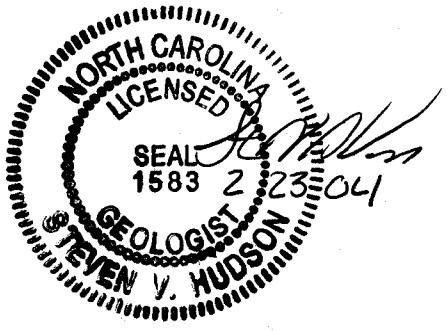
REMEDIAL ACTION OPTIMIZATION
&
REVISED CORRECTIVE ACTION PLAN
BUILDING 900

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

FEBRUARY 20, 2004

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

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

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
CFM	Cubic Feet per Minute
CFH	Cubic Feet per Hour
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
LANTDIV	Atlantic Division
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
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
PSI	Pounds per Square Inch
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 900

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

CATLIN PROJECT NO. 203-063

FEBRUARY 20, 2004

EXECUTIVE SUMMARY

This report is intended to provide information relevant to address and review the effectiveness of current remedial actions being conducted at Building 900 and make revisions to the Corrective Action Plan in order to achieve site closeout. The project site is located at the Hadnot Point Industrial area of Marine Corps Base, Camp Lejeune.

Evidence of petroleum impact to the subsurface of the site was documented in a CAP dated April 1, 1998 prepared by LAW Engineering and Environmental Services, Inc. (LAW). The petroleum impact is suspected to have been caused by a release from the former 5,000-gallon capacity UST 900. The UST was reportedly installed in 1972 and was utilized to store diesel and possible gasoline. Geoscience, Inc. removed UST 900 on November 21, 1994 and disposed approximately 33 cubic yards of petroleum-impacted soil during the removal activities. The estimated horizontal and vertical extent of petroleum impact is documented in the CAP. Construction of the recommended air sparge and soil vapor extraction system was completed by J.A. Jones Environmental Services Company (J.A. Jones) in 1999. The soil and groundwater treatment system was started on July 20, 1999. The system has reportedly operated continuously except during maintenance and sampling events. Building 900 and the associated infrastructure have been demolished.

The remedial goals set forth in the CAP for the site were based on the regulations that were enforced at the time. The cleanup goals for groundwater were the 2L GWQS and for soils were 10 mg/kg TPH - GRO and 40 mg/kg TPH – DRO. Since submittal of the CAP the State regulations have changed. The current applicable remedial requirements for this site are the Risk Based Corrective Action (RBCA) rules for Petroleum Underground Storage Tanks per 15A NCAC 2L .0106 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. The current "clean up" goals for this site are the GCLs for groundwater and the Residential MSCCs for soil.

Review of the analytical data indicates that contaminant levels have been reduced to below current risk based cleanup goals. Therefore, no further remedial efforts appear to be necessary and the active remedial system should be shutdown. Groundwater sampling is proposed for one year on a quarterly basis subsequent to system shutdown to ensure groundwater contaminants do not rebound. Upon completion of four consecutive quarters of post-operational sampling with contaminant levels below current GCLs, a request for No Further Action may be requested.

REMEDIAL ACTION OPTIMIZATION
&
REVISED CORRECTIVE ACTION PLAN
BUILDING 900

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

CATLIN PROJECT NO. 203-063

FEBRUARY 20, 2004

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 900 site located in the Hadnot Point Industrial area of MCB, Camp Lejeune. Additionally, this report provides revisions to the CAP in order to achieve site closure. This report has been formatted in general accordance with the 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 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 & Revised Corrective Action Plan (RAO & 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. In addition, field reconnaissance was conducted to perform on-site inspections of existing site and remedial system conditions and conduct personal interviews with the system operators. Data was then reviewed and the RAO & RCAP was developed.

2.0 SITE HISTORY

(Refer to Figures 1, 2, and 3, and Appendices A and B)

Building 900 was located in the Hadnot Point Industrial area of MCB, Camp Lejeune in Onslow County, North Carolina. The site vicinity is presented on Figure 1. The building was located near the intersection of Holcomb Boulevard and Sneads Ferry Road.

According to information presented in the CAP prepared by LAW Engineering and Environmental Services, Inc. (LAW) for Building 900, dated April 1 1998, a 5,000-gallon capacity UST (UST 900) was located at the former Building 900. The UST was reportedly used to store diesel fuel and possibly gasoline. The exact usage and installation date of the UST is unknown. Geosciences, Inc. removed the UST on November 21, 1994 and prepared a UST Closure Report dated March 1995 detailing the activities. As documented in the 1998 CAP, approximately 33 cubic yards of soil were removed from the site during the UST closure activities.

Two assessments have been conducted at Building 900 site addressing the petroleum release identified during the UST 900 removal activities. These include DPTSAV Site Check, UST 900, dated February 1996 completed by R.E. Wright Environmental, Inc. and a Leaking Underground Storage Tank Site Assessment Report completed by LAW dated August 27, 1996. Numerous monitoring wells and temporary sampling points were installed across the area during these assessment activities. A detailed site plan, including monitoring well locations and temporary sampling locations, is presented on Figure 2.

Results from the groundwater sampling conducted during the assessment investigations indicate that deeper portions (greater than 45 feet bls) of the aquifer have not been impacted by petroleum constituents associated with this release. However, dissolved petroleum constituents were identified in the shallow groundwater. As presented in the CAP, the dissolved contaminant plume originated near the former UST 900 and extended to the north-northwest with the highest concentrations of dissolved petroleum constituents occurring in the area immediately adjacent to the former UST basin. No free product was identified in any of the monitoring wells or temporary sampling points installed at the subject site.

Subsequent to the CAP approval, a remediation system, consisting of an air sparge and soil vapor extraction (AS/SVE) was installed in 1999 by J.A. Jones Environmental Services Company (J.A. Jones). The soil and groundwater treatment system was reportedly started on July 20, 1999. The system has operated continuously except during occasional maintenance repairs, power outages, and quarterly groundwater sampling events.

The current remediation system layout is illustrated on Figure 3.

2.1 CONCEPTUAL SITE MODEL (BASED ON 1998 CAP)

2.1.1 Site Geology

The elevation of the site is roughly 30 feet above MSL and the topography is relatively flat. The majority of the land surface in the vicinity of the former UST 900 is covered by concrete and a railroad track with the associated ballast. The subsurface geology as interpreted by LAW in geologic cross-sections presented in the 1998 CAP consists of interbedded sand and silty/clayey sand to a depth of approximately 14 feet BLS. The surficial material is underlain by approximately five to 10 feet of clay that is underlain by alternating layers of sand and clay. Weathered limestone was encountered at a depth of approximately 30 feet.

2.1.2 Groundwater Elevation and Flow Direction

Depth to groundwater measurements collected during the pre-CAP activities revealed measurements averaging approximately four feet BLS. The apparent groundwater flow direction as determined by LAW in the 1998 CAP was generally to the north.

2.1.3 Potential Receptors

LAW identified one water supply well within 1,500 feet of the subject site in the 1998 CAP. Water supply well HP-634 was located approximately 500 feet east of the site and had been abandoned due to trichloroethene impact from another contaminant source. Two additional water supply wells, HP-630 and HP-642, were identified approximately 2,620 feet south and approximately 2,180 feet southeast of the site, respectively.

The nearest surface water receptor identified by LAW during preparation of the 1998 CAP was Beaverdam Creek located approximately 2,200 feet northwest of the site.

A basement was identified beneath Building 900 (which has since been demolished) in the 1998 CAP prepared by LAW. Due to the shallow groundwater table identified during the investigations of roughly four feet BLS, the basement was considered a potential receptor for exposure to petroleum vapors.

No other receptors were identified in the 1998 CAP.

2.1.4 Contaminants of Concern

(Refer to Table 1, and Appendices A and B)

The list of contaminants identified by LAW above applicable action levels at the time of the CAP is included in Table 1. The maximum concentrations of these constituents identified in the CAP are additionally included in Table 1.

3.0 REMEDIAL ACTION REVIEW

3.1 REMEDIAL SYSTEM OBJECTIVES

As detailed in the CAP prepared by LAW, the remedial objectives included:

1. ***Primary Source(s) Removal:***

   UST 900 was removed on November 21, 1994

2. ***Secondary Source Removal:***

   According to the CAP, unsaturated soils containing TPH concentration in excess of State action levels were not identified in the previous assessment. However, approximately 33 cubic yards of potentially impacted soils were excavated and disposed off site during the UST 900 removal activities.

3. ***Groundwater Remediation:***

   (i) Dissolved-Phase Groundwater contamination: Restore groundwater adversely impacted by petroleum fuel releases to a quality consistent with North Carolina Groundwater Quality Standards

   (ii) Receptor Protection: Protect receptors by conducting groundwater monitoring activities to document the groundwater quality in the vicinity of receptors. An active system and natural processes will likely reduce and remediate the existing dissolved phase contamination plume, thereby, protecting receptors.

4. ***Target Cleanup Concentrations:***
   (Refer to Table 1)

   Target cleanup concentrations along with the maximum existing concentrations identified in the 1998 CAP are presented in Table 1 of this report. The cleanup targets for groundwater as presented in the CAP are based on the 2L GWQS relevant in 1998.

3.2 *RECOMMENDED REMEDIAL STRATEGY*

LAW evaluated natural attenuation/degradation and AS/SVE with natural attenuation/degradation as two potential remedial options for the Building 900 site. Based on site specific conditions including contaminant plume size, contaminant migration pattern, and the estimated migration rate, the AS/SVE with natural attenuation/degradation was recommended by LAW in the 1998 CAP.

Based on a July 15, 1997 pilot study, LAW recommended a total air injection flow rate of 22 CFM at 5.2 PSI. LAW calculated an estimated radius of influence of 30 feet at these flow rates. Remediation was estimated to take approximately 6 to fifteen years from system installation and activation. LAW recommended a comprehensive groundwater and effluent sampling program.

3.3 *IMPLEMENTED REMEDIAL SYSTEM*

(Refer to Figure 3)

Subsequent to CAP approval, J.A. Jones installed the AS/SVE portion of the recommended remedial system in June through July of 1999. The treatment system installed at the site consists of four air sparge and soil vent well pairs. The air sparge wells are constructed of approximately 1 foot of 2-inch diameter PVC, slot .020, well screen installed to an approximate depth of 15 feet BLS. The soil vapor extraction wells are constructed with approximately four feet of 2-inch diameter PVC well screen installed to an approximate depth of 5 feet BLS. According to the Annual Monitoring Report dated October 2002 prepared by J.A. Jones, the remedial system was started on July 20, 1999. The current remedial system layout is presented on Figure 3.

3.4 *REMEDIAL SYSTEM STATUS*

Details pertaining to actual system operation time were not available; therefore, system efficiency calculations are not presented. As detailed in the Annual Monitoring Report dated October 2002 prepared by J.A. Jones, the system has undergone only two major repairs since start-up. These included the replacement of the positive displacement blower in February 2000 and a total system shutdown from January 29, 2001 through February 28, 2001 due to a power outage associated with the demolition activities at the former Building 900. The system was restarted March 1, 2001.

J.A. Jones reports in the Annual Monitoring Report (2002) that the airflow injection rates have been routinely adjusted during site inspections to optimize the system's performance and prevent excessive groundwater mounding. As of April 2002, the system was operation at a reported average injection rate per well of 13.5 CFH at 5 PSI. The operational parameters of the SVE unit were not available. Field reconnaissance conducted by CATLIN personnel in conjunction with LANTDIV

personnel revealed the system to be well maintained and in good working condition. All portions of the system were reported to be operational and functional. The remedial system is reportedly physically inspected a minimum of once per week.

3.5 MONITORING STATUS

Depths to groundwater measurements have been collected monthly from each of the groundwater monitoring wells (MW-1 through MW-8, 78GW22, 78GW23, and RW-10) located at the Building 900 site since system start-up. Review of the data generated from these gauging events as presented in the 2002 J.A. Jones annual monitoring event indicates that there has been a gradual shift in the groundwater flow direction from the north to the west.

According to the 2002 Annual Monitoring Report prepared by J.A. Jones, groundwater samples were collected from the subject site prior to system start-up on July 19,1999 then monthly during the first quarter of the system operation from July 20, 1999 to October 21, 1999. The subject site has been monitored quarterly since the October 1999 sampling event through April 2002 (monitoring wells MW-2 through MW-6, MW-8 through MW-10, 78GW23, and RW-10). The groundwater samples were analyzed during that event for semi volatile organic compounds per EPA Method 625, volatile aromatic hydrocarbons per EPA Methods 601 and 602, and lead per EPA Method 239.2. Soil vapor extraction effluent samples are collected quarterly and analyzed per EPA Method 18 for volatile aromatic hydrocarbons. These sampling events are summarized in annual monitoring reports prepared by J.A. Jones on file in the WiRO.

During the summer of 2002, groundwater monitoring and remedial system operation and maintenance responsibility was transferred from J.A. Jones to Shaw Environmental, Inc. (Shaw). No data pertaining to the quarterly sampling event scheduled for July 2002 was obtained during the preparation of this report. Additionally, groundwater sample analysis conducted on the quarterly groundwater samples collected by Shaw from October 2002 through August 2003 were analyzed per EPA Method 602 for volatile aromatic hydrocarbons and EPA Method 610 for polynuclear aromatic hydrocarbons, and for lead per EPA Method 6010B.

3.6 FREE PRODUCT

No measurable thickness of free product has been identified at the site.

3.7 CURRENT CONTAMINANT CONCENTRATIONS

3.7.1 Soil

(Refer to Appendices A and B)

Soil contaminant levels as TPH Gasoline identified during the studies ranged

from below laboratory detection limits to 5,500 mg/Kg. However, the soil samples collected by R.E. Wright were collected from below the groundwater table that was measured at a depth of approximately four feet BLS and are therefore not representative of vadose soils. Additionally, the highest reported concentration reported in the LAW assessment (1997) was reported at 20.8 mg/Kg from the soil sample collected from GP-1 located approximately 75 feet southwest of the former UST basin. This soil sample was collected from a depth of two to four feet BLS, therefore may be representative of the smear zone, and is not representative of vadose soil impact.

Soil contaminant levels as TPH Diesel identified during these studies ranged from below laboratory detection limits to 260 mg/Kg. The contaminant levels identified as TPH Diesel are considered similar to those as identified as TPH Gasoline. The highest levels were identified in the soil samples collected by R.E. Wright from below the shallow water table. The only other detectable concentrations of TPH Diesel identified during the assessments were collected from GP-1 (12.4 mg/Kg) and GP-5 (15.4 mg/Kg). As previously stated, the samples were collected from two to four feet BLS and may not be representative of true vadose soil contamination. These samples were collected from approximately 75 feet southwest and 20 feet east of the former UST basin, respectively. A summary table of the analytical soil results as presented in the CAP (LAW, 1998) with the associated figures from the same CAP are presented in Appendices A and B.

3.7.2 Groundwater

(Refer to Table 1, Figures 5 through 8, and Appendices A, B, and E)

The maximum groundwater contaminations at the time of CAP (LAW, 1998) preparation are presented on Table 1.

The most recent groundwater-sampling event completed at the site was conducted in August 2003. Groundwater samples were collected from monitoring wells MW-1 through MW-3, MW-5, MW-6, MW-8 through MW-10, RW-10, and IR78-GW23 and analyzed per EPA Methods 602, 610, and 6010B. Groundwater samples were reportedly not collected from MW-4 due to bubbling observed in the well. Concentrations of target constituents identified above current 2L GWQS were identified in groundwater samples collected from monitoring wells MW-02 (benzene - 29.7 µg/L and ethylbenzene - 131 µg/L), MW-9 (benzene - 19 µg/L), MW10 (benzene – 3.1 µg/L), RW-10 (benzene – 19.2 µg/L), and IR78-GW23 (benzene – 7.7 µg/L). Analytical results from a groundwater sampling event conducted on the same monitoring wells, including MW-4, in May 2003 revealed similar results with the following contaminant concentrations identified above current 2L GWQS in the sample collected from MW-4: benzene – 524 µg/L, ethylbenzene - 702

µg/L, xylenes – 1,270 µg/L, and naphthalene - 138 µg/L. An analytical data summary of the most recent groundwater sampling events (October 2002 through August 2003) is presented in Appendix E.

The analytical results from the August 2003 sampling event are presented for benzene, toluene, ethylbenzene, total xylenes, and naphthalene on Figures 5 through 8, respectively.

4.0 REMEDIATION EFFECTIVENESS EVALUATION

According to J.A. Jones 2002 Annual Monitoring Report, with the exception of bis (2-ethylhexyl) phthalate, contaminant concentrations identified in the groundwater at the Building 900 site have decreased by over 60% from the concentrations identified in the CAP. A review of the 2003 sampling data (compiled through August 2003) revealed the following contaminant percentage decreases as compared to the concentrations presented in the CAP:

COMPOUND	MAXIMUM CONCENTRATION DETECTED FROM CAP	MAXIMUM CONCENTRATION DETECTED IN 2003	PERCENT DECREASE
Benzene	2,095 µg/L	700 µg/L	299%
Toluene	6,525 µg/L	138 µg/L	4,728%
Ethylbenzene	2,100 µg/L	998 µg/L	210%
Total Xylenes	9,350 µg/L	1,810 µg/L	517%
MTBE	120 µg/L	224 µg/L	54%
Naphthalene	449 µg/L	138 µg/L	325%
Lead	645 µg/L	8.2 µg/L	7,866%

The current extent of groundwater contamination above 2L GWQS does not appear to have been significantly reduced as compared to the historical estimated areal extent. However, as compared to the groundwater contaminant concentrations identified in the CAP the contaminant concentration levels identified during the August 2003 groundwater-sampling event are substantially lower. The groundwater analytical data summary tables as presented in the CAP are included in Appendix A. Analytical data summary figures from the CAP data are presented in Appendix B. Appendix C contains post-CAP groundwater analytical data summary tables through April 2002. Groundwater analytical data summary tables from October 2002 through August 2003 are included in Appendix E.

Using contaminant reduction as an indicator, it appears that the active remediation has had a beneficial effect at the subject site. However, based on the reported (J.A. Jones, 2002) current air sparge injection flow rate of 13.5 CFH at 5 PSI per well as compared to the design (LAW, 1998) injection flow rate of 5.5 CFM at 5.2 PSI per well, it is unclear if the air sparge system has contributed significantly to the contaminant reduction.

4.1 SYSTEM SUITABILITY

Based on the reduced levels of groundwater contamination, some type of beneficial remedial actions are occurring at the subject site, possibly as a result of the active remedial system; therefore, the system as designed appears to be suitable.

5.0 REMEDIATION MODIFICATIONS AND ALTERNATIVES

5.1 REGULATORY FRAMEWORK EVALUATION

(Refer to Appendix E)

As previously discussed, 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 this site are the Risk Based Corrective Action for Petroleum Underground Storage Tanks (RBCA) per 15A NCAC 2L .0106 which became effective on January 2, 1998 and defined 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 to present the data necessary to allow NCDENR to assess the site's applicable risk classification.

The completed form is included in Appendix D. 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 Low Risk and Industrial/Commercial Land Use site. This ranking revises the target cleanup goals for both soil and groundwater (see Section 5.3).

5.2 REVISED CONCEPTUAL SITE MODEL

5.2.1 Groundwater Depth and Flow Direction

The groundwater gauging data from the 2002 annual monitoring report as compared to the historical data presented in the previous reports indicates that the groundwater flow trends at the site have gradually shifted from a northerly flow to a more westerly flow direction. Depth to groundwater is slightly lower than previously identified and ranges from a low of 12.10 feet BLS (78GW23) to a high of 6.44 feet BLS (MW-5).

5.2.2 Potential Receptors

(Refer to Figure 1 and Appendix D)

The potential receptors have been re-evaluated during the preparation of this RAO & RCAP using the Risk Classification and Land Use Form included in Appendix D. Based on the risk characterization, this site appears to be a Low Risk Site that may be classified as Industrial/Commercial land use.

A receptor survey performed as part of this plan identified one additional potential receptor within the area of investigation. The additional receptor is a retention pond, located approximately 1,000 feet southwest of the former UST, which was constructed as part of the Temporary Hadnot Point Fuel Farm. All water supply wells previously identified within 1,500 feet of the subject site have been permanently abandoned. Due to the distance from the contaminant plume and the low contaminant levels identified, impact to potential receptors is unlikely. Additionally, Building 900 and the associated infrastructure, including the basement, have been demolished and the footprint of the former building is now covered with concrete. Therefore, the basement is no longer a potential receptor. The potential receptors are presented on the Site Location Map on Figure 1.

5.2.3 Contaminants of Concern

The contaminants of concern as established in the CAP (LAW, 1998) are still relevant, except, the 2001 Guidelines for soils require chemical specific testing and cleanup levels.

5.3 ALTERNATIVE REGULATORY MECHANISMS

5.3.1 Revised Target Cleanup Goals

(Refer to Table 3)

Based on the risk characterization study discussed above, it appears that the revised applicable cleanup concentration for soil is based on the Industrial/Commercial MSCCs. Soil contamination data presented in the CAP from this site was based on the TPH-Gasoline and TPH-Diesel Action Levels. No soil samples have been obtained for Risk Based Analysis; however, it appears from an evaluation of previous TPH analyses that no petroleum impact has occurred in the vadose zone soils.

Additionally, based on the risk characterization study discussed above, it appears the Revised Target Cleanup Concentrations for groundwater are based on the GCLs. The revised cleanup levels are summarized in Table 1.

5.3.2 Land Use Restrictions

As required by the NCDENR, a Notice of Residual Petroleum (NRP) must be prepared and recorded where contaminants in groundwater remain at concentrations that exceed the 2L GWQS or soil contaminant concentrations exceed the Residential MSCC. At this site, based on the most recent sampling event, benzene, toluene, ethylbenzene, total xylenes, MTBE, and

naphthalene concentrations dissolved in groundwater are in excess of the 2L GWQS. Therefore, a NRP is necessary to obtain site closure.

Marine Corps Base, Camp Lejeune is currently in the process of developing a legal document designated as a Land Use Restriction (LUR) that is being designed as an acceptable document to both State and Federal Government agencies to accomplish the intent of the NRP.

5.4 ALTERNATIVE REMEDIAL TECHNOLOGIES

No alternative remedial technologies were investigated to accomplish the ultimate goal of site closure. The identified contaminant levels are below the Revised Target Cleanup Concentrations.

5.5 COST EFFICIENCY EVALUATION

A detailed cost efficiency evaluation was not performed for this site. The recommendation for shutdown of the active remediation system is based on a comparative evaluation of the implementation of system shutdown and monitoring procedures versus continuation of system operation to achieve closure based on 2L GWQS criteria. The current plan of system shutdown and quarterly monitoring will be necessary regardless of the chosen method. Therefore, the only benefit of the continued operation of the system would be to attempt to achieve compliance with current 2L GWQS which would allow for system closure without a LUR. The comparative cost associated with continued system operation versus preparation of a LUR would be substantially higher resulting in system shutdown as the most economically feasible alternative.

6.0 OPTIMIZATION RECOMMENDATIONS

6.1 SOIL

Based on review of historical data, no petroleum related vadose zone soil impact associated with the Building 900 release appears to be present at the subject site. Therefore, no additional soil assessment or remediation appears to be necessary.

6.2 GROUNDWATER

Based on the Revised Target Cleanup Concentrations discussed within Section 5.3.1 of this report, CATLIN recommends shutdown of the active groundwater remediation system currently in operation at the site. Upon acceptance of the recommended system shutdown by NCDENR, the active remediation system should be shut down and secured to assure that the integrity of the system and well network is not jeopardized. Groundwater sampling is recommended on a quarterly basis subsequent to system shutdown for four consecutive events to check for contaminant rebound.

A review of existing groundwater monitoring data revealed that no petroleum constituents have been identified above current GCLs. Therefore, CATLIN recommends sampling all on-site monitoring wells associated with the Building 900 site during a yearly quarterly sampling program initiated following system shut down. All monitoring wells sampled during this period are recommended to be gauged and sampled for the following Risk Based analyses: EPA Method 602 plus xylenes, EPA Method 625 plus 10 tics, MADEP EPH and VPH. The results of these four quarters of sampling should be presented within a Groundwater Monitoring Report with Site Closure (if applicable) at the conclusion of the fourth quarter of sampling.

Upon receipt of No Further Action with LUR, CATLIN recommends the selected monitoring wells referenced in the previous paragraph be sampled on a frequency of once every five years for the following analyses: EPA Method 602 plus xylenes, EPA Method 625 plus 10 tics, MADEP EPH and VPH. The results of these sampling events should be compared to the groundwater quality standard applicable at that time, currently the 2L GWQS. Prior to each 5-year sampling event, applicable regulations should be reviewed to establish the proper sampling and analytical protocol. The LUR should be requested to be removed from the site at the time the selected monitoring wells meet the applicable groundwater quality standard.

7.0 IMPLEMENTATION

7.1 IMPLEMENTATION PLAN

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

- Submittal of RAO & RCAP to NCDENR for approval of recommendations.
- Shutdown active remediation system subsequent to plan approval.
- Initiate the suggested quarterly groundwater sampling for one year.
- Preparation of a Groundwater Monitoring Report with Site Closure request (if no rebound contamination is present above revised standards).
- Proceed with No Further Action requirements with the intent of the LUR.
- Site Restoration:
    - Disassemble and remove the AS/SVE system. Components of the system may be utilized at other sites or stored for future use.
    - AS/SVE wells and non-relevant monitoring wells should be abandoned in place in accordance to 15A NCAC 2C.0113.
- Proceed with 5-year sampling plan.

Due to the location of the Building 900 site within the Hadnot Point Industrial Complex, the relevance of the individual monitoring wells associated with the site should be reviewed prior to abandonment. Numerous monitoring wells installed to address the impact associated with the Building 900 site may be utilized to assess additional environmental concerns located in the vicinity.

As previously stated, Marine Corps Base, Camp Lejeune is currently in the process of producing a legal document acceptable to State and Federal Government agencies to accomplish the intent of the Notice of Residual Petroleum.

7.2 SCHEDULE FOR IMPLEMENTATION

System shutdown is recommended to commence immediately upon plan approval by appropriate State authorities. Upon system shutdown, quarterly groundwater sampling should be conducted at the site for four consecutive events at which time site conditions should be evaluated to determine if a request for site closure is warranted. The upcoming March 2004 sampling event will be an appropriate milestone to begin the quarterly sampling activities.

