

06.07-10/01/96-01706

**QUARTERLY MONITORING REPORTS
OPERABLE UNIT NO. 5 - SITE 2**

**MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA**

CONTRACT TASK ORDER 0367

Prepared for:

**DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES
ENGINEERING COMMAND
*Norfolk, Virginia***

Under the:

**LANTDIV CLEAN Program
Contract N62470-89-D-4814**

Prepared by:

**BAKER ENVIRONMENTAL, INC.
*Coraopolis, Pennsylvania***

TABLE OF CONTENTS

	<u>Page</u>
PREFACE	P-1
1.0 INTRODUCTION	1-1
1.1 Report Organization	1-1
1.2 Quarterly Sampling Program	1-1
1.3 Groundwater Elevation and Flow Direction	1-2
1.3 Field Observations	1-3
2.0 ANALYTICAL RESULTS AND FINDINGS	2-1
2.1 Shallow Groundwater	2-1
2.1.1 Volatile Organic Compounds	2-1
2.1.2 Selected Total Metals	2-2
2.1.3 Suspended and Dissolved Solids	2-2
2.2 Deep Groundwater	2-2
2.2.1 Volatile Organic Compounds	2-2
2.2.2 Selected Total Metals	2-3
2.2.3 Suspended and Dissolved Solids	2-3
3.0 RECOMMENDATIONS	3-1
3.1 Modify Sampling Frequency	3-1
3.2 Abandon and Replace Deep Monitoring Well	3-1
3.3 Abandon and Replace Shallow Monitoring Wells	3-2
3.4 Maintain Well Security and Aesthetics	3-2
4.0 REFERENCES	4-1

ATTACHMENTS

A	Well Development Records
B	Chain-of-Custody Documentation
C	Sample Tracking Form
D	Sample Designations
E	Monitoring Program Analytical Results
F	Test Boring and Well Construction Record

LIST OF TABLES

- 1-1 Summary of Groundwater Field Parameters
- 1-2 Summary of Well Construction Details
- 1-3 Groundwater Sampling Summary
- 1-4 Analytical Method Detection Limits
- 1-5 Summary of Water Level Measurements

- 2-1 Summary of Groundwater Analytical Results
- 2-2 Positive Detections in Groundwater
- 2-3 Trip Blank Analytical Results

LIST OF FIGURES

- P-1 Location Map, Operable Unit No. 5 - Site 2

- 1-1 Monitoring Well Location Map, Site 2
- 1-2 Supply Well Location Map, Site 2
- 1-3 Shallow Groundwater Contour Map, Site 2

- 2-1 Organic Compounds in Groundwater, Site 2
- 2-2 Ethylbenzene Results from Shallow Well 2-GW03
- 2-3 Total Xylene Results from Shallow Well 2-GW03

LIST OF ACRONYMS

DQOs	Data Quality Objectives
MCLs	maximum contaminant levels
MDL	method detection limit
NCWQS	North Carolina Water Quality Standards
NFESC	Naval Facilities Engineering Service Center
ROD	Record of Decision
TAL	target analyte list
TCL	target compound list
TDS	total dissolved solids
TOC	top-of-casing
TSS	total suspended solids
mg/L	milligrams per liter
µg/L	micrograms per liter
VOCs	volatile organic compounds

PREFACE

The quarterly monitoring reports that are presented herein describe the procedures, analytical findings, and subsequent recommendations of the monitoring program at Operable Unit (OU) No.5 (Site 2), MCB Camp Lejeune, North Carolina. Figure P-1 depicts the location of OU No. 5. The monitoring reports have been prepared by Baker Environmental, Inc. and submitted to the USEPA - Region IV; the NC DEHNR; MCB Camp Lejeune Environmental Management Department; and to the Naval Facilities Engineering Command, Atlantic Division (LANTDIV).

The monitoring program at OU No.5 was implemented in response to the Record of Decision (ROD) document signed by MCB Camp Lejeune on September 15, 1994. The ROD for OU No.5 stipulates that groundwater samples from 12 monitoring wells and 3 base water supply wells be collected quarterly and submitted for specified laboratory analyses. The ROD also indicates that documentation in support of the selected remedy, groundwater monitoring, be maintained for periodic regulatory review.

The two principal objectives of the monitoring program at OU No.5 are as follows: (1) to prevent future human exposure to contaminated groundwater and (2) to insure, through monitoring, that there is no human or ecological exposure due to off-site migration of contaminants. The quarterly monitoring reports document the findings and provide interested parties with information required to authorize future decisions regarding OU No. 5. The information presented in the reports will be used to either extend, modify, or discontinue the monitoring program as necessary.

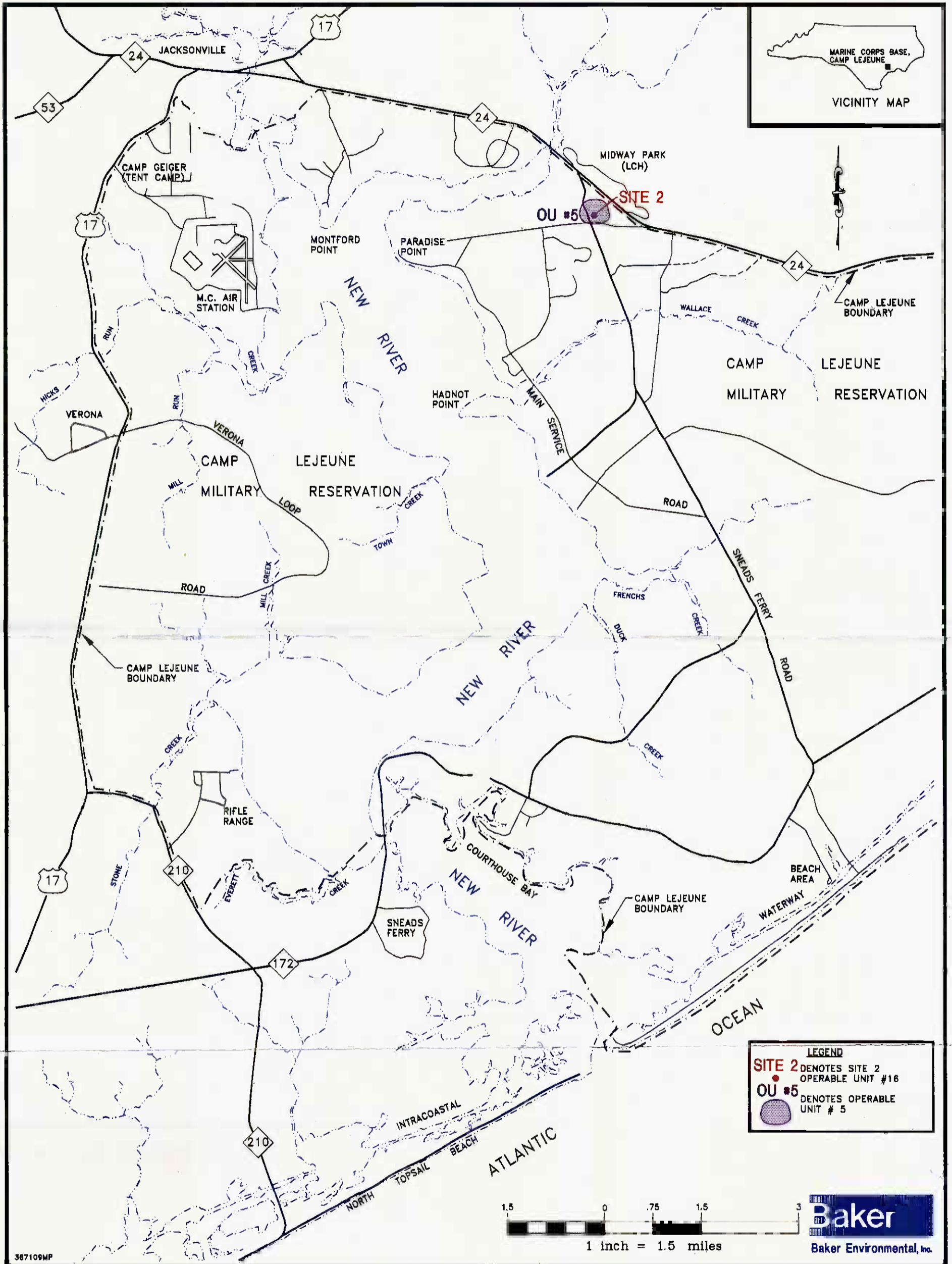


FIGURE P-1
 LOCATION MAP
 OPERABLE UNIT No. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO - 0367
 MARINE CORPS BASE, CAMP LEJEUNE
 NORTH CAROLINA

01706-TJ01V

1.0 INTRODUCTION

The following quarterly monitoring report presents the procedures, analytical findings, and subsequent recommendations from the monitoring program at Operable Unit No.5 (Site 2), MCB Camp Lejeune, North Carolina. The report describes the activities completed at Site 2 during the third quarter of 1996.

1.1 Report Organization

This quarterly monitoring report is comprised of three text sections. Section 1.0 describes sampling program procedures and methodology. Section 1.0 also provides groundwater elevation data, groundwater flow direction, and various field observations. Analytical results and findings are presented in the Section 2.0. A comparison of previous analytical results versus the most recent results is also included within Section 2.0. Finally, Section 3.0 presents recommendations to improve the quarterly sampling program at Site 2. All tables, figures, and attachments are provided after the text portion of this quarterly report.

1.2 Quarterly Sampling Program

The sampling program commenced on July 22, 1996 and continued through July 26, 1996. The sampling program consisted of groundwater collection and analysis from each of the 11 shallow monitoring wells at Site 2. In addition to the shallow wells, one deep monitoring well and three base water supply wells were also sampled as part of the quarterly monitoring effort. Figure 1-1 depicts the locations of both shallow and deep monitoring wells at Site 2; locations of the three base water supply wells are depicted in Figure 1-2.

One week prior to sampling, monitoring wells at Site 2 were redeveloped to remove fine-grained material from the well screens and to reestablish interconnection with the surrounding geologic formation. Ten of the 11 shallow monitoring wells (2-GW01 and 2-GW03 through 2-GW11) and the deep monitoring well (2-GW03DW) were redeveloped prior to sampling. One of the 11 shallow monitoring wells (2-GW02) could not be redeveloped because it had less than 14 inches of standing groundwater within the well casing. During redevelopment a Waterra™ pump was used to rapidly raise and lower dedicated 1/2-inch polyethylene tubing upon which a check valve and surge block were secured. Where conditions permitted, three to five well volumes were removed during redevelopment until the groundwater was essentially sediment-free. Measurements of pH, specific conductance, and temperature were recorded after each volume was removed to confirm groundwater parameter stabilization. The groundwater measurements compiled during redevelopment activities are provided as Attachment A.

During the quarterly sampling event, a low flow purge and sampling technique was employed. The sampling methodology was developed in response to conversations with USEPA Region IV personnel in Athens, Georgia. A peristaltic pump, with the intake set two to four feet above the bottom of the well, was used to purge each of the monitoring wells. While purging groundwater, a flow rate of less than 0.25 gallons per minute was maintained. Environmental samples were obtained directly from the pump discharge. Dedicated sections of polyethylene and silicon pump-head tubing were used during purge and sampling activities at each monitoring well.

A minimum of three well volumes were purged from each monitoring well prior to sampling. Supply wells were permitted to pump at their maximum sustainable pumping capacity until a minimum of three well volumes had been purged. Measurements of pH, specific conductance, dissolved oxygen,

temperature, and turbidity were recorded after each well volume was removed to ensure that groundwater characteristics had stabilized before sampling. These measurements were recorded in a field logbook and are provided in Table 1-1. Prior to groundwater purging, water level and total depth measurements from each monitoring well were obtained. Water level and well depth measurements were used to calculate the volume of water in each well and the volume of water necessary to purge the well. Published information regarding base water supply wells HP-616, HP-646, and HP-647 was used to calculate the amount of water required to purge three well volumes. Table 1-2 provides a summary of both monitoring well and supply well construction details.

Groundwater samples were collected to assess whether contamination, detected during previous investigative activities, was present in the shallow aquifer or had migrated to the deeper aquifer. Based upon previous quarterly monitoring results and decision documents, the contaminants of concern were volatile organic compounds (VOCs) and selected metals. Groundwater samples were analyzed for full target compound list (TCL) organics, selected target analyte list (TAL) total metals, total suspended solids (TSS), and total dissolved solids (TDS). Samples were preserved at the time of collection with hydrochloric acid for organic analyses, nitric acid for metal analyses, and sodium hydroxide for suspended and dissolved solid analyses. Table 1-3 provides a summary of requested analyses and groundwater samples submitted during the quarterly monitoring program. Groundwater samples were analyzed using various analytical methods, as provided in Table 1-3, and Level III Data Quality Objectives (DQOs). DQO Level III is equivalent to the Naval Facilities Engineering Service Center (NFESC) Level C, as specified in the "Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Programs" document. Table 1-4 provides the various analytical method detection limits and comparative state and federal groundwater quality standards.

Trip blanks were prepared prior to the sampling event, placed in sample storage containers, and kept with the investigative samples throughout the sampling event. The trip blanks were then packaged for shipment with the environmental samples and sent for analysis. Trip blanks were used to determine if samples were cross-contaminated during storage and transportation to the laboratory.

Sample information, including well number, sample identification, time and date of sample collection, samplers, analytical parameters, and required laboratory turnaround time, was recorded in a field logbook and on sample labels. Chain-of-custody documentation, provided in Attachment B, accompanied the groundwater samples to the laboratory. Chain-of-custody forms were then compared to the monitoring plan; this comparison was used to verify that appropriate laboratory analyses had been requested. Upon receipt of the laboratory analytical results, a further comparison was performed to verify that each sample was analyzed for the requested analyses. Sample tracking documentation is provided as Attachment C. The sample designation format used during the monitoring program at Site 2 is provided in Attachment D.

1.3 Groundwater Elevation and Flow Direction

Static water level measurements were collected after all well sampling activities had been completed. Measurements were recorded from top-of-casing (TOC) reference points marked on both shallow and deep monitoring well casings. Groundwater measurements were recorded to the nearest 0.01-foot using an electric measuring tape. Table 1-5 provides a summary of water level measurements collected on August 8, 1996. Figure 1-3 depicts the static elevations and approximate flow direction of groundwater at Site 2. Groundwater was determined to generally flow north-northeasterly toward Overs Creek, a tributary of Northeast Creek. A drainage ditch that lies on both sides of the MCB, Camp Lejeune Railroad appears to have some affect upon groundwater flow particularly in the

northern portion of the study area. To the east of monitoring well 2-GW09, a sloped embankment that runs parallel to the rail grade begins to become more pronounced. This rapid change in surface elevation may explain the more easterly component of groundwater flow from 2-GW09.

Localized groundwater flow, presented in Figure 1-3, should be considered an approximate interpretation of available elevation data. Static groundwater elevation data collected from shallow monitoring wells installed during the 1986 Confirmation Study were considered unreliable. As a result, groundwater contours were estimated over portions of the study area adjacent to shallow monitoring wells 2-GW01 through 2-GW05.

1.3 Field Observations

The following field observations were noted during the quarterly monitoring program. Recommendations regarding the field observations which follow are presented in Section 3.0.

Field measurements obtained during both development and purge activities at deep monitoring well 2-GW03DW suggest that bentonite clay, installed during well construction, has begun to enter the screen and sandpack. Measurements of groundwater pH were consistently greater than 11.9 standard units; deep wells typically have pH readings that range between 6.0 and 8.0 standard units. The presence of bentonite clay most likely has increased the alkalinity of extracted groundwater samples. Deep well 2-GW03DW was also pumped dry during development operations, which is abnormal for wells installed at similar depths. The sandpack is presumably being clogged with bentonite clay, limiting the ability of groundwater to enter the well screen. The static elevation of groundwater at 2-GW03DW, greater than 11 feet below mean sea level, may also support the assumption that both well screen and sandpack have been obstructed with bentonite clay. In addition, samplers have reported observing gray material suspended in groundwater samples. Bentonite clay may have entered the surrounding geologic formation and has been drawn to the screen during groundwater extraction activities. As a result, both screen and sandpack may become further restricted during future sampling events.

During redevelopment, four of the five monitoring wells that were installed in 1986 did not recharge adequately and often the extracted groundwater appeared turbid. As cited, well 2-GW02 was not redeveloped due to an insufficient amount of groundwater in the screened portion of the well casing. According to construction information presented in Table 1-2, at least 14 feet of static groundwater was expected within well 2-GW02. Following redevelopment, groundwater levels had not yet returned to within ten percent of their original static state in wells 2-GW01 and 2-GW04 after being allowed to recover for five days. These field observations suggest that older wells at Site 2 may have begun to deteriorate or that both well screen and sandpack are clogged with fine-grained material from the surrounding formation. In either case, shallow groundwater analytical results may be inaccurately represented. Environmental samples could possibly be obtained from only an uncontaminated interval of the surficial aquifer where groundwater is permitted to enter the well screen.

In addition to their suspected below-ground-surface deterioration, wells that were installed during the 1986 Confirmation Study appear to need above-ground maintenance. The paint on the bollards and protective casings of wells 2-GW01 through 2-GW05 has begun to peel and rust is present. Both the usability and security of each well at Site 2 should be maintained if they are going to remain groundwater sample collection points in the future.

2.0 ANALYTICAL RESULTS AND FINDINGS

The section which follows presents analytical results and findings from groundwater monitoring performed at Site 2 during the third quarter of 1996. This section focuses upon primary site concerns and is not intended to address all analytical results. The quarterly sampling program at Site 2 entailed the collection of groundwater samples from 11 shallow monitoring wells (2-GW01 through 2-GW11), one deep monitoring well (2-GW03DW), and three water supply wells (numbers 616, 646, and 647). Analytical results from the monitoring program at Site 2 are provided in the paragraphs which follow. A summary of groundwater analytical results is provided in Table 2-1. A positive detection summary of organic compounds, selected TAL metals, total dissolved solids, and total suspended solids is provided in Table 2-2.

Trip blanks accompanied the groundwater samples during field collection, shipment, and laboratory analysis. No organic compounds were detected in either of the two trip blanks submitted during the quarterly sampling program at Site 2. Analytical results from the two trip blanks are presented in Table 2-3.

2.1 Shallow Groundwater

Groundwater conditions within the upper portion of the surficial aquifer were evaluated through collection and analysis of samples from each of the 11 shallow monitoring wells at Site 2 (refer to Table 1-2 for well construction details). The subsections which follow provide not only the most recent analytical data, but a comparison of those results versus previous investigative results.

2.1.1 Volatile Organic Compounds

A total of six VOCs were detected among samples obtained from three of the shallow monitoring wells at Site 2. As depicted in Figure 2-1, positive VOC detections were limited to shallow wells 2-GW01, 2-GW03, and 2-GW06. Methylene chloride and ethylbenzene were detected at maximum concentrations of 1.0 and 130 micrograms per liter ($\mu\text{g/L}$), respectively. Methylene chloride and ethylbenzene were detected in two of the shallow groundwater samples. Chloroform, toluene, chlorobenzene and total xylenes were each detected once among the 11 shallow groundwater samples at concentrations of 1.0, 3.0, 1.0, and 1,200 $\mu\text{g/L}$.

