of Release

The questions below pertain to the property containing the source area of the release.

1. *Does the property contain one or more primary or secondary residences (permanent or temporary)?* YES **NO**
Describe.

No. The property does not contain any primary or secondary residences.

2. *Does the property contain a school, daycare center, hospital, playground, park, recreation area, church, nursing home or other place of public assembly?* YES **NO**
Describe.

No. The property does not contain any of the above referenced public assembly places.

3. *Does the property contain a commercial (e.g., retail, warehouse, office/business space, etc.) or industrial (e.g., manufacturing, utilities, industrial research and development, chemical/petroleum bulk storage, etc.) enterprise, an inactive commercial or industrial enterprise, or is the land undeveloped?* **YES** NO
Describe.

Yes. The site layout consists of MWSS-272, a Warehouse/Maintenance facility, Marine Wing Support Group 27, 2nd Marine Aircraft Wing and a large paved parking lot.

4. *Do children visit the property?* YES **NO**
Explain.

No. The property is an industrial facility and is not likely to be visited by children.

Is access to the property reliably restricted consistent with its use (e.g., by fences, security personnel or both)? **YES** NO

Explain.

Yes. A fence restricts access to the property and all visitors are required to check in with MCAS personnel is required.

5. *Do pavement, buildings, or other structures cap the contaminated soil?* **YES** NO
Describe.

Yes. A large portion of potentially impacted soils have an asphalt and/or concrete cap.

If YES, what mechanisms are in place or can be put into place to ensure that the contaminated soil will remain capped in the foreseeable future?

As necessary, appropriate land use restrictions will insure that any potentially impacted soils will remain capped. However, no evidence suggests the continued presence of petroleum impacted soils.

6. *What is the zoning status of the property?*

The MCB Camp Lejeune is not subject to local or county zoning requirements. The surrounding properties have been developed for military support purposes.

7. *Is the use of the property likely to change in the next 20 years?* YES **NO**
Explain.

No. The designated use of military property is not likely to change within the foreseeable future.

Property Surrounding Source Area of Release

The questions below pertain to the area within 1500 feet of the source area of the release (excludes property containing source area of the release):

1. *What is the distance from the source area of the release to the **nearest** primary or secondary residence (permanent or temporary)?*

The closest residence is a primary residence approximately 1,000 feet of the subject source area.

2. *What is the distance from the source area of the release to the **nearest** school, daycare center, hospital, playground, park, recreation area, church, nursing home or other place of public assembly?*

A mess hall is located approximately 1,100 feet from the subject source area. The closest recreation area is a park located at a distance greater than 1,500 feet from the subject source area.

3. *What is the zoning status of properties in the surrounding area?*

As previously mentioned, the MCB Camp Lejeune is not subject to local or county zoning requirements.

4. *Briefly characterize the use and activities of the land in the surrounding area.*

The land surrounding the source area has been developed for military purposes, including support facilities and residences for military personnel.

B. RECEPTOR INFORMATION

1. Water Supply Wells

Physical reconnaissance and review of the Wellhead Protection Plan – 2002 Update prepared by AH Environmental indicated that water supply wells AS-4150 and AS-5001 are located within 1,500 feet of the subject source area.

2. Public Water Supplies

Are public water supplies available within 1,500 feet of the source area of the release? **YES** NO

If YES, where is the location of the nearest public water lines and the source(s) of the public water supply (indicate on map). Describe.

Public water is provided to buildings within 1,500 feet of the subject site by water mains which carry treated potable water. Potable water is supplied to the site and surrounding areas by the MCB water supply system. Potable water for Camp Lejeune is obtained from various water treatment facilities throughout the base. Groundwater obtained from the Castle Hayne Aquifer is the raw water source for the treatment facilities.

3. Surface Water

Identify all surface water bodies (e.g., ditch, pond, stream, lake, river) within 1,500 feet of the source area of the release. This information must be shown on the USGS topographic map.

There are numerous surface water bodies located within 1,500 feet of the source area of release including detention ponds and drainage ditches located along Canal Street.