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

J.A. Jones Environmental Services Company, 2002, *Annual Monitoring Report - Task Order No. 56 - Soil and Groundwater Remediation – Building 900.* Report dated October 2002 - Revised.

LAW Engineering, Inc., 1998, *Corrective Action Plan for the Recovery of Free Product and the Restoration of Petroleum Contaminated Soil and Groundwater. Building 900.* Report dated April 1, 1998.

North Carolina Department of Environment and Natural Resources, Groundwater Section, 1998, *Groundwater Section Guidelines for the Investigation and Remediation of Soils and Groundwater, Volume II: Petroleum Underground Storage Tanks,* Raleigh, North Carolina, January 2, 1998.

Radian International, 2001, *Guidance for Optimizing Remedial Action Operation.* Prepared for Naval Facilities Engineering Service Center, Port Hueneme, California. Report dated April 2001.

North Carolina Department of Environment and Natural Resources, Division of Waste Management, UST Section, 2001, *Guidelines for Assessment and Corrective Action.* Effective July 1, 2001.

North Carolina Department of Environment and Natural Resources, Division of Water Quality, 2002, *Title 15A Subchapter 2L-Classifications and Water Quality Standards Applicable To The Groundwaters of North Carolina.* April 7, 2002.

Shaw Environmental, Incorporated, 2003, *Unpublished Groundwater Monitoring Data.*

TABLES

TABLE 1

MAXIMUM CONTAMINANT CONCENTRATIONS AND TARGET CLEANUP LEVELS

REMEDIAL ACTION OPTIMIZATION
&
REVISED CORRECTIVE ACTION PLAN
BUILDING 900

MARINE CORPS BASE, CAMP LEJEUNE

MEDIUM	COMPONENT	1998 MAXIMUM CONCENTRATIONS (FROM CAP)	1998 TARGET CLEANUP (FROM CAP)	2003 MAXIMUM CONCENTRATIONS (THROUGH AUGUST)	REVISED TARGET CLEANUP
FREE PRODUCT	Diesel Gasoline	NMT	NMT	NMT	< 1/8"
VADOSE ZONE SOIL (mg/Kg)	TPH Gasoline	20.8	10	UNKNOWN	Industrial/Commercial Maximum Soil Contaminant Concentrations
	TPH Diesel	15.4	40		
	EPA Method 8260	NA	n/a		
	EPA Method 8270	NA	n/a		
	MADEP VPH/EPH	NA	n/a		
GROUNDWATER (µg/L)	Benzene	2,095.0	1	700.0	5,000
	Toluene	6,525.0	1,000	138.0	257,500
	Ethylbenzene	2,100.0	29	998.0	29,000
	Total Xylenes	9,350.0	530	1,810.0	87,500
	MTBE	120.0	200	224.0	200,000
	Naphthalene	449.0	21	138.0	15,500
	Lead	645.0	15	8.2	15,000
	Bis(2-Ethylhexyl) Phthalate	10.7	*	NA	3,000

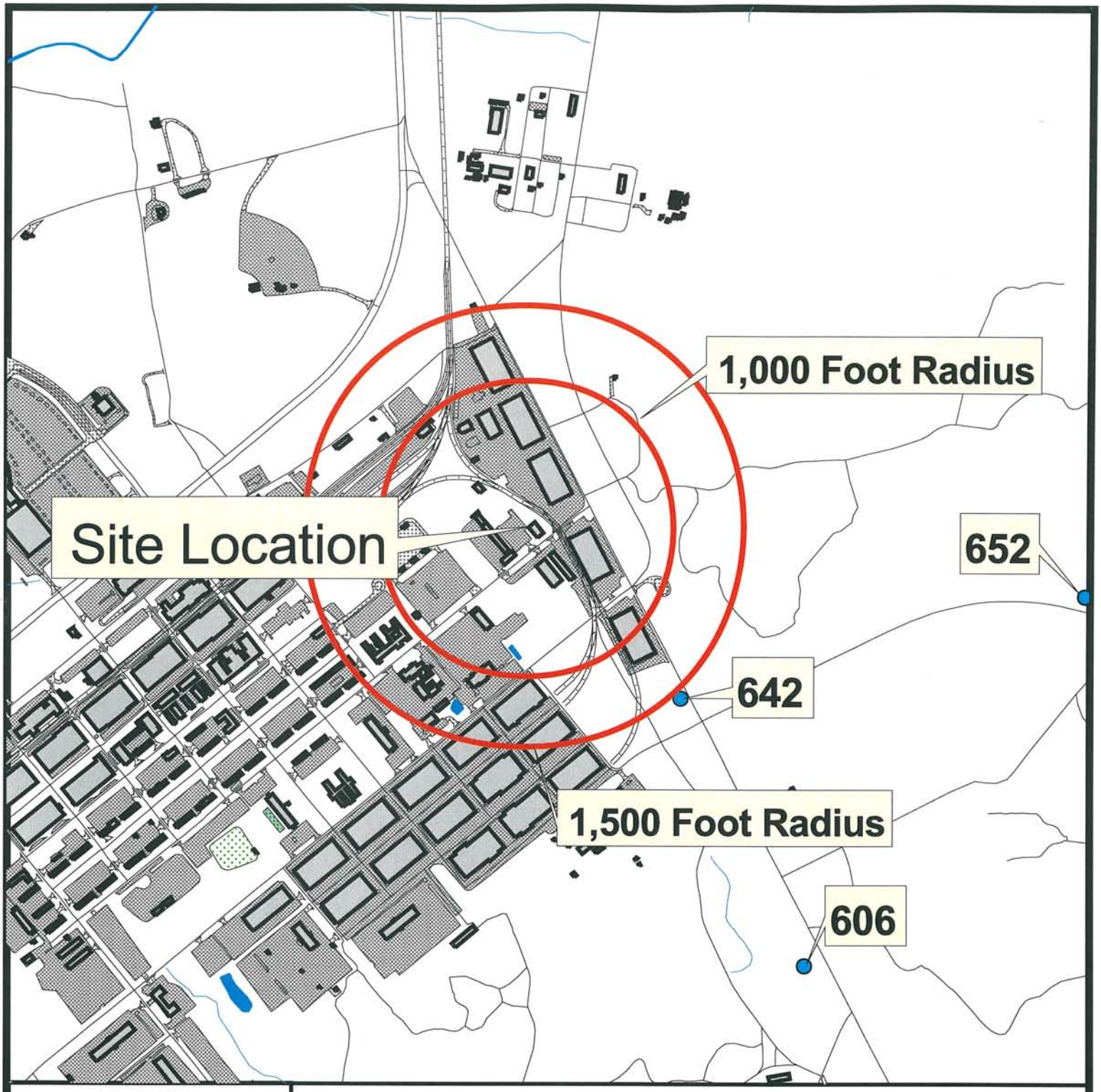
NMT = No Measurable Thickness

NA = Not Analyzed

n/a = Not Applicable

* = No numerical standard established.

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

1000 0 1000 Feet

SCALE

N
W E
S

CATLIN ENGINEERS and SCIENTISTS

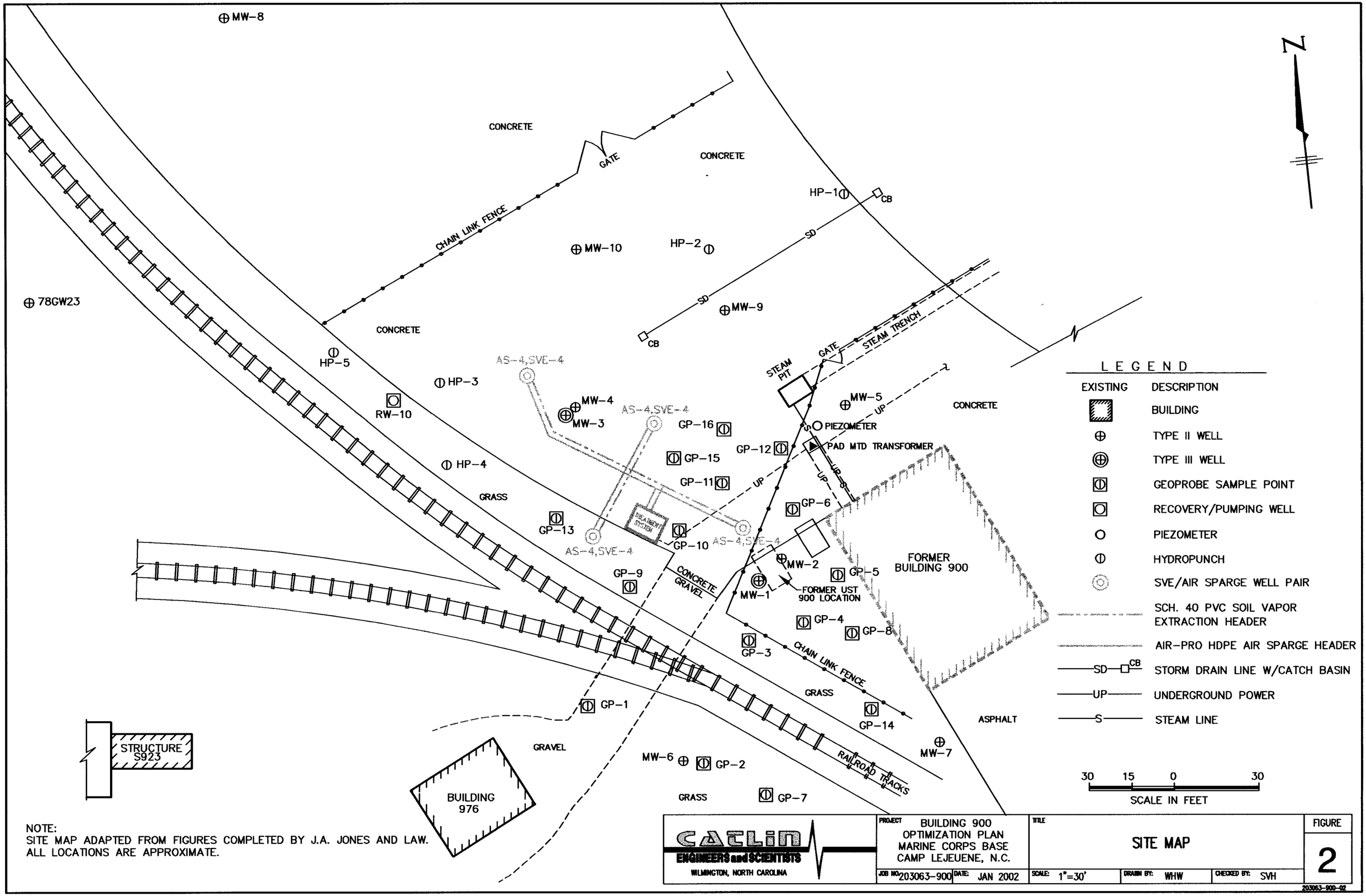
DRAWN BY:	CHECK BY:	APPROVED BY:
THW	SVH	SVH

CATLIN PROJECT No.: 203-063

SITE LOCATION MAP

BUILDING 900

FIGURE 1

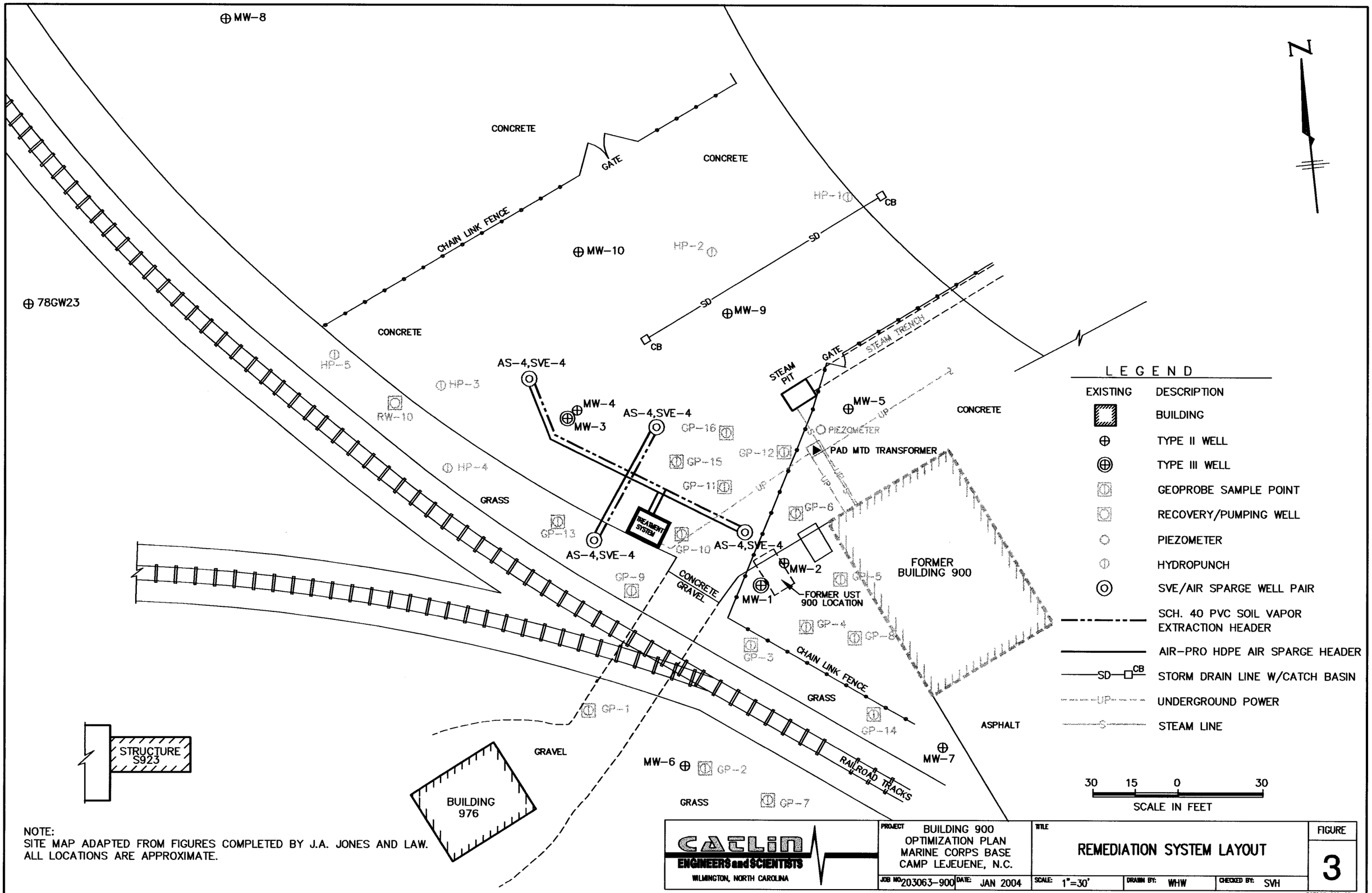


NOTE:
SITE MAP ADAPTED FROM FIGURES COMPLETED BY J.A. JONES AND LAW.
ALL LOCATIONS ARE APPROXIMATE.

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT: BUILDING 900 OPTIMIZATION PLAN MARINE CORPS BASE CAMP LEJEUNE, N.C.	TITLE: SITE MAP			FIGURE 2
JOB NO. 203063-900	DATE: JAN 2002	SCALE: 1"=30'	DRAWN BY: WHW	CHECKED BY: SVH

203063-900-02

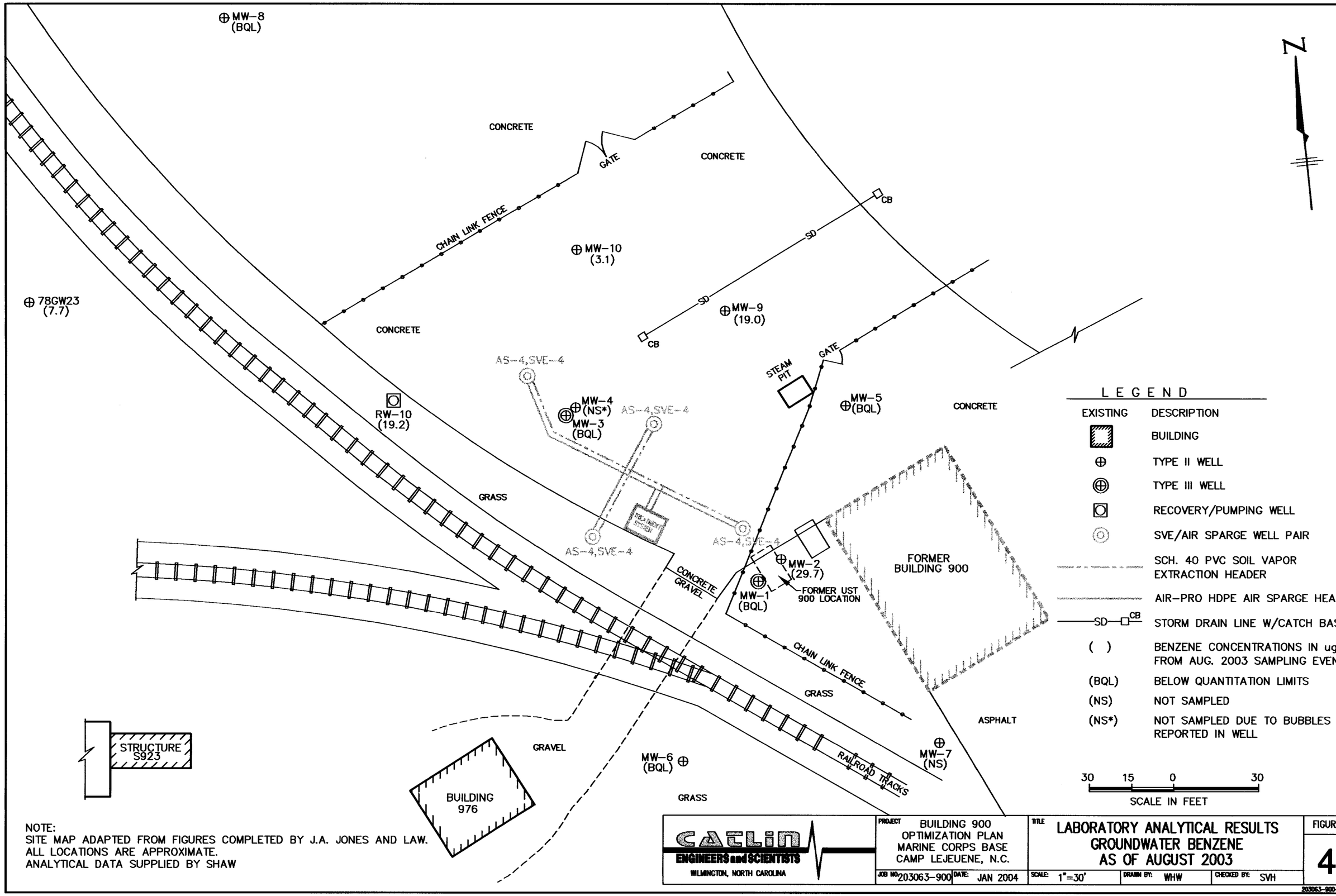


NOTE:
SITE MAP ADAPTED FROM FIGURES COMPLETED BY J.A. JONES AND LAW.
ALL LOCATIONS ARE APPROXIMATE.

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT: BUILDING 900 OPTIMIZATION PLAN MARINE CORPS BASE CAMP LEJEUNE, N.C.	TITLE: REMEDIATION SYSTEM LAYOUT		FIGURE 3
JOB NO: 203063-900	DATE: JAN 2004	SCALE: 1"=30'	DRAWN BY: WHW
CHECKED BY: SVH			

203063-900-03

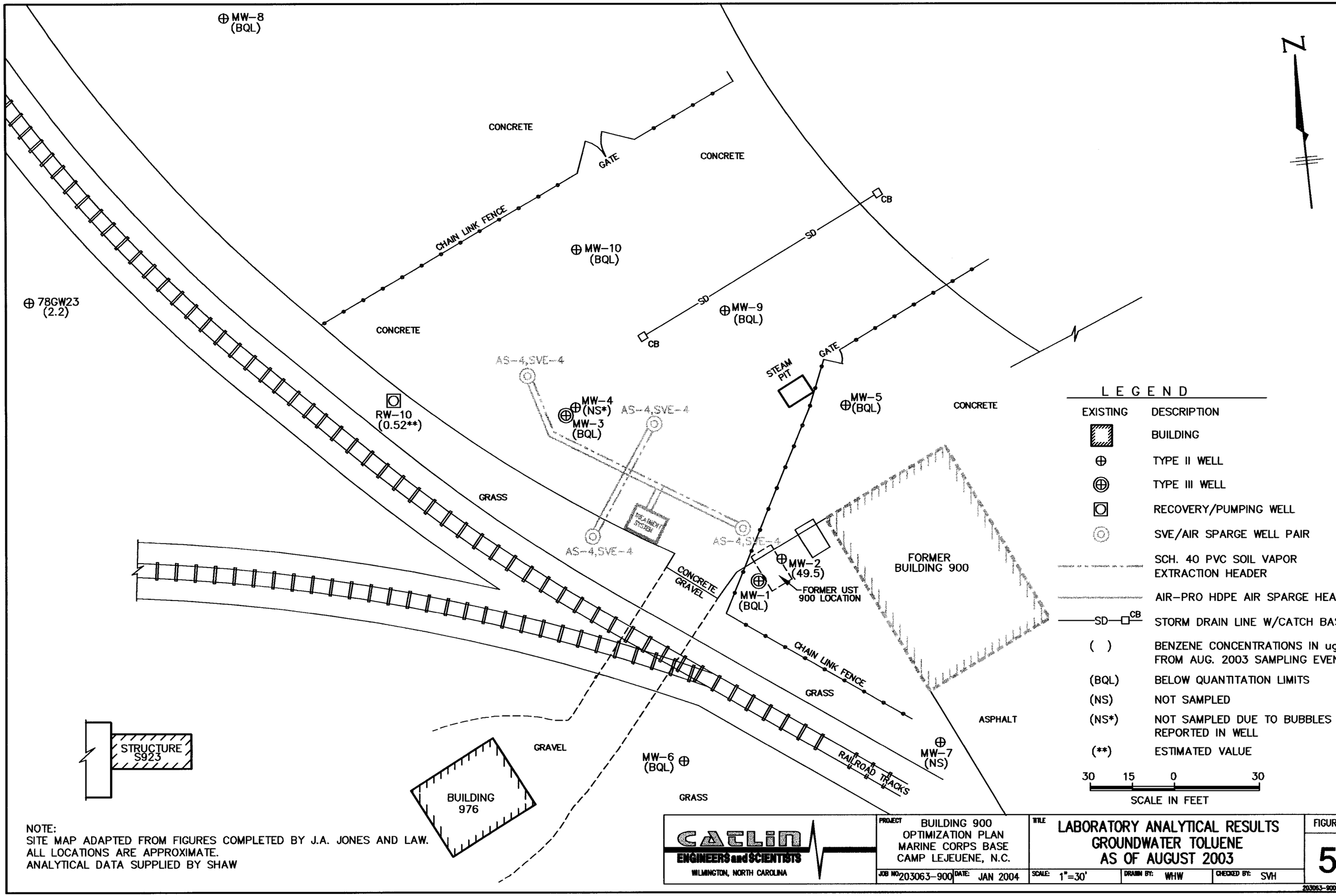


NOTE:
SITE MAP ADAPTED FROM FIGURES COMPLETED BY J.A. JONES AND LAW.
ALL LOCATIONS ARE APPROXIMATE.
ANALYTICAL DATA SUPPLIED BY SHAW

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT: BUILDING 900 OPTIMIZATION PLAN MARINE CORPS BASE CAMP LEJEUNE, N.C.	TITLE: LABORATORY ANALYTICAL RESULTS GROUNDWATER BENZENE AS OF AUGUST 2003			FIGURE 4
JOB NO: 203063-900	DATE: JAN 2004	SCALE: 1"=30'	DRAWN BY: WHW	CHECKED BY: SVH

203063-900-04

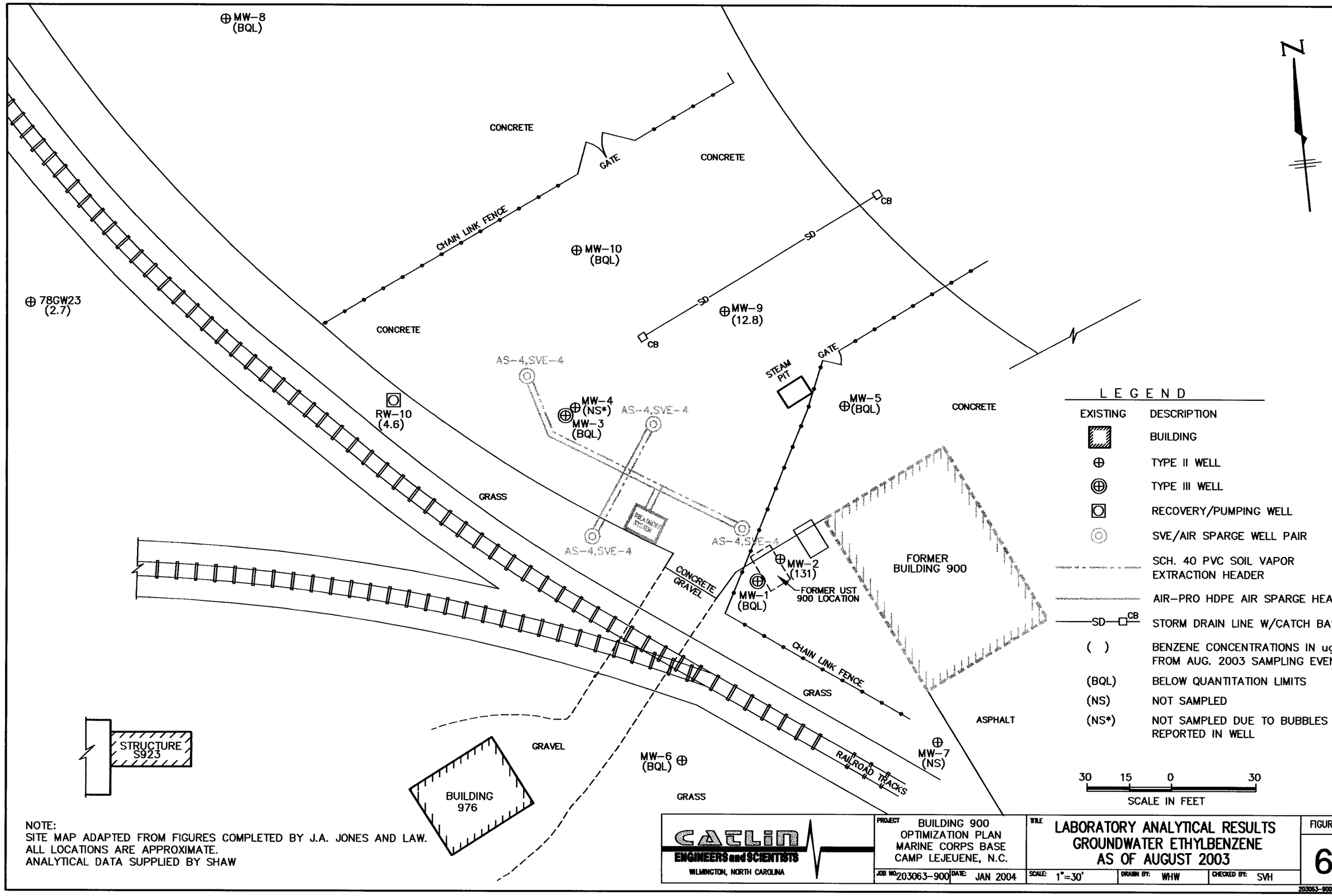


NOTE:
SITE MAP ADAPTED FROM FIGURES COMPLETED BY J.A. JONES AND LAW.
ALL LOCATIONS ARE APPROXIMATE.
ANALYTICAL DATA SUPPLIED BY SHAW