As indicated in Table 2-1, the maximum concentrations of chloroform, ethylbenzene, and total xylenes exceeded applicable North Carolina Water Quality Standards (NCWQS). None of the positive VOC detections exceeded applicable Federal Maximum Contaminant Levels (MCLs), however. Ethylbenzene and total xylenes were detected in the sample obtained from monitoring well 2-GW03 at concentrations in excess of the 29 and 530 $\mu\text{g/L}$ NCWQS levels. The same two VOCs have also been detected during previous quarterly sampling events at concentrations exceeding water quality standards. Figures 2-2 and 2-3 depict ethylbenzene and total xylene concentrations since the inception of monitoring program activities at Site 2. Both VOCs have consistently been detected in shallow monitoring well 2-GW03 at levels exceeding applicable water quality standards. The same contaminants were identified in the Record of Decision (ROD) as potential contaminants of concern, particularly in samples obtained from 2-GW03.

Benzene, styrene, toluene, and 1,1,2-trichloroethane, among other VOCs, have been detected in well 2-GW03 during previous sampling activities. Analytical results from 2-GW03 suggest that selected contaminants remain in the southern portion of the study area. Adjacent shallow wells have not exhibited similar contaminants, indicating that contaminants have not migrated horizontally.

Previous monitoring results from the adjacent deep well, however, have exhibited positive detections of both toluene and total xylenes below 1.0 µg/L. These results imply that contaminants may have begun to migrate vertically. Attachment E provides all of the current and previous sampling results collected during the monitoring program at Site 2.

Chloroform was detected at a concentration of 1.0 µg/L, which exceeded the NCWQS of 0.19 µg/L, in a sample obtained from shallow well 2-GW06. No other volatile contaminants were detected at this location; however, the same compound was detected during a prior sampling event. As cited in Table 1-4, the method detection limit (MDL) for chloroform is 0.5 µg/L and the NCWQS is 0.19 µg/L. Previous sampling results may not have indicated the presence of chloroform at concentrations above the NCWQS, but below the MDL. In addition, chloroform is a common laboratory contaminant and may have been introduced during sample preparation. Substantiating evidence that confirms the presence of chloroform in groundwater at Site 2 will need to be provided during future sampling events.

2.1.2 Selected Total Metals

As presented in Table 2-2, target metals were detected in each of the 11 groundwater samples submitted for analysis from Site 2. Barium and manganese were the most frequently detected metals in samples obtained from the shallow aquifer. Both barium and manganese were detected in each of the 11 shallow groundwater samples. Beryllium, chromium and lead were detected in 5, 1, and 7 of the shallow groundwater samples, respectively. None of the positive metal detections exceeded either North Carolina standards or Federal MCLs.

2.1.3 Suspended and Dissolved Solids

Both TSS and TDS analyses were performed for each of the 11 shallow groundwater samples obtained at Site 2. Suspended solids were reported at concentrations ranging from 8 to 14 milligrams per liter (mg/L) in 10 of the 11 samples. Dissolved solids were reported in each of the shallow groundwater samples at concentrations between 82 and 230 mg/L. None of the positive dissolved solid levels exceeded the NCWQS of 500 mg/L.

2.2 Deep Groundwater

Groundwater conditions within the deeper, Castle Hayne Aquifer at Site 2 were evaluated through collection and analysis of samples from one deep monitoring well and three base water supply wells (refer to Section 1.0 for well locations and construction details). The subsections which follow provide not only the most recent analytical data, but a comparison of those results versus previous investigative results.

2.2.1 Volatile Organic Compounds

Methylene chloride was detected at a concentration of 1.0 µg/L in the sample obtained from supply well No. 616, located approximately 1,300 feet south of the study area. No other volatile contaminants were detected among the other four deep groundwater samples. Previous sampling results do not indicate the presence of methylene chloride in any of the samples obtained from the deep aquifer at Site 2. In addition, methylene chloride is a common laboratory contaminant and may have been introduced during sample preparation or analysis. Similar results will need to be observed before the presence of methylene chloride in supply well No. 616 can be confirmed. The absence

of positive fuel-related contaminants in samples obtained from the three supply wells near Site 2 suggests that similar VOCs have not migrated to those locations.

Previous sampling results from deep monitoring well 2-GW03DW indicate that selected VOCs may have begun to migrate vertically from the surficial aquifer. During the third sampling quarter of 1995 toluene was detected in 2-GW03DW at a concentration of 0.3 µg/L; total xylenes were then detected at a concentration of 0.1 µg/L during the fourth quarter of 1995. No other organic contaminants have been detected in any of the samples obtained from 2-GW03DW. Additional sampling data will be required before the presence of VOCs in the deep aquifer can be confirmed. In either case, however, none of the positive VOC detections in the deep aquifer exceeded applicable water quality standards.

2.2.2 Selected Total Metals

Barium, lead and manganese were detected in each of the samples obtained from the three supply wells and the deep monitoring well at Site 2. Beryllium and chromium were not detected in any of the supply wells, but were detected in monitoring well 2-GW03DW. A complete positive detection summary for total metals in groundwater is provided in Table 2-2.

As provided in Table 2-1, manganese was the only total metal detected at a concentration in excess of either state or federal screening standards. Manganese exceeded the NCWQS of 50 µg/L with a concentration of 186 µg/L in the sample obtained from deep monitoring well 2-GW03DW. Manganese has also been detected in well 2-GW03DW during previous quarterly sampling events at concentrations ranging from 11 to 1,290 µg/L. Three of the four remaining metals were detected at their respective maximum concentrations, among samples obtained from both the shallow and deep aquifers, in the sample obtained from 2-GW03DW. In general, higher concentrations of total metals are typically noted in samples obtained from the undifferentiated surficial formation.

As cited in Section 1.3, bentonite clay from well construction is suspected to have clogged the well screen and sandpack of deep monitoring well 2-GW03DW. Bentonite clay, as a result, may also have been introduced into groundwater samples obtained from the deep well. Clay minerals are made of sheetlike units joined by very weak bonding forces, relative to hydrogen and other ion bonding. Various ion substitutions for silica and aluminum in the clay are likely to take place in the presence of water, resulting in a relatively large cation exchange capacity and affinity for metallic ions (Bowels, 1984). An abundance of available metallic ions, particularly manganese, from the surrounding geologic formation may then be attracted to and bond with the bentonite clay. The presence of bentonite clay in groundwater samples may, therefore, falsely compound total metal analytical results.

2.2.3 Suspended and Dissolved Solids

Both TSS and TDS analyses were performed for each of the four deep groundwater samples obtained at Site 2. Suspended solids were reported at concentrations ranging from 9 to 11 mg/L in each of the deep groundwater samples. Dissolved solids were also reported in each sample, at concentrations ranging from 230 to 1,000 mg/L. Only the dissolved solid detection of 1,000 mg/L from well 2-GW03DW exceeded the NCWQS of 500 mg/L. The concentration of dissolved solids in deep monitoring well 2-GW03DW may substantiate the premise that bentonite clay has been artificially introduced to the surrounding geologic formation; consequently, the presence of bentonite clay may be reflected in sample analyses.

Previous groundwater analytical results from deep monitoring well 2-GW03DW have also suggested the presence of both suspended and dissolved solids at higher than typical concentrations. Suspended solids have been reported at concentrations ranging from 9 to 42,000 mg/L. Three of the four previous dissolved solid analytical results exceeded the NCWQS of 500 mg/L; TDS concentrations ranged between 56 and 876 mg/L.

3.0 RECOMMENDATIONS

Based upon the observations and findings presented in Sections 1.0 and 2.0, the subsections which follow detail recommendations of the monitoring program at Site 2. If non-significant changes are made to a component of the selected remedy described in the ROD (Baker, 1994a), they should be recorded in a post-decision document file; if significant changes are made, these changes will need to be documented in an Explanation of Significant Differences.

3.1 Modify Sampling Frequency

The ROD for Site 2 stipulates that groundwater samples from both monitoring and supply wells be collected quarterly. Possible off-site migration of known contaminants is monitored through quarterly groundwater sample collection and analysis. Groundwater monitoring was implemented to insure that potential human and ecological receptors would not be exposed to known site contaminants.

The majority of groundwater samples obtained from Site 2 have exhibited little or no contamination during previous sampling events. Only two contaminants, ethylbenzene and total xylenes, have consistently been detected in 1 of the 12 monitoring wells above state water quality standards. Ethylbenzene and total xylenes were also detected in the same well, 2-GW03, and at similar concentrations during the 1993 RI (Baker, 1994b). Ethylbenzene was also detected in shallow monitoring well 2-GW03 during the 1986 Confirmation Study (ES&E, 1990). In addition, analytical results from adjacent shallow monitoring wells do not suggest that contaminants have migrated from the area immediately surrounding 2-GW03. Based upon this information, a reduction in the number of yearly sampling events from four to two is recommended.

3.2 Abandon and Replace Deep Monitoring Well

Recorded field observations suggest that bentonite clay, installed during well construction, has begun to enter the screen and sandpack of deep monitoring well 2-GW03DW. The sandpack is presumably being clogged with bentonite clay, limiting the ability of groundwater to enter the well screen. Bentonite clay, as a result, may also have been introduced into groundwater samples obtained from the deep well. The presence of bentonite clay in groundwater samples could falsely bias total metal analytical results. As cited, manganese was the only total metal detected at a concentration in excess of either state or federal screening standards among all 15 groundwater samples obtained from Site 2. Total dissolved solids have also been detected at concentrations in excess of the state screening standard in well 2-GW03DW. Based upon this information, it is recommended that well 2-GW03DW be abandoned according to accepted procedures.

Deep monitoring well 2-GW03DW is located within 50 feet of shallow monitoring well 2-GW03. The screened portion of 2-GW03DW is below a semi-confining unit that separates the surficial and Castle Hayne aquifers. The Test Boring and Well Construction Record for deep monitoring well 2-GW03DW is presented in Attachment F. As provided in Section 2.0, both ethylbenzene and total xylenes were detected at concentrations exceeding applicable water quality standards in well 2-GW03. Although both ethylbenzene and total xylenes were detected at concentrations below 1.0 µg/L in 2-GW03DW during a previous monitoring event, their presence has not been confirmed by additional positive detections. In order to determine whether volatile contaminants have migrated to the deeper portion of the shallow aquifer it is recommended that an intermediate well be installed immediately above the semi-confining unit. The recommended intermediate well should be located adjacent to shallow monitoring well 2-GW03 and extend to a depth of approximately 60 feet below

ground surface. If contaminants are detected immediately above the semi-confining unit, a deep well may need to be reinstalled in the Castle Hayne Aquifer.

3.3 Abandon and Replace Shallow Monitoring Wells

Recorded field observations suggest that three of the five monitoring wells installed at Site 2 during 1986 have begun to deteriorate or that both well screen and sandpack are clogged with fine-grained material from the surrounding formation. During redevelopment, monitoring wells 2-GW01 and 2-GW04 did not recharge adequately and often the extracted groundwater appeared very turbid. Well 2-GW02 was not redeveloped due to an insufficient amount of groundwater in the screened portion of the well casing. As a result of deterioration or obstruction, environmental samples could possibly be obtained from only an uncontaminated interval of the surficial aquifer where groundwater is permitted to enter the well screen, inaccurately representing true groundwater conditions. Based upon this information, it is recommended that wells 2-GW01, 2-GW02, and 2-GW04 be abandoned according to accepted procedures and replaced by similarly constructed shallow monitoring wells.

3.4 Maintain Well Security and Aesthetics

Shallow monitoring wells that were installed during the 1986 Confirmation Study have begun to show signs of deterioration. The bollards and protective casings of wells 2-GW01 through 2-GW05 have developed peeling paint and rust. In addition, a number of the padlocks used to secure the protective covers are either missing or no longer function properly. Both the usability and security of each monitoring well should be maintained if they are going to remain reliable groundwater sample collection points in the future. As suggested, the bollards and well casings should be painted with a weather and rust resistant paint. New padlocks that operate with a universal key should be installed on each of the monitoring wells at Site 2.

4.0 REFERENCES

Baker Environmental, Incorporated (Baker). 1994a. Record of Decision for Operable Unit No. 5 (Site 2), Marine Corps Base Camp Lejeune, North Carolina. Final. Prepared for the Department of the Navy Atlantic Division Naval Facilities Engineering Command, Norfolk, Virginia.

Baker Environmental, Incorporated (Baker). 1994b. Remedial Investigation Report for Operable Unit No. 5 (Site 2), Marine Corps Base Camp Lejeune, North Carolina. Final. Prepared for the Department of the Navy Atlantic Division Naval Facilities Engineering Command, Norfolk, Virginia.

Bowels, Joseph E., Physical and Geotechnical Properties of Soils, second edition McGraw-Hill Inc., 1984.

Environmental Science & Engineering (ES&E). 1990. Site Summary Report. Final. Prepared for the Department of the Navy Atlantic Division Naval Facilities Engineering Command, Norfolk, Virginia. ESE Project No. 49-02036.

TABLES

TABLE 1-1

**SUMMARY OF GROUNDWATER FIELD PARAMETERS
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA**

Well Number	Measuring Time	Well Volumes	Field Parameters				
			Dissolved Oxygen	Specific Conductance $\mu\text{mhos/cm}$	Temperature ($^{\circ}\text{C}$)	pH (S.U.)	Turbidity (N.T.U)
2-GW01	0055	0	3.00	227.6	23.7	5.52	>200
	1002	1.0	4.25	224.9	23.7	5.50	33.0
	1012	1.5	4.75	226.6	23.4	6.02	69.5
	1016	2.0	4.50	224.9	23.3	6.23	57.5
	1025	2.5	5.00	224.9	23.6	5.44	3.8
	1040	3.0	5.00	222.5	24.2	5.40	20.1
	1045	3.5	4.50	225.4	24.1	5.32	30.1
2-GW02	0940	0	1.25	180.4	22.8	6.16	71.0
	0945	1.0	1.25	178.1	23.5	6.05	68.0
	1002	2.0	1.25	150.0	21.9	5.89	100.0
	1009	3.0	0.75	147.5	21.7	5.84	36.0
	1016	4.0	1.50	145.3	22.2	6.68	19.0
	1022	5.0	1.75	144.3	24.2	6.51	10.0
2-GW03	1621	0	2.25	135.2	23.2	5.19	0.5
	1625	0.5	2.75	131.7	22.2	5.16	0.9
	1632	1.0	2.00	130.8	22.5	5.17	1.2
	1645	1.5	2.50	129.7	21.7	5.13	1.1
	1655	2.0	2.75	129.9	21.8	5.24	1.7
	1704	3.0	4.25	132.0	21.8	5.25	0.2
2-GW03DW	1110	0	1.25	2887	21.4	4.16	1.8
	1130	1.0	1.20	2667	20.9	12.04	42.0
	1154	2.0	3.25	2645	21.9	11.63	14.0
2-GW04	1136	0	1.75	159.0	25.4	5.65	35.0
	1143	1.0	1.75	157.0	24.3	5.50	7.0
	1150	2.0	2.15	155.0	24.3	5.69	4.0
	1156	3.0	2.00	155.0	24.2	5.69	3.0
2-GW05	1345	0	3.75	259.4	23.3	5.16	1.1
	1351	0.5	2.50	245.2	22.6	5.04	5.1
	1400	1.0	2.00	245.3	23.0	5.09	4.8
	1407	2.0	2.25	247.7	23.0	5.06	2.5
	1424	3.0	2.75	248.9	23.0	5.31	1.2
2-GW06	1344	0	3.20	267.0	21.1	4.41	48.0
	1405	1.0	2.80	248.0	21.7	4.46	35.0
	1421	2.0	2.15	264.0	21.8	4.42	20.0
	1441	3.0	2.30	275.0	23.3	4.31	11.0

TABLE 1-1 (Continued)

SUMMARY OF GROUNDWATER FIELD PARAMETERS
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-0367
 MCB, CAMP LEJEUNE, NORTH CAROLINA

Well Number	Measuring Time	Well Volumes	Field Parameters				
			Dissolved Oxygen	Specific Conductance $\mu\text{mhos/cm}$	Temperature ($^{\circ}\text{C}$)	pH (S.U.)	Turbidity (N.T.U)
2-GW07	1616	0	1.20	223.0	23.2	5.28	19.0
	1642	1.0	0.75	243.0	25.3	5.14	2.3
	1710	2.0	1.30	260.0	24.6	5.21	2.5
	1724	3.0	1.75	254.2	24.6	5.34	2.9
2-GW08	1105	0	3.00	205.3	23.7	4.22	13.6
	1117	0.5	3.25	190.6	22.1	4.47	6.7
	1128	1.0	3.50	183.6	23.0	4.23	6.8
	1140	1.5	2.50	183.6	23.8	4.65	14.6
	1149	2.0	3.00	182.1	24.1	4.34	11.4
	1156	2.5	4.50	185.5	23.1	4.33	6.0
	1210	3.0	4.75	195.8	25.1	4.50	3.0
2-GW09	1016	0	3.00	387.5	21.6	4.14	6.3
	1026	0.5	2.75	362.5	21.5	4.04	5.7
	1037	1.0	3.25	846.1	22.1	4.14	7.1
	1045	1.5	3.75	334.0	22.4	4.16	5.7
	1055	2.0	3.50	343.8	22.4	3.76	5.4
	1105	2.5	3.00	354.4	22.2	3.74	5.1
	1115	3.0	3.25	365.5	21.7	3.74	5.2
2-GW10	0915	0	2.50	418.9	23.0	6.33	24.0
	0920	1.0	2.00	385.7	25.3	6.27	5.0
	0925	1.5	2.50	343.2	25.1	6.25	5.3
	0930	2.0	2.25	338.6	25.1	6.14	4.8
	0934	2.5	2.00	333.3	24.9	6.22	4.4
	0940	3.0	2.50	331.5	24.8	6.23	3.5
2-GW11	1135	0	1.25	279.3	23.0	5.28	87.2
	1141	1.0	2.00	261.7	24.6	5.21	17.9
	1146	1.5	1.25	288.3	24.9	5.18	7.5
	1151	2.0	2.00	242.6	24.2	5.26	3.9
	1159	2.5	2.75	228.4	24.8	5.33	1.3
	1204	3.0	1.75	219.4	24.4	5.32	1.8
HP-616 (Supply Well)	0920	1.0	2.00	290.6	20.0	7.40	3.0
	0933	2.0	1.00	286.2	19.8	7.31	0.1
	0946	3.0	1.25	288.7	19.7	7.23	0.6
	0955	4.0	1.75	290.2	19.5	7.18	0.4

TABLE 1-1 (Continued)

**SUMMARY OF GROUNDWATER FIELD PARAMETERS
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA**

Well Number	Measuring Time	Well Volumes	Field Parameters				
			Dissolved Oxygen	Specific Conductance $\mu\text{mhos/cm}$	Temperature ($^{\circ}\text{C}$)	pH (S.U.)	Turbidity (N.T.U)
HP-646 (Supply Well)	0813	1.0	2.00	351.2	18.2	7.13	0.0
	0818	2.0	1.75	300.9	18.3	7.20	0.2
	0822	3.0	2.00	302.3	18.4	7.26	0.2
	0825	4.0	2.25	302.6	18.4	7.27	0.1
HP-647 (Supply Well)	0853	2.0	1.75	329.3	18.2	7.43	1.0
	0857	2.0	1.50	319.4	18.2	7.34	0.2
	0900	3.0	2.00	311.8	18.2	7.27	0.0
	0903	4.0	2.00	309.5	18.3	7.19	0.0

Notes:

- N.T.U. = Nephelometric Turbidity Units
- S.U. = Standard Units
- $\mu\text{mhos/cm}$ = micro ohms per centimeter
- $^{\circ}\text{C}$ = Degrees Centigrade

TABLE 1-2

SUMMARY OF WELL CONSTRUCTION DETAILS
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO - 0367
 MCB CAMP LEJEUNE, NORTH CAROLINA