4. Wellhead Protection Areas

Identify all planned or approved wellhead protection areas (e.g., ditch, pond, stream, lake, river) within 1,500 feet of the source area of the release. This information must be shown on the USGS topographic map. Wellhead protection areas are defined in 42 USC 300h-7(e).

According to the latest Wellhead Protection Plan Update (2002), the site is located within the 10-year capture zone for maximum pumping conditions. This area is associated with public water supply well AS-4150 located approximately 500 feet east-southeast of the source area.

5. Deep Aquifers in the Coastal Plain Physiographic Region

(Refer to page 19 of the guidelines) NOTE: This requirement only pertains to releases in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985.

As identified in the Geologic Map of North Carolina (North Carolina Department of Natural Resources and Community Development, 1985), the subject site lies within the Coastal Plain physiographic province. Aquifer testing results between Type II and Type III well pairs at the subject site indicate that recharge to a deep aquifer is occurring.

To some degree seven of the ten aquifers identified to date in the North Carolina Coastal Plain are typically present beneath portions of the MCB Camp Lejeune. In order of increasing depth, these aquifers include the Surficial, Castle Hayne, Beaufort, Peedee, Black Creek, and upper and lower Cape Fear aquifers.

Aquifers below the surficial aquifer in the area typically include the Castle Hayne Aquifer, the Beaufort Aquifer, and the Peedee Aquifer, in order of increasing depth. Both the Beaufort and Peedee Aquifers contain saltwater in portions of the MCB Camp Lejeune and are not generally used for water supply. The Castle Hayne Aquifer contains freshwater and is the principle aquifer used in the area for water supply.

6. Subsurface Structures

Numerous underground utilities are present throughout the site. These utilities are located above the shallow groundwater table and are not considered potential receptors.

7. Property Owners and Occupants

The subject site is owned and operated by the Commanding General – Marine Corps Base, Camp Lejeune.

APPENDIX F

SOIL VAPOR EXTRACTION LABORATORY DATA

DATA OBTAINED FROM

ANNUAL MONITORING REPORT

BY SHAW

Table 3-2
Summary of Detected Concentrations
Treatment System Samples
Building AS-4158
Camp Lejeune, North Carolina

Parameter	Sample Location	SVE-I	
	Sample ID	USTAS4158-SVE-I-03A	USTAS4158-SVE-I-02D
Volatile Aromatic Hydrocarbons by USEPA Method 18, ppm	Sample Date	1/7/2003 *	10/16/2002
Benzene		BQL	BQL
Ethylbenzene		BQL	BQL
Toluene		BQL	BQL
Total Xylenes		BQL	BQL

NOTE:
SVE-I collected from Soil Vapor Extraction System Influent.
SVE-E collected from Soil Vapor Extraction System Effluent.
Bold type indicates detected concentrations above laboratory quantitation limits.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package

Table 3-2
Summary of Detected Concentrations
Treatment System Samples
Building AS-4158
Camp Lejeune, North Carolina

Parameter	Sample Location	SVE-E						
	Sample ID	USTAS4158-SVE-E-02A	USTAS4158-SVE-E-01D	USTAS4158-SVE-E-01C	USTAS4158-SVE-E-01A	USTAS4158-SVE-E-99D	USTAS4158-SVE-E-99C	USTAS4158-SVE-E-99B
Volatile Aromatic Hydrocarbons by USEPA Method 18, ppm	Sample Date	1/8/2002 *	10/9/2001 *	7/9/2001 *	2/15/2001 *	10/13/1999 *	7/7/1999 *	4/12/1999 *
Benzene		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Toluene		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes		BQL	BQL	BQL	BQL	BQL	BQL	BQL

NOTE:
SVE-I collected from Soil Vapor Extraction System Influent.
SVE-E collected from Soil Vapor Extraction System Effluent.
Bold type indicates detected concentrations above laboratory quantitation limits.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package

Table 3-2
Summary of Detected Concentrations
Treatment System Samples
Building AS-4158
Camp Lejeune, North Carolina