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT: BUILDING 900 OPTIMIZATION PLAN MARINE CORPS BASE CAMP LEJEUNE, N.C.	TITLE: LABORATORY ANALYTICAL RESULTS GROUNDWATER TOLUENE AS OF AUGUST 2003		FIGURE 5
JOB NO: 203063-900	DATE: JAN 2004	SCALE: 1"=30'	DRAWN BY: WHW / CHECKED BY: SVH

203063-900-05

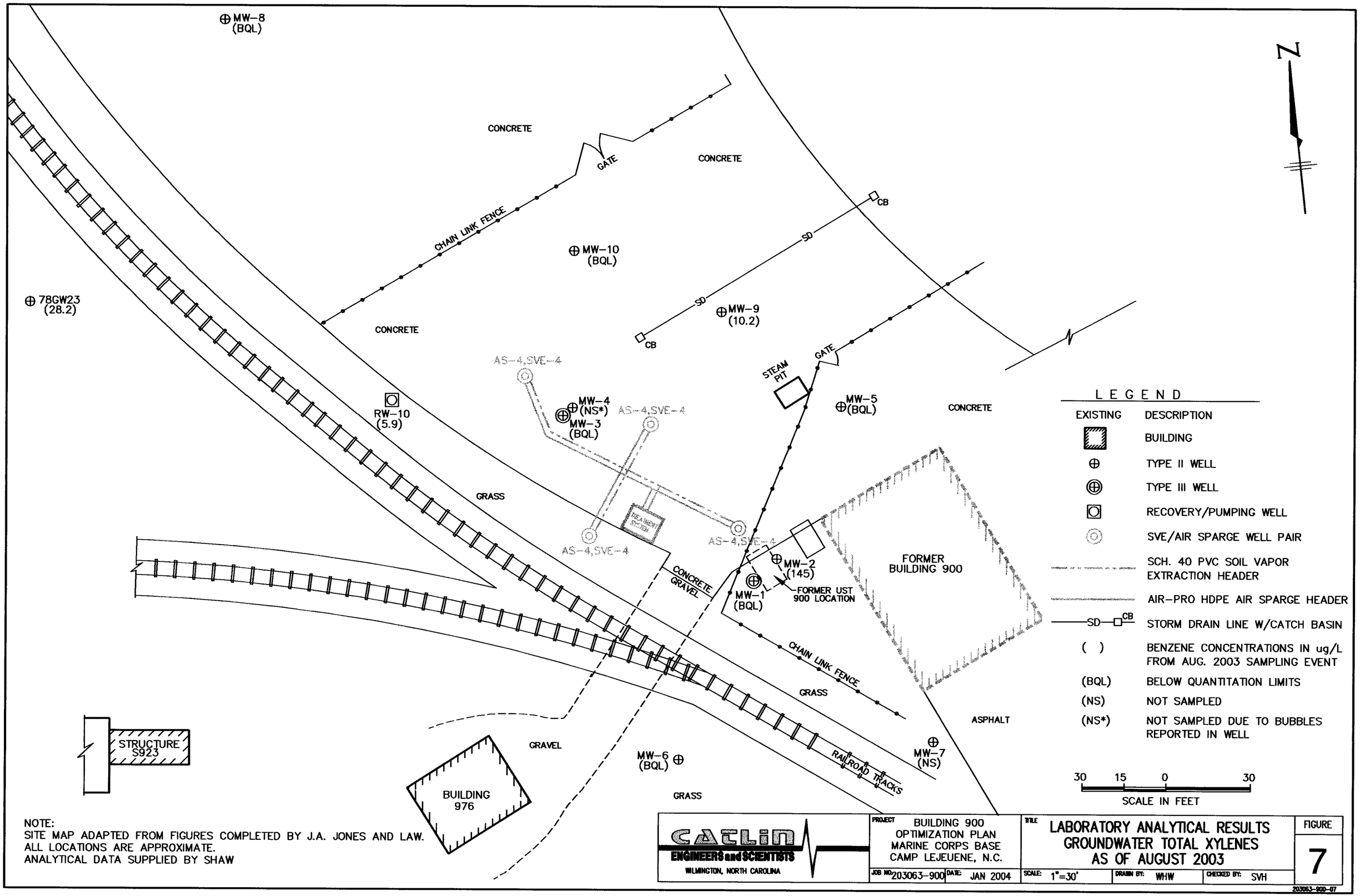


NOTE:
SITE MAP ADAPTED FROM FIGURES COMPLETED BY J.A. JONES AND LAW.
ALL LOCATIONS ARE APPROXIMATE.
ANALYTICAL DATA SUPPLIED BY SHAW

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT: BUILDING 900 OPTIMIZATION PLAN MARINE CORPS BASE CAMP LEJEUNE, N.C.				TITLE: LABORATORY ANALYTICAL RESULTS GROUNDWATER ETHYLBENZENE AS OF AUGUST 2003	FIGURE 6
JOB NO: 203063-900	DATE: JAN 2004	SCALE: 1"=30'	DRAWN BY: WHW	CHECKED BY: SVH	

203063-900-06



NOTE:
SITE MAP ADAPTED FROM FIGURES COMPLETED BY J.A. JONES AND LAW.
ALL LOCATIONS ARE APPROXIMATE.
ANALYTICAL DATA SUPPLIED BY SHAW

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT: BUILDING 900 OPTIMIZATION PLAN MARINE CORPS BASE CAMP LEJEUNE, N.C.		TITLE: LABORATORY ANALYTICAL RESULTS GROUNDWATER TOTAL XYLENES AS OF AUGUST 2003	FIGURE 7
JOB NO: 203063-900	DATE: JAN 2004	SCALE: 1"=30'	DRAWN BY: WHW / CHECKED BY: SVH

203063-900-07

MW-8 (BQL)

CONCRETE

GATE

CONCRETE

CHAIN LINK FENCE

MW-10 (BQL)

CB

SD

SD

MW-9 (10.8)

CB

78GW23 (BQL)

CONCRETE

AS-4,SVE-4

MW-4 (NS*)

MW-3 (BQL)

AS-4,SVE-4

STEAM PIT

GATE

MW-5 (BQL)

CONCRETE

RW-10 (BQL)

GRASS

AS-4,SVE-4

AS-4,SVE-4

FORMER BUILDING 900

MW-2 (BQL)

FORMER UST 900 LOCATION

MW-1 (BQL)

CONCRETE

GRAVEL

CHAIN LINK FENCE

GRASS

ASPHALT

MW-7 (NS)

RAILROAD TRACKS

STRUCTURE S923

GRAVEL

MW-6 (BQL)

BUILDING 976

GRASS

N

LEGEND

EXISTING	DESCRIPTION
	BUILDING
⊕	TYPE II WELL
⊕	TYPE III WELL
	RECOVERY/PUMPING WELL
	SVE/AIR SPARGE WELL PAIR
	SCH. 40 PVC SOIL VAPOR EXTRACTION HEADER
	AIR-PRO HDPE AIR SPARGE HEADER
SD—CB	STORM DRAIN LINE W/CATCH BASIN
( )	BENZENE CONCENTRATIONS IN ug/L FROM AUG. 2003 SAMPLING EVENT
(BQL)	BELOW QUANTITATION LIMITS
(NS)	NOT SAMPLED
(NS*)	NOT SAMPLED DUE TO BUBBLES REPORTED IN WELL

30 15 0 30

SCALE IN FEET

NOTE:
SITE MAP ADAPTED FROM FIGURES COMPLETED BY J.A. JONES AND LAW.
ALL LOCATIONS ARE APPROXIMATE.
ANALYTICAL DATA SUPPLIED BY SHAW

CATLIN ENGINEERS and SCIENTISTS
WILMINGTON, NORTH CAROLINA

PROJECT: BUILDING 900 OPTIMIZATION PLAN MARINE CORPS BASE CAMP LEJEUNE, N.C.

JOB NO: 203063-900 DATE: JAN 2004

TITLE: LABORATORY ANALYTICAL RESULTS GROUNDWATER NAPHTHALENE AS OF AUGUST 2003

SCALE: 1"=30' DRAWN BY: WHW CHECKED BY: SVH

FIGURE 8

203063-900-08

APPENDIX A

ANALYTICAL DATA SUMMARY TABLES
PRE-CAP

TABLE 2.2
LABORATORY ANALYSIS RESULTS, FEBRUARY 1996 GROUNDWATER SAMPLING BY R.E. WRIGHT ASSOCIATES, INC.
DPTSAV™ SITE CHECK REPORT, UST 900, REWEI PROJECT 95551
BUILDING 900
LEAKING UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT
MCB, CAMP LEJEUNE, NORTH CAROLINA

LABORATORY ANALYSIS RESULTS - GROUNDWATER SAMPLES	N.C. GROUNDWATER QUALITY STANDARD[1] (mg/L)	DETECTED CONTAMINATION (mg/L)				
		P-1	P-2	P-3	P-4	P-4 Duplicate
EPA Method 602 (Purgeable Aromatic Compounds)						
Benzene	1	**2,100**	**120**	**5,100**	**170**	**180**
Toluene	1000	**1,000**	350	**21,000**	160	160
Ethylbenzene	29	**480**	100	**1,900**	**350**	**360**
Xylenes	530	**1,284**	292	**8,800**	**1,380**	**1,380**
Methyl-tert-butyl-ether	200	NA	NA	NA	NA	NA
TOTAL BTEX	*	4,864	862	36,800	2,060	2,080
EPA Method 625 (Semi-volatile Organic Compounds). TICs not listed below, but included within R.E. Wright Site Check Report.						
Naphthalene	21	ND	12	**420**	**320**	**320**
Phenol	300	29	ND	40	ND	ND
EPA Method 23.9.2 (Lead)	15	**58**	**21**	**200**	**99**	**150**

ND - Not detected at laboratory method detection limit for test
[1] - North Carolina Administrative Code, Title 15A, Subchapter 2L
Bolded Text - Detected Concentration above N.C. Groundwater Standard.
* Groundwater Standard not applicable

LEAKING UNDERGROUND STORAGE TANK ASSESSMENT REPORT
BUILDING 900
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA
LAW JOB NO. 30740-5-0500/0185

USGS WELL NO., ALTITUDE OF WELL[2] (FT. ABOVE MSL)	USGS OR MCB WELL NO.	TOTAL WELL DEPTH (FT)	SCREENED INTERVAL (FT)	CASING DIAMETER (INCH)	APPROXIMATE DISTANCE AND DIRECTION FROM BUILDING 900 (FT)	WELL USAGE[1], INSTALLATION DATE[2]
3440260771931.1 (29 ft.)	T-2	240	--	--	1580 ft., East	Open Test Hole.
3440550771929.1 (15 ft.)	T-5	232	--	--	2900 ft., Northeast	Open Test Hole
3440180772007.1 (25 ft.)	HP-602	160	70-80 100-105 120-125 145-150 155-160	8	2142 ft., West	Off-line DW. TCE Contamination, 14 ug/L Installed 1941e
3440030771948.1 (26 ft.)	HP-630	176	62-97 87-92 102-117 127-142 152-162	8	2620 ft., South	Not Known
3440300771935.1 (31 ft.)	HP-634	225	11 zones, 65-225 ft.	8	550 ft., Northeast	Off-line DW. TCE Contamination, 2.9 ug/L Installed 1959e
3440390771954.1 (31 ft.)	HP-637	172	90-98 102-114 120-128 140-148 156-172	8	2630 ft., North-Northwest	Off-line DW. Installed 1969
3440100771924.1 (29 ft.)	HP-642	210	112-124 136-144 157-163 174-178 188-196	8	2180 ft., Southeast	Active DW Installed 1971
3440180772007.1 (25 ft)	HP-602	190	70-90 100-105 120-125 145-150 155-160	8	1800 ft., East	Not Known
3440390771954.1 (31 ft)	HP-637	172	90-98 102-114 120-128 140-148 156-172	8	2000 ft., North	Not Known

NOTES:

[1] Based on review of Geophex, Ltd., Wellhead Management Program Engineering Study 91-36, March 1993, and telephone correspondence with MCB Public Works Personnel.

[2] Based on review of USGS Water Resources Investigation Reports 89-4096 and 93-4049. An "e" indicates that the installation date was estimated by the USGS.

DW Drinking Water Supply Well

-- Information Not Available

TCE Trichloroethene

TABLE 3.1
WELL INVENTORY SUMMARY, (0.5 MILE RADIUS)
LEAKING UNDERGROUND STORAGE TANK ASSESSMENT REPORT
BUILDING 900
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA
LAW JOB NO. 30740-5-0500/0185

USGS WELL NO., ALTITUDE OF WELL[2] (FT. ABOVE MSL)	USGS OR MCB WELL NO.	TOTAL WELL DEPTH (FT)	SCREENED INTERVAL (FT)	CASING DIAMETER (INCH)	APPROXIMATE DISTANCE AND DIRECTION FROM BUILDING 900 (FT)	WELL USAGE[1], INSTALLATION DATE[2]
3440260771931.1 (29 ft.)	T-2	240	--	--	1580 ft., East	Open Test Hole.
3440550771929.1 (15 ft.)	T-5	232	--	--	2900 ft., Northeast	Open Test Hole
3440030771948.1 (26 ft.)	HP-630	176	62-97 87-92 102-117 127-142 152-162	8	2620 ft., South	Not Known
3440300771935.1 (31 ft.)	HP-634	225	11 zones, 65-225 ft.	8	550 ft., Northeast	Off-line DW. TCE Contamination, 2.9 ug/L Installed 1959e
3440100771924.1 (29 ft.)	HP-642	210	112-124 136-144 157-163 174-178 188-196	8	2180 ft., Southeast	Active DW Installed 1971

NOTES:

[1] Based on review of Geophex, Ltd., Wellhead Management Program Engineering Study 91-36, March 1993, and telephone correspondence with MCB Public Works Personnel.

[2] Based on review of USGS Water Resources Investigation Reports 89-4096 and 93-4049. An "e" indicates that the installation date was estimated by the USGS.

DW Drinking Water Supply Well

-- Information Not Available

TCE Trichloroethene

TABLE 3.2
SUMMARY OF EXPOSURE PATHWAYS
LEAKING UNDERGROUND STORAGE TANK
SITE ASSESSMENT REPORT
BUILDING 900
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA
LAW JOB NO. 30740-5-0500/0185

CONTAMINATED MEDIUM	INGESTION (EATING)	INGESTION (DRINKING)	INHALATION	ADSORPTION
Free Product	NA	NA	NA	NA
Soil	Contingent Exposure (1)	NA	NA	Contingent Exposure (1)
Groundwater	Exposure Unlikely (2)	Exposure Unlikely (2)	NA	Exposure Unlikely (2)
Surface Water	Exposure Unlikely (3)	Exposure Unlikely (3)	NA	Exposure Unlikely (3)
Vapor	NA	NA	Exposure Unlikely (1)	NA

NOTES:

NA Not Applicable
(1) Potential for exposure only if subsurface below approximately 2.0 foot BLS is disturbed within the immediate vicinity of the former UST location.
(2) Via use of MCB water supply lines that extend to Building 900 for drinking.
(3) Preliminary groundwater sampling results indicated that petroleum constituents should not extend into local surface water.

TABLE 4.2
SUMMARY OF LABORATORY ANALYTICAL RESULTS, SOIL SAMPLES
LEAKING UNDERGROUND STORAGE TANKS
SITE ASSESSMENT REPORT
BUILDING 900
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA
LAW JOB NO. 30740-5-0500/0185

SAMPLE LOCATION		LABORATORY RESULTS		
BORING IDENTIFICATION	SAMPLE DEPTH (FT)	TPH-GASOLINE (mg/Kg)	TPH-DIESEL (mg/Kg)	OTHER TEST
GEOPROBE ASSESSMENT:				
900-GP1	2 to 4	20.8	12.4	--
900-GP2	2 to 4	ND	ND	--
900-GP3	2 to 4	ND	ND	--
900-GP4	2 to 4	ND	ND	--
900-GP5	2 to 4	ND	15.4	--
900-GP6	2 to 4	ND	ND	--
900-GP7	2 to 4	ND	ND	--
900-GP8	4 to 6	ND	ND	--
900-GP9	2 to 4	0.34	ND	--
900-GP10	2 to 4	1.03	ND	--
900-GP11	2 to 4	0.24	ND	--
900-GP12	2 to 4	ND	ND	--
900-GP13	2 to 4	ND	ND	--
900-GP14	4 to 6	ND	ND	--
900-GP15	2 to 4	0.45	ND	--
900-GP16	2 to 4	ND	ND	--
WELL INSTALLATION & SOIL CUTTINGS COMPOSITE SAMPLE				
900-MW1	2 to 4	ND	ND	--
900-MW2	1 to 2.5	ND	ND	--
900-MW2	2 to 4	ND	ND	Flashpoint = No Flash Soil pH = 4.66
900-MW3	2 to 4	ND	ND	
900-MW4	2 to 3.5	ND	ND	--
900-MW5	2 to 4	ND	ND	--
900-MW6	2 to 4	ND	ND	--
AS872-MW7	2 to 4	ND	ND	--
MW22 (Duplicate of MW2)	1 to 2.5	ND	ND	--
ROLL-OFF COMPOSITE	Various	**214**	**52**	Soil pH = NA Flashpoint=NA

Bold test = Concentrations detected above NC soil remediation guidelines.
-- = Samples not analyzed for test.
ND = Not detected: see laboratory reports for applicable limit.
NA = Not Analyzed

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

TABLE 5.1 (Page 1 of 3)
SUMMARY OF LABORATORY ANALYTICAL RESULTS, GROUNDWATER SAMPLES (GEOPROBE)
LEAKING UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT
BUILDING 900
CAMP LEJEUNE, NORTH CAROLINA
LAW JOB NO. 30740-5-0500/0185

PARAMETER	GEOPROBE SAMPLED NUMBER	GP-1	GP-2	GP-3 (PZ1)	GP-4	GP-5	GP-6	GP-7	N.C. GROUNDWATER STANDARDS
	SAMPLE DEPTHS	10-12	10-12	4.4-8.5	8-10	8-10	8-10	10-12	
	SAMPLE DATES	7-16-96	7-16-96	7-15-96	7-15-96	7-17-96	7-15-96	7-16-96	
EPA METHOD 602									
Benzene		**146.0**	0.9	**50.5**	2.6	ND	5.6	ND	1.0
Toluene		ND	1.0	4.1	0.6	ND	0.8	ND	1,000
Ethylbenzene		**32.0**	ND	5.4	ND	ND	3.9	ND	29
Xylenes		ND	ND	12.2	ND	ND	9.3	ND	530
Chlorobenzene		ND	ND	ND	ND	ND	ND	ND	50
1,2-Dichlorobenzene		ND	ND	ND	ND	ND	ND	ND	620
1,3-Dichlorobenzene		ND	ND	ND	ND	ND	ND	ND	620
1,4-Dichlorobenzene		ND	ND	ND	ND	ND	ND	ND	75
Total BTEX		178.0	1.9	72.2	3.2	ND	19.6	ND	N/A
Total EPA 602 Compound		178.0	1.9	72.2	3.2	ND	19.6	ND	N/A
EPA METHOD 625 (Base Neutrals Only)									
Acenaphthene		ND	ND	7.65	18.4	5.36	63.0	ND	80
Anthracene		ND	ND	ND	ND	ND	4.19	ND	2100
Fluoranthene		ND	ND	ND	ND	ND	ND	ND	280
Fluorene		ND	ND	1.19	12.6	ND	35.9	ND	280
Naphthalene		**75.2**	0.39	**21.6**	14.7	2.35	**144.0**	ND	21
Phenanthrene		ND	ND	ND	ND	ND	35.0	ND	210
Pyrene		ND	ND	ND	ND	ND	ND	ND	210
Total EPA 625 B,N Compounds		75.2	0.39	30.4	45.7	7.71	282.1	ND	N/A

NOTES:
All concentrations are in µg/L
B,N = Base, Neutral
Bold Text = Concentrations detected in the groundwater samples above the respective, NC 2L Groundwater Standards.
ND = Not Detected
N/A = Not Applicable

TABLE 5.1 (Page 2 of 3)
SUMMARY OF LABORATORY ANALYTICAL RESULTS, GROUNDWATER SAMPLES (GEOPROBE)
LEAKING UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT
BUILDING 900
CAMP LEJEUNE, NORTH CAROLINA
LAW JOB NO. 30740-5-0500/0185

PARAMETER	GEOPROBE SAMPLE NUMBER	GP-8 (PZ-2)	GP-9 (PZ-3)	GP-10	GP-11 (PZ-4)	GP-12	GP-13	GP-14	N.C. GROUNDWATER STANDARDS
	SAMPLE DEPTHS	4.4-7.9	2.6-7.9	10-12	4.4-8.9	8-10	8-10	12-14 ft.	
	SAMPLE DATES	7-15-96	7-15-96	7-15-96	7-15-96	7-16-96	7-16-96	7-11-96	
EPA METHOD 602									
Benzene		**1.2**	**4.0**	**618**	**187**	**1.9**	**2,095**	**1.9**	1.0
Toluene		ND	ND	**6,525**	186	ND	**3,620**	2.0	1,000
Ethylbenzene		ND	1.2	**2,100**	**241**	ND	**682**	2.5	29
Xylenes		ND	4.8	**9,350**	**645**	ND	**2,940**	3.6	530.0
Chlorobenzene		ND	ND	ND	ND	ND	ND	ND	50.0
1,2-Dichlorobenzene		ND	ND	ND	ND	ND	ND	ND	620
1,3-Dichlorobenzene		ND	ND	ND	ND	ND	ND	ND	620
1,4-Dichlorobenzene		ND	ND	ND	ND	ND	ND	ND	75
Total BTEX		1.2	10.0	18,593	1,259	1.9	9,337	10	N/A
Total EPA 602 Compound		1.2	10.0	18,593	1,259	1.9	9,337	10	N/A
EPA METHOD 625 (Base Neutrals Only)									
Acenaphthene		ND	ND	ND	ND	37.6	ND	21.7	80
Anthracene		ND	ND	ND	ND	4.38	ND	ND	2100
Fluoranthene		ND	ND	ND	ND	2.01	ND	ND	280
Fluorene		ND	ND	ND	ND	30.4	ND	ND	280
Naphthalene		ND	ND	**428**	**139**	18.6	**223**	**449**	21
Phenanthrene		ND	ND	ND	ND	8.86	ND	ND	210
Pyrene		ND	ND	ND	ND	1.09	ND	ND	210
Total EPA 625 B,N Compounds		ND	ND	428	139	102.9	223	470.7	N/A

NOTES:

All concentrations are in µg/L
B,N = Base, Neutral
Bolded Text = Concentrations detected in the groundwater samples above the respective, NC 2L Groundwater Standards.
ND = Not Detected
N/A = Not Applicable

TABLE 5.1 (Page 3 of 3)
SUMMARY OF LABORATORY ANALYTICAL RESULTS, GROUNDWATER SAMPLES (GEOPROBE)
LEAKING UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT
BUILDING 900
CAMP LEJEUNE, NORTH CAROLINA
LAW JOB NO. 30740-5-0500/0185

PARAMETER	GEOPROBE SAMPLE NUMBER	GP-15	GP-16	GP-55 (Duplicate of GP-5)	N.C. GROUNDWATER STANDARDS
	SAMPLE DEPTHS	8-10	10-12	8-10	
	SAMPLE DATES	7-16-96	7-16-96	7-17-96	
EPA METHOD 602					
Benzene		**245.5**	**1.6**	ND	1.0
Toluene		208.5	0.9	ND	1000.0
Ethylbenzene		**109.5**	1.4	ND	29.0
Xylenes		300.5	1.7	ND	530.0
Chlorobenzene		ND	ND	ND	50.0
1,2-Dichlorobenzene		ND	ND	ND	620.0
1,3-Dichlorobenzene		ND	ND	ND	620.0
1,4-Dichlorobenzene		ND	ND	ND	75.0
Total BTEX		864	5.6	ND	N/A
Total EPA 602 Compound		864	5.6	ND	N/A
EPA METHOD 625 (Base Neutrals Only)					
Acenaphthene		2.39	42.4	1.39	80
Anthracene		ND	ND	ND	2100
Fluoranthene		ND	ND	ND	280
Fluorene		1.09	16.5	ND	280
Naphthalene		**114**	**308**	ND	21
Phenanthrene		ND	ND	ND	210
Pyrene		ND	ND	ND	210
Total EPA 625 B,N Compounds		117.5	366.9	1.4	N/A

NOTES:

All concentrations are in µg/L
B,N = Base, Neutral
Bolded Text = Concentrations detected in the groundwater samples above the respective, NC 2L Groundwater Standards.
ND = Not Detected
N/A = Not Applicable

TABLE 5.3 (Page 1 of 5)

SUMMARY OF LABORATORY ANALYTICAL RESULTS (ug/L)

GROUNDWATER SAMPLES, MONITORING WELLS AND HYDROPUNCH PENETROMETERS

LEAKING UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT

BUILDING 900

CAMP LEJEUNE, NORTH CAROLINA

LAW JOB NO. 30740-5-0500/Phase 0185

PARAMETER	WELL NUMBER	MW-1 (Type III)	MW-2	MW-3 (Type III)	MW-4	MW-5	MW-6	MW-7	MW-22 (DUPL.)	N.C.
	SCREENED INTERVAL (feet bls)	45-50	3.9-13.9	45-50	4-14	4.1-14.1	3.2-13.2	3.2-13.2	3-13	GROUNDWATER
	DATE SAMPLED	3/1/96	8/1/96	3/1/96	8/1/96	8/1/96	8/1/96	8/1/96	8/1/96	STANDARDS
EPA METHOD 602										
Benzene		ND	360	0.63	**588**	ND	**1.74**	ND	**235**	1
Ethylbenzene		ND	**1200**	ND	**574**	ND	0.70	ND	**846**	29
Toluene		.54	**2900**	0.50	119	ND	0.82	.87	**2240**	1000
Xylenes (total)		ND	**5400**	ND	**965**	ND	1.35	.73	**4240**	530
MTBE		3.81	120.00	2.36	ND	1.59	6.80	2.20	ND	200
Total BTEX		.54	9860	1.13	2246	--	4.61	1.60	7561	--
Total EPA 602 Compounds		4.35	9980	3.49	2246	1.59	11.41	3.80	7561	--
EPA METHOD 625 (Base Neutral Semivolatile Organic Compounds)										
Acenaphthene		10.10	ND	7.73	ND	ND	ND	ND	ND	80
Bis (2-ethylhexyl)phthalate		ND	ND	ND	ND	ND	ND	ND	ND	**
Di-n-octylphthalate		ND	ND	ND	ND	ND	ND	ND	ND	700
Fluorene		1.97	ND	2.49	ND	ND	ND	ND	ND	280
Naphthalene		ND	**188**	ND	**64.2**	ND	ND	ND	**189**	21
Phenanthrene		ND	ND	ND	ND	ND	ND	ND	ND	210
Total Base Neutral Semivolatile Organic Compounds		12.07	188	10.22	64.2	--	--	--	189	--
Total Lead (EPA 239.2)		NA	645	NA	**118**	**27.1**	103	64.9	NA	15

All results are in ug/L.