Monitoring Well Number	Date Installed	Top of Casing Elevation (feet, msl)	Ground Surface Elevation (feet, msl)	Boring Depth (feet, bgs)	Well Depth (feet, bgs)	Screen Interval Depth (feet, bgs)	Depth to Sand Pack (feet, bgs)	Depth to Bentonite (feet, bgs)	Stick-Up (feet, ags)
2-GW01	1984	34.15	32.30	NA	25.0	10.0 to 25.0	NA	NA	2.0
2-GW02	1984	34.15	31.90	NA	25.0	10.0 to 25.0	NA	NA	NA
2-GW03	1984	35.40	33.00	NA	25.0	10.0 to 25.0	NA	NA	NA
2-GW03DW	1993	36.07	33.10	100.0	100.0	90.0 to 100.0	85.0	83.0	3.0
2-GW04	1984	32.73	30.70	NA	25.0	10.0 to 25.0	NA	NA	NA
2-GW05	1984	33.72	31.80	NA	25.0	10.0 to 25.0	NA	NA	NA
2-GW06	1993	34.40	31.8	12.5	12.5	2.6 to 12.6	1.5	0.5	2.6
2-GW07	1993	34.03	31.6	16.0	13.0	3.0 to 13.0	2.0	1.0	2.4
2-GW08	1993	34.92	31.90	12.5	12.5	2.5 to 12.5	1.5	0.5	3
2-GW09	1993	35.02	32.60	13.0	13.0	3.0 to 13.0	2.0	1.0	2.4
2-GW10	1994	32.28	32.47	15.0	13.5	3.5 to 13.5	2.5	1.5	3.5
2-GW11	1994	35.20	33.94	15.0	14.0	1.0 to 14.0	3.0	2.0	3
HP-616 ⁽¹⁾	1942	NA	33.30	NA	170.0	95.0 to 115.0	NA	NA	NA
		NA	NA	NA	NA	130.0 to 140.0	NA	NA	NA
		NA	NA	NA	NA	160.0 to 170.0	NA	NA	NA
HP-646 ⁽¹⁾	1971	NA	26.00	NA	270.0	90.0 to 100.0	NA	NA	NA
		NA	NA	NA	NA	240.0 to 250.0	NA	NA	NA
		NA	NA	NA	NA	255.0 to 265.0	NA	NA	NA
HP-647 ⁽¹⁾	1970	NA	33.00	NA	200.0	105.0 to 115.0	NA	NA	NA
		NA	NA	NA	NA	138.0 to 143.0	NA	NA	NA
		NA	NA	NA	NA	175.0 to 190.0	NA	NA	NA

Notes:

⁽¹⁾ Water Supply Well
 msl = Mean Sea Level
 bgs = Below ground surface

NA = Information not available
 ags = Above ground surface

TABLE 1-3

**GROUNDWATER SAMPLING SUMMARY
OPERABLE UNIT NO.5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA**

Sample Location	Media	TCL Volatiles ⁽¹⁾	Selected TAL Metals ⁽²⁾	Total Dissolved Solids ⁽³⁾	Total Suspended Solids ⁽³⁾	Sample Identification
2-GW01	GW	X	X	X	X	02-GW01-96C
2-GW02	GW	X	X	X	X	02-GW02-96C
2-GW03	GW	X	X	X	X	02-GW03-96C
2-GW03DW	GW	X	X	X	X	02-GW03DW-96C
2-GW04	GW	X	X	X	X	02-GW04-96C
2-GW05	GW	X	X	X	X	02-GW05-96C
2-GW06	GW	X	X	X	X	02-GW06-96C
2-GW07	GW	X	X	X	X	02-GW07-96C
2-GW08	GW	X	X	X	X	02-GW08-96C
2-GW09	GW	X	X	X	X	02-GW09-96C
2-GW10	GW	X	X	X	X	02-GW10-96C
2-GW11	GW	X	X	X	X	02-GW11-96C
616 ⁽⁴⁾	GW	X	X	X	X	02-PRW616-96C
646 ⁽⁴⁾	GW	X	X	X	X	02-PRW646-96C
647 ⁽⁴⁾	GW	X	X	X	X	02-PRW646-96C

Notes:

- ⁽¹⁾ Target Compound List Organics by Environmental Protection Agency (EPA) Method 8260.
- ⁽²⁾ Selected Target Analyte List Metals (Barium, Beryllium, Cadmium, Chromium, Lead and Manganese) by Solid Waste Method 6010.
- ⁽³⁾ Total Suspended and Dissolved Solids by EPA Method 160.
- ⁽⁴⁾ Water Supply Well

X = Requested Analysis

TABLE 1-4

**ANALYTICAL METHOD DETECTION LIMITS
OPERABLE UNIT NO.5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA**

Parameter	Analytical Method	MDL	NCWQS	MCL
Volatile Organics µg/L:				
Chloromethane	8260	0.5	NA	NA
Vinyl Chloride	8260	0.5 ⁽¹⁾	0.015	2
Bromomethane	8260	0.5	NA	NA
Chloroethane	8260	0.5	NA	NA
1,1-dichloroethene	8260	0.5	7	7
Acetone	8260	2	700	NA
Carbon Disulfide	8260	2	700	NA
Methylene Chloride	8260	0.5	5	5
1,2-dichloroethene (Total)	8260	0.5	70	70
1,1-dichloroethane	8260	0.5	700	NA
2-butanone	8260	2	NA	NA
Chloroform	8260	0.5 ⁽¹⁾	0.19	100
1,1,1-trichloroethane	8260	0.5	200	200
Carbon Tetrachloride	8260	0.5 ⁽¹⁾	0.3	5
Benzene	8260	0.5	1	5
1,2-dichloroethane	8260	0.5 ⁽¹⁾	0.38	5
Trichloroethene	8260	0.5	NA	5
1,2-dichloropropane	8260	0.5	0.56	5
Bromodichloromethane	8260	0.5	0.6	100
Cis-1,3-dichloropropene	8260	0.5	NA	NA
4-methyl-2-pentanone	8260	2	NA	NA
Toluene	8260	0.5	1000	1000
Trans-1,3-dichloropropene	8260	0.5 ⁽¹⁾	0.2	NA
1,1,2-trichloroethane	8260	0.5	NA	5
Tetrachloroethene	8260	0.5	0.7	5
2-hexanone	8260	2	NA	NA
Dibromochloromethane	8260	0.5	NA	NA
Chlorobenzene	8260	0.5	50	100
Ethylbenzene	8260	0.5	29	700
Xylene, Total	8260	0.5	530	10000
Styrene	8260	0.5	100	100
Bromoform	8260	0.5 ⁽¹⁾	0.19	100
1,1,2,2-tetrachloroethane	8260	0.5	NA	NA

TABLE 1-4 (Continued)

**ANALYTICAL METHOD DETECTION LIMITS
OPERABLE UNIT NO.5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA**

Parameter	Analytical Method	MDL	NCWQS	MCL
Metals (µg/L):				
Barium, Total	6010A	1.4	2000	2000
Beryllium, Total	6010A	0.7	NA	4
Cadmium, Total	6010A	2.6	5	5
Chromium, Total	6010A	3.3	50	100
Lead, Total	7421	1.2	15	15
Manganese, Total	6010A	1.6	NA	50
Wet Chemistry (mg/L):				
Total Dissolved Solids	SW846160.1	10	500	500
Total Suspended Solids	SW846160.2	5	NA	NA

Notes:

⁽¹⁾ Method Detection Limit greater than North Carolina Water Quality Standard

- MCL = Federal Maximum Contaminant Level. Maximum permissible level of a contaminant in water which is delivered to any user of a public water system. (U.S. Environmental Protection Agency - Drinking Water Regulations and Health Advisories.)
- MDL = Method Detection Limit
- NA = standard not available
- NCWQS = North Carolina Water Quality Standards. Values Applicable to Groundwater (North Carolina Administrative Code, Title 15A, Subchapter 2L).
- mg/L = milligrams per liter or parts per million
- µg/L = micrograms per liter or parts per billion

TABLE 1-5

SUMMARY OF WATER LEVEL MEASUREMENTS
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

Well Identification	Reference Elevation ⁽¹⁾	SWL (August 8, 1996)	SWE (August 8, 1996)
2-GW01	34.15	7.13	27.02
2-GW02	34.15	25.51	8.64
2-GW03	35.40	15.17	20.23
2-GW03DW	36.07	47.71	-11.64
2-GW04	32.73	11.12	21.61
2-GW05	33.72	15.48	18.24
2-GW06	34.40	2.79	31.61
2-GW07	34.03	3.97	30.06
2-GW08	34.92	3.18	31.74
2-GW09	35.02	3.60	31.42
2-GW10	32.28	4.99	27.29
2-GW11	35.20	6.23	28.97

Notes:

- ⁽¹⁾ Top of well casing in feet above mean sea level (msl)
- SWL = Static water level taken from top of well casing
- SWE = Static water elevation in feet above msl

TABLE 2-1

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
OPERABLE UNIT No. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

Fraction (units)	Detected Contaminants or Analytes	Comparison Criteria		Min.	Max.	Location(s) of Maximum Detection	Detection Frequency	Detections Above		Qualitative Assessment of Positive Detections
		NCWQS	MCL					NCWQS	MCL	
Volatile Organics (µg/L)	Methylene Chloride	5	5	0.9	1.0	GW06 & PRW616	3/15	0/15	0/15	Common laboratory contaminant
	Chloroform	0.19	100	1.0	1.0	GW06	1/15	1/15	0/15	1 Exceeds NCWQS, laboratory contaminant
	Toluene	1,000	1,000	3.0	3.0	GW03	1/15	0/15	0/15	Did not exceed screening standards
	Ethylbenzene	29	700	1.0	130	GW03	2/15	1/15	0/15	1 Exceeds NCWQS
	Chlorobenzene	50	100	1.0	1.0	GW03	1/15	0/15	0/15	Did not exceed screening standards
	Xylene (Total)	530	10,000	1,200	1,200	GW03	1/15	1/15	0/15	1 Exceeds NCWQS
Total Metals (µg/L)	Barium, Total	2,000	2,000	3.8	1150	GW03DW	15/15	0/15	0/15	Did not exceed screening standards
	Beryllium, Total	NE	4	0.7	1.5	GW06	6/15	NA	0/15	Did not exceed MCL
	Chromium, Total	50	100	4.3	21.3	GW03DW	2/15	0/15	0/15	Did not exceed screening standards
	Lead, Total	15	15	1.3	13.7	GW03DW	11/15	0/15	0/15	Did not exceed screening standards
	Manganese, Total	50	NE	6.1	186	GW03DW	15/15	1/15	NA	1 Exceeds NCWQS
Wet Chemistry (mg/L)	Total Dissolved Solids	500	NE	82	1,000	GW03DW	15/15	1/15	NA	1 Exceeds NCWQS
	Total Suspended Solid	NE	NE	8	290	GW03DW	14/15	NA	NA	No screening standards applicable

Notes:

- Concentrations presented in micrograms per liter (µg/L) or parts per billion for organic and metal results, wet chemistry results presented in milligrams per liter (mg/L) or parts per million.

NA - Not applicable

NCWQS - North Carolina Water Quality Standards (North Carolina Administrative Code, Title 15A, Subchapter 2L).

NE - Not Established

MCL - Federal Maximum Contaminant Level. Maximum permissible level of a contaminant in water which is delivered to any user of a public water system (U.S. Environmental Protection Agency - Drinking Water Regulations and Health Advisories).

TABLE 2-2
POSITIVE DETECTIONS IN GROUNDWATER
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	02-GW01-96C	02-GW02-96C	02-GW03-96C	02-GW03DW-96C	02-GW04-96C	02-GW05-96C
DATE SAMPLED	07/23/96	07/23/96	07/23/96	07/25/96	07/23/96	07/23/96
VOLATILES (ug/L)						
METHYLENE CHLORIDE	0.5 U	0.5 U	0.9	0.5 U	0.5 U	0.5 U
CHLOROFORM	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TOLUENE	0.5 U	0.5 U	3	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	0.5 U	0.5 U	1	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	1	0.5 U	130	0.5 U	0.5 U	0.5 U
XYLENE (TOTAL)	0.5 U	0.5 U	1200	0.5 U	0.5 U	0.5 U
TOTAL METALS (ug/L)						
BARIUM, TOTAL	43.3	38.5	44.2	1150	89.1	87.8
BERYLLIUM, TOTAL	0.7 U	0.72	0.7 U	1	1.3	1.5
CHROMIUM, TOTAL	3.3 U	3.3 U	3.3 U	21.3	3.3 U	3.3 U
LEAD, TOTAL	1.2 U	1.2 U	3.1	13.7	1.6	1.2 U
MANGANESE, TOTAL	42.8	6.1	11.8	186	15	39.4
WET CHEMISTRY (mg/L)						
TOTAL DISSOLVED SOLIDS	190	82	110	1000	110	220
TOTAL SUSPENDED SOLIDS	10	12	9	290	10	10

ug/L - micrograms per liter
mg/L - milligrams per liter
U - not detected

**TABLE 2-2
 POSITIVE DETECTIONS IN GROUNDWATER
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-0367
 MCB, CAMP LEJEUNE, NORTH CAROLINA**

SAMPLE ID	02-GW06-96C	02-GW07-96C	02-GW08-96C	02-GW09-96C	02-GW10-96C	02-GW11-96C
DATE SAMPLED	07/23/96	07/23/96	07/24/96	07/25/96	07/25/96	07/23/96
VOLATILES (ug/L)						
METHYLENE CHLORIDE	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROFORM	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TOLUENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
XYLENE (TOTAL)	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TOTAL METALS (ug/L)						
BARIUM, TOTAL	92.5	82.2	67	49.6	38.6	75.1
BERYLLIUM, TOTAL	0.89	0.7 U	0.7 U	1.2	0.7 U	0.7 U
CHROMIUM, TOTAL	3.3 U	4.3	3.3 U	3.3 U	3.3 U	3.3 U
LEAD, TOTAL	2.2	2.7	2.4	2.3	1.3	1.2 U
MANGANESE, TOTAL	24	29.5	38.4	35.7	11.9	34.5
WET CHEMISTRY (mg/L)						
TOTAL DISSOLVED SOLIDS	170	190	120	230	190	150
TOTAL SUSPENDED SOLIDS	14	12	10	5 U	12	8

ug/L - micrograms per liter
 mg/L - milligrams per liter
 U - not detected

TABLE 2-2
POSITIVE DETECTIONS IN GROUNDWATER
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	02-PRW616-96C	02-PRW646-96C	02-PRW647-96C
DATE SAMPLED	07/24/96	07/24/96	07/24/96
VOLATILES (ug/L)			
METHYLENE CHLORIDE	1	0.5 U	0.5 U
CHLOROFORM	0.5 U	0.5 U	0.5 U
TOLUENE	0.5 U	0.5 U	0.5 U
CHLOROBENZENE	0.5 U	0.5 U	0.5 U
ETHYLBENZENE	0.5 U	0.5 U	0.5 U
XYLENE (TOTAL)	0.5 U	0.5 U	0.5 U
TOTAL METALS (ug/L)			
BARIUM, TOTAL	6.4	3.8	11
BERYLLIUM, TOTAL	0.7 U	0.7 U	0.7 U
CHROMIUM, TOTAL	3.3 U	3.3 U	3.3 U
LEAD, TOTAL	1.3	2.2	3.7
MANGANESE, TOTAL	20.2	21.7	21.2
WET CHEMISTRY (mg/L)			
TOTAL DISSOLVED SOLIDS	230	240	230
TOTAL SUSPENDED SOLIDS	11	10	9

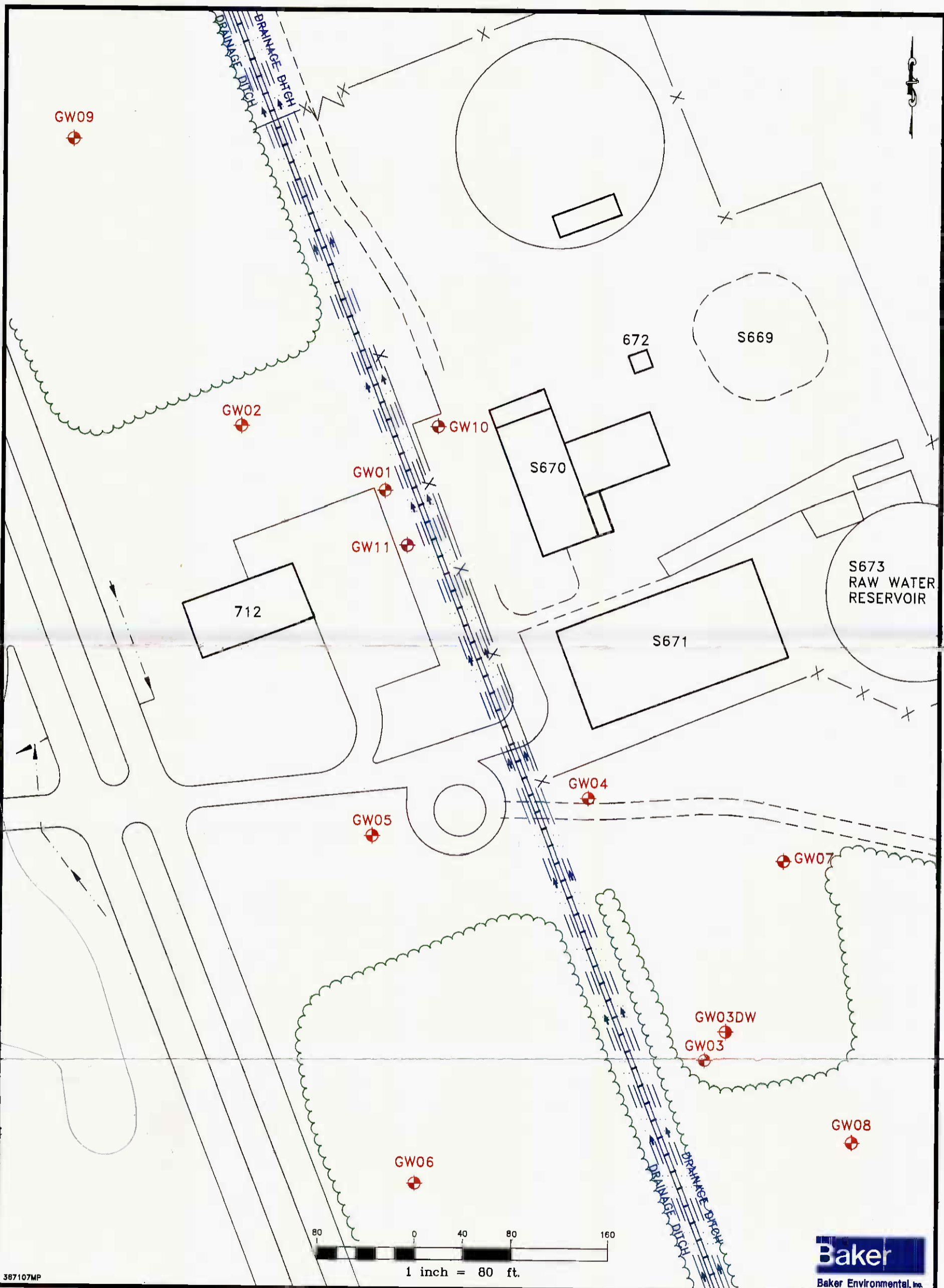
ug/L - micrograms per liter
mg/L - miligrams per liter
U - not detected

TABLE 2-3
TRIP BLANK ANALYTICAL RESULTS
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA

SAMPLE ID	02-TB01-96C	02-TB02-96C
DATE SAMPLED	07/23/96	07/25/96
UNITS	ug/L	ug/L
VOLATILES		
CHLOROMETHANE	0.5 U	0.5 U
VINYL CHLORIDE	0.5 U	0.5 U
BROMOMETHANE	0.5 U	0.5 U
CHLOROETHANE	0.5 U	0.5 U
1,1-DICHLOROETHENE	0.5 U	0.5 U
ACETONE	2 U	2 U
CARBON DISULFIDE	2 U	2 U
METHYLENE CHLORIDE	0.5 U	0.5 U
1,2-DICHLOROETHENE (TOTAL)	0.5 U	0.5 U
1,1-DICHLOROETHANE	0.5 U	0.5 U
2-BUTANONE	2 U	2 U
CHLOROFORM	0.5 U	0.5 U
1,1,1-TRICHLOROETHANE	0.5 U	0.5 U
CARBON TETRACHLORIDE	0.5 U	0.5 U
BENZENE	0.5 U	0.5 U
1,2-DICHLOROETHANE	0.5 U	0.5 U
TRICHLOROETHENE	0.5 U	0.5 U
1,2-DICHLOROPROPANE	0.5 U	0.5 U
BROMODICHLOROMETHANE	0.5 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.5 U	0.5 U
4-METHYL-2-PENTANONE	2 U	2 U
TOLUENE	0.5 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.5 U	0.5 U
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U
TETRACHLOROETHENE	0.5 U	0.5 U
2-HEXANONE	2 U	2 U
DIBROMOCHLOROMETHANE	0.5 U	0.5 U
CHLOROBENZENE	0.5 U	0.5 U
ETHYLBENZENE	0.5 U	0.5 U
XYLENE (TOTAL)	0.5 U	0.5 U
STYRENE	0.5 U	0.5 U
BROMOFORM	0.5 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.5 U	0.5 U

NOTES
ug/L = micrograms per liter
U = not detected

FIGURES



387107MP

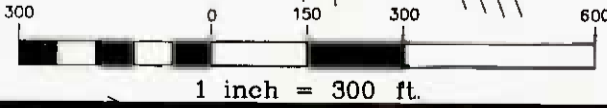
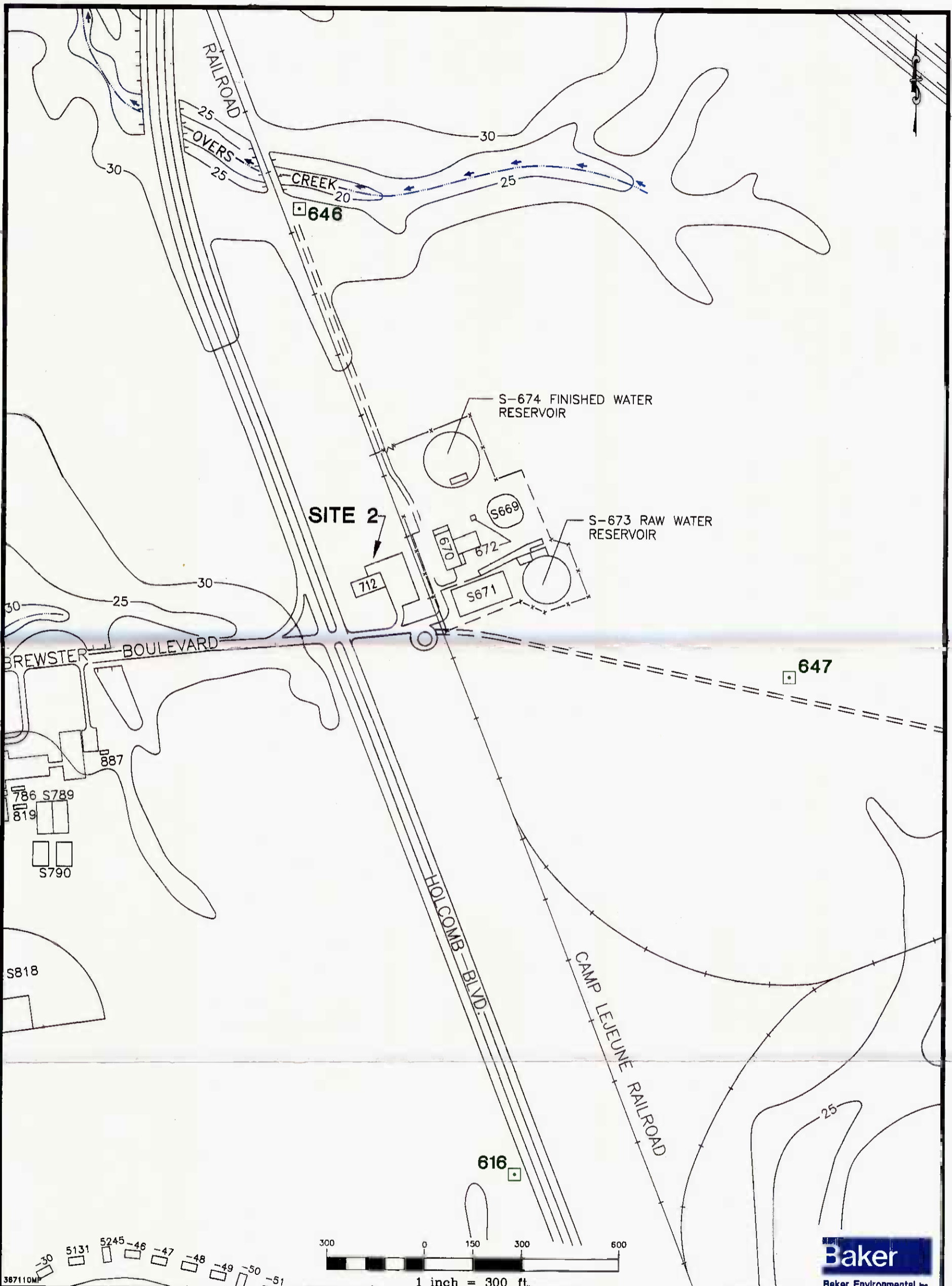
LEGEND

- GW02 SHALLOW MONITORING WELL
- GW03DW DEEP MONITORING WELL
- DIRECTION OF SURFACE WATER FLOW

FIGURE 1-1
MONITORING WELL LOCATION MAP
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO - 0367

MARINE CORPS BASE, CAMP LEJEUNE
 NORTH CAROLINA



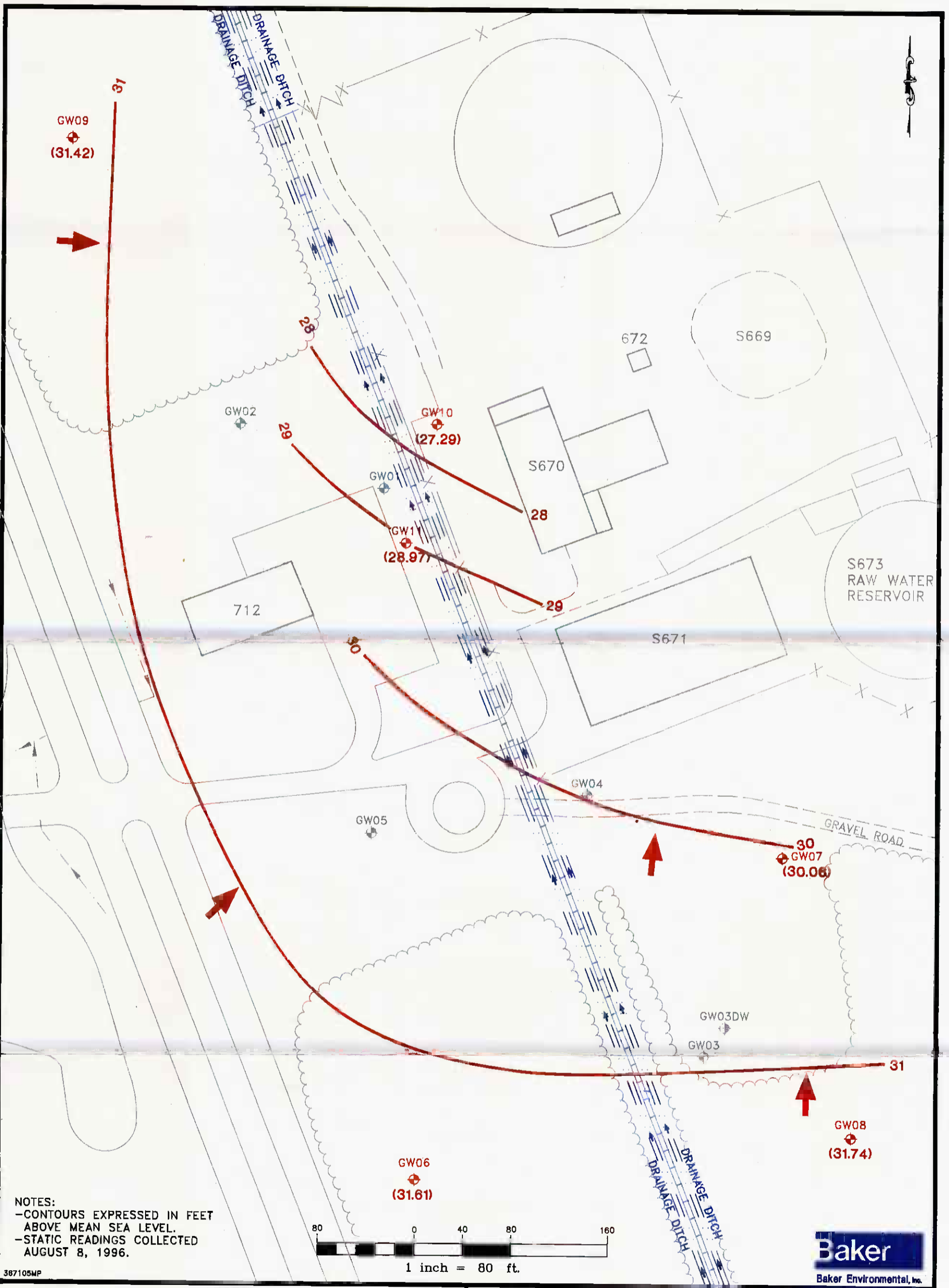


LEGEND

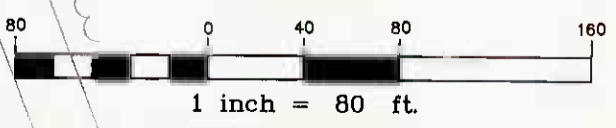
- 616** WATER SUPPLY WELL
- DIRECTION OF SURFACE WATER

FIGURE 1-2
SUPPLY WELL LOCATION MAP
 OPERABLE UNIT No. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO - 0367
 MARINE CORPS BASE, CAMP LEJEUNE
 NORTH CAROLINA

SOURCE: LANTDIV, FEB. 1992



NOTES:
 -CONTOURS EXPRESSED IN FEET ABOVE MEAN SEA LEVEL.
 -STATIC READINGS COLLECTED AUGUST 8, 1996.



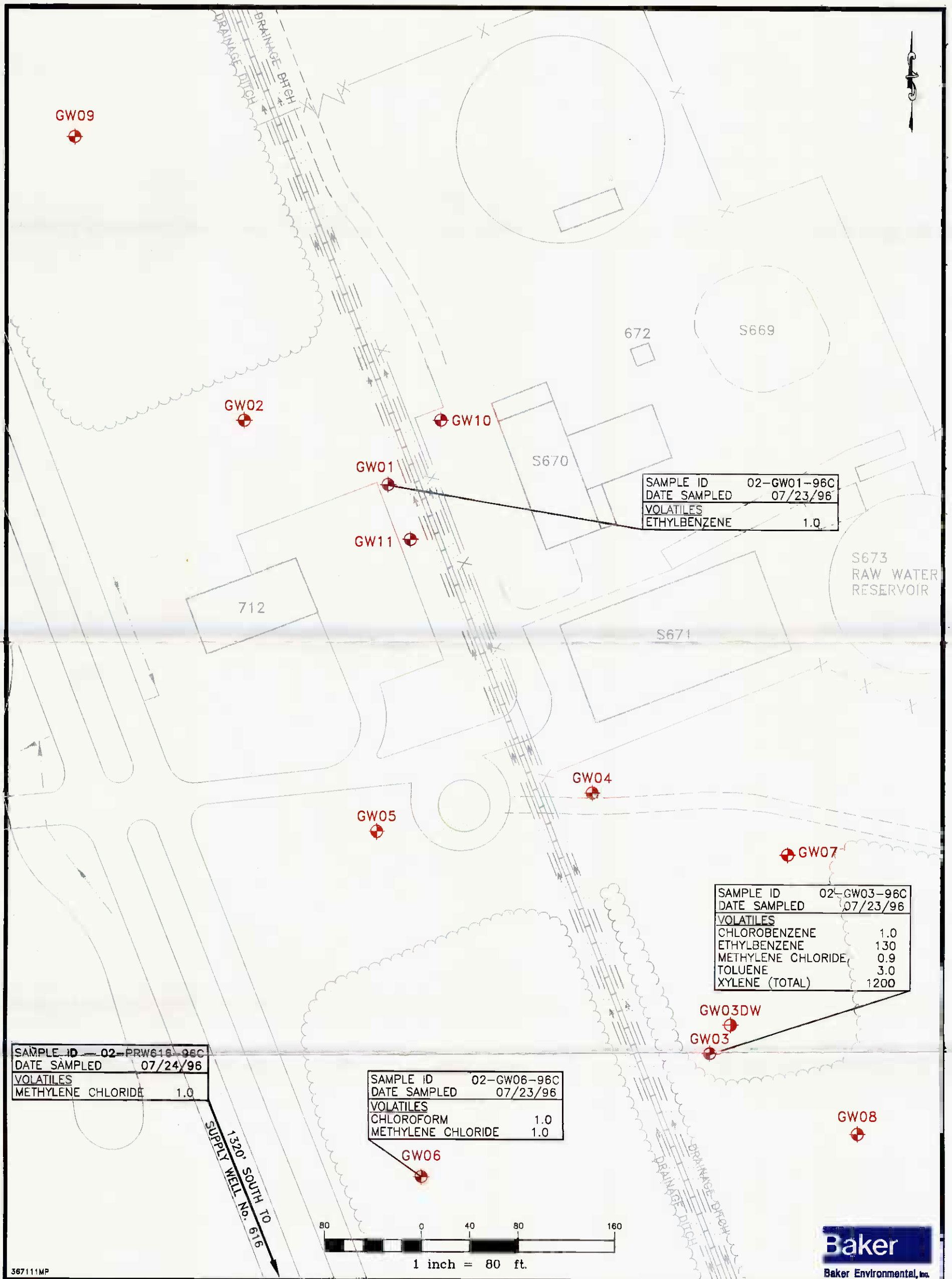
387105MP

LEGEND

	SHALLOW MONITORING WELL
	DEEP MONITORING WELL
(27.29)	STATIC GROUNDWATER ELEVATION
	GROUNDWATER ELEVATION CONTOUR
	APPROXIMATE DIRECTION OF GROUNDWATER FLOW
	DIRECTION OF SURFACE WATER FLOW

SOURCE: LANTDIV, FEB. 1992

FIGURE 1-3
 SHALLOW GROUNDWATER
 CONTOUR MAP
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT CTO - 0367
 MARINE CORPS BASE, CAMP LEJEUNE
 NORTH CAROLINA



LEGEND

- GW02 SHALLOW MONITORING WELL
- GW03DW DEEP MONITORING WELL
- DIRECTION OF SURFACE WATER FLOW

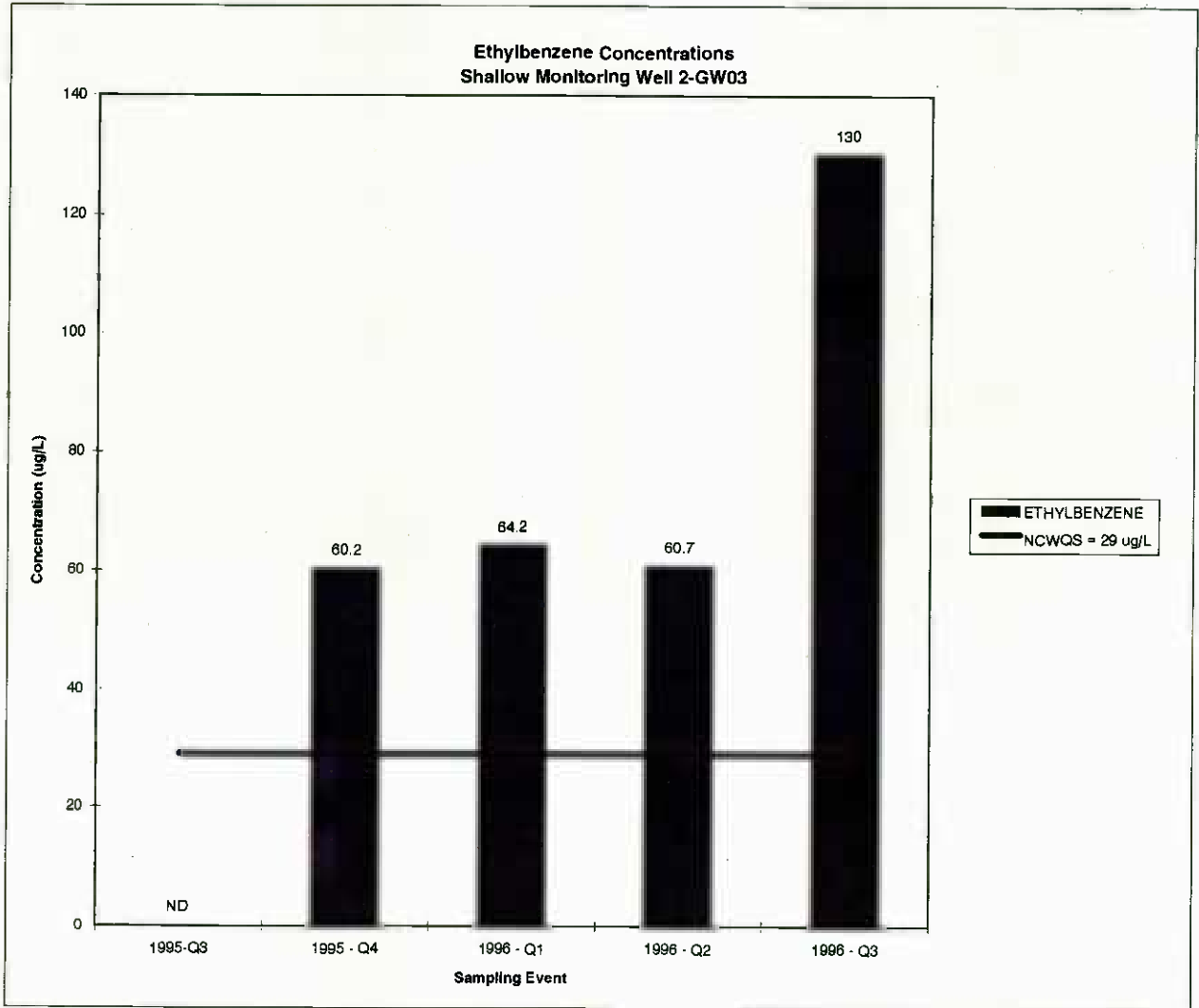
FIGURE 2-1
ORGANIC COMPOUNDS IN GROUNDWATER
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO - 0367
 MARINE CORPS BASE, CAMP LEJEUNE
 NORTH CAROLINA

SOURCE: LANTDIV, FEB. 1992



FIGURE 2-2

ETHYLBENZENE RESULTS FROM 2-GW03
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-367
 MCB, CAMP LEJEUNE, NORTH CAROLINA