Parameter	Sample Location	SVE-E					
	Sample ID	USTAS4158-SVE-E-99A	USTAS4158-SVE-E-98D	USTAS4158-SVE-E-98C1	USTAS4158-SVE-E-98B3	USTAS4158-SVE-E-98B2	USTAS4158-SVE-E-98B1
Volatile Aromatic Hydrocarbons by USEPA Method 18, ppm	Sample Date	1/18/1999 *	10/15/1998	7/22/1998	6/19/1998	5/8/1998	4/22/1998
Benzene		BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene		BQL	BQL	BQL	BQL	BQL	BQL
Toluene		BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes		BQL	BQL	BQL	BQL	BQL	**17.9**

NOTE:
SVE-I collected from Soil Vapor Extraction System Influent.
SVE-E collected from Soil Vapor Extraction System Effluent.
Bold type indicates detected concentrations above laboratory quantitation limits.
BQL = Below Laboratory Quantitation Limit
* verified with laboratory data package

Report QC Checklist ***(Initial and date below)***

Report Written by JKB

Project No. 203-063

Client DOD

Project Name AS-4158

Document Title Optimization

ATTACH COMPLETED TABLE, FIGURE & APPENDIX QC CHECKLIST

****

O Cover letter is intact with correct client info, project number, spelling, and carbon copies (cc:).

√ Cover Sheet is intact with correct project title, client name/address, and date.

√ Table of Contents is included showing correct page numbers and spelling has been checked.

√ All pages are included in correct order with numbers and titles checked against Table of Contents.

√ All tables are in the correct order and titles checked against TOC.

√ All figures are in the correct order and titles checked against TOC.

√ All appendices are in the correct order and titles checked against TOC.

Added

Don't think Table 1 was referenced

O All references to table numbers in text correspond accurately to tables included in document.

√ All references to figure numbers in text correspond accurately to figures included in document.

O All references to appendix numbers/letters in text correspond accurately to appendices included in document.

√ All attachments referenced in document are intact.

√ All footers (text, tables, appendices) have the correct client, project number and are all formatted correctly.

√ All title pages are included and correct.

√ "List of Acronyms" is included in Table of Contents and at beginning of report as Pages i, ii, etc.

√ Spelling/Grammar checked in entire text document.

√ All data values/numbers referenced in the text have been checked against the tables/figures.

*** *ATTACH TO DOCUMENT FOR <u>PROJECT MANAGER</u> AND <u>MARTHA</u>* ***

FILE WITH ORIGINAL REPORT

Completed By QB

Date _____

Tables/Figures/Appendices QC Checklist

Project No. 203063 Client DOB

Project Name AS-4158 Document Title Optimization

****

TABLES

Tables Checked 1, 2, 3, 4A, 4B, 5

✓ Check table numbers and titles against the Table of Contents.

✓ All data presented in the table agrees with data contained in original documents (i.e. lab reports, field notes).

✓ Table headings are correct and consistent on all tables.

✓ All footers are correct and consistent.

✓ All analytes listed on tables are spelled correctly and corresponding State Standards are correct.

✓ Spelling and grammar has been checked on all tables.

✓ All notes required on tables are present and correct.

FIGURES

Figures Checked 2, 4, 5, 3, 1, 6

✓ Check figure numbers and titles against the Table of Contents.

✓ All data presented on the figure agrees with data contained in table and original documents (i.e. lab reports, field notes).

✓ Figure title blocks are correct and consistent on all figures.

✓ All analytes listed on figures are spelled correctly and corresponding State Standards are correct.

✓ Spelling and grammar has been checked on all figures.

✓ All notes are relevant, correct and checked for spelling and grammar.

✓ Any data presented on figures (i.e. groundwater flow direction, contaminant plumes, x-sections) are correct.

✓ North arrow and scale are present and correct.

✓ Check legend symbols. Are all symbols used in the drawing? accurate? existing vs. new, etc.?

✓ Is a reference present as to how the drawing was created (i.e., adopted from another drawing, GPS survey).

APPENDICES

Appendices Checked A, B, C, F, E, D

✓ All appendices are complete.

✓ All appendix titles and letters/numbers match the Table of Contents exactly.

****** ATTACH TO DOCUMENT FOR PROJECT MANAGER ******

FILE WITH ORIGINAL REPORT ALONG WITH REPORT QC CHECKLIST