Bold text indicates groundwater concentrations above established North Carolina Groundwater Standards.

DUPL = Duplicate Sample from 900-MW2

NA = Sample not tested for this parameter.

ND = Not detected above the laboratory detection limit. See laboratory report for dection limits.

** North Carolina Groundwater Standard is equal to the laboratory method detection limit. See laboratory report.

-- Not Applicable

TABLE 5.3 (Page 2 of 5)

SUMMARY OF LABORATORY ANALYTICAL RESULTS (ug/L)

GROUNDWATER SAMPLES, MONITORING WELLS AND HYDROPUNCH PENETROMETERS

LEAKING UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT

BUILDING 900

CAMP LEJEUNE, NORTH CAROLINA

LAW JOB NO. 30740-5-0500/Phase 0185

PARAMETER	WELL NUMBER	HP-1	HP-2	HP-3	HP-4	HP-5	RINSE BLANK	RINSE BLANK	TRIP BLANK I AA97500	N.C.
	SCREENED INTERVAL (feet bls)	5-8	5-8	5-8	6-8	5-8				GROUNDWATER
	DATE SAMPLED	8/31/96	8/31/96	8/31/96	7/29/96	7/31/96	8/2/96	8/9/96	8/9/96	STANDARDS
EPA METHOD 602										
Benzene		3.87	35.90	500	ND	41.70	ND	ND	ND	1
Ethylbenzene		3.30	16.70	200	ND	.91	ND	ND	ND	29
Toluene		ND	2.75	92.3	ND	2.85	ND	ND	ND	1000
Xylenes (total)		11.4	49.10	520	ND	.70	ND	ND	ND	530
MTBE		22.4	12.70	ND	ND	ND	ND	ND	ND	200
Total BTEX		18.57	104.45	1312.30	--	46.16	--	--	--	--
Total EPA 602 Compounds		40.97	117.15	1312.30	--	46.16	--	ND	ND	--
EPA METHOD 625 (Base Neutral Semivolatile Organic Compounds)										
Acenaphthene		ND	ND	ND	ND	ND	ND	ND	ND	80
Bis (2-ethylhexyl)phthlate		**3.88**	ND	**8.33**	ND	**10.70**	ND	ND	ND	**
Di-n-octylphthalate		ND	ND	ND	ND	ND	ND	ND	ND	700
Fluorene		ND	ND	ND	ND	ND	ND	ND	ND	280
Naphthalene		10.7	17.50	10.20	**22.9**	ND	ND	ND	ND	21
Phenanthrene		ND	ND	ND	ND	1.27	ND	ND	ND	210
Total Base Neutral Semivolatile Organic Compounds		14.58	17.5	18.53	22.9	11.27	ND	--	--	--
Total Lead (EPA 239.2)		NA	NA	NA	NA	NA	NA	NA	NA	15

All results are in ug/L.

Bold text indicates groundwater concentrations above established North Carolina Groundwater Standards.

DUPL = Duplicate Sample from 900-MW2

NA = Sample not tested for this parameter.

ND = Not detected above the laboratory detection limit. See laboratory report for dection limits.

** North Carolina Groundwater Standard is equal to the laboratory method detection limit. See laboratory report.

-- Not Applicable

TABLE 5.3 (Page 3 of 5)

SUMMARY OF LABORATORY ANALYTICAL RESULTS (ug/L)

GROUNDWATER SAMPLES, MONITORING WELLS AND HYDROPUNCH PENETROMETERS

LEAKING UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT

BUILDING 900

CAMP LEJEUNE, NORTH CAROLINA

LAW JOB NO. 30740-5-0500/Phase 0185

PARAMETER	WELL NUMBER	TRIP BLANK 2 (AA97080)	PURGE WATER SAMPLES	HP-6	HP-7	HP-8	HP-9	HP-10	HP-11	N.C. GROUNDWATER
	SCREENED INTERVAL (feet bls)			5-9	5-9	5-9	5-9	5-9	5-9	STANDARDS
	DATE SAMPLED	8/1/96	8/9/96	3/11/97	3/11/97	3/11/97	3/11/97	3/11/97	3/11/97	(ug/l)
EPA METHOD 602										
Benzene		ND	3.45	.89	.58	.56	2.73	37.70	19.00	1
Ethylbenzene		ND	27.80	ND	ND	ND	ND	36.10	.81	29
Toluene		.99	71.3	ND	ND	ND	ND	5.15	.57	1000
Xylenes (total)		.87	238.00	.75	ND	ND	ND	123.00	6.76	530
MTBE		ND	ND	ND	ND	4.26	ND	ND	ND	200
Total BTEX		1.86	340.55	1.64	.58	.56	2.73	201.95	27.14	--
Total EPA 602 Compounds		1.86	340.55	1.64	.58	4.82	2.73	201.95	27.14	--
EPA METHOD 625 (Base Neutral Semivolatile Organic Compounds)										
Acenaphthene		NA	2.64	ND	ND	ND	ND	ND	ND	80
Bis (2-ethylhexyl)phthalate			ND	ND	ND	ND	ND	ND	ND	**
Di-n-octylphthalate			ND	ND	ND	ND	ND	ND	ND	700
Fluorene			ND	ND	ND	ND	ND	ND	ND	280
Naphthalene			ND	ND	ND	ND	ND	11.80	3.79	21
Phenanthrene			ND	ND	ND	ND	ND	ND	ND	210
Total Base Neutral Semivolatile Organic Compounds			2.64	ND	ND	ND	ND	11.80	3.79	--
Total Lead (EPA 239.2)		NA	NA	NA	NA	NA	NA	NA	NA	15

All results are in ug/L.

Bold text indicates groundwater concentrations above established North Carolina Groundwater Standards.

DUPL = Duplicate Sample from 900-MW2

NA = Sample not tested for this parameter.

ND = Not detected above the laboratory detection limit. See laboratory report for dection limits.

** North Carolina Groundwater Standard is equal to the laboratory method detection limit. See laboratory report.

-- Not Applicable

TABLE 5.3 (Page 4 of 5)

SUMMARY OF LABORATORY ANALYTICAL RESULTS (ug/L)

GROUNDWATER SAMPLES, MONITORING WELLS AND HYDROPUNCH PENETROMETERS

LEAKING UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT

BUILDING 900

CAMP LEJEUNE, NORTH CAROLINA

LAW JOB NO. 30740-5-0500/Phase 0185

PARAMETER	WELL NUMBER	HP-12	HP-13	HP-14	HP-15	HP-16	HP-17	HP-20 (Dup of HP-10)	HP-21 (Rinse Blank)	N.C. GROUNDWATER
	SCREENED INTERVAL (FEET BLS	5-9	5-8	4/8	5-9	5-9	5-9	5-9	--	STANDARDS
	DATE SAMPLED	3/11/97	3/10/97	3/11/97	3/11/97	3/11/97	3/11/97	3/11/97	3/12/97	(ug/l)
EPA METHOD 602										
Benzene		.73	4.75	8.07	2.51	2.21	.63	32.20	0.66	1
Ethylbenzene		ND	ND	23.50	10.80	.73	ND	29.80	ND	29
Toluene		ND	ND	ND	1.68	2.65	ND	4.38	ND	1000
Xylenes (total)		.89	1.20	178.00	31.80	1.35	ND	106.00	0.61	530
MTBE		ND	ND	ND	ND	ND	7.64	ND	ND	200
Total BTEX		1.62	5.95	209.57	46.79	6.94	.63	172.38	1.27	--
Total EPA 602 Compounds		1.62	5.95	209.57	46.79	6.94	8.27	172.38	1.27	--
EPA METHOD 625 (Base Neutral Semivolatile Organic Compounds)										
Acenaphthene		ND	ND	ND	ND	ND	ND	ND	ND	80
Bis (2-ethylhexyl)phthalate		ND	ND	ND	ND	ND	ND	ND	ND	**
Di-n-octylphthalate		ND	ND	ND	ND	ND	ND	ND	ND	700
Fluorene		ND	ND	ND	ND	ND	ND	ND	ND	280
Naphthalene		ND	ND	49.5	13.2	ND	ND	13.70	ND	21
Phenanthrene		ND	ND	ND	ND	ND	ND	ND	ND	210
Total Base Neutral Semivolatile Organic Compounds		ND	ND	49.50	13.20	ND	ND	13.70	ND	--
Total Lead (EPA 239.2)		NA	NA	NA	NA	NA	NA	NA	NA	15

All results are in ug/L.

Bold text indicates groundwater concentrations above established North Carolina Groundwater Standards.

DUPL = Duplicate Sample from 900-MW2

NA = Sample not tested for this parameter.

ND = Not detected above the laboratory detection limit. See laboratory report for dection limits.

** North Carolina Groundwater Standard is equal to the laboratory method detection limit. See laboratory report.

-- Not Applicable

TABLE 5.3 (Page 5 of 5)

SUMMARY OF LABORATORY ANALYTICAL RESULTS (ug/L)

GROUNDWATER SAMPLES, MONITORING WELLS AND HYDROPUNCH PENETROMETERS

LEAKING UNDERGROUND STORAGE TANK SITE ASSESSMENT REPORT

BUILDING 900

CAMP LEJEUNE, NORTH CAROLINA

LAW JOB NO. 30740-5-0500/Phase 0185

PARAMETER	WELL NUMBER	TRIP BLANK	DECON WATER (DW)*						N.C. GROUNDWATER STANDARDS (ug/l)
	SCREENED INTERVAL	--	--						
	DATE SAMPLED	3/11/97	3/12/97						
EPA METHOD 602									
Benzene		.88	.59						1
Ethylbenzene		ND	ND						29
Toluene		ND	ND						1000
Xylenes (total)		ND	ND						530
MTBE		ND	1.84						200
Total BTEX		0.88	ND						--
Total EPA 602 Compounds		0.88	ND						--
EPA METHOD 625 (Base Neutral Semivolatile Organic Compounds)									
Acenaphthene		ND	ND						80
Bis (2-ethylhexyl)phthalate		ND	**7.34**						**
Di-n-octylphthalate		ND	2.18						700
Fluorene		ND	ND						280
Naphthalene		ND	ND						21
Butylbenzylphthalate		ND	6.38						100
Phenanthrene		ND	ND						210
Total Base Neutral Semivolatile Organic Compounds		ND	ND						--
Total Lead (EPA 239.2)		NA	NA						15

All results are in ug/L.

Bold text indicates groundwater concentrations above established North Carolina Groundwater Standards.

DUPL = Duplicate Sample from 900-MW2

NA = Sample not tested for this parameter.

ND = Not detected above the laboratory detection limit. See laboratory report for dection limits.

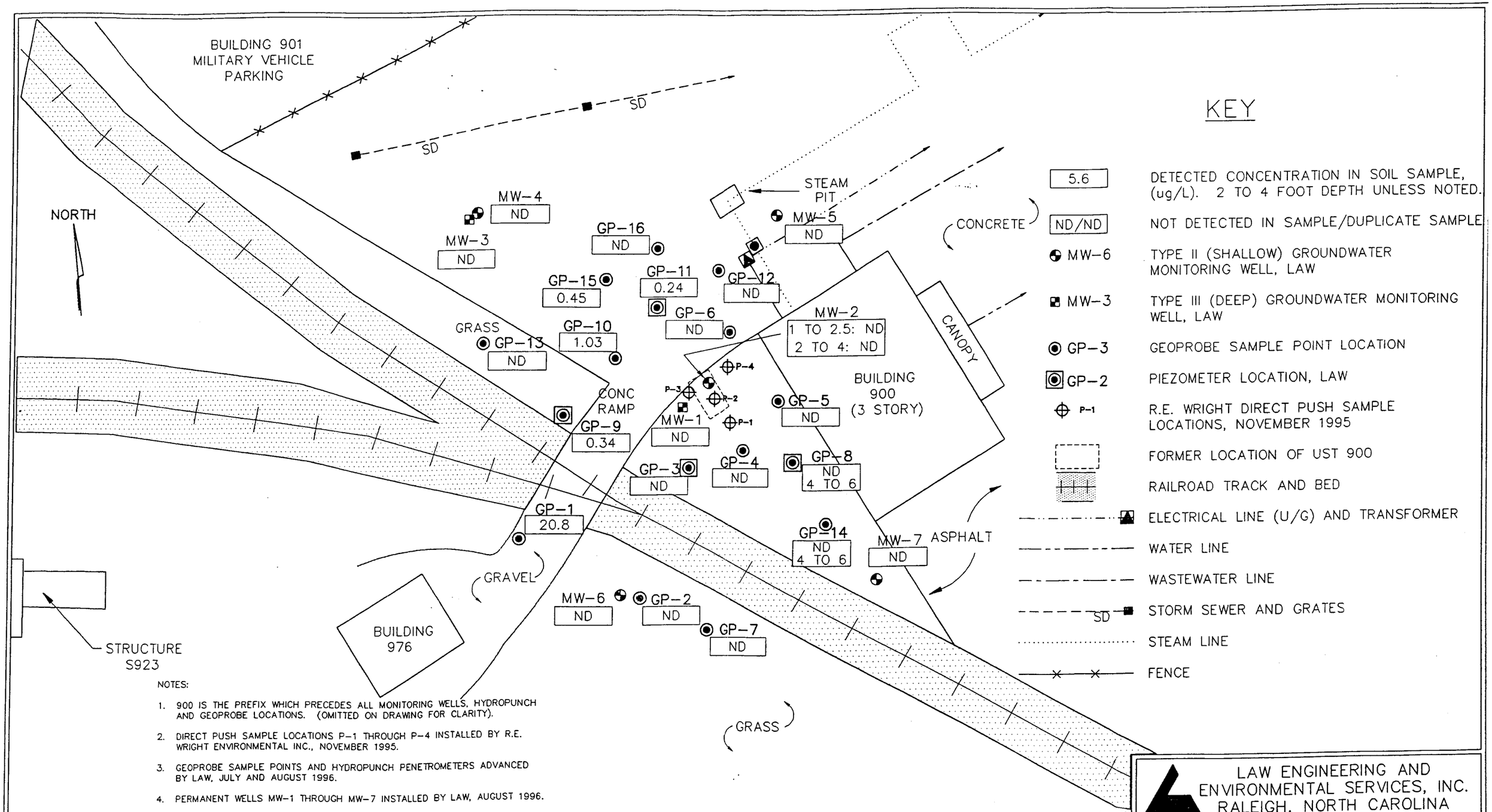
** North Carolina Groundwater Standard is equal to the laboratory method detection limit. See laboratory report.

-- Not Applicable

* Re-roofing of Building 900 was being completed on this day

APPENDIX B

ANALYTICAL DATA SUMMARY FIGURES
PRE-CAP



KEY

5.6	DETECTED CONCENTRATION IN SOIL SAMPLE, (ug/L). 2 TO 4 FOOT DEPTH UNLESS NOTED.
ND/ND	NOT DETECTED IN SAMPLE/DUPLICATE SAMPLE
MW-6	TYPE II (SHALLOW) GROUNDWATER MONITORING WELL, LAW
MW-3	TYPE III (DEEP) GROUNDWATER MONITORING WELL, LAW
GP-3	GEOPROBE SAMPLE POINT LOCATION
GP-2	PIEZOMETER LOCATION, LAW
P-1	R.E. WRIGHT DIRECT PUSH SAMPLE LOCATIONS, NOVEMBER 1995
	FORMER LOCATION OF UST 900
	RAILROAD TRACK AND BED
	ELECTRICAL LINE (U/G) AND TRANSFORMER
	WATER LINE
	WASTEWATER LINE
SD	STORM SEWER AND GRATES
	STEAM LINE
	FENCE

NOTES:

1. 900 IS THE PREFIX WHICH PRECEDES ALL MONITORING WELLS, HYDROPUNCH AND GEOPROBE LOCATIONS. (OMITTED ON DRAWING FOR CLARITY).
2. DIRECT PUSH SAMPLE LOCATIONS P-1 THROUGH P-4 INSTALLED BY R.E. WRIGHT ENVIRONMENTAL INC., NOVEMBER 1995.
3. GEOPROBE SAMPLE POINTS AND HYDROPUNCH PENETROMETERS ADVANCED BY LAW, JULY AND AUGUST 1996.
4. PERMANENT WELLS MW-1 THROUGH MW-7 INSTALLED BY LAW, AUGUST 1996.
5. BUILDING 900, THE STEAM PIT, THE GEOPROBE SAMPLING POINTS, HYDROPUNCH SAMPLE POINTS, AND THE MONITORING WELLS WERE THE ONLY POINTS LOCATED IN THE FIELD BY A PROFESSIONAL LAND SURVEYOR. THE LOCATION OF UTILITIES EDGE OF CONCRETE SURFACING, RAILROAD TRACKS, AND OTHER BUILDINGS ARE APPROXIMATE.
6. NCDEHNR TPH GASOLINE LIMIT FOR SOILS IS 10 MG/KG.
7. IN NOVEMBER 1995, GASOLINE TPH WERE DETECTED IN THE R.E. WRIGHT ENVIRONMENTAL INC. SOIL SAMPLES AS FOLLOWS: P-1: 5500 MG/KG AT 6 FEET BGS; P-2: ND AT 3 FEET BGS; P-3: 350 MG/KG AT 6 FEET BGS; P-4: 2300 MG/KG AT 9-10 FEET BGS.
8. AT THE TIME OF OUR FIELDWORK, GROUNDWATER WAS ENCOUNTERED AT A DEPTH OF APPROXIMATELY 4 FEET.

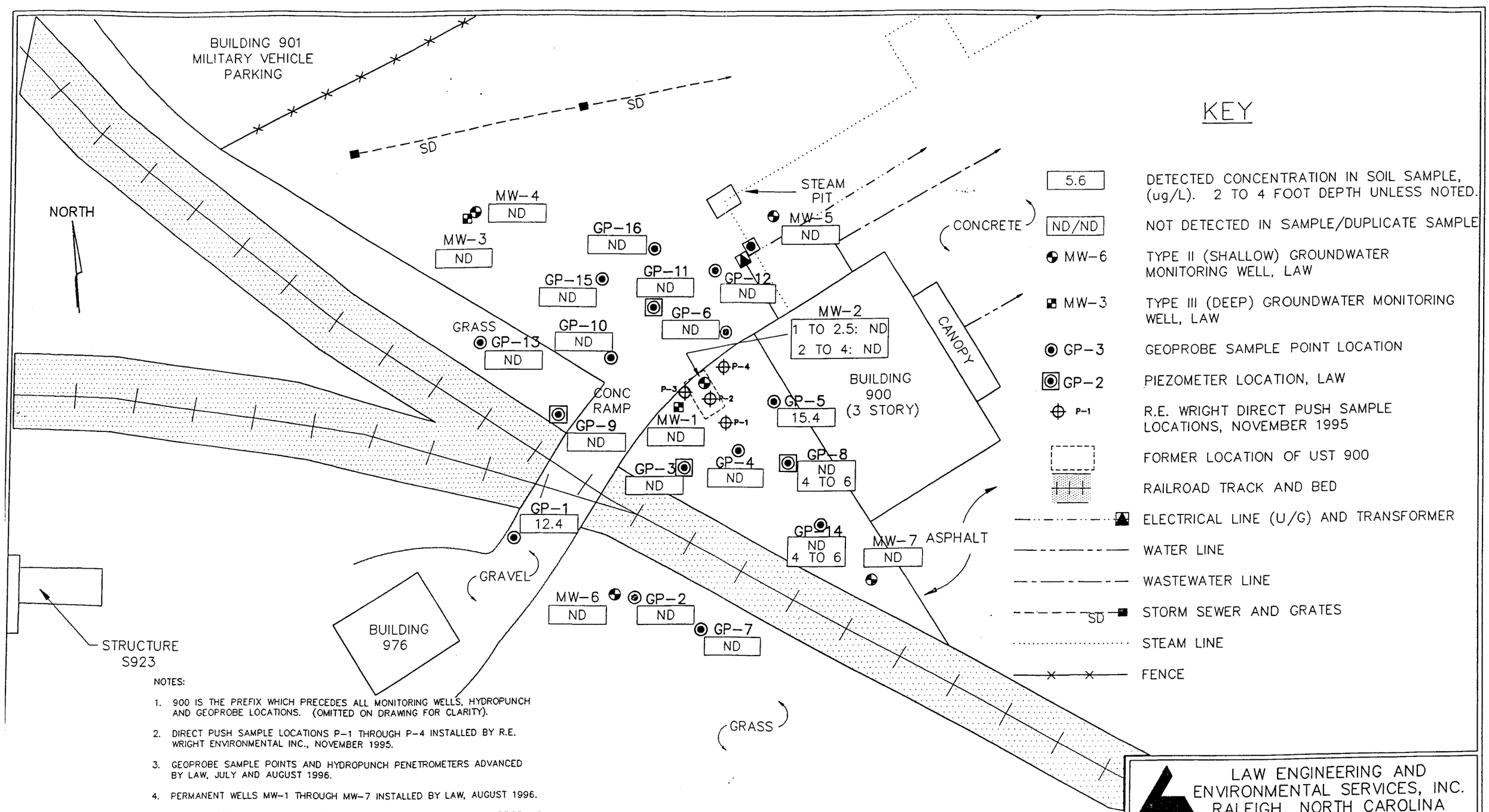
N0185V14(1:360)

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
RALEIGH, NORTH CAROLINA

TPH GASOLINE CONCENTRATIONS (SOIL)
BUILDING 900
LEAKING UNDERGROUND STORAGE TANK
CAMP LEJEUNE, NORTH CAROLINA
CONTRACT N62470-93-D-4020

DRAWN: EBA	DATE: AUGUST 1997
DFT CHECK: J.T	SCALE: 1'=30'
ENG CHECK: CEJ	JOB: 30740-5-500/0185
APPROVAL: BJB	DWG: 4.5

REFERENCE: MCB AUTOCAD DRAWING F08.DWG AND FIELD NOTES



KEY

5.6	DETECTED CONCENTRATION IN SOIL SAMPLE, (ug/L). 2 TO 4 FOOT DEPTH UNLESS NOTED.
ND/ND	NOT DETECTED IN SAMPLE/DUPLICATE SAMPLE
MW-6	TYPE II (SHALLOW) GROUNDWATER MONITORING WELL, LAW
MW-3	TYPE III (DEEP) GROUNDWATER MONITORING WELL, LAW
GP-3	GEOPROBE SAMPLE POINT LOCATION
GP-2	PIEZOMETER LOCATION, LAW
P-1	R.E. WRIGHT DIRECT PUSH SAMPLE LOCATIONS, NOVEMBER 1995
	FORMER LOCATION OF UST 900
	RAILROAD TRACK AND BED
	ELECTRICAL LINE (U/G) AND TRANSFORMER
	WATER LINE
	WASTEWATER LINE
SD	STORM SEWER AND GRATES
	STEAM LINE
	FENCE

NOTES:

1. 900 IS THE PREFIX WHICH PRECEDES ALL MONITORING WELLS, HYDROPUNCH AND GEOPROBE LOCATIONS. (OMITTED ON DRAWING FOR CLARITY).
2. DIRECT PUSH SAMPLE LOCATIONS P-1 THROUGH P-4 INSTALLED BY R.E. WRIGHT ENVIRONMENTAL INC., NOVEMBER 1995.
3. GEOPROBE SAMPLE POINTS AND HYDROPUNCH PENETROMETERS ADVANCED BY LAW, JULY AND AUGUST 1996.
4. PERMANENT WELLS MW-1 THROUGH MW-7 INSTALLED BY LAW, AUGUST 1996.
5. BUILDING 900, THE STEAM PIT, THE GEOPROBE SAMPLING POINTS, HYDROPUNCH SAMPLE POINTS, AND THE MONITORING WELLS WERE THE ONLY POINTS LOCATED IN THE FIELD BY A PROFESSIONAL LAND SURVEYOR. THE LOCATION OF UTILITIES EDGE OF CONCRETE SURFACING, RAILROAD TRACKS, AND OTHER BUILDINGS ARE APPROXIMATE.
6. NCDEHNR DIESEL TPH LIMIT FOR SOILS IS 40 MG/KG.
7. IN NOVEMBER 1995, DIESEL TPH WERE DETECTED IN THE R.E. WRIGHT ENVIRONMENTAL INC. SOIL SAMPLES AS FOLLOWS: P-1: 260 MG/KG AT 6 FEET BGS; P-2: ND AT 3 FEET BGS; P-3: 37 MG/KG AT 6 FEET BGS; P-4: 63 MG/KG AT 9-10 FEET BGS.
8. AT THE TIME OF OUR FIELDWORK, GROUNDWATER WAS ENCOUNTERED AT A DEPTH OF APPROXIMATELY 4 FEET.