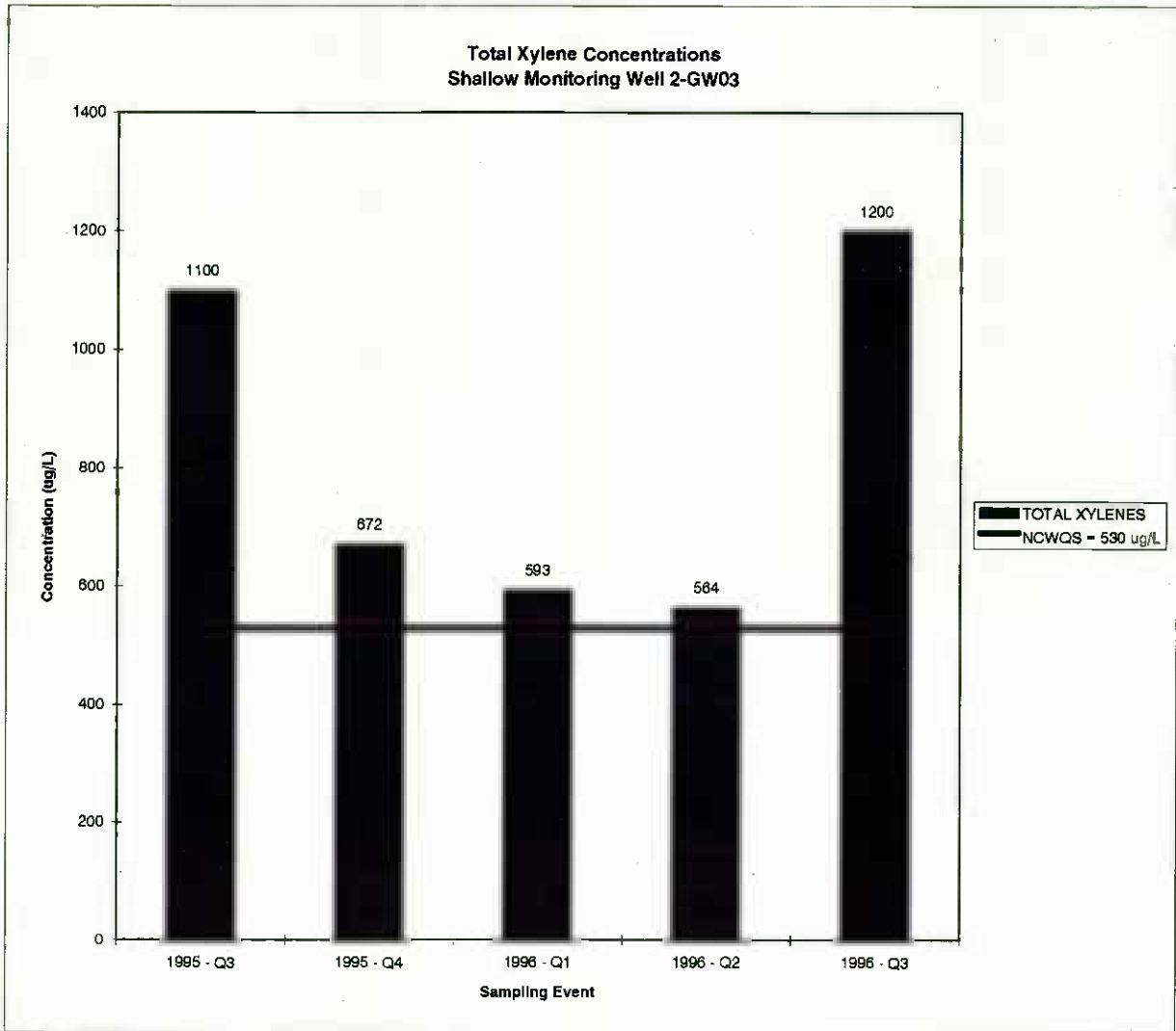
Q1 - Quarter 1 (January - March) Q3 - Quarter 3 (July - September)
 Q2 - Quarter 2 (April - June) Q4 - Quarter 4 (October - December)

Notes:
 Federal Maximum Contaminant Level (MCL) = 700 micrograms per liter (ug/L)
 North Carolina Water Quality Standard (NCWQS) = 29 micrograms per liter (ug/L)
 ND = Not Detected

Contaminant	Mean Detection (ug/L)	Median Detection (ug/L)	Detection Frequency	Detections Above Standards
ETHYLBENZENE	63	60.7	4/5	4/5

FIGURE 2-3

TOTAL XYLENE RESULTS FROM 2-GW03
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-367
 MCB, CAMP LEJEUNE, NORTH CAROLINA



Q1 - Quarter 1 (January - March) Q3 - Quarter 3 (July - September)
 Q2 - Quarter 2 (April - June) Q4 - Quarter 4 (October - December)

Notes:

Federal Maximum Contaminant Level (MCL) = 10,000 micrograms per liter (ug/L)
 North Carolina Water Quality Standard (NCWQS) = 530 micrograms per liter (ug/L)

Contaminant	Mean Detection (ug/L)	Median Detection (ug/L)	Detection Frequency	Detections Above Standards
TOTAL XYLENES	825.8	672	5/5	5/5

ATTACHMENT A
WELL DEVELOPMENT RECORDS

Baker

Baker Environmental, Inc.

FIELD WELL DEVELOPMENT RECORDPROJECT: Monitoring and O&M Program Support, MCB Camp Lejeune,
North CarolinaCTO NO.: 367WELL NO.: 02-GW01DATE: 7-15-96SITE: 2GEOLOGIST/ENGINEER: KATua/RWKrivan

TIME START	DEVELOPMENT DATA						
	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPECIFIC COND. (µmhos/cm)	TEMP (°C)	COLOR
0825							
TIME FINISH							
0830							
INITIAL WATER LEVEL (FT)	0830	3.0	5.27	27.0	240	22.0	Very silty/sandy Brown
7.30'							
TOTAL WELL DEPTH (TD)							
25.0'							
WELL DIAMETER (INCHES)							
2.0"							
CALCULATED WELL VOLUME							
3.0 gal. (1)							
BOREHOLE DIAMETER (INCHES)							
-							
BOREHOLE VOLUME							
-							
AMOUNT OF WATER ADDED DURING DRILLING							
NA							
DEVELOPMENT METHOD							
Check valve with Surge Block							
PUMP TYPE							
Waterra™							
TOTAL TIME (A)							
5 min.							
AVERAGE FLOW (GPM)(B)							
.6 gal./min.							

TOTAL ESTIMATED WITHDRAWAL AxB=
3.0 gallons

HNU/OVA READING

0ppm BG=0ppm

Satisfied criteria for well development. No elevated HNu readings occurred during well development. All readings are shown prior to stabilization of water quality parameters (pH, specific conductance and temperature). All readings are recorded in the field log book. Well pumped dry after extraction of 3.0 gallons.

Baker

Baker Environmental, Inc.

FIELD WELL DEVELOPMENT RECORDPROJECT: Monitoring and O&M Program Support, MCB Camp Lejeune,
North CarolinaCTO NO.: 367WELL NO.: 02-GW02DATE: 7-15-96SITE: 2GEOLOGIST/ENGINEER: KATua/RWKrivan

TIME START —	DEVELOPMENT DATA						
	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPECIFIC COND. (µmhos/cm)	TEMP (°C)	COLOR
TIME FINISH —							
INITIAL WATER LEVEL (FT) 26.55'							
TOTAL WELL DEPTH (TD) 27.60'							
WELL DIAMETER (INCHES)							
CALCULATED WELL VOLUME .2 gal. (1)							
BOREHOLE DIAMETER (INCHES) —							
BOREHOLE VOLUME —							
AMOUNT OF WATER ADDED DURING DRILLING NA							
DEVELOPMENT METHOD Check valve with Surge Block							
PUMP TYPE Waterra™							
TOTAL TIME (A) —							
AVERAGE FLOW (GPM)(B) —							
TOTAL ESTIMATED WITHDRAWAL AxB= —	No volumes recovered.						
HNU/OVA READING —							

Baker

Baker Environmental, Inc.

FIELD WELL DEVELOPMENT RECORDPROJECT: Monitoring and O&M Program Support, MCB Camp Lejeune,
North CarolinaCTO NO.: 367WELL NO.: 02-GW03DATE: 7-15-96SITE: 2GEOLOGIST/ENGINEER: KATua/RWKrivan

TIME START	DEVELOPMENT DATA						
	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPECIFIC COND. (µmhos/cm)	TEMP (°C)	COLOR
0950							
TIME FINISH							
1020							
INITIAL WATER LEVEL (FT)	0955	3.3	4.79	22.7	160	22.0	Silty / Sandy Brown
5.80'							
TOTAL WELL DEPTH (TD)	1000	6.6	4.66	21.5	155	20.5	Silty / Sandy Brown
25.0'							
WELL DIAMETER (INCHES)	1005	9.9	4.71	21.6	155	20.5	clearer / light sandy Brown
2.0"							
WELL DIAMETER (INCHES)	1010	13.2	4.74	23.0	150	20.0	clearer / light sandy Brown
2.0"							
CALCULATED WELL VOLUME	1020	16.5	4.80	23.9	110	21.0	clearer / v. light sandy Brown
3.3 gal. (1)							
BOREHOLE DIAMETER (INCHES)							
-							
BOREHOLE VOLUME							
-							
AMOUNT OF WATER ADDED DURING DRILLING							
NA							
DEVELOPMENT METHOD							
Check valve with Surge Block							
PUMP TYPE							
Waterra™							
TOTAL TIME (A)							
30 min.							
AVERAGE FLOW (GPM)(B)							
.55 gal./min.							
TOTAL ESTIMATED WITHDRAWAL AxB=	Satisfied criteria for well development. No elevated HNu readings occurred during well development. All readings are shown prior to stabilization of water quality parameters (pH, specific conductance and temperature). All readings are recorded in the field log book.						
16.5 gallons							
HNU/VA READING							

Baker

Baker Environmental, Inc.

FIELD WELL DEVELOPMENT RECORDPROJECT: Monitoring and O&M Program Support, MCB Camp Lejeune,
North CarolinaCTO NO.: 367WELL NO.: 02-GW3DDATE: 7-14-96SITE: 2GEOLOGIST/ENGINEER: KATua/RWKrivan

TIME START	DEVELOPMENT DATA						
	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPECIFIC COND. (µmhos/cm)	TEMP (°C)	COLOR
1725							
TIME FINISH							
1735							
INITIAL WATER LEVEL (FT)	1730	21.0	11.99	25.2	2800	20.0	Grayish/near clear
37.0'							
TOTAL WELL DEPTH (TD)	1735	42.0	11.97	22.8	2700	21.0	Grayish/near clear
100.0'							
WELL DIAMETER (INCHES)							
4"							
CALCULATED WELL VOLUME							
42 gal. (1)							
BOREHOLE DIAMETER (INCHES)							
-							
BOREHOLE VOLUME							
-							
AMOUNT OF WATER ADDED DURING DRILLING							
NA							
DEVELOPMENT METHOD							
Check valve with Surge Block							
PUMP TYPE							
Waterra™							
TOTAL TIME (A)							
10 min.							
AVERAGE FLOW (GPM)(B)							
4.5 gal./min.							
TOTAL ESTIMATED WITHDRAWAL AxB=	Satisfied criteria for well development. No elevated HNu readings occurred during well development. All readings are shown prior to stabilization of water quality parameters (pH, specific conductance and temperature). All readings are recorded in the field log book. Well pumped dry after extraction of 45 gallons.						
45.0 gallons							
HNU/DVA READING							
0000 00000000							



FIELD WELL DEVELOPMENT RECORD

PROJECT: Monitoring and O&M Program Support, MCB Camp Lejeune,
North Carolina

CTO NO.: 367 WELL NO.: 02-GW04

DATE: 7-15-96 SITE: 2

GEOLOGIST/ENGINEER: KATua/RWKrivan

TIME START	DEVELOPMENT DATA						
1345							
TIME FINISH	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPECIFIC COND. (µmhos/cm)	TEMP (°C)	COLOR
1355							
INITIAL WATER LEVEL (FT) 6.35'	1350	3.2	5.45	28.3	145	25.0	turbid / Brown
TOTAL WELL DEPTH (TD) 25.0'							
WELL DIAMETER (INCHES) 2.0"							
CALCULATED WELL VOLUME 3.2 gal. (1)							
BOREHOLE DIAMETER (INCHES) -							
BOREHOLE VOLUME -							
AMOUNT OF WATER ADDED DURING DRILLING NA							
DEVELOPMENT METHOD Check valve with Surge Block							
PUMP TYPE Waterra™							
TOTAL TIME (A) 10 min.							
AVERAGE FLOW (GPM)(B) .32 gal./min							
TOTAL ESTIMATED WITHDRAWAL AxB= 3.2 gallons	Well pumped dry.						
HNU/OVA READING							



FIELD WELL DEVELOPMENT RECORD

PROJECT: Monitoring and O&M Program Support, MCB Camp Lejeune,
North Carolina

CTO NO.: 367

WELL NO.: 02-GW05

DATE: 7-15-96

SITE: 2

GEOLOGIST/ENGINEER: KATua/RWKrivan

TIME START	DEVELOPMENT DATA						
	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPECIFIC COND. (µmhos/cm)	TEMP (°C)	COLOR
1255							
TIME FINISH							
1310							
INITIAL WATER LEVEL (FT)							
16.1'	1300	1.5	4.49	29.0	260	23.0	milky/Light Tan
TOTAL WELL DEPTH (TD)							
25.0'	1305	3.0	4.49	25.4	230	23.0	turbid/Light Tan
WELL DIAMETER (INCHES)							
2.0"	1310	4.5	4.54	24.2	245	23.0	turbid/Light Tan
CALCULATED WELL VOLUME							
1.5 gal. (1)							
BOREHOLE DIAMETER (INCHES)							
-							
BOREHOLE VOLUME							
-							
AMOUNT OF WATER ADDED DURING DRILLING							
NA							
DEVELOPMENT METHOD							
Check valve with Surge Block							
PUMP TYPE							
Waterra™							
TOTAL TIME (A)							
15 min.							
AVERAGE FLOW (GPM)(B)							
.3 gal./min.							

TOTAL ESTIMATED WITHDRAWAL AxB= 4.5 gallons

INU/OVA READING

Satisfied criteria for well development. No elevated HNu readings occurred during well development. All readings are shown prior to stabilization of water quality parameters (pH, specific conductance and temperature). All readings are recorded in the field log book.

Baker

Baker Environmental, Inc.

FIELD WELL DEVELOPMENT RECORDPROJECT: Monitoring and O&M Program Support, MCB Camp Lejeune,
North CarolinaCTO NO.: 367WELL NO.: 02-GW06DATE: 7-15-96SITE: 2GEOLOGIST/ENGINEER: KATua/RWKrivan

TIME START	DEVELOPMENT DATA						
	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPECIFIC COND. (µmhos/cm)	TEMP (°C)	COLOR
1555							
TIME FINISH							
1615							
INITIAL WATER LEVEL (FT)	1600	6.0	3.94	27.0	285	22.0	Light Brown / clear
3.30'							
TOTAL WELL DEPTH (TD)	1605	9.0	3.93	24.5	290	23.0	Very light Brown / clear
12.50'							
WELL DIAMETER (INCHES)	1610	12.0	3.90	23.7	300	21.5	Very light Brown / clear
4"							
WELL DIAMETER (INCHES)	1612	15.0	3.88	24.1	305	22.0	clear
4"							
CALCULATED WELL VOLUME	1615	18.0	3.90	24.0	300	21.0	clear
6.0 gal. (1)							
BOREHOLE DIAMETER (INCHES)							
-							
BOREHOLE VOLUME							
-							
AMOUNT OF WATER ADDED DURING DRILLING							
NA							
DEVELOPMENT METHOD							
Check valve with Surge Block							
PUMP TYPE							
Waterra™							
TOTAL TIME (A)							
20 min							
AVERAGE FLOW (GPM)(B)							
.9 gal./min.							
TOTAL ESTIMATED WITHDRAWAL AxB=	Satisfied criteria for well development. No elevated HNu readings occurred during well development. All readings are shown prior to stabilization of water quality parameters (pH, specific conductance and temperature). All readings are recorded in the field log book.						
18.0 gallons							
HNU/NOVA READING							
0 ppm BG = 0 ppm							

Baker

Baker Environmental, Inc.

FIELD WELL DEVELOPMENT RECORDPROJECT: Monitoring and O&M Program Support, MCB Camp Lejeune,
North CarolinaCTO NO.: 367WELL NO.: 02-GW07DATE: 7-15-96SITE: 2GEOLOGIST/ENGINEER: KATua/RWKrivan

TIME START	DEVELOPMENT DATA						
	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPECIFIC COND. (µmhos/cm)	TEMP (°C)	COLOR
1052							
TIME FINISH							
1106							
INITIAL WATER LEVEL (FT)	1055	6.0	5.15	27.7	180	25.0	Light Brown
4.05'							
TOTAL WELL DEPTH (TD)	1058	12.0	5.28	26.4	255	25.0	Very Light Brown
13.0'							
WELL DIAMETER (INCHES)	1103	15.0	5.26	28.4	220	24.0	Very Light Brown
4.0"							
WELL DIAMETER (INCHES)	1106	18.0	5.24	25.8	210	24.0	Very Light Brown
CALCULATED WELL VOLUME							
6.0 gal. (1)							
BOREHOLE DIAMETER (INCHES)							
-							
BOREHOLE VOLUME							
-							
AMOUNT OF WATER ADDED DURING DRILLING							
NA							
DEVELOPMENT METHOD							
Check valve with Surge Block							
PUMP TYPE							
Waterra™							
TOTAL TIME (A)							
14 min.							
AVERAGE FLOW (GPM)(B)							
.7 gal./min.							
TOTAL ESTIMATED WITHDRAWAL AxB=	Satisfied criteria for well development. No elevated HNu readings occurred during well development. All readings are shown prior to stabilization of water quality parameters (pH, specific conductance and temperature). All readings are recorded in the field log book.						
18.0 gallons							
HNU/NOVA READING							
00000 RG = 0.0000							

Baker

Baker Environmental, Inc.

FIELD WELL DEVELOPMENT RECORDPROJECT: Monitoring and O&M Program Support, MCB Camp Lejeune,
North CarolinaCTO NO.: 367WELL NO.: 02-GW08DATE: 7-16-96SITE: 2GEOLOGIST/ENGINEER: KATua/RWKrivan

TIME START	DEVELOPMENT DATA						
	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPECIFIC COND. (µmhos/cm)	TEMP (°C)	COLOR
0752							
TIME FINISH							
0833							
INITIAL WATER LEVEL (FT)	0805	6.30	3.60	23.0	170	22.0	Light Tan/ slightly Turbid
3.05'							
TOTAL WELL DEPTH (TD)	0818	9.45	3.69	22.1	170	21.5	clearer
12.50'							
WELL DIAMETER (INCHES)	0825	12.60	3.69	21.5	170	21.0	clear
4"							
WELL DIAMETER (INCHES)	0833	18.90	3.78	23.1	175	22.0	clear
CALCULATED WELL VOLUME							
BOREHOLE DIAMETER (INCHES)							
—							
BOREHOLE VOLUME							
—							
AMOUNT OF WATER ADDED DURING DRILLING							
NA							
DEVELOPMENT METHOD							
Check valve with Surge Block							
PUMP TYPE							
Waterra™							
TOTAL TIME (A)							
41 min.							
AVERAGE FLOW (GPM)(B)							
.46 gal./min.							