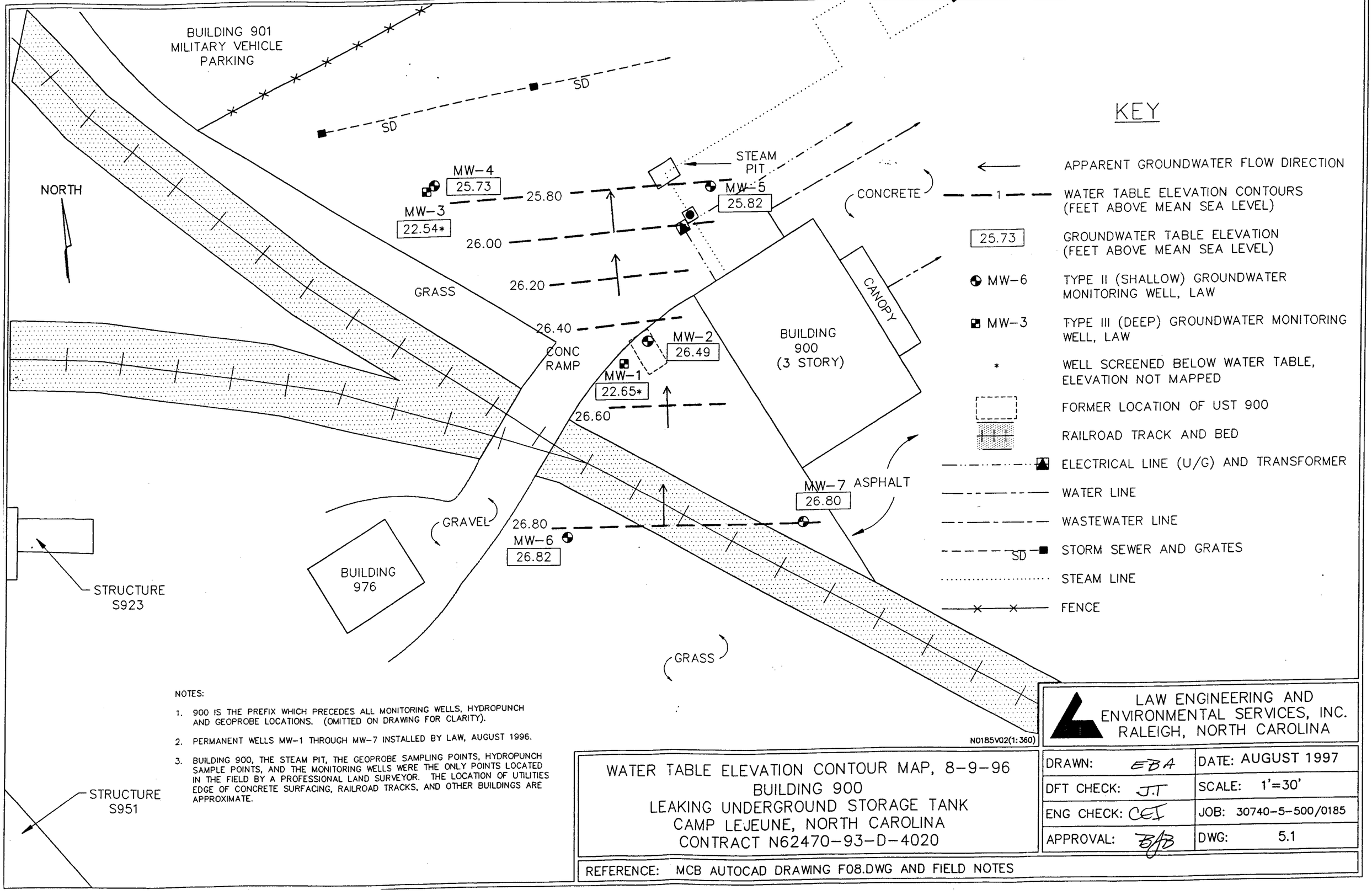
N0185V13(1:360)

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
RALEIGH, NORTH CAROLINA

TPH DIESEL CONCENTRATIONS (SOIL)
BUILDING 900
LEAKING UNDERGROUND STORAGE TANK
CAMP LEJEUNE, NORTH CAROLINA
CONTRACT N62470-93-D-4020

DRAWN: EBA	DATE: AUGUST 1997
DFT CHECK: J.T	SCALE: 1'=30'
ENG CHECK: CEJ	JOB: 30740-5-500/0185
APPROVAL: BJB	DWG: 4.6

REFERENCE: MCB AUTOCAD DRAWING F08.DWG AND FIELD NOTES



NOTES:

1. 900 IS THE PREFIX WHICH PRECEDES ALL MONITORING WELLS, HYDROPUNCH AND GEOPROBE LOCATIONS. (OMITTED ON DRAWING FOR CLARITY).
2. PERMANENT WELLS MW-1 THROUGH MW-7 INSTALLED BY LAW, AUGUST 1996.
3. BUILDING 900, THE STEAM PIT, THE GEOPROBE SAMPLING POINTS, HYDROPUNCH SAMPLE POINTS, AND THE MONITORING WELLS WERE THE ONLY POINTS LOCATED IN THE FIELD BY A PROFESSIONAL LAND SURVEYOR. THE LOCATION OF UTILITIES EDGE OF CONCRETE SURFACING, RAILROAD TRACKS, AND OTHER BUILDINGS ARE APPROXIMATE.

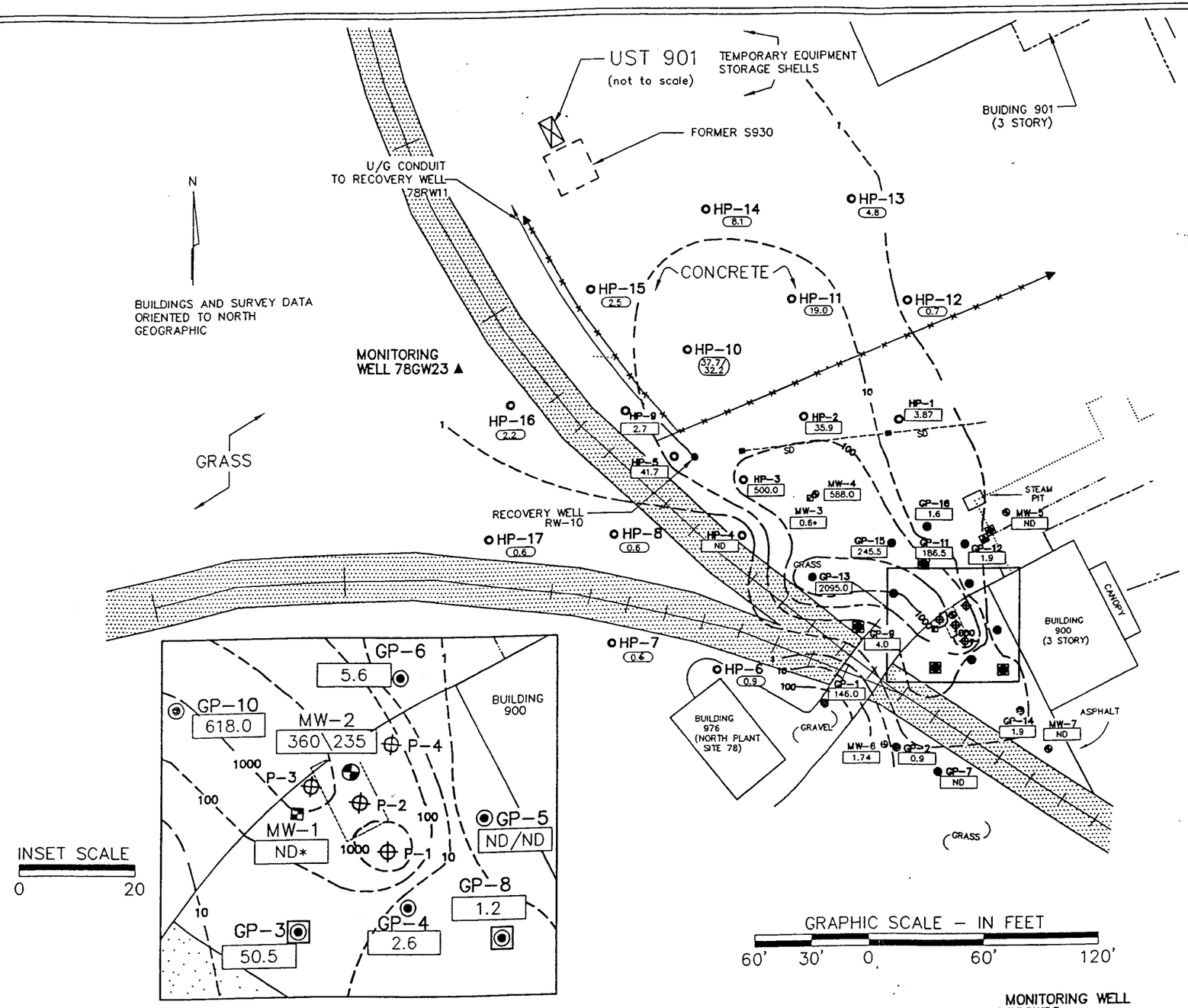
N0185V02(1:360)

LAW ENGINEERING AND
ENVIRONMENTAL SERVICES, INC.
RALEIGH, NORTH CAROLINA

WATER TABLE ELEVATION CONTOUR MAP, 8-9-96
BUILDING 900
LEAKING UNDERGROUND STORAGE TANK
CAMP LEJEUNE, NORTH CAROLINA
CONTRACT N62470-93-D-4020

DRAWN: EBA	DATE: AUGUST 1997
DFT CHECK: J.T	SCALE: 1'=30'
ENG CHECK: CEI	JOB: 30740-5-500/0185
APPROVAL: BAB	DWG: 5.1

REFERENCE: MCB AUTOCAD DRAWING F08.DWG AND FIELD NOTES



KEY

- CONCENTRATION ISOPLETH (ug/L)
- HP-13 (6.0) — DETECTED CONCENTRATIONS IN HYDROPUNCH* GROUNDWATER SAMPLE (ug/L), MARCH 1997
- GP-16 (5.6) — DETECTED CONCENTRATIONS IN GROUNDWATER SAMPLE (ug/L), JULY & AUGUST.
- ND/ND — NOT DETECTED IN GROUNDWATER SAMPLE/ DUPLICATE SAMPLE.
- * — WELL SCREENED BELOW WATER TABLE. GROUNDWATER SAMPLE CONCENTRATION NOT MAPPED.
- MW-6 — TYPE II (SHALLOW) GROUNDWATER MONITORING WELL, LAW
- MW-3 — TYPE III (DEEP) GROUNDWATER MONITORING WELL, LAW
- GP-3 — GEOPROBE SAMPLE POINT LOCATION
- GP-2 — PIEZOMETER LOCATION, LAW
- HP-3 — HYDROPUNCH PENETROMETERS, LAW
- P-1 — R.E. WRIGHT DIRECT PUSH SAMPLE LOCATIONS, NOVEMBER 1995
- FORMER LOCATION OF UST 900
- RAILROAD TRACK AND BED
- ELECTRICAL LINE (U/G) AND TRANSFORMER
- WATER LINE AND VALVE
- WASTEWATER LINE
- SD — STORM SEWER AND GRATES
- STEAM LINE
- FENCE

1. 900 IS THE PREFIX WHICH PRECEDES ALL MONITORING WELLS, HYDROPUNCH AND GEOPROBE LOCATIONS.
2. DIRECT PUSH SAMPLE LOCATIONS P-1 TO P-4 INSTALLED BY R.E. WRIGHT ENVIRONMENTAL INC.,NOVEMBER 1995.
3. GEOPROBE SAMPLE POINTS AND HYDROPUNCH PENETROMETERS ADVANCED BY LAW , JULY-AUGUST 1996, AND MARCH 1997(HP-6 TO HP-17). MONITORING WELLS INSTALLED BY LAW IN JULY 1996 AND SAMPLED AUGUST, 1996.
4. BUILDING 900, THE STEAM PIT, THE GEOPROBE SAMPLING POINTS, HYDROPUNCH SAMPLE POINTS, AND THE MONITORING WELLS WERE THE ONLY POINTS LOCATED IN THE FIELD BY A PROFESSIONAL LAND SURVEYOR. THE LOCATION OF UTILITIES EDGE OF CONCRETE SURFACING, RAILROAD TRACKS, AND OTHER BUILDINGS ARE APPROXIMATE.
5. THE N.C. GROUNDWATER STANDARD FOR BENZENE IS 1 ug\L.
6. IN NOVEMBER. 1995, BENZENE WAS DETECTED IN THE R.E. WRIGHT ENVIRONMENTAL INC. GROUNDWATER SAMPLES AS FOLLOWS: P-1: 2100 ug/L; P-2: 120 ug/L; P-3: 5100 ug/L; P-4: 170 ug/L.

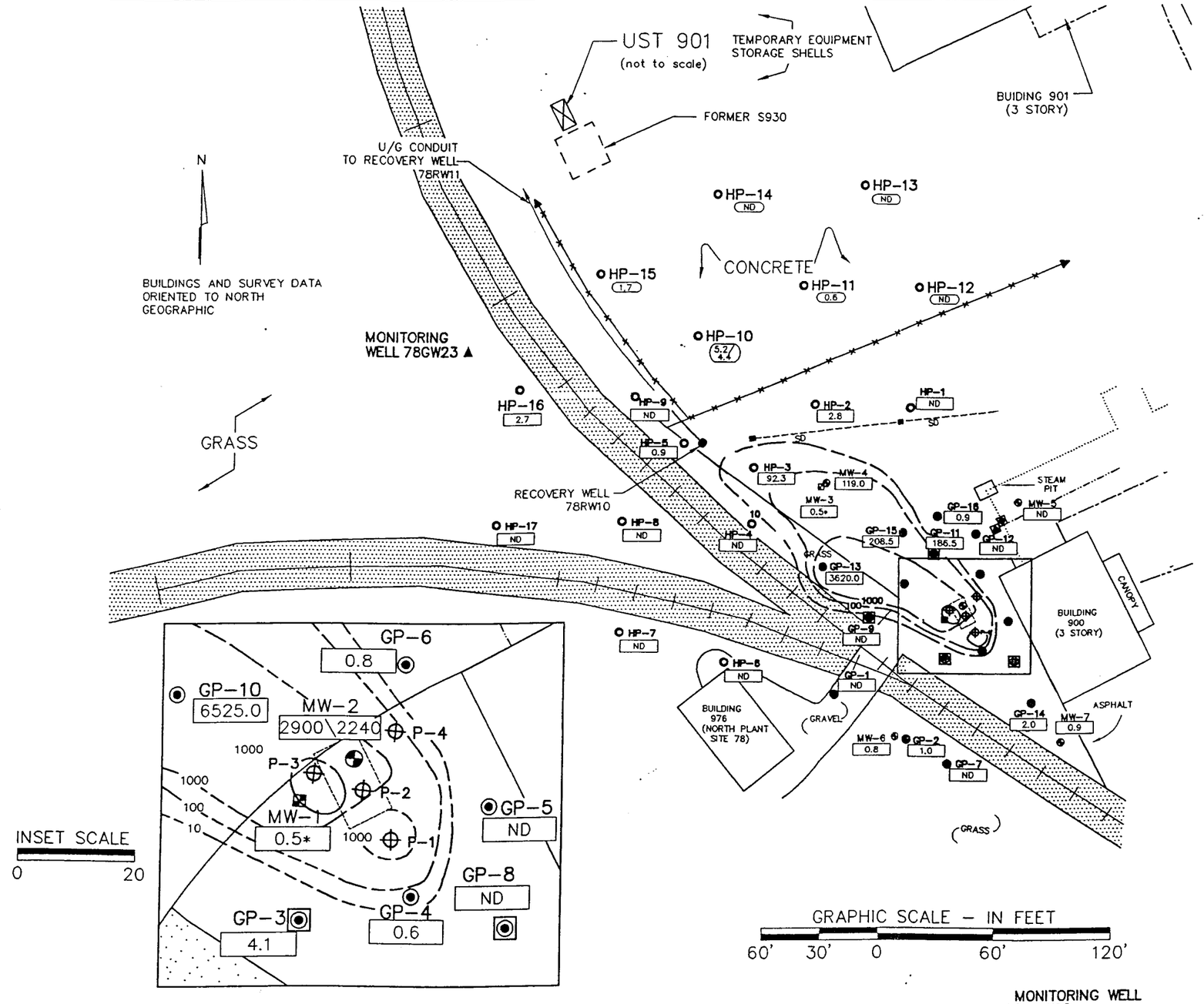
N01855-2(1:720)

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
RALEIGH, NORTH CAROLINA

BENZENE CONCENTRATIONS (WATER)-ISOPLETH MAP
BUILDING 900
LEAKING UNDERGROUND STORAGE TANK
CAMP LEJEUNE, NORTH CAROLINA
CONTRACT N62470-93-D-4020

DRAWN: EBA	DATE: AUGUST 1997
DFT CHECK: JT	SCALE: 1'=60'
ENG CHECK: CEX	JOB: 30740-5-500/0185
APPROVAL: [illegible]	DWG: 5.2

REFERENCE: MCB AUTOCAD DRAWING F08.DWG,FIELD NOTES,AND LAW DRAWING 5.2 (September 1996)



KEY

- CONCENTRATION ISOPLETH (ug/L)
- HP-13 (6.0) — DETECTED CONCENTRATIONS IN HYDROPUNCH* GROUNDWATER SAMPLE (ug/L), MARCH 1997
- GP-16 (5.6) — DETECTED CONCENTRATIONS IN GROUNDWATER SAMPLE (ug/L), JULY & AUGUST 1996.
- ND/ND — NOT DETECTED IN GROUNDWATER SAMPLE/ DUPLICATE SAMPLE.
- * — WELL SCREENED BELOW WATER TABLE. GROUNDWATER SAMPLE CONCENTRATION NOT MAPPED.
- MW-6 — TYPE II (SHALLOW) GROUNDWATER MONITORING WELL, LAW
- MW-3 — TYPE III (DEEP) GROUNDWATER MONITORING WELL, LAW
- GP-3 — GEOPROBE SAMPLE POINT LOCATION
- GP-2 — PIEZOMETER LOCATION, LAW
- HP-3 — HYDROPUNCH PENETROMETERS, LAW
- P-1 — R.E. WRIGHT DIRECT PUSH SAMPLE LOCATIONS, NOVEMBER 1995
- FORMER LOCATION OF UST 900
- RAILROAD TRACK AND BED
- ELECTRICAL LINE (U/G) AND TRANSFORMER
- WATER LINE AND VALVE
- WASTEWATER LINE
- SD — STORM SEWER AND GRATES
- STEAM LINE
- FENCE

1. 900 IS THE PREFIX WHICH PRECEDES ALL MONITORING WELLS, HYDROPUNCH AND GEOPROBE LOCATIONS.
2. DIRECT PUSH SAMPLE LOCATIONS P-1 TO P-4 INSTALLED BY R.E. WRIGHT ENVIRONMENTAL INC.,NOVEMBER 1995.
3. GEOPROBE SAMPLE POINTS AND HYDROPUNCH PENETROMETERS ADVANCED BY LAW , JULY-AUGUST 1996, AND MARCH 1997(HP-6 TO HP-17). MONITORING WELLS INSTALLED BY LAW IN JULY 1996 AND SAMPLED AUGUST, 1996.
4. BUILDING 900, THE STEAM PIT, THE GEOPROBE SAMPLING POINTS, HYDROPUNCH SAMPLE POINTS, AND THE MONITORING WELLS WERE THE ONLY POINTS LOCATED IN THE FIELD BY A PROFESSIONAL LAND SURVEYOR. THE LOCATION OF UTILITIES EDGE OF CONCRETE SURFACING, RAILROAD TRACKS, AND OTHER BUILDINGS ARE APPROXIMATE.
5. THE N.C. GROUNDWATER STANDARD FOR TOLUENE IS 1000 ug\L.
6. IN NOVEMBER 1995, TOLUENE WAS DETECTED IN THE R.E. WRIGHT ENVIRONMENTAL INC. GROUNDWATER SAMPLES AS FOLLOWS: P-1: 1000 ug/L; P-2: 350 ug/L; P-3: 2100 ug/L; P-4: 160 ug/L.

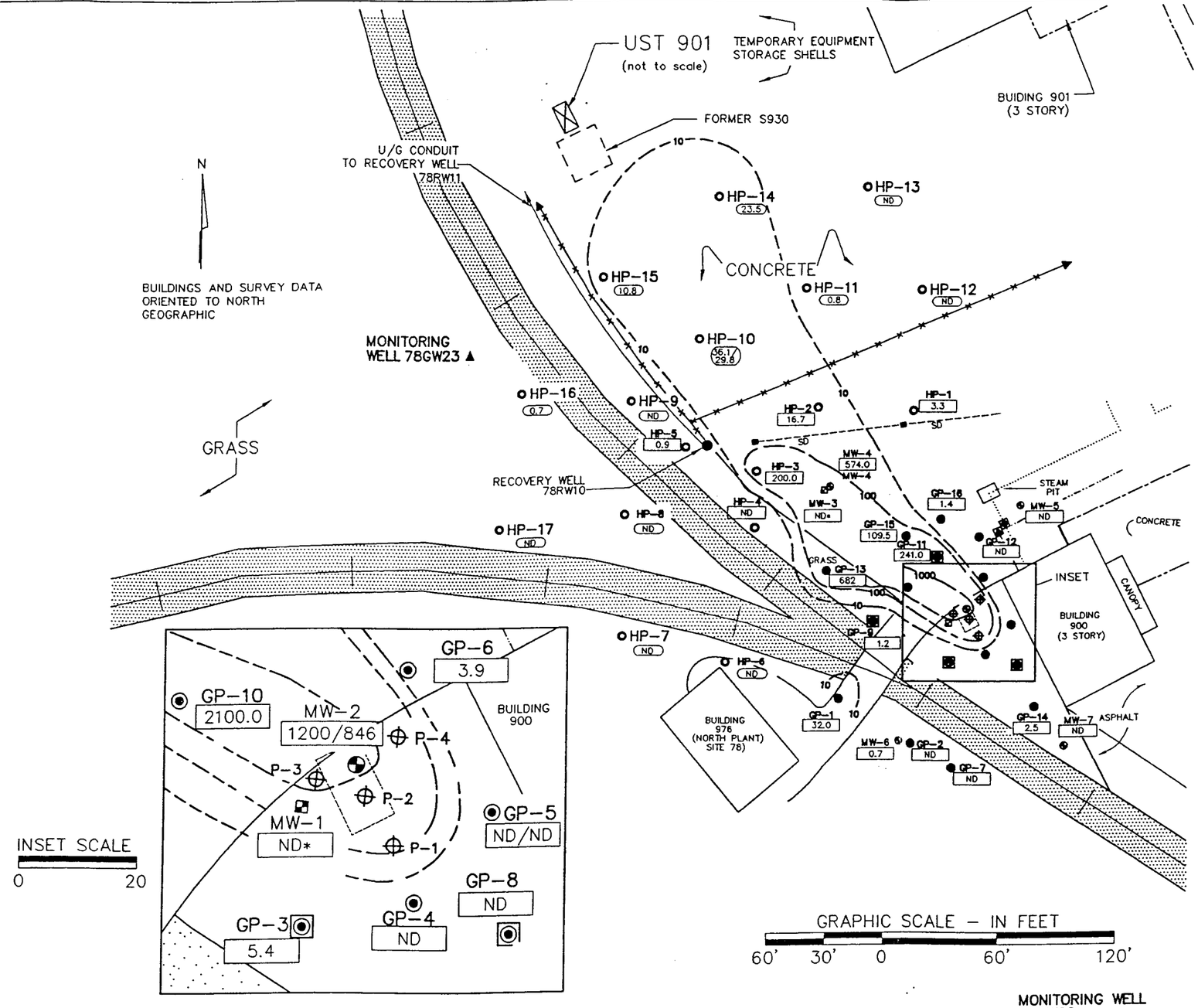
N01855-3(1:720)

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
RALEIGH, NORTH CAROLINA

TOLUENE CONCENTRATIONS (WATER)–ISOPLETH MAP
BUILDING 900
LEAKING UNDERGROUND STORAGE TANK
CAMP LEJEUNE, NORTH CAROLINA
CONTRACT N62470-93-D-4020

DRAWN: EBA	DATE: AUGUST 1997
DFT CHECK: JJ	SCALE: 1'=60'
ENG CHECK: CES	JOB: 30740-5-500/0185
APPROVAL: BAB	DWG: 5.3

REFERENCE: MCB AUTOCAD DRAWING F08.DWG,FIELD NOTES,AND LAW DRAWING 5.3 (September 1996)



KEY

---10---	CONCENTRATION ISOPLETH (ug/L)
HP-13 (6.0)	DETECTED CONCENTRATIONS IN HYDROPUNCH GROUNDWATER SAMPLE (ug/L), MARCH 1997
GP-16 (5.6)	DETECTED CONCENTRATIONS IN GROUNDWATER SAMPLE (ug/L), JULY & AUGUST, 1996.
ND/ND	NOT DETECTED IN GROUNDWATER SAMPLE/ DUPLICATE SAMPLE.
*	WELL SCREENED BELOW WATER TABLE. GROUNDWATER SAMPLE CONCENTRATION NOT MAPPED.
MW-6	TYPE II (SHALLOW) GROUNDWATER MONITORING WELL, LAW
MW-3	TYPE III (DEEP) GROUNDWATER MONITORING WELL, LAW
GP-3	GEOPROBE SAMPLE POINT LOCATION
GP-2	PIEZOMETER LOCATION, LAW
HP-3	HYDROPUNCH PENETROMETERS, LAW
P-1	R.E. WRIGHT DIRECT PUSH SAMPLE LOCATIONS, NOVEMBER 1995
	FORMER LOCATION OF UST 900
	RAILROAD TRACK AND BED
	ELECTRICAL LINE (U/G) AND TRANSFORMER
	WATER LINE AND VALVE
	WASTEWATER LINE
SD	STORM SEWER AND GRATES
	STEAM LINE
	FENCE

1. 900 IS THE PREFIX WHICH PRECEDES ALL MONITORING WELLS, HYDROPUNCH AND GEOPROBE LOCATIONS.
2. DIRECT PUSH SAMPLE LOCATIONS P-1 TO P-4 INSTALLED BY R.E. WRIGHT ENVIRONMENTAL INC.,NOVEMBER 1995.
3. GEOPROBE SAMPLE POINTS AND HYDROPUNCH PENETROMETERS ADVANCED BY LAW , JULY-AUGUST 1996, AND MARCH 1997(HP-6 TO HP-17). MONITORING WELLS INSTALLED BY LAW IN JULY1996 AND SAMPLED AUGUST 1996.
4. BUILDING 900, THE STEAM PIT, THE GEOPROBE SAMPLING POINTS, HYDROPUNCH SAMPLE POINTS, AND THE MONITORING WELLS WERE THE ONLY POINTS LOCATED IN THE FIELD BY A PROFESSIONAL LAND SURVEYOR. THE LOCATION OF UTILITIES EDGE OF CONCRETE SURFACING, RAILROAD TRACKS, AND OTHER BUILDINGS ARE APPROXIMATE.
5. THE N.C. GROUNDWATER STANDARD FOR ETHYLBENZENE IS 29 ug/L.
6. IN NOVEMBER 1995, ETHYLBENZENE WAS DETECTED IN THE R.E. WRIGHT ENVIRONMENTAL INC. GROUNDWATER SAMPLES AS FOLLOWS: P-1: 480 ug/L; P-2: 100 ug/L; P-3: 1900 ug/L; P-4: 350 ug/L.