TOTAL ESTIMATED WITHDRAWAL AxB=
18.9 gallons

HNU/DVA READING

0ppm BG=0ppm

Satisfied criteria for well development. No elevated HNu readings occurred during well development. All readings are shown prior to stabilization of water quality parameters (pH, specific conductance and temperature). All readings are recorded in the field log book.

Baker

Baker Environmental, Inc.

FIELD WELL DEVELOPMENT RECORDPROJECT: Monitoring and O&M Program Support, MCB Camp Lejeune,
North CarolinaCTO NO.: 367WELL NO.: 02-GW09DATE: 7-16-96SITE: 2GEOLOGIST/ENGINEER: KATua/RWKrivan

TIME START	DEVELOPMENT DATA						
	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPECIFIC COND. (µmhos/cm)	TEMP (°C)	COLOR
0857							
TIME FINISH							
0922							
INITIAL WATER LEVEL (FT)	0910	5.60	3.68	22.6	420	21.5	clear/ slightly Turbid
4.5'							
TOTAL WELL DEPTH (TD)	0913	8.40	3.63	22.7	405	22.0	clear/ slightly Turbid
13.0'							
WELL DIAMETER (INCHES)	0917	11.20	3.68	22.5	390	21.0	clear slightly Turbid
4"							
WELL DIAMETER (INCHES)	0922	16.80	3.82	21.7	410	21.0	clear
CALCULATED WELL VOLUME							
5.6 gal. (1)							
BOREHOLE DIAMETER (INCHES)							
-							
BOREHOLE VOLUME							
-							
AMOUNT OF WATER ADDED DURING DRILLING							
NA							
DEVELOPMENT METHOD							
Check valve with Surge Block							
PUMP TYPE							
Waterra™							
TOTAL TIME (A)							
25 min.							
AVERAGE FLOW (GPM)(B)							
.67 gal./min.							
TOTAL ESTIMATED WITHDRAWAL AxB=	Satisfied criteria for well development. No elevated HNu readings occurred during well development. All readings are shown prior to stabilization of water quality parameters (pH, specific conductance and temperature). All readings are recorded in the field log book.						
16.80 gallons							
HNU/VA READING							
000m RG=000m							

Baker

Baker Environmental, Inc.

FIELD WELL DEVELOPMENT RECORDPROJECT: Monitoring and O&M Program Support, MCB Camp Lejeune,
North CarolinaCTO NO.: 367WELL NO.: 02-GW10DATE: 7-16-96SITE: 2GEOLOGIST/ENGINEER: KATua/RWKrivan

TIME START 1005	DEVELOPMENT DATA						
	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPECIFIC COND. (µmhos/cm)	TEMP (°C)	COLOR
TIME FINISH 1036							
INITIAL WATER LEVEL (FT)	1008	1.40	6.53	25.2	320	24.0	Brown/Turbid
TOTAL WELL DEPTH (TD) 13.30	1011	2.80	6.15	24.5	315	24.0	Brown/Turbid
WELL DIAMETER (INCHES) 2"	1015	4.20	5.96	24.9	310	24.0	Brown/Turbid
CALCULATED WELL VOLUME 1.4 gal. (1)	1020	5.60	5.97	24.9	300	24.0	Brown/less Turbid
BOREHOLE DIAMETER (INCHES) —	1025	7.00	6.01	26.0	300	25.0	Brown/less Turbid
BOREHOLE VOLUME —	1033	8.40	5.97	28.2	295	25.0	Brown/less Turbid
AMOUNT OF WATER ADDED DURING DRILLING NA	1036	9.80	5.91	27.5	295	25.0	Brown/ slightly clearer
DEVELOPMENT METHOD Check valve with Surge Block							
PUMP TYPE Waterra™							
TOTAL TIME (A) 31 min.							
AVERAGE FLOW (GPM)(B) .31 gal./min.							

TOTAL ESTIMATED WITHDRAWAL AxB=
9.80 gallons

(HNU)OVA READING

00ppm BG=00ppm

Satisfied criteria for well development. No elevated HNu readings occurred during well development. All readings are shown prior to stabilization of water quality parameters (pH, specific conductance and temperature). All readings are recorded in the field log book.

Baker

Baker Environmental, Inc.

FIELD WELL DEVELOPMENT RECORDPROJECT: Monitoring and O&M Program Support, MCB Camp Lejeune,
North CarolinaCTO NO.: 367WELL NO.: 02-GW11DATE: 7-15-96SITE: 2GEOLOGIST/ENGINEER: KATua/RWKrivan

TIME START 1444	DEVELOPMENT DATA						
	TIME	CUMULATIVE VOLUME (gallons)	pH	TEMP (°C)	SPECIFIC COND. (µmhos/cm)	TEMP (°C)	COLOR
TIME FINISH 1507							
INITIAL WATER LEVEL (FT) 6.70'	1450	1.6	5.18	25.1	270	25.0	turbid / Dark Brown
TOTAL WELL DEPTH (TD) 16.0'	1456	3.2	5.21	26.0	265	23.0	turbid / Dark Brown
WELL DIAMETER (INCHES) 2.0"	1458	4.8	5.16	26.0	240	23.0	turbid / Dark Brown
CALCULATED WELL VOLUME 1.6 gal. (1)	1502	6.4	5.19	24.7	225	23.0	turbid / Dark Brown
BOREHOLE DIAMETER (INCHES) -	1507	8.0	5.15	25.2	210	24.0	turbid / Dark Brown
BOREHOLE VOLUME -							
AMOUNT OF WATER ADDED DURING DRILLING NA							
DEVELOPMENT METHOD Check valve with Surge Block							
PUMP TYPE Waterra™							
TOTAL TIME (A) 23 min.							
AVERAGE FLOW (GPM)(B) .34 gal. / min.							
TOTAL ESTIMATED WITHDRAWAL AxB= 8.0 gallons	Satisfied criteria for well development. No elevated HNu readings occurred during well development. All readings are shown prior to stabilization of water quality parameters (pH, specific conductance and temperature). All readings are recorded in the field log book.						
HNU/VA READING 0 ppm BG=0ppm							

ATTACHMENT B
CHAIN-OF-CUSTODY DOCUMENTATION

CHAIN-OF CUSTODY RECORD

Lab and BOA #: _____
 Delivery Order #: _____
 Project Number: 62470-259/367
 Project Name: LTM
 Field Team: Kivan/TUA
 SEND RESULTS TO: Tre Kiblock

Analytical Methods										General Comments		
Notes Sample Number	Date	Time	Sample Location	Matrix Type (1)		Type of Container(s) ⁽³⁾				Number of Container(s)	Sample ID Remarks	
				GB (2)	COM (2)	G	P	P				
Portline	7/23/96	1050		GW		2	1	1				02-GW01-96C
Turn	7/23/96	1025		GW		2	1	1				02-GW02-96C
	7/23/96	1200		GW		2	1	1				02-GW04-96C
	7/23/96	1220		GW		2	1	1				02-GW11-96C
	7/23/96	1430		GW		2	1	1				02-GW05-96C
	7/23/96	1445		GW		2	1	1				02-GW06-96C
	7/23/96	1710		GW		2	1	1				02-GW03-96C
	7/23/96	1730		GW		2	1	1				02-GW07-96C
	7/24/96	1000		GW		2	1	1				02-PWR66-96C
✓	7/24/96	0830		GW		2	1	1				02-PWR66-96C

Relinquished By: Donald Kivan Date: 7/24/96 Time: 1530
 Received By: _____ Date: _____ Time: _____
 Shipped by (check one): Hand Overnight Other

Relinquished By: _____ Date: _____ Time: _____
 Received By: _____ Date: _____ Time: _____
 Shipped by (check one): Hand Overnight Other

Relinquished By: _____ Date: _____ Time: _____
 Received By: _____ Date: _____ Time: _____
 Shipped by (check one): Hand Overnight Other

Sample Stored at 4 Degrees C: Yes No
 Chain-of-custody seal on cooler: Yes Number: _____ No
 Analysis turnaround: Priority _____ hrs. Regular
 See Work Order
 See Analysis Request Form

Sample Disposal Return to Baker Lab Disposal
 Archive until: _____ (date)

- NOTES:
- (1) A - Air SB - SubSurface Soil
 - GW - Groundwater SW - Surface Water
 - L - Leachate W - Waste
 - S - Spring WP - Wipe
 - SS - Surface Soil WW - Wastewater
 - (2) GB - Grab
 - COM - Composite
 - (3) P - Plastic
 - G - Glass

White - Return with analytical results; Yellow - Laboratory Copy; Pink - Field Copy

Courier Name: Fed Ex
 Courier Pickup Number: 1369 799966
 File Name: _____

CHAIN-OF-CUSTODY RECORD

Lab and BOA #: _____
Delivery Order #: _____
Project Number: 62470-259/367
Project Name: LTM
Field Team: Krivan/TUA
SEND RESULTS TO: Trehilcock

Analytical Methods										
TCL	VOAs									
LIST 1										
TAL Metals										
TSS/TDS										

General Comments
CC#
00501-96C

Notes Sample Number	Date	Time	Sample Location	Matrix Type (1)		Type of Container(s) ⁽³⁾										Number of Container(s)	Sample ID Remarks	
				GB (2)	COM (2)	G	P	P										
<u>Routine</u>	<u>7/24/96</u>	<u>0915</u>		<u>GW</u>		<u>2</u>	<u>1</u>	<u>1</u>										<u>02-PWR1647-96C</u>
<u>Turn</u>	<u>7/24/96</u>	<u>1215</u>		<u>GW</u>		<u>2</u>	<u>1</u>	<u>1</u>										<u>02-AW108-96C</u>
<u>Blank</u>	<u>7/24/96</u>	<u>1430</u>				<u>2</u>												<u>02-TB01-96C</u>

Relinquished By: Donald Krivan Date: 7/24/96 Time: 1530
 Received By: _____ Date: _____ Time: _____
 Shipped by (check one): Hand Overnight Other

Relinquished By: _____ Date: _____ Time: _____
 Received By: _____ Date: _____ Time: _____
 Shipped by (check one): Hand Overnight Other

Relinquished By: _____ Date: _____ Time: _____
 Received By: _____ Date: _____ Time: _____
 Shipped by (check one): Hand Overnight Other

Sample Stored at 4 Degrees C: Yes No
 Chain-of-custody seal on cooler: Yes Number: _____ No
 Analysis turnaround: Priority _____ hrs. Regular
 See Work Order
 See Analysis Request Form
 Sample Disposal Return to Baker Lab Disposal
 Archive until: _____ (date)

NOTES:
 (1) A - Air SB - SubSurface Soil
 GW - Groundwater SW - Surface Water (2) GB - Grab
 L - Leachate W - Waste COM - Composite
 S - Spring WP - Wipe (3) P - Plastic
 SS - Surface Soil WW - Wastewater G - Glass

White - Return with analytical results; Yellow - Laboratory Copy; Pink - Field Copy

Courier Name: PO EX
 Courier Pickup Number: 1369799966
 File Name: _____

Baker

Baker Environmental, Inc.
Airport Office Park, Bldg. 3
420 Rouser Road
Coraopolis, PA 15108
412-269-6000
412-269-6097 (fax)

CHAIN-OF-CUSTODY RECORD

Lab and BOA #: _____
Delivery Order #: _____
Project Number: 62470-259/367
Project Name: LTM
Field Team: Krivan/Tue
SEND RESULTS TO: Tred/Cox

Analytical Methods										General Comments			
TCL VOA	LIST I	TAL Metals	TSS/TDS								COC# <u>02502-96C</u>	Sample ID -Remarks	
Type of Container(s) ⁽³⁾													
Number of Container(s)													
Notes	Sample Number	Date	Time	Sample Location	Matrix Type (1)	GB (2)	COM (2)						
Routine		7/25/06	0830		GW	2		1	1			02-GW03DW-96C	
Turn		7/25/06	0945		GW	2		1	1			02-GW10-96C	
↓		7/25/06	1130		GW	2		1	1			02-GW09-96C	
BLANK		7/25/06	1700			2						02-TB02-96C	

Relinquished By: [Signature] Date: 7/26/06 Time: 0715
Received By: _____ Date: _____ Time: _____
Shipped by (check one): Hand Overnight Other

Relinquished By: _____ Date: _____ Time: _____
Received By: _____ Date: _____ Time: _____
Shipped by (check one): Hand Overnight Other

Relinquished By: _____ Date: _____ Time: _____
Received By: _____ Date: _____ Time: _____
Shipped by (check one): Hand Overnight Other

Sample Stored at 4 Degrees C: Yes No
Chain-of-custody seal on cooler: Yes Number: 62470-259-96C No
Analysis turnaround: Priority _____ hrs. Regular
See Work Order
See Analysis Request Form

Sample Disposal Return to Baker Lab Disposal
Archive until: Sample ID (date)

- NOTES:
- (1) A - Air SB - SubSurface Soil
 - GW - Groundwater SW - Surface Water
 - L - Leachate W - Waste
 - S - Spring WP - Wipe
 - SS - Surface Soil WW - Wastewater
 - (2) GB - Grab
 - COM - Composite
 - Plastic
 - G - Glass

White - Return with analytical results; Yellow - Laboratory Copy; Pink - Field Copy

Courier Name: Fed Ex
Courier Pickup Number: 1369799244
File Name: _____

ATTACHMENT C
SAMPLE TRACKING FORM

Sample Tracking and Chain-of-Custody Documentation - Site 2
Monitoring and O&M Program Support, CTO-367
MCB, Camp Lejeune, North Carolina

MATRIX	DATE SHIPPED	SAMPLE ID	Analysis Requested				Analysis Received				DATE RECEIVED	TURNAROUND TIME	RFW #	COMMENTS	
			TCL Volatiles (EPA 8260)	TAL Metals (SW 6010)	Total Dissolved Solids	Total Suspended Solids	TCL Volatiles (EPA 8260)	TAL Metals (SW 6010)	Total Dissolved Solids	Total Suspended Solids					
Groundwater		COC# OU501-96C													
	7/24/96	02-GW01-96C	X	X	X	X	X	X	X	X	8/22/96	28	9607G397		
	7/24/96	02-GW02-96C	X	X	X	X	X	X	X	X	8/22/96	28	9607G397		
	7/24/96	02-GW04-96C	X	X	X	X	X	X	X	X	8/22/96	28	9607G397		
	7/24/96	02-GW11-96C	X	X	X	X	X	X	X	X	8/22/96	28	9607G397		
	7/24/96	02-GW05-96C	X	X	X	X	X	X	X	X	8/22/96	28	9607G397		
	7/24/96	02-GW06-96C	X	X	X	X	X	X	X	X	8/22/96	28	9607G397		
	7/24/96	02-GW03-96C	X	X	X	X	X	X	X	X	8/22/96	28	9607G397		
	7/24/96	02-GW07-96C	X	X	X	X	X	X	X	X	8/22/96	28	9607G397		
	7/24/96	02-PWR616-96C	X	X	X	X	X	X	X	X	8/22/96	28	9607G397		
	7/24/96	02-PWR646-96C	X	X	X	X	X	X	X	X	8/22/96	28	9607G397		
	7/24/96	02-PWR647-96C	X	X	X	X	X	X	X	X	8/22/96	28	9607G397		
	7/24/96	02-GW08-96C	X	X	X	X	X	X	X	X	8/22/96	28	9607G397		
	7/24/96	02-TB01-96C	X				X				8/22/96	28	9607G397		
			COC# OU502-96C												
		7/26/96	02-GW03DW-96C	X	X	X	X	X	X	X	X	8/23/96	27	9607G439	
		7/26/96	02-GW10-96C	X	X	X	X	X	X	X	X	8/23/96	27	9607G439	
		7/26/96	02-GW09-96C	X	X	X	X	X	X	X	X	8/23/96	27	9607G439	
		7/26/96	02-TB02-96C	X				X				8/23/96	27	9607G439	
	TOTAL ANALYSES			17	15	15	15	17	15	15	15				

ATTACHMENT D
SAMPLE DESIGNATIONS

SAMPLE DESIGNATIONS

In order to accurately identify and differentiate samples collected during the monitoring program, all samples were designated with a unique identification number. The unique sample number identifies the site, the sample media, the sampling station's number, and the quarter in which the sample was collected. The sample designation format is as follows:

Site Number - Sample Station Identifier - Year and Quarter

An explanation of each identifier is provided below:

Site Number	The investigation was conducted at Site 2.
Sample Station Identifier	Each monitoring well has been assigned a unique identification number. The identification number may include the qualifiers "DW" which denotes a deep monitoring well, "GW" which denotes groundwater, or "PRW" which denotes a production or supply well.
Year	The investigation was conducted during 1996.
Quarter	The investigation was conducted during the third quarter. The four quarters of year are identified by the first four letters of the alphabet (i.e., A, B, C and D).

Under this sample designation format the sample number 02-GW03DW-96C refers to:

<u>02</u> -GW03DW-96C	Site 2
02- <u>GW</u> 03DW-96C	Groundwater sample
02-GW <u>03</u> DW-96C	Monitoring well No.3
02-GW03 <u>DW</u> -96C	Deep monitoring well
02-GW03DW- <u>96</u> C	Year 1996.
02-GW03DW-96 <u>C</u>	The third quarter (i.e., July through September)

This sample designation format has also been applied to sampling results collected during previous quarterly monitoring events.