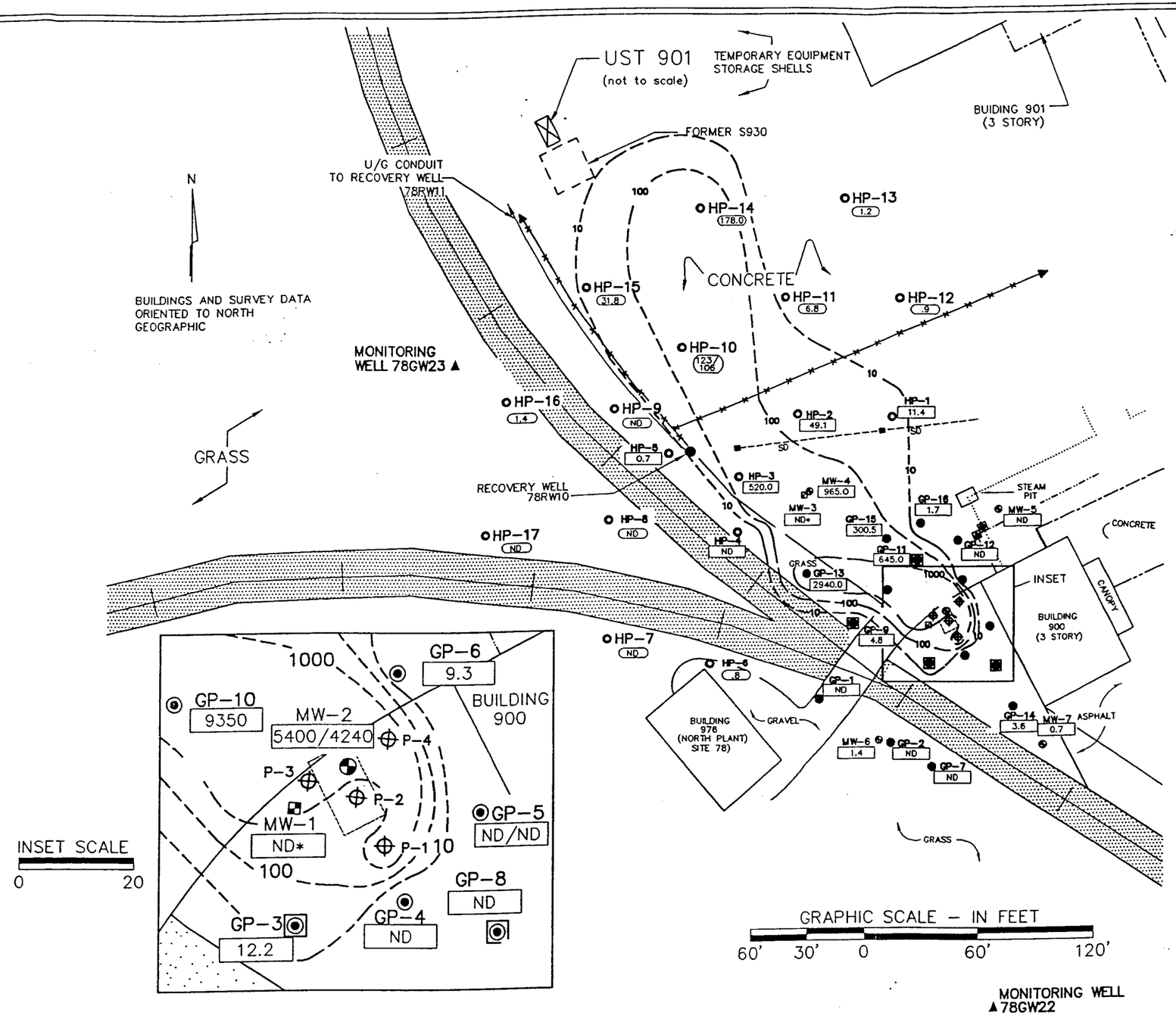
LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
RALEIGH, NORTH CAROLINA

N01855-4(1:720)

ETHYLBENZENE CONCENTRATIONS (WATER)-ISOPLETH MAP
BUILDING 900
LEAKING UNDERGROUND STORAGE TANK
CAMP LEJEUNE, NORTH CAROLINA
CONTRACT N62470-93-D-4020

DRAWN: EBA	DATE: AUGUST 1997
DFT CHECK: J.T	SCALE: 1'=60'
ENG CHECK: CEI	JOB: 30740-5-500/0185
APPROVAL: BJB	DWG: 5.4

REFERENCE: MCB AUTOCAD DRAWING F08.DWG,FIELD NOTES,AND LAW DRAWING 5.4 (September 1996)



KEY

----10----	CONCENTRATION ISOPLETH (ug/L)
HP-13 (6.0)	DETECTED CONCENTRATIONS IN HYDROPUNCH* GROUNDWATER SAMPLE (ug/L), MARCH 1997
GP-16 (5.6)	DETECTED CONCENTRATIONS IN GROUNDWATER SAMPLE (ug/L), JULY & AUGUST, 1996.
ND/ND	NOT DETECTED IN GROUNDWATER SAMPLE/ DUPLICATE SAMPLE.
*	WELL SCREENED BELOW WATER TABLE. GROUNDWATER SAMPLE CONCENTRATION NOT MAPPED.
MW-6	TYPE II (SHALLOW) GROUNDWATER MONITORING WELL, LAW
MW-3	TYPE III (DEEP) GROUNDWATER MONITORING WELL, LAW
GP-3	GEOPROBE SAMPLE POINT LOCATION
GP-2	PIEZOMETER LOCATION, LAW
HP-3	HYDROPUNCH PENETROMETERS, LAW
P-1	R.E. WRIGHT DIRECT PUSH SAMPLE LOCATIONS, NOVEMBER 1995
	FORMER LOCATION OF UST 900
	RAILROAD TRACK AND BED
	ELECTRICAL LINE (U/G) AND TRANSFORMER
	WATER LINE AND VALVE
	WASTEWATER LINE
SD	STORM SEWER AND GRATES
	STEAM LINE
	FENCE

1. 900 IS THE PREFIX WHICH PRECEDES ALL MONITORING WELLS, HYDROPUNCH AND GEOPROBE LOCATIONS.
2. DIRECT PUSH SAMPLE LOCATIONS P-1 TO P-4 INSTALLED BY R.E. WRIGHT ENVIRONMENTAL INC.,NOVEMBER 1995.
3. GEOPROBE SAMPLE POINTS AND HYDROPUNCH PENETROMETERS ADVANCED BY LAW , JULY-AUGUST 1996, AND MARCH 1997(HP-6 TO HP-17). MONITORING WELLS INSTALLED BY LAW IN JULY1996 AND SAMPLED AUGUST 1996.
4. BUILDING 900, THE STEAM PIT, THE GEOPROBE SAMPLING POINTS, HYDROPUNCH SAMPLE POINTS, AND THE MONITORING WELLS WERE THE ONLY POINTS LOCATED IN THE FIELD BY A PROFESSIONAL LAND SURVEYOR. THE LOCATION OF UTILITIES EDGE OF CONCRETE SURFACING, RAILROAD TRACKS, AND OTHER BUILDINGS ARE APPROXIMATE.
5. THE N.C. GROUNDWATER STANDARD FOR TOTAL XYLENES IS 530 ug/L.
6. IN NOVEMBER 1995, XYLENES WERE DETECTED IN THE R.E. WRIGHT ENVIRONMENTAL INC. GROUNDWATER SAMPLES AS FOLLOWS: P-1: 1284 ug/L; P-2: 292 ug/L; P-3: 8800 ug/L; P-4: 1380 ug/L.

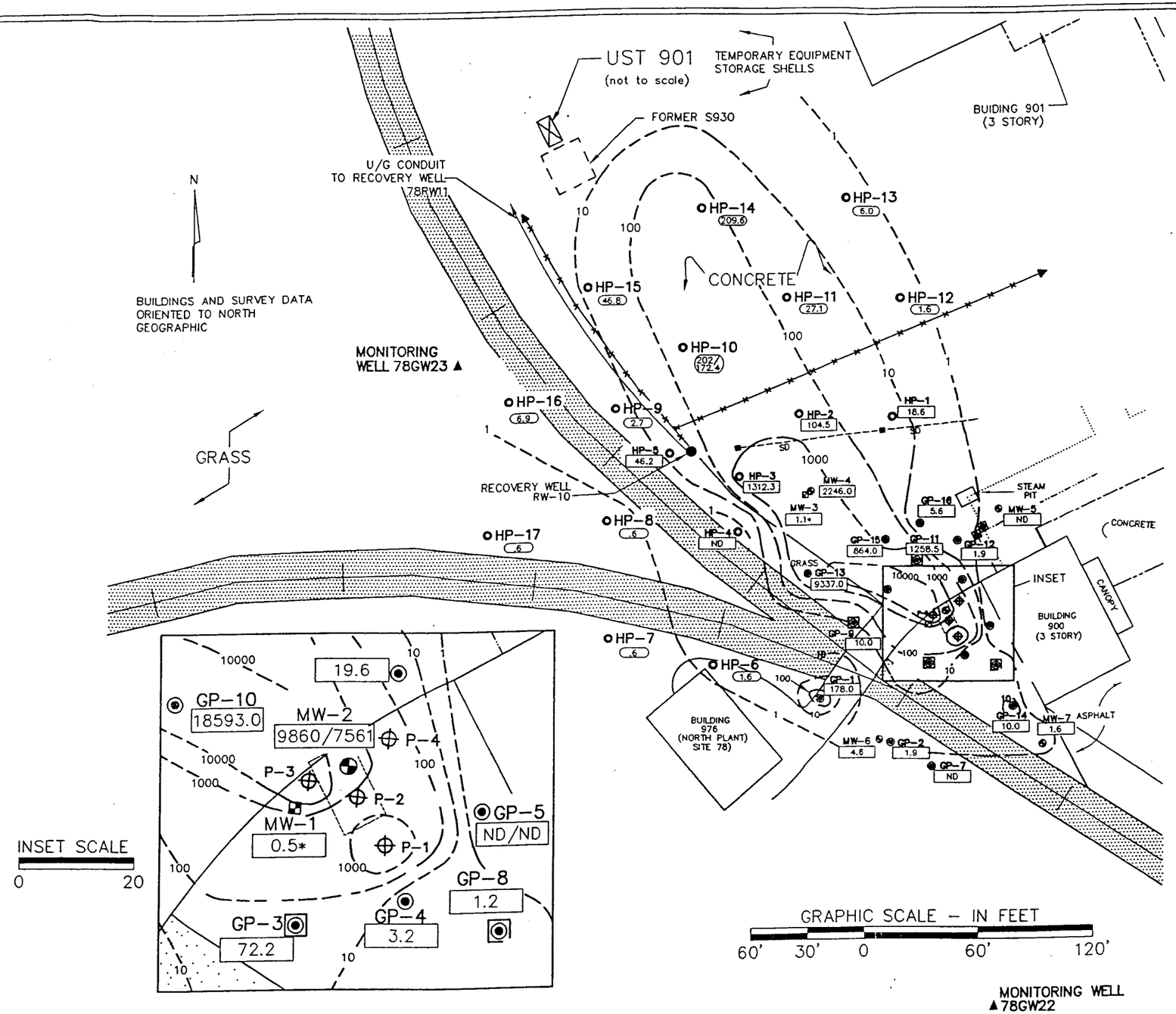
N01855-5(1:720)

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
RALEIGH, NORTH CAROLINA

TOTAL XYLENES CONCENTRATIONS (WATER)-ISOPLETH MAP
BUILDING 900
LEAKING UNDERGROUND STORAGE TANK
CAMP LEJEUNE, NORTH CAROLINA
CONTRACT N62470-93-D-4020

DRAWN: EBA	DATE: AUGUST 1997
DFT CHECK: JT	SCALE: 1'=60'
ENG CHECK: CCS	JOB: 30740-5-500/0185
APPROVAL: BJB	DWG: 5.5

REFERENCE: MCB AUTOCAD DRAWING F08.DWG,FIELD NOTES,AND LAW DRAWING 5.5 (September 1996)



KEY

- CONCENTRATION ISOPLETH (ug/L)
- HP–13 (6.0) — DETECTED CONCENTRATIONS IN HYDROPUNCH* GROUNDWATER SAMPLE (ug/L), MARCH 1997
- GP–16 (5.6) — DETECTED CONCENTRATIONS IN GROUNDWATER SAMPLE (ug/L), JULY & AUGUST, 1996.
- ND/ND — NOT DETECTED IN GROUNDWATER SAMPLE/ DUPLICATE SAMPLE.
- * — WELL SCREENED BELOW WATER TABLE. GROUNDWATER SAMPLE CONCENTRATION NOT MAPPED.
- MW–6 — TYPE II (SHALLOW) GROUNDWATER MONITORING WELL, LAW
- MW–3 — TYPE III (DEEP) GROUNDWATER MONITORING WELL, LAW
- GP–3 — GEOPROBE SAMPLE POINT LOCATION
- GP–2 — PIEZOMETER LOCATION, LAW
- HP–3 — HYDROPUNCH PENETROMETERS, LAW
- P–1 — R.E. WRIGHT DIRECT PUSH SAMPLE LOCATIONS, NOVEMBER 1995
- FORMER LOCATION OF UST 900
- RAILROAD TRACK AND BED
- ELECTRICAL LINE (U/G) AND TRANSFORMER
- WATER LINE AND VALVE
- WASTEWATER LINE
- SD — STORM SEWER AND GRATES
- STEAM LINE
- FENCE

1. 900 IS THE PREFIX WHICH PRECEDES ALL MONITORING WELLS, HYDROPUNCH AND GEOPROBE LOCATIONS.
2. DIRECT PUSH SAMPLE LOCATIONS P–1 TO P–4 INSTALLED BY R.E. WRIGHT ENVIRONMENTAL INC., NOVEMBER 1995.
3. GEOPROBE SAMPLE POINTS AND HYDROPUNCH PENETROMETERS ADVANCED BY LAW, JULY–AUGUST 1996, AND MARCH 1997(HP–6 TO HP–17). MONITORING WELLS INSTALLED BY LAW, AUG. 1996.
4. BUILDING 900, THE STEAM PIT, THE GEOPROBE SAMPLING POINTS, HYDROPUNCH SAMPLE POINTS, AND THE MONITORING WELLS WERE THE ONLY POINTS LOCATED IN THE FIELD BY A PROFESSIONAL LAND SURVEYOR. THE LOCATION OF UTILITIES EDGE OF CONCRETE SURFACING, RAILROAD TRACKS, AND OTHER BUILDINGS ARE APPROXIMATE.
5. IN NOVEMBER 1995, TOTAL BTEX WAS DETECTED IN THE R.E. WRIGHT ENVIRONMENTAL INC. GROUNDWATER SAMPLES AS GROUNDWATER SAMPLES AS FOLLOWS: P–1: 4864 ug/L; P–2: 862 ug/L; P–3: 36800 ug/L; P–4: 2060 ug/L.

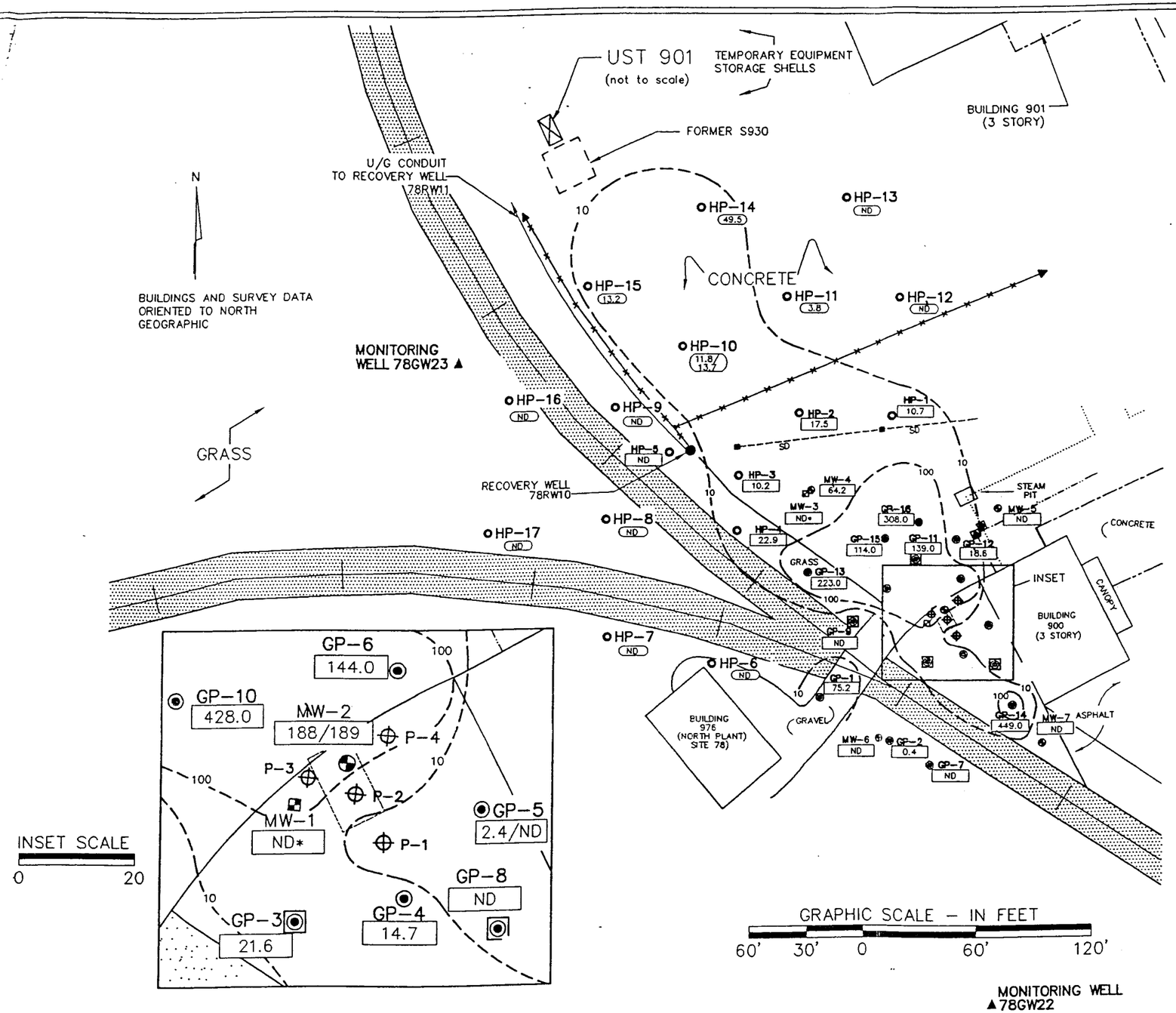
N01855–6(1:720)

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
RALEIGH, NORTH CAROLINA

TOTAL BTEX CONCENTRATIONS (WATER)–ISOPLETH MAP
BUILDING 900
LEAKING UNDERGROUND STORAGE TANK
CAMP LEJEUNE, NORTH CAROLINA
CONTRACT N62470–93–D–4020

DRAWN: EBA	DATE: AUGUST 1997
DFT CHECK: JT	SCALE: 1'=60'
ENG CHECK: CEL	JOB: 30740–5–500/0185
APPROVAL: BAB	DWG: 5.6

REFERENCE: MCB AUTOCAD DRAWING F08.DWG,FIELD NOTES,AND LAW DRAWING 5.6 (September 1996)



KEY

----------	CONCENTRATION ISOPLETH (ug/L)
HP-14 (49.5)	DETECTED CONCENTRATIONS IN HYDROPUNCH* GROUNDWATER SAMPLE (ug/L), MARCH 1997
GP-16 [308.0]	DETECTED CONCENTRATIONS IN GROUNDWATER SAMPLE (ug/L), JULY & AUGUST, 1996
ND/ND	NOT DETECTED IN GROUNDWATER SAMPLE/ DUPLICATE SAMPLE.
*	WELL SCREENED BELOW WATER TABLE. GROUNDWATER SAMPLE CONCENTRATION NOT MAPPED.
MW-6	TYPE II (SHALLOW) GROUNDWATER MONITORING WELL, LAW
MW-3	TYPE III (DEEP) GROUNDWATER MONITORING WELL, LAW
GP-3	GEOPROBE SAMPLE POINT LOCATION
GP-2	PIEZOMETER LOCATION, LAW
HP-3	HYDROPUNCH PENETROMETERS, LAW
P-1	R.E. WRIGHT DIRECT PUSH SAMPLE LOCATIONS, NOVEMBER 1995
	FORMER LOCATION OF UST 900
	RAILROAD TRACK AND BED
	ELECTRICAL LINE (U/G) AND TRANSFORMER
	WATER LINE AND VALVE (CIRCLED IF FIELD CHECKED)
	WASTEWATER LINE
SD	STORM SEWER AND GRATES
	STEAM LINE
	FENCE

1. 900 IS THE PREFIX WHICH PRECEDES ALL MONITORING WELLS, HYDROPUNCH AND GEOPROBE LOCATIONS.
2. DIRECT PUSH SAMPLE LOCATIONS P-1 TO P-4 INSTALLED BY R.E. WRIGHT ENVIRONMENTAL INC.,NOVEMBER 1995.
3. GEOPROBE SAMPLE POINTS AND HYDROPUNCH PENETROMETERS ADVANCED BY LAW, JULY-AUGUST 1996 AND MARCH 1997(HP-6 TO HP-17). MONITORING WELLS INSTALLED BY LAW, AUGUST 1996.
4. BUILDING 900, THE STEAM PIT, THE GEOPROBE SAMPLING POINTS, HYDROPUNCH SAMPLE POINTS, AND THE MONITORING WELLS WERE THE ONLY POINTS LOCATED IN THE FIELD BY A PROFESSIONAL LAND SURVEYOR. THE LOCATION OF UTILITIES EDGE OF CONCRETE SURFACING, RAILROAD TRACKS, AND OTHER BUILDINGS ARE APPROXIMATE.
5. THE NC GROUNDWATER STANDARD FOR NAPHTHALENE IS 21 ug/L.
6. IN NOVEMBER 1995, NAPHTHALENE WAS DETECTED IN THE R.E. WRIGHT ENVIRONMENTAL INC. GROUNDWATER SAMPLES AS FOLLOWS: P-1: ND; P-2: 12 ug/L; P-3: 420 ug/L; P-4: 320 ug/L.