ATTACHMENT E
MONITORING PROGRAM ANALYTICAL RESULTS

Symbol Key:

MG/L = Milligrams per Liter

NA = Not Analyzed

U = Not Detected

UG/L = Micrograms per Liter

GROUNDWATER ANALYTICAL RESULTS
 JULY 1995 - SEPTEMBER 1996
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-0367
 MCB, CAMP LEJEUNE, NORTH CAROLINA
 VOLATILE ORGANICS

SAMPLE ID	02-GW01-95C	02-GW01-95D	02-GW01-96A	02-GW01-96B	02-GW01-96C	02-GW02-95C
DATE SAMPLED	08/01/95	11/02/95	02/01/96	05/03/96	07/23/96	08/01/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES						
CHLOROMETHANE	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U
VINYL CHLORIDE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
BROMOMETHANE	0.4 U	0.4 U	0.4 U	0.4 U	0.5 U	0.4 U
CHLOROETHANE	0.4 U	0.4 U	0.4 U	0.4 U	0.5 U	0.4 U
1,1-DICHLOROETHENE	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U
ACETONE	NA	NA	NA	NA	2 U	NA
CARBON DISULFIDE	NA	NA	NA	NA	2 U	NA
METHYLENE CHLORIDE	0.6 U	0.4 U	0.1 U	0.1 U	0.5 U	0.6 U
1,2-DICHLOROETHENE (TOTAL)	NA	NA	NA	NA	0.5 U	NA
1,1-DICHLOROETHANE	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U
2-BUTANONE	NA	NA	NA	NA	2 U	NA
CHLOROFORM	0.1 U	0.3 U	0.4 U	0.1 U	0.5 U	0.1 U
1,1,1-TRICHLOROETHANE	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U
CARBON TETRACHLORIDE	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U
BENZENE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
1,2-DICHLOROETHANE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
TRICHLOROETHENE	NA	NA	NA	NA	0.5 U	NA
1,2-DICHLOROPROPANE	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U
BROMODICHLOROMETHANE	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U
CIS-1,3-DICHLOROPROPENE	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U
4-METHYL-2-PENTANONE	NA	NA	NA	NA	2 U	NA
TOLUENE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
TRANS-1,3-DICHLOROPROPENE	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	NA	NA	NA	NA	0.5 U	NA
2-HEXANONE	NA	NA	NA	NA	2 U	NA
DIBROMOCHLOROMETHANE	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U
CHLOROBENZENE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
ETHYLBENZENE	0.9	1.1	0.4	0.7	1	0.1 U
XYLENES, TOTAL	0.6 U	0.8 U	0.1 U	0.6 U	0.5 U	0.1 U
STYRENE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
BROMOFORM	0.3 U	0.3 U	0.3	0.3 U	0.5 U	0.3 U
1,1,2,2-TETRACHLOROETHANE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
2-CHLOROETHYL VINYL ETHER	5 U	5 U	5 U	5 U	NA	5 U
1,2-DICHLOROBENZENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U

GROUNDWATER ANALYTICAL RESULTS
 JULY 1995 - SEPTEMBER 1996
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-0367
 MCB, CAMP LEJEUNE, NORTH CAROLINA
 VOLATILE ORGANICS

SAMPLE ID	02-GW01-95C	02-GW01-95D	02-GW01-96A	02-GW01-96B	02-GW01-96C	02-GW02-95C
DATE SAMPLED	08/01/95	11/02/95	02/01/96	05/03/96	07/23/96	08/01/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES (cont)						
1,3-DICHLOROBENZENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.4 U
1,4-DICHLOROBENZENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.4 U
DICHLORODIFLUOROMETHANE	0.3 U	0.3 U	0.3 U	0.3 U	NA	0.3 U
TETRACHLOROETHYLENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
TRANS-1,2-DICHLOROETHENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
TRICHLOROETHYLENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
TRICHLOROFUOROMETHANE	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
BROMOBENZENE	NA	NA	NA	NA	NA	NA
BROMOETHANE	NA	NA	NA	NA	NA	NA
O-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA
P-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	NA	NA	NA	NA	NA
M-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
O-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
P-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
DICHLOROMETHANE	NA	NA	NA	NA	NA	NA
1,1-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA
2,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPENE (TOTAL)	NA	NA	NA	NA	NA	NA
ETHYLENE DIBROMIDE	NA	NA	NA	NA	NA	NA
1,1,1,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA
1,2,3-TRICHLOROPROPANE	NA	NA	NA	NA	NA	NA
M & P-XYLENE	NA	NA	NA	NA	NA	NA
MANGANESE, DISSOLVED	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPENE (TOTAL)	NA	NA	NA	NA	NA	NA
O-XYLENES	NA	NA	NA	NA	NA	NA

GROUNDWATER ANALYTICAL RESULTS
 JULY 1995 - SEPTEMBER 1996
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-0367
 MCB, CAMP LEJEUNE, NORTH CAROLINA
 VOLATILE ORGANICS

SAMPLE ID	02-GW02-95D	02-GW02-96A	02-GW02-96B	02-GW02-96C	02-GW03-95C	02-GW03-95D
DATE SAMPLED	11/02/95	02/01/96	05/03/96	07/23/96	08/01/95	11/02/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES						
CHLOROMETHANE	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
VINYL CHLORIDE	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U
BROMOMETHANE	0.4 U	0.4 U	0.4 U	0.5 U	0.4 U	0.4 U
CHLOROETHANE	0.4 U	0.4 U	0.4 U	0.5 U	0.4 U	0.4 U
1,1-DICHLOROETHENE	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
ACETONE	NA	NA	NA	2 U	NA	NA
CARBON DISULFIDE	NA	NA	NA	2 U	NA	NA
METHYLENE CHLORIDE	0.3 U	0.1 U	0.1 U	0.5 U	0.8 U	0.2 U
1,2-DICHLOROETHENE (TOTAL)	NA	NA	NA	0.5 U	NA	NA
1,1-DICHLOROETHANE	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U
2-BUTANONE	NA	NA	NA	2 U	NA	NA
CHLOROFORM	0.6 U	0.1 U	0.1 U	0.5 U	0.1	0.6 U
1,1,1-TRICHLOROETHANE	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
CARBON TETRACHLORIDE	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U
BENZENE	0.4	0.1 U	0.2 U	0.5 U	0.3	0.1 U
1,2-DICHLOROETHANE	0.3	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U
TRICHLOROETHENE	NA	NA	NA	0.5 U	NA	NA
1,2-DICHLOROPROPANE	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U
BROMODICHLOROMETHANE	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U
CIS-1,3-DICHLOROPROPENE	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
4-METHYL-2-PENTANONE	NA	NA	NA	2 U	NA	NA
TOLUENE	0.1 U	0.1 U	0.1 U	0.5 U	3.4	2.1
TRANS-1,3-DICHLOROPROPENE	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	NA	NA	NA	0.5 U	NA	NA
2-HEXANONE	NA	NA	NA	2 U	NA	NA
DIBROMOCHLOROMETHANE	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U
CHLOROBENZENE	0.1 U	0.1 U	0.1 U	0.5 U	1.3	0.9
ETHYLBENZENE	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	60.2
XYLENES, TOTAL	0.1 U	0.1 U	0.1 U	0.5 U	1100	672
STYRENE	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U
BROMOFORM	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
1,1,2,2-TETRACHLOROETHANE	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U
2-CHLOROETHYL VINYL ETHER	5 U	5 U	5 U	NA	5 U	5 U
1,2-DICHLOROETHANE	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
VOLATILE ORGANICS

SAMPLE ID	02-GW02-95D	02-GW02-96A	02-GW02-96B	02-GW02-96C	02-GW03-95C	02-GW03-95D
DATE SAMPLED	11/02/95	02/01/96	05/03/96	07/23/96	08/01/95	11/02/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES (cont)						
1,3-DICHLOROBENZENE	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U
1,4-DICHLOROBENZENE	0.1 U	0.1 U	0.1 U	NA	0.2 U	0.1 U
DICHLORODIFLUOROMETHANE	0.3 U	0.3 U	0.3 U	NA	0.3 U	0.3 U
TETRACHLOROETHYLENE	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U
TRANS-1,2-DICHLOROETHENE	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U
TRICHLOROETHYLENE	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U
TRICHLOROFUOROMETHANE	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U
BROMOBENZENE	NA	NA	NA	NA	NA	NA
BROMOETHANE	NA	NA	NA	NA	NA	NA
O-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA
P-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	NA	NA	NA	NA	NA
M-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
O-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
P-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
DICHLOROMETHANE	NA	NA	NA	NA	NA	NA
1,1-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA
2,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPENE (TOTAL)	NA	NA	NA	NA	NA	NA
ETHYLENE DIBROMIDE	NA	NA	NA	NA	NA	NA
1,1,1,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA
1,2,3-TRICHLOROPROPANE	NA	NA	NA	NA	NA	NA
M & P-XYLENE	NA	NA	NA	NA	NA	NA
MANGANESE, DISSOLVED	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPENE (TOTAL)	NA	NA	NA	NA	NA	NA
O-XYLENES	NA	NA	NA	NA	NA	NA

GROUNDWATER ANALYTICAL RESULTS
 JULY 1995 - SEPTEMBER 1996
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-0367
 MCB, CAMP LEJEUNE, NORTH CAROLINA
 VOLATILE ORGANICS

SAMPLE ID	02-GW03-96A	02-GW03-96B	02-GW03-96C	02-GW03DW-95C	02-GW03DW-95D
DATE SAMPLED	02/01/96	05/03/96	07/23/96	08/01/95	11/02/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES					
CHLOROMETHANE	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
VINYL CHLORIDE	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U
BROMOMETHANE	0.4 U	0.4 U	0.5 U	0.4 U	0.4 U
CHLOROETHANE	0.4 U	0.4 U	0.5 U	0.4 U	0.4 U
1,1-DICHLOROETHENE	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
ACETONE	NA	NA	2 U	NA	NA
CARBON DISULFIDE	NA	NA	2 U	NA	NA
METHYLENE CHLORIDE	0.1 U	0.2 U	0.9	0.7 U	0.6 U
1,2-DICHLOROETHENE (TOTAL)	NA	NA	0.5 U	NA	NA
1,1-DICHLOROETHANE	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U
2-BUTANONE	NA	NA	2 U	NA	NA
CHLOROFORM	0.1 U	0.2 U	0.5 U	0.1 U	0.1 U
1,1,1-TRICHLOROETHANE	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
CARBON TETRACHLORIDE	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U
BENZENE	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U
1,2-DICHLOROETHANE	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U
TRICHLOROETHENE	NA	NA	0.5 U	NA	NA
1,2-DICHLOROPROPANE	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U
BROMODICHLOROMETHANE	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U
CIS-1,3-DICHLOROPROPENE	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
4-METHYL-2-PENTANONE	NA	NA	2 U	NA	NA
TOLUENE	1.4	1.3	3	0.3	0.2 U
TRANS-1,3-DICHLOROPROPENE	0.3 U	0.3	0.5 U	0.3 U	0.3 U
1,1,2-TRICHLOROETHANE	0.5 U	0.9	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	NA	NA	0.5 U	NA	NA
2-HEXANONE	NA	NA	2 U	NA	NA
DIBROMOCHLOROMETHANE	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U
CHLOROBENZENE	1	0.8	1	0.1 U	0.1 U
ETHYLBENZENE	64.2	60.7	130	0.1 U	0.1 U
XYLENES, TOTAL	593	564	1200	0.3 U	0.1
STYRENE	0.1 U	10.9	0.5 U	0.1 U	0.1 U
BROMOFORM	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
1,1,2,2-TETRACHLOROETHANE	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U
2-CHLOROETHYL VINYL ETHER	5 U	5	NA	5 U	5 U
1,2-DICHLOROBENZENE	0.1 U	0.1 U	NA	0.1 U	0.1 U

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
VOLATILE ORGANICS

SAMPLE ID	02-GW03-96A	02-GW03-96B	02-GW03-96C	02-GW03DW-95C	02-GW03DW-95D
DATE SAMPLED	02/01/96	05/03/96	07/23/96	08/01/95	11/02/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES (cont)					
1,3-DICHLOROBENZENE	0.1 U	0.1 U	NA	0.1 U	0.1 U
1,4-DICHLOROBENZENE	0.1 U	0.1 U	NA	0.1 U	0.1 U
DICHLORODIFLUOROMETHANE	0.3 U	0.3 U	NA	0.3 U	0.3 U
TETRACHLOROETHYLENE	0.1 U	0.1 U	NA	0.1 U	0.1 U
TRANS-1,2-DICHLOROETHENE	0.1 U	0.1 U	NA	0.1 U	0.1 U
TRICHLOROETHYLENE	0.1 U	0.1 U	NA	0.1 U	0.1 U
TRICHLOROFLUOROMETHANE	0.5 U	0.5 U	NA	0.5 U	0.5 U
BROMOBENZENE	NA	NA	NA	NA	NA
BROMOETHANE	NA	NA	NA	NA	NA
O-CHLOROTOLUENE	NA	NA	NA	NA	NA
P-CHLOROTOLUENE	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	NA	NA	NA	NA
M-DICHLOROBENZENE	NA	NA	NA	NA	NA
O-DICHLOROBENZENE	NA	NA	NA	NA	NA
P-DICHLOROBENZENE	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA
1,1-DICHLOROETHYLENE	NA	NA	NA	NA	NA
DICHLOROMETHANE	NA	NA	NA	NA	NA
1,1-DICHLOROPROPENE	NA	NA	NA	NA	NA
1,3-DICHLOROPROPANE	NA	NA	NA	NA	NA
2,2-DICHLOROPROPANE	NA	NA	NA	NA	NA
1,3-DICHLOROPENE (TOTAL)	NA	NA	NA	NA	NA
ETHYLENE DIBROMIDE	NA	NA	NA	NA	NA
1,1,1,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA
1,2,3-TRICHLOROPROPANE	NA	NA	NA	NA	NA
M & P-XYLENE	NA	NA	NA	NA	NA
MANGANESE, DISSOLVED	NA	NA	NA	NA	NA
1,3-DICHLOROPROPENE (TOTAL)	NA	NA	NA	NA	NA
O-XYLENES	NA	NA	NA	NA	NA

GROUNDWATER ANALYTICAL RESULTS
 JULY 1995 - SEPTEMBER 1996
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-0367
 MCB, CAMP LEJEUNE, NORTH CAROLINA
 VOLATILE ORGANICS

SAMPLE ID	02-GW03DW-96A	02-GW03DW-96B	02-GW03DW-96C	02-GW04-95C	02-GW04-95D	02-GW04-96A
DATE SAMPLED	02/02/96	05/02/96	07/25/96	08/01/95	11/02/95	02/01/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES						
CHLOROMETHANE	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U
VINYL CHLORIDE	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U
BROMOMETHANE	0.4 U	0.4 U	0.5 U	0.4 U	0.4 U	0.4 U
CHLOROETHANE	0.4 U	0.4 U	0.5 U	0.4 U	0.4 U	0.4 U
1,1-DICHLOROETHENE	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U
ACETONE	NA	NA	2 U	NA	NA	NA
CARBON DISULFIDE	NA	NA	2 U	NA	NA	NA
METHYLENE CHLORIDE	0.1 U	0.1 U	0.5 U	0.3 U	0.1 U	0.1 U
1,2-DICHLOROETHENE (TOTAL)	NA	NA	0.5 U	NA	NA	NA
1,1-DICHLOROETHANE	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
2-BUTANONE	NA	NA	2 U	NA	NA	NA
CHLOROFORM	0.1 U	0.1 U	0.5 U	0.1 U	0.5 U	0.1 U
1,1,1-TRICHLOROETHANE	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U
CARBON TETRACHLORIDE	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
BENZENE	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U
1,2-DICHLOROETHANE	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U
TRICHLOROETHENE	NA	NA	0.5 U	NA	NA	NA
1,2-DICHLOROPROPANE	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
BROMODICHLOROMETHANE	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
CIS-1,3-DICHLOROPROPENE	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U
4-METHYL-2-PENTANONE	NA	NA	2 U	NA	NA	NA
TOLUENE	0.2 U	0.4 U	0.5 U	0.1 U	0.2 U	0.1 U
TRANS-1,3-DICHLOROPROPENE	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	NA	NA	0.5 U	NA	NA	NA
2-HEXANONE	NA	NA	2 U	NA	NA	NA
DIBROMOCHLOROMETHANE	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
CHLOROBENZENE	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U
ETHYLBENZENE	0.1 U	0.2 U	0.5 U	0.1 U	0.1 U	0.1 U
XYLENES, TOTAL	0.1 U	0.6 U	0.5 U	0.3 U	0.1 U	0.1 U
STYRENE	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U
BROMOFORM	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U
1,1,2,2-TETRACHLOROETHANE	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U
2-CHLOROETHYL VINYL ETHER	5 U	5 U	NA	5 U	5 U	5 U
1,2-DICHLOROBENZENE	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U

GROUNDWATER ANALYTICAL RESULTS
 JULY 1995 - SEPTEMBER 1996
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-0367
 MCB, CAMP LEJEUNE, NORTH CAROLINA
 VOLATILE ORGANICS

SAMPLE ID	02-GW03DW-96A	02-GW03DW-96B	02-GW03DW-96C	02-GW04-95C	02-GW04-95D	02-GW04-96A
DATE SAMPLED	02/02/96	05/02/96	07/25/96	08/01/95	11/02/95	02/01/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES (cont)						
1,3-DICHLOROBENZENE	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U
1,4-DICHLOROBENZENE	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U
DICHLORODIFLUOROMETHANE	NA	0.3 U	NA	0.3 U	0.3 U	0.3 U
TETRACHLOROETHYLENE	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U
TRANS-1,2-DICHLOROETHENE	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U
TRICHLOROETHYLENE	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U
TRICHLOROFLUOROMETHANE	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U
BROMOBENZENE	NA	NA	NA	NA	NA	NA
BROMOETHANE	NA	NA	NA	NA	NA	NA
O-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA
P-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	NA	NA	NA	NA	NA
M-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
O-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
P-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
DICHLOROMETHANE	NA	NA	NA	NA	NA	NA
1,1-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA
2,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPENE (TOTAL)	NA	NA	NA	NA	NA	NA
ETHYLENE DIBROMIDE	NA	NA	NA	NA	NA	NA
1,1,1,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA
1,2,3-TRICHLOROPROPANE	NA	NA	NA	NA	NA	NA
M & P-XYLENE	NA	NA	NA	NA	NA	NA
MANGANESE, DISSOLVED	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPENE (TOTAL)	NA	NA	NA	NA	NA	NA
O-XYLENES	NA	NA	NA	NA	NA	NA

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
VOLATILE ORGANICS

SAMPLE ID	02-GW04-96B	02-GW04-96C	02-GW05-95C	02-GW05-95D	02-GW05-96A	02-GW05-96B
DATE SAMPLED	05/03/96	07/23/96	08/01/95	11/02/95	02/01/96	05/03/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES						
CHLOROMETHANE	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U
VINYL CHLORIDE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U
BROMOMETHANE	0.4 U	0.5 U	0.4 U	0.4 U	0.4 U	0.4 U
CHLOROETHANE	0.4 U	0.5 U	0.4 U	0.4 U	0.4 U	0.4 U
1,1-DICHLOROETHENE	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U
ACETONE	NA	2 U	NA	NA	NA	NA
CARBON DISULFIDE	NA	2 U	NA	NA	NA	NA
METHYLENE CHLORIDE	0.1 U	0.5 U	0.1 U	0.3 U	0.1 U	0.1 U
1,2-DICHLOROETHENE (TOTAL)	NA	0.5 U	NA	NA	NA	NA
1,1-DICHLOROETHANE	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U
2-BUTANONE	NA	2 U	NA	NA	NA	NA
CHLOROFORM	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1,1-TRICHLOROETHANE	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U
CARBON TETRACHLORIDE	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U
BENZENE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-DICHLOROETHANE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U
TRICHLOROETHENE	NA	0.5 U	NA	NA	NA	NA
1,2-DICHLOROPROPANE	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U
BROMODICHLOROMETHANE	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U
CIS-1,3-DICHLOROPROPENE	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U
4-METHYL-2-PENTANONE	NA	2 U	NA	NA	NA	NA
TOLUENE	0.1 U	0.5 U	0.1 U	0.1 U	0.2 U	0.1 U
TRANS-1,3-DICHLOROPROPENE	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	NA	0.5 U	NA	NA	NA	NA
2-HEXANONE	NA	2 U	NA	NA	NA	NA
DIBROMOCHLOROMETHANE	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U
CHLOROBENZENE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U
ETHYLBENZENE	0.1 U	0.5 U	0.1 U	0.1	0.1 U	0.1 U
XYLENES, TOTAL	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U
STYRENE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U
BROMOFORM	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U
1,1,2,2-TETRACHLOROETHANE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U
2-CHLOROETHYL VINYL ETHER	5 U	NA	5 U	5 U	5 U	5 U
1,2-DICHLOROBENZENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
VOLATILE ORGANICS

SAMPLE ID	02-GW04-96B	02-GW04-96C	02-GW05-95C	02-GW05-95D	02-GW05-96A	02-GW05-96B
DATE SAMPLED	05/03/96	07/23/96	08/01/95	11/02/95	02/01/96	05/03/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES (cont)						
1,3-DICHLOROBENZENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U
1,4-DICHLOROBENZENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U
DICHLORODIFLUOROMETHANE	0.3 U	NA	0.3 U	0.3 U	0.3 U	0.3 U
TETRACHLOROETHYLENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U
TRANS-1,2-DICHLOROETHENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U
TRICHLOROETHYLENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U
TRICHLOROFUOROMETHANE	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U
BROMOBENZENE	NA	NA	NA	NA	NA	NA
BROMOETHANE	NA	NA	NA	NA	NA	NA
O-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA
P-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	NA	NA	NA	NA	NA
M-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
O-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
P-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
DICHLOROMETHANE	NA	NA	NA	NA	NA	NA
1,1-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA
2,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPENE (TOTAL)	NA	NA	NA	NA	NA	NA
ETHYLENE DIBROMIDE	NA	NA	NA	NA	NA	NA
1,1,1,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA
1,2,3-TRICHLOROPROPANE	NA	NA	NA	NA	NA	NA
M & P-XYLENE	NA	NA	NA	NA	NA	NA
MANGANESE, DISSOLVED	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPENE (TOTAL)	NA	NA	NA	NA	NA	NA
O-XYLENES	NA	NA	NA	NA	NA	NA