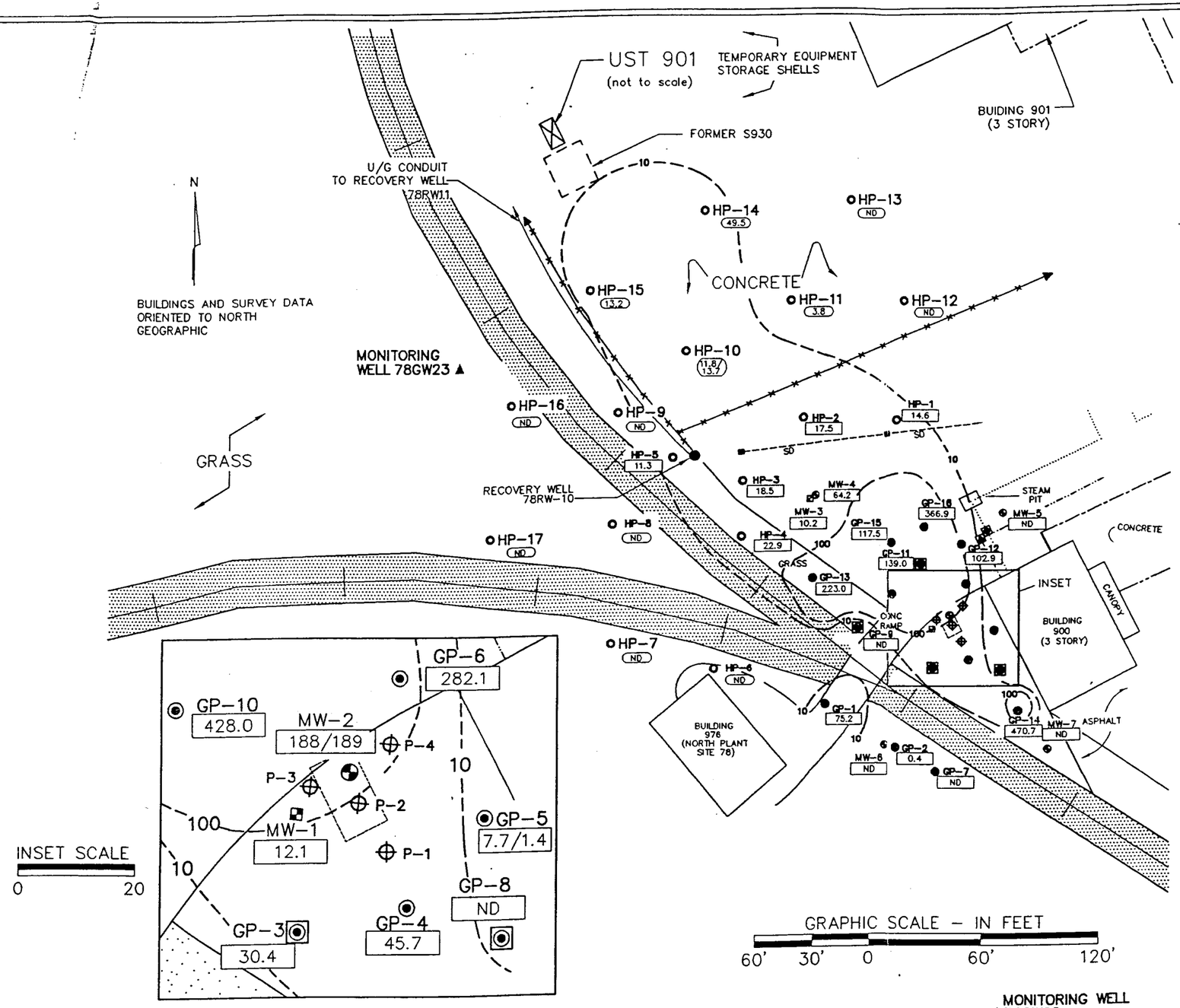
N0185D03(1:720)

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
RALEIGH, NORTH CAROLINA

NAPHTHALENE CONCENTRATIONS (WATER)–ISOPLETH MAP
BUILDING 900
LEAKING UNDERGROUND STORAGE TANK
CAMP LEJEUNE, NORTH CAROLINA
CONTRACT N62470-93-D-4020

DRAWN: EBA	DATE: AUGUST 1997
DFT CHECK: J.T	SCALE: 1'=60'
ENG CHECK: CEJ	JOB: 30740-5-500/0185
APPROVAL: B/B	DWG: 5.7

REFERENCE: MCB AUTOCAD DRAWING F08.DWG,FIELD NOTES AND LAW DRAWING 5.8 (September 1996)



KEY

----------	CONCENTRATION ISOPLETH (ug/L)
HP-13 (6.0)	DETECTED CONCENTRATIONS IN HYDROPUNCH* GROUNDWATER SAMPLE (ug/L), MARCH 1997
GP-16 (5.6)	DETECTED CONCENTRATIONS IN GROUNDWATER SAMPLE (ug/L), JULY & AUGUST.
ND/ND	NOT DETECTED IN GROUNDWATER SAMPLE/ DUPLICATE SAMPLE.
*	WELL SCREENED BELOW WATER TABLE. GROUNDWATER SAMPLE CONCENTRATION NOT MAPPED.
MW-6	TYPE II (SHALLOW) GROUNDWATER MONITORING WELL, LAW
MW-3	TYPE III (DEEP) GROUNDWATER MONITORING WELL, LAW
GP-3	GEOPROBE SAMPLE POINT LOCATION
GP-2	PIEZOMETER LOCATION, LAW
HP-3	HYDROPUNCH PENETROMETERS, LAW
P-1	R.E. WRIGHT DIRECT PUSH SAMPLE LOCATIONS, NOVEMBER 1995
	FORMER LOCATION OF UST 900
	RAILROAD TRACK AND BED
	ELECTRICAL LINE (U/G) AND TRANSFORMER
	WATER LINE AND VALVE (CIRCLED IF FIELD CHECKED)
	WASTEWATER LINE
SD	STORM SEWER AND GRATES
	STEAM LINE
	FENCE

1. 900 IS THE PREFIX WHICH PRECEDES ALL MONITORING WELLS, HYDROPUNCH AND GEOPROBE LOCATIONS.
2. DIRECT PUSH SAMPLE LOCATIONS P-1 TO P-4 INSTALLED BY R.E. WRIGHT ENVIRONMENTAL INC.,NOVEMBER 1995.
3. GEOPROBE SAMPLE POINTS AND HYDROPUNCH PENETROMETERS ADVANCED BY LAW , JULY-AUGUST 1996, AND MARCH 1997(HP-6 TO HP-17). MONITORING WELLS INSTALLED BY LAW IN JULY,1996 AND SAMPLED AUGUST 1996.
4. BUILDING 900, THE STEAM PIT, THE GEOPROBE SAMPLING POINTS, HYDROPUNCH SAMPLE POINTS, AND THE MONITORING WELLS WERE THE ONLY POINTS LOCATED IN THE FIELD BY A PROFESSIONAL LAND SURVEYOR. THE LOCATION OF UTILITIES EDGE OF CONCRETE SURFACING, RAILROAD TRACKS, AND OTHER BUILDINGS ARE APPROXIMATE.
5. IN NOVEMBER 1995, TOTAL BASE NEUTRAL SEMI-VOLATILE ORGANIC COMPOUNDS WERE DETECTED IN THE R.E. WRIGHT ENVIRONMENTAL INC. GROUNDWATER SAMPLES AS FOLLOWS: P-1: 29 ug/L; P-2: 12 ug/L; P-3: 460 ug/L; P-4: 320 ug/L.

N01855-9(1:720)

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
RALEIGH, NORTH CAROLINA

TOTAL BASE NEUTRAL SEMI-VOLATILE ORGANIC COMPOUND CONCENTRATIONS (WATER)-ISOPLETH MAP BUILDING 900 LEAKING UNDERGROUND STORAGE TANK CAMP LEJEUNE, NORTH CAROLINA CONTRACT N62470-93-D-4020

DRAWN: EBA	DATE: AUGUST 1997
DFT CHECK: J.T	SCALE: 1'=60'
ENG CHECK: CKS	JOB: 30740-5-500/0185
APPROVAL:	DWG: 5.8

REFERENCE: MCB AUTOCAD DRAWING F08.DWG,FIELD NOTES AND LAW DRAWING 5.9 (September 1996)

APPENDIX C

ANALYTICAL DATA SUMMARY TABLES
POST-CAP THROUGH APRIL 2002

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	MW-01								
		Sample ID	UST900-MW01-02B	UST900-MW01-02A	UST900-MW01-01D	UST900-MW01-01C	UST900-MW01-01B	UST900-MW01-01A	UST900-MW01-00D	UST900-MW01-00C	UST900-MW01-99B
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	4/23/2002	1/21/2002	10/25/2001	7/19/2001	4/23/2001	1/23/2001	10/23/2000	7/24/2000	6/23/1999
cis-1,2-Dichloroethene	70		BQL	BQL	BQL	NA	NA	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L											
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Semivolatile Organic Compounds by USEPA Methods 625, ug/L											
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Bis(2-ethylhexyl)phthlate	Detection Limit		29	104	28	42	BQL	BQL	BQL	BQL	68
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		10	22	BQL	27	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L											
Lead	0.015		BQL	BQL	15.7	BQL	BQL	5.87	0.143	0.0529	BQL

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	MW02						
		Sample ID	UST900-MW02-02B	UST900-MW02-02A	UST900-MW02-01D	UST900-MW02-01C	UST900-MW02-01B	UST900-MW02-01A	UST900-MW02-00D
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	4/23/2002	1/21/2002	10/25/2001	7/19/2001	4/23/2001	1/23/2001	10/23/2000
cis-1,2-Dichloroethene	70		BQL	BQL	BQL	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L									
Benzene	1		49	47	47	20	48	37	37
Ethylbenzene	29		430	510	510	180	280	450	290
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		120	99	99	39	89	77	50
Total Xylenes	530		420	560	560	120	240	450	420
Semivolatile Organic Compounds by USEPA Methods 625, ug/L									
Naphthalene	21		110	200	130	37	36	100	100
1-Methylnaphthalene	Detection Limit		15	21	11	10	13	19	21
2-Methylnaphthalene	28		BQL	17	16	BQL	BQL	BQL	20
Bis(2-ethylhexyl)phthlate	Detection Limit		5.1	BQL	BQL	BQL	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L									
Lead	0.015		0.0144	BQL	24.3	BQL	0.0112	7.1400	0.0172

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	MW-02						
		Sample ID	UST900-MW02-00C	UST900-MW02-00B	UST900-MW02-00A	UST900-MW02-99D	UST900-MW02-99C3	UST900-MW02-99C2	UST900-MW02-99B
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	7/24/2000	4/19/2000	1/24/2000	10/21/1999	9/24/1999	8/24/1999	6/23/1999
cis-1,2-Dichloroethene	70		NA	NA	NA	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L									
Benzene	1		170	280	99	120	69	250	180
Ethylbenzene	29		960	1300	510	510	420	1300	930
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		350	690	270	350	260	910	1000
Total Xylenes	530		2400	3300	1400	1250	1100	3600	2400
Semivolatile Organic Compounds by USEPA Methods 625, ug/L									
Naphthalene	21		270	250	220	200	110	280	230
1-Methylnaphthalene	Detection Limit		28	31	31	34	16	37	32
2-Methylnaphthalene	28		48	44	47	42	52	57	39
Bis(2-ethylhexyl)phthlate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L									
Lead	0.015		0.0210	0.0112	0.0105	0.0124	0.0151	0.152	0.137

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	MW03						
		Sample ID	UST900-MW03-02B	UST900-MW03-02A	UST900-MW03-01D	UST900-MW03-01C	UST900-MW03-01B	UST900-MW03-01A	UST900-MW03-00D
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	4/24/2002	1/21/2002	10/25/2002	7/19/2001	4/23/2001	1/23/2001	10/23/2000
cis-1,2-Dichloroethene	70		NA	NA	NA	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L									
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Semivolatile Organic Compounds by USEPA Methods 625, ug/L									
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Bis(2-ethylhexyl)phthlate	Detection Limit		53	37	120	120	13	24	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L									
Lead	0.015		BQL	BQL	0.0132	0.0132	BQL	2.43	0.0229

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	MW03						
		Sample ID	UST900-MW03-00C	UST900-MW03-00B	UST900-MW03-00A	UST900-MW03-99D	UST900-MW03-99C3	UST900-MW03-99C2	UST900-MW03-99B
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	7/24/2000	4/19/2000	1/24/2000	10/21/1999	9/24/1999	8/24/1999	6/23/1999
cis-1,2-Dichloroethene	70		NA	NA	NA	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L									
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	BQL
Toluene	1000			BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530			BQL	BQL	BQL	BQL	BQL	BQL
Semivolatile Organic Compounds by USEPA Methods 625, ug/L									
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Bis(2-ethylhexyl)phthlate	Detection Limit		BQL	13	17	BQL	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L									
Lead	0.015		0.0198	0.0127	0.0105	BQL	BQL	BQL	BQL

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	MW04						
		Sample ID	UST900-MW04-02B	UST900-MW04-02A	UST900-MW04-01D	UST900-MW04-01C	UST900-MW04-01B	UST900-MW04-01A	UST900-MW04-00D
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	4/24/2002	1/21/2002	10/25/2001	7/19/2001	4/23/2001	1/23/2001	10/23/2000
cis-1,2-Dichloroethene	70		13	2	24	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L									
Benzene	1		330	270	230	520	550	500	450
Ethylbenzene	29		760	520	620	830	510	1200	830
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		140	110	120	190	180	140	110
Total Xylenes	530		1340	911	1058	1470	930	1320	1000
Semivolatile Organic Compounds by USEPA Methods 625, ug/L									
Naphthalene	21		170	160	170	240	110	170	200
1-Methylnaphthalene	Detection Limit		12	10	12	16	10	14	23
2-Methylnaphthalene	28		22	19	26	28	BQL	17	28
Bis(2-ethylhexyl)phthlate	Detection Limit		25	38	31	130	93	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L									
Lead	0.015		BQL	BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	MW-04						
		Sample ID	UST900-MW04-00C	UST900-MW04-00B	UST900-MW04-00A	UST900-MW04-99D	UST900-MW04-99C3	UST900-MW04-99C2	UST900-MW04-99B
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	7/24/2000	4/19/2000	1/24/2000	10/21/1999	9/24/1999	8/24/1999	6/23/1999
cis-1,2-Dichloroethene	70		NA	NA	NA	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L									
Benzene	1		**430**	**590**	**420**	**500**	**560**	**520**	**730**
Ethylbenzene	29		**670**	**910**	**580**	**740**	**830**	**790**	**1100**
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		**110**	**160**	**110**	**120**	**150**	**120**	**160**
Total Xylenes	530		**1090**	**1380**	**980**	**1430**	**1460**	**1340**	**1770**
Semivolatile Organic Compounds by USEPA Methods 625, ug/L									
Naphthalene	21		**220**	**230**	**130**	**210**	**260**	**240**	**190**
1-Methylnaphthalene	Detection Limit		**20**	**21**	BQL	**24**	**22**	**21**	**16**
2-Methylnaphthalene	28		**22**	**30**	**13**	**33**	**34**	**29**	**24**
Bis(2-ethylhexyl)phthlate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	**10**	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L									
Lead	0.015		BQL	BQL	BQL	BQL	BQL	**0.0320**	**0.0384**

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	MW05						
		Sample ID	UST900-MW05-02B	UST900-MW05-02A	UST900-MW05-01A	UST900-MW05-01C	UST900-MW05-01A	UST900-MW05-00D	UST900-MW05-00C
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	4/23/2002	1/21/2002	10/25/2001	7/19/2001	1/23/2001	10/23/2000	7/24/2000
cis-1,2-Dichloroethene	70		BQL	BQL	BQL	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L									
Benzene	1		2.6	BQL	BQL	BQL	BQL	1	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Semivolatile Organic Compounds by USEPA Methods 625, ug/L									
Naphthalene	21		46	BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Bis(2-ethylhexyl)phthlate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		12	BQL	BQL	10	BQL	16	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L									
Lead	0.015		BQL	0.0301	13.7	0.0124	2.97	BQL	BQL

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	MW05					
		Sample ID	UST900-MW05-00B	UST900-MW05-00A	UST900-MW05-99D	UST900-MW05-99C3	UST900-MW05-99C2	UST900-MW05-99B
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	4/19/2000	1/24/2000	10/21/1999	9/24/1999	8/24/1999	6/23/1999
cis-1,2-Dichloroethene	70		NA	NA	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L								
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
Semivolatile Organic Compounds by USEPA Methods 625, ug/L								
Naphthalene	21		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
Bis(2-ethylhexyl)phthlate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		1	BQL	10	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L								
Lead	0.015		BQL	BQL	BQL	BQL	0.0135	BQL

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	MW06						
		Sample ID	UST900-MW06-02B	UST900-MW06-02A	UST900-MW06-01D	UST900-MW06-01C	UST900-MW06-01B	UST900-MW06-01A	UST900-MW06-00D
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	4/23/2002	1/21/2002	10/25/2001	7/16/2001	4/23/2001	1/23/2001	10/23/2000
cis-1,2-Dichloroethene	70		BQL	BQL	BQL	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L									
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL	9
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Semivolatile Organic Compounds by USEPA Methods 625, ug/L									
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Bis(2-ethylhexyl)phthlate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L									
Lead	0.015		0.0157	0.0471	45.9	0.0329	0.0262	4.86	0.0265

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	MW-06							MW-7
		Sample ID	UST900-MW06-00C	UST900-MW06-00B	UST900-MW06-00A	UST900-MW06-99D	UST900-MW06-99C3	UST900-MW06-99C2	UST900-MW06-99B	UST900-MW07-99B
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	7/24/2000	4/19/2000	1/24/2000	10/21/1999	9/24/1999	8/24/1999	6/23/1999	6/23/1999
cis-1,2-Dichloroethene	70		NA	NA	NA	NA	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L										
Benzene	1		39	13	5	BQL	1	2	BQL	BQL
Ethylbenzene	29		4	3	BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	4	BQL	BQL	BQL	BQL	BQL	BQL
Semivolatile Organic Compounds by USEPA Methods 625, ug/L										
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Bis(2-ethylhexyl)phthlate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L										
Lead	0.015		0.0269	0.0383	0.0398	0.0178	0.0204	0.0734	0.0792	0.0442

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	MW08						
		Sample ID	UST900-MW08-02B	UST900-MW08-02A	UST900-MW08-01D	UST900-MW08-01C	UST900-MW08-01B	UST900-MW08-00C	UST900-MW08-00B
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	4/23/2002	1/21/2002	10/25/2002	7/19/2001	4/23/2001	7/24/2000	4/19/2000
cis-1,2-Dichloroethene	70		BQL	BQL	NA	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L									
Benzene	1		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Semivolatile Organic Compounds by USEPA Methods 625, ug/L									
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Bis(2-ethylhexyl)phthlate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L									
Lead	0.015		BQL	0.018	BQL	BQL	BQL	BQL	0.0149

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	MW-08				
		Sample ID	UST900-MW08-00A	UST900-MW08-99D	UST900-MW08-99C3	UST900-MW08-99C2	UST900-MW08-99B
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	1/24/2000	10/21/1999	9/24/1999	8/24/1999	6/23/1999
cis-1,2-Dichloroethene	70		NA	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L							
Benzene	1		BQL	BQL	BQL	BQL	BQL
Ethylbenzene	29		BQL	BQL	BQL	BQL	BQL
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL
Total Xylenes	530		BQL	BQL	BQL	BQL	BQL
Semivolatile Organic Compounds by USEPA Methods 625, ug/L							
Naphthalene	21		BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL
Bis(2-ethylhexyl)phthlate	Detection Limit		BQL	BQL	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L							
Lead	0.015		**0.0232**	BQL	BQL	**0.0198**	**0.0216**

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	MW-09								
		Sample ID	UST900-MW09-02B	UST900-MW09-02A	UST900-MW09-01D	UST900-MW09-01C	UST900-MW09-01B	UST900-MW09-01A	UST900-MW09-00D	UST900-MW09-00C	UST900-MW09-00B
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	4/24/2002	1/21/2002	10/25/2001	7/19/2001	4/23/2001	1/23/2001	10/23/2000	7/24/2000	6/19/2000
cis-1,2-Dichloroethene	70		7	4	6	NA	NA	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L											
Benzene	1		45	15	74	64	88	65	51	42	32
Ethylbenzene	29		15	4	58	45	61	42	32	26	24
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		3	BQL	7	8	12	6	4	3	3
Total Xylenes	530		23	3	41	47	91	75	79	84	77
Semivolatile Organic Compounds by USEPA Methods 625, ug/L											
Naphthalene	21		BQL	BQL	19	19	21	14	14	11	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Bis(2-ethylhexyl)phthlate	Detection Limit		11	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L											
Lead	0.015		BQL	BQL	10.9	0.0239	BQL	BQL	BQL	BQL	BQL

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	MW10								
		Sample ID	UST900-MW10-02B	UST900-MW10-02A	UST900-MW10-01D	UST900-MW10-01C	UST900-MW10-01B	UST900-MW10-01A	UST900-MW10-00D	UST900-MW10-00C	UST900-MW10-00B
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	4/23/2002	1/21/2002	10/25/2001	7/19/2001	4/23/2001	1/23/2001	10/23/2000	7/24/2000	6/19/2000
cis-1,2-Dichloroethene	70		NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L											
Benzene	1		**15**	**17**	**11**	**23**	**23**	**21**	**24**	**22**	**22**
Ethylbenzene	29		BQL	BQL	2	4	5	4	14	25	30
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	1
Total Xylenes	530		BQL	BQL	BQL	BQL	2	BQL	BQL	10	22
Semivolatile Organic Compounds by USEPA Methods 625, ug/L											
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Bis(2-ethylhexyl)phthlate	Detection Limit		**14**	**20**	**24**	BQL	BQL	BQL	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L											
Lead	0.015		BQL	**0.0107**	BQL	BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	78GW23						
		Sample ID	UST900-78GW23-02B	UST900-78GW23-02A	UST900-78GW23-01D	UST900-78GW23-01C	UST900-78GW23-01B	UST900-78GW23-01A	UST900-78GW23-00D
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	4/23/2002	1/21/2002	10/25/2001	7/19/2001	4/23/2001	1/23/2001	10/23/2000
cis-1,2-Dichloroethene	70		2400	2400	3900	3400	3800	3300	5200
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L									
Benzene	1		14	9	7	12	12	13	14
Ethylbenzene	29		10	6	BQL	7	8	5	5
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	110	BQL	130
Toluene	1000		5	4	BQL	4	4	2	3
Total Xylenes	530		68	38	28	52	55	38	43
Semivolatile Organic Compounds by USEPA Methods 625, ug/L									
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Bis(2-ethylhexyl)phthlate	Detection Limit		54	59	59	15	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L									
Lead	0.015		BQL	BQL	13.4	BQL	BQL	BQL	BQL

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	78GW23						
		Sample ID	UST900-78GW23-00C	UST900-78GW23-00B	UST900-78GW23-00A	UST900-78GW23-99D	UST900-78GW23-99C3	UST900-78GW23-99C2	UST900-78GW23-99B
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	7/24/2000	4/19/2000	1/24/2000	10/21/1999	9/24/1999	8/24/1999	6/23/1999
cis-1,2-Dichloroethene	70		4500	1800	2600	NA	2400	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L									
Benzene	1		15	18	17	17	11	14	18
Ethylbenzene	29		9	9	9	7	BQL	12	11
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	160	BQL	BQL
Toluene	1000		4	4	4	4	BQL	4	4
Total Xylenes	530		56	63	65	59	32	63	57
Semivolatile Organic Compounds by USEPA Methods 625, ug/L									
Naphthalene	21		BQL	BQL	BQL	BQL	BQL	BQL	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Bis(2-ethylhexyl)phthlate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L									
Lead	0.015		BQL	BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	RW10								
		Sample ID	UST900-RW10-02B	UST900-RW10-02A	UST900-RW10-01D	UST900-RW10-01C	UST900-RW10-01B	UST900-RW10-01A	UST900-RW10-00D	UST900-RW10-00C	UST900-RW10-99B
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	4/23/2002	1/21/2002	10/25/2001	7/19/2001	4/23/2001	1/23/2001	10/23/2000	7/24/2000	6/23/1999
cis-1,2-Dichloroethene	70		NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L											
Benzene	1		200	220	140	99	60	37	67	110	240
Ethylbenzene	29		66	96	74	11	19	340	29	29	94
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		BQL	63	BQL	BQL	BQL	74	BQL	BQL	13
Total Xylenes	530		68	90	59	22	34	440	114	47	240
Semivolatile Organic Compounds by USEPA Methods 625, ug/L											
Naphthalene	21		20	21	16	BQL	BQL	110	12	12	BQL
1-Methylnaphthalene	Detection Limit		BQL	BQL	BQL	BQL	BQL	20	BQL	BQL	BQL
2-Methylnaphthalene	28		BQL	BQL	BQL	BQL	BQL	110	BQL	BQL	BQL
Bis(2-ethylhexyl)phthlate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	13
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL	18
Lead by USEPA Method 504.1, mg/L											
Lead	0.015		BQL	BQL	BQL	BQL	BQL	2.15	BQL	BQL	BQL

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	DUP1						
		Sample ID	UST900-DUP1-02B	UST900-DUP1-02A	UST900-DUP1-01D	UST900-DUP1-01C	UST900-DUP1-01B	UST900-DUP1-01A	UST900-DUP1-00D
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	4/23/2002	1/21/2002	10/25/2001	7/19/2001	4/23/2001	1/23/2001	10/23/2000
cis-1,2-Dichloroethene	70		NA	NA	NA	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L									
Benzene	1		47	47	69	24	51	36	36
Ethylbenzene	29		400	600	420	200	330	290	290
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		120	120	78	52	110	48	48
Total Xylenes	530		390	850	460	150	290	420	420
Semivolatile Organic Compounds by USEPA Methods 625, ug/L									
Naphthalene	21		120	170	150	40	31	78	78
1-Methylnaphthalene	Detection Limit		18	22	11	10	BQL	16	16
2-Methylnaphthalene	28		20	15	23	BQL	BQL	17	17
Bis(2-ethylhexyl)phthlate	Detection Limit		12	83	35	BQL	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L									
Lead	0.015		0.011	BQL	BQL	BQL	BQL	0.014	0.014

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	DUP1						
		Sample ID	UST900-DUP1-00C	UST900-DUP1-00B	UST900-DUP1-00A	UST900-DUP1-99D	UST900-DUP1-99C3	UST900-DUP1-99C2	UST900-DUP1-99B
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	7/24/2000	4/19/2000	1/24/2000	10/21/1999	9/24/1999	8/24/1999	6/23/1999
cis-1,2-Dichloroethene	70		NA	NA	NA	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L									
Benzene	1		**180**	**220**	**150**	**130**	**59**	**230**	**180**
Ethylbenzene	29		**990**	**890**	**690**	**630**	**350**	**1100**	**970**
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		**360**	**700**	**430**	**430**	**210**	**690**	**1200**
Total Xylenes	530		**2500**	**2400**	**1900**	**1500**	**870**	**3000**	**2500**
Semivolatile Organic Compounds by USEPA Methods 625, ug/L									
Naphthalene	21		**310**	**280**	**180**	**200**	**190**	**300**	**180**
1-Methylnaphthalene	Detection Limit		**35**	**35**	**23**	**33**	**26**	**39**	**26**
2-Methylnaphthalene	28		**44**	**52**	**33**	**39**	**36**	**58**	**32**
Bis(2-ethylhexyl)phthlate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	**14**
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L									
Lead	0.015		**0.012**	**0.012**	**0.023**	**0.010**	**0.012**	**0.110**	BQL

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Summary of Detected Concentrations
Groundwater Monitoring Well Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	NCDENR	Sample Location	DUP2							
		Sample ID	UST900-DUP2-02B	UST900-DUP2-02A	UST900-DUP2-01D	UST900-DUP2-01C	UST900-DUP2-01B	UST900-DUP2-01A	UST900-DUP2-00D	UST900-DUP2-00C
Volatile Organic Compounds by USEPA Method 601, ug/L	Regulatory Limit	Sample Date	4/23/2002	1/21/2002	10/25/2001	7/19/2001	4/23/2001	1/23/2001	10/23/2000	7/24/2000
cis-1,2-Dichloroethene	70		NA	NA	NA	NA	NA	NA	NA	NA
Volatile Aromatic Hydrocarbons by USEPA Method 602, ug/L										
Benzene	1		290	260	300	400	460	480	450	420
Ethylbenzene	29		660	520	600	690	430	790	820	650
Methyl-tert-butyl ether (MTBE)	200		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Toluene	1000		110	110	110	140	150	140	99	100
Total Xylenes	530		1110	911	1008	1210	720	1220	990	1035
Semivolatile Organic Compounds by USEPA Methods 625, ug/L										
Naphthalene	21		190	180	160	190	120	160	120	250
1-Methylnaphthalene	Detection Limit		14	13	15	11	BQL	13	13	23
2-Methylnaphthalene	28		24	23	19	19	BQL	16	17	26
Bis(2-ethylhexyl)phthlate	Detection Limit		11	99	BQL	140	64	BQL	BQL	BQL
Dimethylphthalate	Detection Limit		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Diethylphthalate	5000		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
2,4-Dimethylphenol	140		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Acenaphthene	80		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Phenol	300		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL
Lead by USEPA Method 504.1, mg/L										
Lead	0.015		BQL	BQL	BQL	BQL	BQL	BQL	BQL	BQL

Notes:
Duplicate sample (DUP-1) collected from monitoring well MW-2.
Detected concentrations above the regulatory limits are indicated in boldface type.
NA indicates that the sample was not analyzed for the constituent.
BQL = Below Laboratory Quantitation Limit
Shaded areas indicate detected concentrations above laboratory quantitation limits.

Table 3-2
Summary of Detected Concentrations
Treatment System Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	Sample Location	SVE-E*				SVE1**	SVE2**
	Sample ID	UST900-SVE-E-02B	UST900-SVE-E-02A	UST900-SVE-E-01D	UST900-SVE-E-01C	UST900-SVE2-01B	UST900-SVE3-01B
Volatile Aromatic Hydrocarbons by USEPA Method 18, ppm	Sample Date	4/16/2002	1/18/2002	10/18/2001	7/11/2001	4/16/2001	4/16/2001
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	BQL

NOTE:
* Sample collected from Soil Vapor Extraction System Effluent.
** Sample collected from Soil Vapor Extraction well vaults.
*** Sample collected from Soil Vapor Extraction System Influent.
Shaded areas indicate detected concentrations above laboratory quantitation limits.
BQL = Below Laboratory Quantitation Limit

Table 3-2
Summary of Detected Concentrations
Treatment System Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	Sample Location	SVE4**	SVE-E*			
	Sample ID	UST900-SVE4-01B	UST900-SVE-E-01A	UST900-SVE-E-00D	UST900-SVE-E-00C	UST900-SVE-E-00B
Volatile Aromatic Hydrocarbons by USEPA Method 18, ppm	Sample Date	4/16/2001	1/15/2001	10/16/2000	7/17/2000	4/11/2000
Benzene		BQL	BQL	BQL	BQL	BQL
Ethylbenzene		BQL	BQL	BQL	BQL	BQL
Toluene		BQL	BQL	1.6	BQL	BQL
Total Xylenes		BQL	BQL	BQL	BQL	BQL

NOTE:

* Sample collected from Soil Vapor Extraction System Effluent.

** Sample collected from Soil Vapor Extraction well vaults.

*** Sample collected from Soil Vapor Extraction System Influent.

Shaded areas indicate detected concentrations above laboratory quantitation limits.

BQL = Below Laboratory Quantitation Limit

Table 3-2
Summary of Detected Concentrations
Treatment System Samples
Building 900
Marine Corps Base
Camp Lejeune, North Carolina

Parameter	Sample Location	SVE-E*				
	Sample ID	UST900-SVE-E-00A	UST900-SVE-E-99D	UST900-SVE-E-99C3	UST900-SVE-E-99C2	UST900-SVE-E-99C1
Volatile Aromatic Hydrocarbons by USEPA Method 18, ppm	**Sample Date**	1/17/2000	10/13/1999	9/14/1999	8/16/1999	7/20/1999
Benzene		BQL	BQL	1.2	BQL	BQL
Ethylbenzene		BQL	BQL	BQL	BQL	BQL
Toluene		BQL	BQL	2.1	BQL	BQL
Total Xylenes		BQL	BQL	BQL	BQL	0.6

NOTE:

* Sample collected from Soil Vapor Extraction System Effluent.

** Sample collected from Soil Vapor Extraction well vaults.

*** Sample collected from Soil Vapor Extraction System Influent.

Shaded areas indicate detected concentrations above laboratory quantitation limits.

BQL = Below Laboratory Quantitation Limit

APPENDIX D

RISK CLASSIFICATION AND LAND USE FORM

A. RISK CHARACTERIZATION

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

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**

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**

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**

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**

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.

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.

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

   The nearest body of water is a retention pond located approximately 1000 feet southwest of the site.

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.

   MCB, Camp Lejeune has identified proposed wellhead protection areas on the base. The site is not located in an area deemed as a potential wellhead protection area based on the Wellhead Protection Plan Update prepared by AH Environmental Consultants, dated August 2002.

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.

   Groundwater samples collected from Type III monitoring wells at the site were found to be BDL for all contaminant parameters.

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

    All contaminant levels from the August 2003 sampling event are below current GCLs. However, levels of 1-Methylnaphthalene have historically been identified at concentrations above laboratory detection limits. There is currently no GCL established for 1-Methylnaphthalene.

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.

   The subject site is located in the Hadnot Point Industrial area of MCB, Camp Lejeune.

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.

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.

   Numerous industrial facilities are located throughout the general vicinity of the site.

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

   The site is used predominantly by active military personnel.

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

   Yes. The site is located aboard MCB, Camp Lejeune.

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

   The areas of the release are covered with concrete

   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 in place. 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.

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

   No. The designated use of the facility on the Base is not likely to change in 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)?*

   Military apartments are located approximately 2000 feet south southwest of the release 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?*

   Greater than 2500 feet.

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

   As previously stated, MCB, Camp Lejeune is not subject to local or county zoning requirements. The surrounding property has been developed for military support purposes.

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

   The surrounding land is used primarily storage and distribution of military equipment.

B. RECEPTOR INFORMATION

1. Water Supply Wells
(Refer to Table 3 and Figure 5)

Physical reconnaissance and review of the Wellhead Protection Plan – 2002 Update prepared by AH Environmental indicated that no water supply wells are located within 1,500 feet of the subject site.

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.

The nearest body of water is a retention pond located approximately 1000 feet southwest of the site.

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 Wellhead Protection Plan – 2002 Update prepared by AH Environmental Consultants, the site is not locate in, or within 1,500 feet of, a wellhead protection 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. Results of the groundwater analysis conducted on samples collected from the Type III monitoring wells indicates that the deeper portions of the aquifer have not been impacted by petroleum constituents associated with this site.

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. 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 and are not generally used for water supply. The Castle Hayne Aquifer contains freshwater and is the principal 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. Additionally, an active groundwater remediation system is currently in operation at the subject site.

7. Property Owners and Occupants

(see Table 6)

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

APPENDIX E

ANALYTICAL DATA SUMMARY TABLES
OCTOBER 2002 THROUGH AUGUST 2003

CLJ - Site 900
Project #824603

Analytical Data Summary

Sampling Event **August 2003 Field**

Well ID:		MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-08	MW-09	MW-10	RW-10	IR78-GW23
Date Sampled:		08/02/03	08/02/03	08/06/03	NS	08/02/03	08/02/03	08/06/03	08/02/03	08/02/03	NA	08/06/03
Analyte	**Units**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Field Parameters												
Depth to Water	feet	7.56	3.25	7.51	NS	3.24	4.04	4.96	4.91	3.62	NA	7.62
Temperature	°C	21.38	25.17	22.31	NS	26.92	23.82	28.45	26.26	27.08	NA	22.53
Conductivity	mS/m	0.432	0.466	0.423	NS	0.32	0.297	0.296	0.175	0.187	NA	0.218
Turbidity	NTU	20	11	0	NS	11.2	51	373	203	13	NA	39
pH	-	6.95	6.63	7.18	NS	6.53	5.29	6.38	4.29	5.88	NA	5.28
Dissolved Oxygen	mg/L	0.4	0.09	0	NS	0.1	0.34	0.03	0.25	0.11	NA	0.19
Oxidation-Reduction Potential	mV	-129.8	130.1	-86.2	NS	-100.6	26.6	-74.7	255.1	-30.7	NA	22.1

NS = MW-04 not sampled due to bubbling
NA = RW-10 not applicable due to active recovery well

Printed: 12/24/2003

Analytical Data Summary

Sampling Event **August 2003 Organics**

Well ID:		MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-08	MW-09	MW-10	RW-10	IR78-GW23
Laboratory Sample ID:		F18884-1	F18884-2	F18949-1	NS	F18884-7	F18884-3	F18949-2	F18884-6	F18884-5	F18949-3	F18949-4
Date Sampled:		08/02/03	08/02/03	08/06/03	NS	08/02/03	08/02/03	08/06/03	08/02/03	08/02/03	08/06/03	08/06/03
Analyte (ug/l)	**Action Level**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
EPA 602												
Benzene	1	<1.0	**29.7**	<1.0	NS	<1.0	<1.0	<1.0	**19**	**3.1**	**19.2**	**7.7**
Ethylbenzene	29	<1.0	**131**	<1.0	NS	<1.0	<1.0	<1.0	**12.8**	<1.0	**4.6**	**2.7**
Toluene	1000	<1.0	**49.5**	<1.0	NS	<1.0	<1.0	<1.0	<1.0	<1.0	**0.52 J**	**2.2**
Xylenes (total)	530	<3.0	**145**	<3.0	NS	<3.0	<3.0	<3.0	**10.2**	<3.0	**5.9**	**28.2**
Methyl Tert Butyl Ether	200	<1.0	<10	<1.0	NS	<1.0	<1.0	<1.0	<1.0	**0.79 J**	**12.2**	**102**
Total BTEX			**355.2**						**42**	**3.1**	**30.22**	**40.8**
EPA 610												
Acenaphthene	80	**13.3**	<5.2	**2.3 J**	NS	**3.9 J**	<5.1	<5.0	<5.1	<5.0	**18**	<5.0
Acenaphthylene	210	<5.1	<5.2	<5.0	NS	<5.1	<5.1	<5.0	<5.1	<5.0	<5.0	<5.0
Anthracene	2100	<5.1	<5.2	<5.0	NS	<5.1	<5.1	<5.0	<5.1	<5.0	<5.0	<5.0
Benzo(a)anthracene	0.05	<5.1	<5.2	<5.0	NS	<5.1	<5.1	<5.0	<5.1	<5.0	<5.0	<5.0
Fluoranthene	280	<5.1	<5.2	<5.0	NS	<5.1	<5.1	<5.0	<5.1	<5.0	<5.0	<5.0
Fluorene	280	<5.1	<5.2	**2.1 J**	NS	<5.1	<5.1	<5.0	<5.1	<5.0	**5.3**	<5.0
Naphthalene	21	<5.1	<5.2	<5.0	NS	<5.1	<5.1	<5.0	**10.8**	<5.0	<5.0	<5.0
Phenanthrene	210	<5.1	<5.2	<5.0	NS	<5.1	<5.1	<5.0	<5.1	<5.0	**2.0 J**	<5.0
Pyrene	210	<5.1	<5.2	<5.0	NS	<5.1	<5.1	<5.0	<5.1	<5.0	<5.0	<5.0
EPA 6010B												
Lead	15	**3.6 B**	**3.9 B**	<1.2	NS	**2.8 B**	**4.7 B**	**5.2**	**3.1 B**	**4.1 B**	<1.2	<1.2
Bold type indicates detectable concentrations.												
Shaded area indicates detectable concentrations above the groundwater quality standards.												

B = detected in blank
J = estimated value
NS = MW-04 not sampled due to bubbling

Printed: 12/24/2003
Samples analyzed by Accutest

Analytical Data Summary

Sampling Event **April 2003 Field**

Well ID:		MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-08	MW-09	MW-10	RW-10	IR78-GW23
Date Sampled:		05/14/03	05/14/03	05/14/03	05/14/03	05/14/03	05/14/03	05/14/03	05/14/03	05/14/03	05/14/03	05/14/03
Analyte	**Units**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Field Parameters												
Depth to Water	feet	8.00	4.01	7.93	4.08	3.91	4.91	5.82	5.84	4.32	NA	8.53
Temperature	°C	21.10	19.90	21.67	19.91	20.45	18.29	21.85	20.72	21.67	NA	19.42
Conductivity	mS/m	4.289	4.81	4.171	1.426	3.449	2.888	3.028	1.372	1.762	NA	2.26
Turbidity	NTU	0	13	4	178	21.5	62	97	226.0	13	NA	27
pH	-	7.09	6.72	7.05	5.60	6.54	5.41	6.28	4.52	5.77	NA	5.41
Dissolved Oxygen	mg/L	0.55	0.6	0.86	0.82	0.67	1.71	0.77	1.48	0.64	NA	0.86
Oxidation-Reduction Potential	mV	-127.5	-93.9	-107.5	-49.8	-92.2	84.2	-86.1	158.5	-21.7	NA	12.8

RW-10 is active recovery well for North Plant. No field readings taken.

Analytical Data Summary

Sampling Event **May 2003 Organics**

Well ID:		MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-08	MW-09	MW-10	RW-10	IR78-GW23
Laboratory Sample ID:		F17826-1	F17826-2	F17826-3	F17826-4	F17826-10	F17826-5	F17826-6	F17826-9	F17826-8	F17826-11	F17826-12
Date Sampled:		05/14/03	05/14/03	05/14/03	05/14/03	05/14/03	05/14/03	05/14/03	05/14/03	05/14/03	05/14/03	05/14/03
Analyte (ug/l)	**Action Level**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
EPA 602												
Benzene	1	<1.0	**44.6**	**0.75 J**	**524**	<1.0	<1.0	<1.0	**9.0**	**4.0**	**273**	**9.0**
Ethylbenzene	29	<1.0	**151**	**3.5**	**702**	<1.0	**1.7**	**1.3**	**0.53 J**	<1.0	**45.3**	**4.9**
Toluene	1000	<1.0	**60.3**	<1.0	**67.7**	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	**3.1**
Xylenes (total)	530	<3.0	**177**	**5.9**	**1270**	<3.0	**3.0**	**2.1 J**	**11**	<3.0	**17.2**	**27.5**
Methyl Tert Butyl Ether	200	<1.0	<10	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	**6.8**	<1.0
Total BTEX			**432.9**	**10.15**	**2563.7**		**4.7**	**3.4**	**20.53**	**4**	**335.5**	**44.5**
EPA 610												
Acenaphthene	80	**14.4**	<5.1	<5.1	**2.1 J**	<5.1	<5.2	<5.2	<5.1	<5.1	<5.2	<5.0
Acenaphthylene	210	<5.1	<5.1	<5.1	<5.1	<5.1	<5.2	<5.2	<5.1	<5.1	<5.2	<5.0
Anthracene	2100	<5.1	<5.1	<5.1	<5.1	<5.1	<5.2	<5.2	<5.1	<5.1	<5.2	<5.0
Benzo(a)anthracene	0.05	<5.1	<5.1	<5.1	<5.1	<5.1	<5.2	<5.2	<5.1	<5.1	<5.2	<5.0
Fluoranthene	280	<5.1	<5.1	<5.1	<5.1	<5.1	<5.2	<5.2	<5.1	<5.1	<5.2	<5.0
Fluorene	280	<5.1	<5.1	<5.1	<5.1	<5.1	<5.2	<5.2	<5.1	<5.1	<5.2	<5.0
Naphthalene	21	<5.1	**89.7**	<5.1	**138**	<5.1	<5.2	<5.2	**6.8**	<5.1	**13.3**	**2.1 J**
Phenanthrene	210	<5.1	<5.1	<5.1	<5.1	<5.1	<5.2	<5.2	<5.1	<5.1	<5.2	<5.0
Pyrene	210	<5.1	<5.1	<5.1	<5.1	<5.1	<5.2	<5.2	<5.1	<5.1	<5.2	<5.0
EPA 6010B												
Lead	15	**3.7 B**	**2.5 B**	<1.2	**4.6 B**	**1.6 B**	<1.2	<1.2	**8.2**	<1.2	**9.2**	**3.3 B**
Bold type indicates detectable concentrations.												
Shaded area indicates detectable concentrations above the groundwater quality standards.												

B = detected in blank
J = estimated value

Printed: 12/24/2003
Samples analyzed by Accutest

Analytical Data Summary

Sampling Event **February 2003 Field**

Well ID:		MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-08	MW-09	MW-10	RW-10	IR78-GW23
Date Sampled:		02/05/03	02/05/03	02/05/03	02/05/03	02/05/03	02/05/03	02/05/03	02/05/03	02/05/03	02/05/03	02/05/03
Analyte	**Units**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Field Parameters												
Depth to Water	feet	9.71	6.89	9.65	6.51	5.89	6.56	8.43	7.89	6.41	NA	11.08
Temperature	°C	19.51	15.06	20.80	16.88	14.70	13.47	18.01	17.26	17.31	NA	16.97
Conductivity	mS/cm	0.452	0.487	0.459	0.167	0.418	0.26	0.371	0.134	0.151	NA	0.209
Turbidity	NTU	0.3	5.1	0.4	39.6	12.6	2.1	4.8	9.4	10.7	NA	0
pH	-	7.12	6.70	7.13	5.54	6.63	5.58	6.35	4.81	5.84	NA	4.85
Dissolved Oxygen	mg/L	0.38	0.38	7.83	2.17	0.75	0.45	2.51	5.45	0.5	NA	2.67
Oxidation-Reduction Potential	mV	-121.2	-119.8	-80	-33.8	-32.9	69.7	-45.9	176.6	-22.6	NA	25.1

RW-01 is active recovery well for North Plant. No field readings taken.

Analytical Data Summary

Sampling Event **February 2003 Organics**

Well ID:		MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-08	MW-09	MW-10	RW-10	IR78-GW23
Laboratory Sample ID:		F16507-1	F16507-2	F16507-3	F16507-4	F16507-10	F16507-5	F16507-6	F16507-9	F16507-8	F16507-11	F16507-12
Date Sampled:		02/05/03	02/05/03	02/05/03	02/05/03	02/05/03	02/05/03	02/05/03	02/05/03	02/05/03	02/05/03	02/05/03
Analyte (ug/l)	**Action Level**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
EPA 602												
Benzene	1	**0.73 J**	**42.7**	<1.0	**700**	**5.7**	**1.4**	**3.7**	**22.3**	**8.2**	**203**	**11.8**
Ethylbenzene	29	**2.3**	**255**	<1.0	**998**	**2.1**	**2.1**	**4.3**	**33.4**	**2.2**	**40.4**	**6.8**
Toluene	1000	<1.0	**84.1**	<1.0	**138**	**6.0**	**2.4**	**5.3**	**8.1**	**6.1**	<5.0	**6.0**
Xylenes (total)	530	**4.3**	**282**	<3.0	**1810**	**3.9**	**4.0**	**8.0**	**50.9**	**4.6**	**10.2 J**	**51.2**
Methyl Tert Butyl Ether	200	<1.0	<25	<1.0	<15	<1.0	<1.0	<1.0	**0.64 J**	**1.5**	**7.9**	**224**
Total BTEX		**7.33**	**663.8**		**3646**	**17.7**	**9.9**	**21.3**	**114.7**	**21.1**	**253.6**	**75.8**
EPA 610												
Acenaphthene	80	**12.1**	<5.0	<5.1	<5.1	**4.3 J**	<5.0	<5.0	<5.1	<5.0	<5.1	<5.0
Acenaphthylene	210	<5.1	<5.0	<5.1	<5.1	<5.0	<5.0	<5.0	<5.1	<5.0	<5.1	<5.0
Anthracene	2100	<5.1	<5.0	<5.1	<5.1	<5.0	<5.0	<5.0	<5.1	<5.0	<5.1	<5.0
Benzo(a)anthracene	0.05	<5.1	<5.0	<5.1	<5.1	<5.0	<5.0	<5.0	<5.1	<5.0	<5.1	<5.0
Fluoranthene	280	<5.1	<5.0	<5.1	<5.1	<5.0	<5.0	<5.0	<5.1	<5.0	<5.1	<5.0
Fluorene	280	<5.1	<5.0	<5.1	<5.1	<5.0	<5.0	<5.0	<5.1	<5.0	<5.1	<5.0
Naphthalene	21	<5.1	**107**	<5.1	**121**	<5.0	<5.0	**2.1 J**	**8.4**	<5.0	**6.9**	**3.2 J**
Phenanthrene	210	<5.1	<5.0	<5.1	<5.1	<5.0	<5.0	<5.0	<5.1	<5.0	<5.1	<5.0
Pyrene	210	<5.1	<5.0	<5.1	<5.1	<5.0	<5.0	<5.0	<5.1	<5.0	<5.1	<5.0
EPA 6010B												
Lead	15	**2.1 B**	<1.2	**3.9 B**	**2.4 B**	<1.2	<1.2	<1.2	**2.6 B**	<1.2	<1.2	**2.0 B**

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentrations above the groundwater quality standards.

B = detected in blank
J = estimated value

Printed: 12/24/2003
Samples analyzed by Accutest

CLJ - Site 900
Project #824603

Analytical Data Summary

Sampling Event **Oct 2002 Field**

Well ID:		MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-08	MW-09	MW-10	RW-10	IR78-GW23
Date Sampled:		10/23/02	10/23/02	10/23/02	10/23/02	10/31/02	10/23/02	10/23/02	10/31/02	10/23/02	10/23/02	10/23/02
Analyte	**Units**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Field Parameters												
Depth to Water	feet	**9.95**	**6.43**	**10.09**	**7.13**	**5.98**	**6.80**	**8.26**	**7.96**	**6.49**	NA	**11.39**
Temperature	oC	**22.04**	**23.92**	**22.46**	**25.82**	**25.76**	**23.09**	**25.51**	**25.69**	**27.25**	NA	**22.78**
Conductivity	mS/m	**47.4**	**55.33**	**36.55**	**24.25**	**265**	**27.25**	**34.28**	**357**	**14.5**	NA	**21.4**
Turbidity	NTU	**497**	**437.75**	**546.5**	**990+**	**317**	**618.25**	**335.75**	**990+**	**370.75**	NA	**409.5**
pH	-	**6.75**	**6.57**	**6.57**	**5.83**	**5.68**	**4.71**	**6.35**	**5.65**	**6.06**	NA	**4.34**
Dissolved Oxygen	mg/L	**2.8**	**1.6**	**2.29**	**3.03**	**0**	**2.15**	**2.14**	**0**	**2.13**	NA	**1.34**
Oxidation-Reduction Potential	mV	**83.25**	**-137.75**	**-201.25**	**-111.75**	**-63**	**137.75**	**-89.5**	**-180**	**-42.25**	NA	**27**

RW-01 is active recovery well for North Plant. No field readings taken.

Printed: 12/24/2003

CLJ - Site 900
Project #824603

Analytical Data Summary

Sampling Event **Oct 2002 Organics**

Well ID:		MW-01	MW-02	MW-03	MW-04	MW-05	MW-06	MW-08	MW-09	MW-10	RW-10	IR78-GW23
Laboratory Sample ID:		F15159-1	F15159-2	F15159-3	F15159-4	F15237-2	F15159-5	F15159-6	F15237-1	F15159-8	F15159-9	F15159-10
Date Sampled:		10/23/02	10/23/02	10/23/02	10/23/02	10/31/02	10/23/02	10/23/02	10/31/02	10/23/02	10/23/02	10/23/02
Analyte (ug/l)	**Action Level**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
EPA 602												
Benzene	1	<1.0	**53.9**	<1.0	**501**	<1.0	<1.0	<1.0	**9.8**	**4.9**	**4.8**	**12**
Ethylbenzene	29	<1.0	**237**	<1.0	**946**	<1.0	<1.0	<1.0	**4.3**	<1.0	**2.2**	**8.4**
Toluene	1000	<1.0	**83.1**	<1.0	**129**	<1.0	<1.0	<1.0	<1.0	<1.0	**1.1**	**4.0**
Xylenes (total)	530	<3.0	**135**	<3.0	**1640**	<3.0	<3.0	<3.0	**9.0**	<3.0	**4.8**	**74.9**
Methyl Tert Butyl Ether	200	<1.0	<5.0	<1.0	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total BTEX			**509**		**3216**				**23.1**	**4.9**	**12.9**	**99.3**
EPA 610												
Acenaphthene	80	**16.5**	<5.1	<5.1	**3.1 J**	<5.1	<5.0	<5.1	<5.2	<5.3	**3.7 J**	<5.1
Acenaphthylene	210	<5.1	<5.1	<5.1	<5.1	<5.1	<5.0	<5.1	<5.2	<5.3	<5.2	<5.1
Anthracene	2100	<5.1	<5.1	<5.1	<5.1	<5.1	<5.0	<5.1	<5.2	<5.3	<5.2	<5.1
Benzo(a)anthracene	0.05	<5.1	<5.1	<5.1	<5.1	<5.1	<5.0	<5.1	<5.2	<5.3	<5.2	<5.1
Fluoranthene	280	<5.1	<5.1	<5.1	<5.1	<5.1	<5.0	<5.1	<5.2	<5.3	<5.2	<5.1
Fluorene	280	<5.1	<5.1	<5.1	<5.1	<5.1	<5.0	<5.1	<5.2	<5.3	<5.2	<5.1
Naphthalene	21	<5.1	**167**	<5.1	**194**	<5.1	<5.0	<5.1	**5.1 J**	<5.3	<5.2	**7.0**
Phenanthrene	210	<5.1	<5.1	<5.1	<5.1	<5.1	<5.0	<5.1	<5.2	<5.3	<5.2	<5.1
Pyrene	210	<5.1	<5.1	<5.1	<5.1	<5.1	<5.0	<5.1	<5.2	<5.3	<5.2	<5.1

Bold type indicates detectable concentrations.

Shaded area indicates detectable concentrations above the groundwater quality standards.

Printed: 12/24/2003
Samples analyzed by Accutest