GROUNDWATER ANALYTICAL RESULTS
 JULY 1995 - SEPTEMBER 1996
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-0367
 MCB, CAMP LEJEUNE, NORTH CAROLINA
 VOLATILE ORGANICS

SAMPLE ID	02-GW05-96C	02-GW06-95C	02-GW06-95D	02-GW06-96A	02-GW06-96B	02-GW06-96C
DATE SAMPLED	07/23/96	08/01/95	11/02/95	02/01/96	05/03/96	07/23/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES						
CHLOROMETHANE	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U
VINYL CHLORIDE	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
BROMOMETHANE	0.5 U	0.4 U	0.4 U	0.4 U	0.4 U	0.5 U
CHLOROETHANE	0.5 U	0.4 U	0.4 U	0.4 U	0.4 U	0.5 U
1,1-DICHLOROETHENE	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U
ACETONE	2 U	NA	NA	NA	NA	2 U
CARBON DISULFIDE	2 U	NA	NA	NA	NA	2 U
METHYLENE CHLORIDE	0.5 U	0.2 U	0.6 U	0.5 U	0.1 U	1
1,2-DICHLOROETHENE (TOTAL)	0.5 U	NA	NA	NA	NA	0.5 U
1,1-DICHLOROETHANE	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
2-BUTANONE	2 U	NA	NA	NA	NA	2 U
CHLOROFORM	0.5 U	1.2	0.6 U	1.2 U	0.3 U	1
1,1,1-TRICHLOROETHANE	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U
CARBON TETRACHLORIDE	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
BENZENE	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
1,2-DICHLOROETHANE	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
TRICHLOROETHENE	0.5 U	NA	NA	NA	NA	0.5 U
1,2-DICHLOROPROPANE	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
BROMODICHLOROMETHANE	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
CIS-1,3-DICHLOROPROPENE	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U
4-METHYL-2-PENTANONE	2 U	NA	NA	NA	NA	2 U
TOLUENE	0.5 U	0.1 U	0.1 U	0.2 U	0.1 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	0.5 U	NA	NA	NA	NA	0.5 U
2-HEXANONE	2 U	NA	NA	NA	NA	2 U
DIBROMOCHLOROMETHANE	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
CHLOROBENZENE	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
ETHYLBENZENE	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
XYLENES, TOTAL	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
STYRENE	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
BROMOFORM	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
2-CHLOROETHYL VINYL ETHER	NA	5 U	5 U	5 U	5 U	NA
1,2-DICHLOROBENZENE	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA

GROUNDWATER ANALYTICAL RESULTS
 JULY 1995 - SEPTEMBER 1996
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-0367
 MCB, CAMP LEJEUNE, NORTH CAROLINA
 VOLATILE ORGANICS

SAMPLE ID	02-GW05-96C	02-GW06-95C	02-GW06-95D	02-GW06-96A	02-GW06-96B	02-GW06-96C
DATE SAMPLED	07/23/96	08/01/95	11/02/95	02/01/96	05/03/96	07/23/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES (cont)						
1,3-DICHLOROBENZENE	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
1,4-DICHLOROBENZENE	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
DICHLORODIFLUOROMETHANE	NA	0.3 U	0.3 U	0.3 U	0.3 U	NA
TETRACHLOROETHYLENE	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
TRANS-1,2-DICHLOROETHENE	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
TRICHLOROETHYLENE	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
TRICHLOROFUOROMETHANE	NA	0.5 U	0.5 U	0.5 U	0.5 U	NA
BROMOBENZENE	NA	NA	NA	NA	NA	NA
BROMOETHANE	NA	NA	NA	NA	NA	NA
O-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA
P-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	NA	NA	NA	NA	NA
M-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
O-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
P-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
DICHLROMETHANE	NA	NA	NA	NA	NA	NA
1,1-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA
2,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPENE (TOTAL)	NA	NA	NA	NA	NA	NA
ETHYLENE DIBROMIDE	NA	NA	NA	NA	NA	NA
1,1,1,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA
1,2,3-TRICHLOROPROPANE	NA	NA	NA	NA	NA	NA
M & P-XYLENE	NA	NA	NA	NA	NA	NA
MANGANESE, DISSOLVED	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPENE (TOTAL)	NA	NA	NA	NA	NA	NA
O-XYLENES	NA	NA	NA	NA	NA	NA

GROUNDWATER ANALYTICAL RESULTS
 JULY 1995 - SEPTEMBER 1996
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-0367
 MCB, CAMP LEJEUNE, NORTH CAROLINA
 VOLATILE ORGANICS

SAMPLE ID	02-GW07-95C	02-GW07-95D	02-GW07-96A	02-GW07-96B	02-GW07-96C	02-GW08-95C
DATE SAMPLED	08/01/95	11/02/95	02/01/96	05/03/96	07/23/96	08/01/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES						
CHLOROMETHANE	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U
VINYL CHLORIDE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
BROMOMETHANE	0.4 U	0.4 U	0.4 U	0.4 U	0.5 U	0.4 U
CHLOROETHANE	0.4 U	0.4 U	0.4 U	0.4 U	0.5 U	0.4 U
1,1-DICHLOROETHENE	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U
ACETONE	NA	NA	NA	NA	2 U	NA
CARBON DISULFIDE	NA	NA	NA	NA	2 U	NA
METHYLENE CHLORIDE	0.2 U	0.3 U	0.1 U	0.1 U	0.5 U	0.2 U
1,2-DICHLOROETHENE (TOTAL)	NA	NA	NA	NA	0.5 U	NA
1,1-DICHLOROETHANE	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U
2-BUTANONE	NA	NA	NA	NA	2 U	NA
CHLOROFORM	0.1 U	1.2 U	0.1 U	0.1 U	0.5 U	0.1 U
1,1,1-TRICHLOROETHANE	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U
CARBON TETRACHLORIDE	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U
BENZENE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
1,2-DICHLOROETHANE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
TRICHLOROETHENE	NA	NA	NA	NA	0.5 U	NA
1,2-DICHLOROPROPANE	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U
BROMODICHLOROMETHANE	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U
CIS-1,3-DICHLOROPROPENE	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U
4-METHYL-2-PENTANONE	NA	NA	NA	NA	2 U	NA
TOLUENE	0.1 U	0.2 U	0.2 U	0.1 U	0.5 U	0.1 U
TRANS-1,3-DICHLOROPROPENE	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	NA	NA	NA	NA	0.5 U	NA
2-HEXANONE	NA	NA	NA	NA	2 U	NA
DIBROMOCHLOROMETHANE	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U
CHLOROBENZENE	0.4	0.1 U	0.1 U	0.2 U	0.5 U	0.1 U
ETHYLBENZENE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
XYLENES, TOTAL	0.5	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
STYRENE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
BROMOFORM	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U
1,1,2,2-TETRACHLOROETHANE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
2-CHLOROETHYL VINYL ETHER	5 U	5 U	5 U	5 U	NA	5 U
1,2-DICHLOROBENZENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
VOLATILE ORGANICS

SAMPLE ID	02-GW07-95C	02-GW07-95D	02-GW07-96A	02-GW07-96B	02-GW07-96C	02-GW08-95C
DATE SAMPLED	08/01/95	11/02/95	02/01/96	05/03/96	07/23/96	08/01/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES (cont)						
1,3-DICHLOROBENZENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
1,4-DICHLOROBENZENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
DICHLORODIFLUOROMETHANE	0.3 U	0.3 U	0.3 U	0.3 U	NA	0.3 U
TETRACHLOROETHYLENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
TRANS-1,2-DICHLOROETHENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
TRICHLOROETHYLENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
TRICHLOROFLUOROMETHANE	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
BROMOBENZENE	NA	NA	NA	NA	NA	NA
BROMOETHANE	NA	NA	NA	NA	NA	NA
O-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA
P-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	NA	NA	NA	NA	NA
M-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
O-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
P-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
DICHLOROMETHANE	NA	NA	NA	NA	NA	NA
1,1-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA
2,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPENE (TOTAL)	NA	NA	NA	NA	NA	NA
ETHYLENE DIBROMIDE	NA	NA	NA	NA	NA	NA
1,1,1,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA
1,2,3-TRICHLOROPROPANE	NA	NA	NA	NA	NA	NA
M & P-XYLENE	NA	NA	NA	NA	NA	NA
MANGANESE, DISSOLVED	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPENE (TOTAL)	NA	NA	NA	NA	NA	NA
O-XYLENES	NA	NA	NA	NA	NA	NA

GROUNDWATER ANALYTICAL RESULTS
 JULY 1995 - SEPTEMBER 1996
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-0367
 MCB, CAMP LEJEUNE, NORTH CAROLINA
 VOLATILE ORGANICS

SAMPLE ID	02-GW08-95D	02-GW08-96A	02-GW08-96B	02-GW08-96C	02-GW09-95C	02-GW09-95D
DATE SAMPLED	11/02/95	02/01/96	05/03/96	07/24/96	08/01/95	11/02/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES						
CHLOROMETHANE	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
VINYL CHLORIDE	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U
BROMOMETHANE	0.4 U	0.4 U	0.4 U	0.5 U	0.4 U	0.4 U
CHLOROETHANE	0.4 U	0.4 U	0.4 U	0.5 U	0.4 U	0.4 U
1,1-DICHLOROETHENE	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
ACETONE	NA	NA	NA	2 U	NA	NA
CARBON DISULFIDE	NA	NA	NA	2 U	NA	NA
METHYLENE CHLORIDE	0.2 U	0.1 U	0.3 U	0.5 U	0.1 U	0.3 U
1,2-DICHLOROETHENE (TOTAL)	NA	NA	NA	0.5 U	NA	NA
1,1-DICHLOROETHANE	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U
2-BUTANONE	NA	NA	NA	2 U	NA	NA
CHLOROFORM	0.6 U	0.1 U	0.1 U	0.5 U	0.1 U	0.5 U
1,1,1-TRICHLOROETHANE	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
CARBON TETRACHLORIDE	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U
BENZENE	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U
1,2-DICHLOROETHANE	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U
TRICHLOROETHENE	NA	NA	NA	0.5 U	NA	NA
1,2-DICHLOROPROPANE	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U
BROMODICHLOROMETHANE	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U
CIS-1,3-DICHLOROPROPENE	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
4-METHYL-2-PENTANONE	NA	NA	NA	2 U	NA	NA
TOLUENE	0.2 U	0.1 U	0.1 U	0.5 U	0.1 U	0.2 U
TRANS-1,3-DICHLOROPROPENE	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	NA	NA	NA	0.5 U	NA	NA
2-HEXANONE	NA	NA	NA	2 U	NA	NA
DIBROMOCHLOROMETHANE	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U
CHLOROBENZENE	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U
ETHYLBENZENE	0.1 U	0.1 U	0.4	0.5 U	0.1 U	0.1 U
XYLENES, TOTAL	0.3	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U
STYRENE	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U
BROMOFORM	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U
1,1,2,2-TETRACHLOROETHANE	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U
2-CHLOROETHYL VINYL ETHER	5 U	5 U	5 U	NA	5 U	5 U
1,2-DICHLOROBENZENE	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
VOLATILE ORGANICS

SAMPLE ID	02-GW08-95D	02-GW08-96A	02-GW08-96B	02-GW08-96C	02-GW09-95C	02-GW09-95D
DATE SAMPLED	11/02/95	02/01/96	05/03/96	07/24/96	08/01/95	11/02/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES (cont)						
1,3-DICHLOROBENZENE	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U
1,4-DICHLOROBENZENE	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U
DICHLORODIFLUOROMETHANE	0.3 U	0.3 U	0.3 U	NA	0.3 U	0.3 U
TETRACHLOROETHYLENE	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U
TRANS-1,2-DICHLOROETHENE	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U
TRICHLOROETHYLENE	0.1 U	0.1 U	0.1 U	NA	0.1 U	0.1 U
TRICHLOROFLUOROMETHANE	0.5 U	0.5 U	0.5 U	NA	0.5 U	0.5 U
BROMOBENZENE	NA	NA	NA	NA	NA	NA
BROMOETHANE	NA	NA	NA	NA	NA	NA
O-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA
P-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	NA	NA	NA	NA	NA
M-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
O-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
P-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
DICHLOROMETHANE	NA	NA	NA	NA	NA	NA
1,1-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA
2,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPENE (TOTAL)	NA	NA	NA	NA	NA	NA
ETHYLENE DIBROMIDE	NA	NA	NA	NA	NA	NA
1,1,1,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA
1,2,3-TRICHLOROPROPANE	NA	NA	NA	NA	NA	NA
M & P-XYLENE	NA	NA	NA	NA	NA	NA
MANGANESE, DISSOLVED	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPENE (TOTAL)	NA	NA	NA	NA	NA	NA
O-XYLENES	NA	NA	NA	NA	NA	NA

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
VOLATILE ORGANICS

SAMPLE ID	02-GW09-96A	02-GW09-96B	02-GW09-96C	02-GW10-95C	02-GW10-95D	02-GW10-96A
DATE SAMPLED	02/02/96	05/03/96	07/25/96	08/01/95	11/02/95	02/02/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES						
CHLOROMETHANE	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U
VINYL CHLORIDE	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U
BROMOMETHANE	0.4 U	0.4 U	0.5 U	0.4 U	0.4 U	0.4 U
CHLOROETHANE	0.4 U	0.4 U	0.5 U	0.4 U	0.4 U	0.4 U
1,1-DICHLOROETHENE	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U
ACETONE	NA	NA	2 U	NA	NA	NA
CARBON DISULFIDE	NA	NA	2 U	NA	NA	NA
METHYLENE CHLORIDE	0.7 U	0.1 U	0.5 U	0.2 U	0.7 U	0.1 U
1,2-DICHLOROETHENE (TOTAL)	NA	NA	0.5 U	NA	NA	NA
1,1-DICHLOROETHANE	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
2-BUTANONE	NA	NA	2 U	NA	NA	NA
CHLOROFORM	0.3 U	0.1 U	0.5 U	0.1 U	0.6 U	0.4 U
1,1,1-TRICHLOROETHANE	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U
CARBON TETRACHLORIDE	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
BENZENE	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U
1,2-DICHLOROETHANE	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U
TRICHLOROETHENE	NA	NA	0.5 U	NA	NA	NA
1,2-DICHLOROPROPANE	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
BROMODICHLOROMETHANE	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
CIS-1,3-DICHLOROPROPENE	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U
4-METHYL-2-PENTANONE	NA	NA	2 U	NA	NA	NA
TOLUENE	0.1 U	0.1 U	0.5 U	0.1 U	0.3 U	0.1 U
TRANS-1,3-DICHLOROPROPENE	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	NA	NA	0.5 U	NA	NA	NA
2-HEXANONE	NA	NA	2 U	NA	NA	NA
DIBROMOCHLOROMETHANE	0.2 U	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U
CHLOROBENZENE	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U
ETHYLBENZENE	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U
XYLENES, TOTAL	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U
STYRENE	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U
BROMOFORM	0.3 U	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U
1,1,2,2-TETRACHLOROETHANE	0.1 U	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U
2-CHLOROETHYL VINYL ETHER	5 U	5 U	NA	5 U	5 U	5 U
1,2-DICHLOROBENZENE	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
VOLATILE ORGANICS

SAMPLE ID	02-GW09-96A	02-GW09-96B	02-GW09-96C	02-GW10-95C	02-GW10-95D	02-GW10-96A
DATE SAMPLED	02/02/96	05/03/96	07/25/96	08/01/95	11/02/95	02/02/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES (cont)						
1,3-DICHLOROBENZENE	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U
1,4-DICHLOROBENZENE	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U
DICHLORODIFLUOROMETHANE	0.3 U	0.3 U	NA	0.3 U	0.3 U	0.3 U
TETRACHLOROETHYLENE	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U
TRANS-1,2-DICHLOROETHENE	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U
TRICHLOROETHYLENE	0.1 U	0.1 U	NA	0.1 U	0.1 U	0.1 U
TRICHLOROFLUOROMETHANE	0.5 U	0.5 U	NA	0.5 U	0.5 U	0.5 U
BROMOBENZENE	NA	NA	NA	NA	NA	NA
BROMOETHANE	NA	NA	NA	NA	NA	NA
O-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA
P-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	NA	NA	NA	NA	NA
M-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
O-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
P-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA
DICHLOROMETHANE	NA	NA	NA	NA	NA	NA
1,1-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA
2,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPENE (TOTAL)	NA	NA	NA	NA	NA	NA
ETHYLENE DIBROMIDE	NA	NA	NA	NA	NA	NA
1,1,1,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA
1,2,3-TRICHLOROPROPANE	NA	NA	NA	NA	NA	NA
M & P-XYLENE	NA	NA	NA	NA	NA	NA
MANGANESE, DISSOLVED	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPENE (TOTAL)	NA	NA	NA	NA	NA	NA
O-XYLENES	NA	NA	NA	NA	NA	NA

GROUNDWATER ANALYTICAL RESULTS
 JULY 1995 - SEPTEMBER 1996
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-0367
 MCB, CAMP LEJEUNE, NORTH CAROLINA
 VOLATILE ORGANICS

SAMPLE ID	02-GW10-96B	02-GW10-96C	02-GW11-95C	02-GW11-95D	02-GW11-96A	02-GW11-96B	02-GW11-96C
DATE SAMPLED	05/03/96	07/25/96	08/01/95	11/02/95	02/02/96	05/02/96	07/23/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES							
CHLOROMETHANE	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U	0.3	0.5 U
VINYL CHLORIDE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1	0.5 U
BROMOMETHANE	0.4 U	0.5 U	0.4 U	0.4 U	0.4 U	0.4	0.5 U
CHLOROETHANE	0.4 U	0.5 U	0.4 U	0.4 U	0.4 U	0.4	0.5 U
1,1-DICHLOROETHENE	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U	0.3	0.5 U
ACETONE	NA	2 U	NA	NA	NA	NA	2 U
CARBON DISULFIDE	NA	2 U	NA	NA	NA	NA	2 U
METHYLENE CHLORIDE	0.2 U	0.5 U	0.2 U	0.1 U	0.1 U	0.1	0.5 U
1,2-DICHLOROETHENE (TOTAL)	NA	0.5 U	NA	NA	NA	NA	0.5 U
1,1-DICHLOROETHANE	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2	0.5 U
2-BUTANONE	NA	2 U	NA	NA	NA	NA	2 U
CHLOROFORM	0.2	0.5 U	0.1 U	0.6 U	0.4 U	0.3	0.5 U
1,1,1-TRICHLOROETHANE	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U	0.3	0.5 U
CARBON TETRACHLORIDE	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2	0.5 U
BENZENE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
1,2-DICHLOROETHANE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1	0.5 U
TRICHLOROETHENE	NA	0.5 U	NA	NA	NA	NA	0.5 U
1,2-DICHLOROPROPANE	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2	0.5 U
BROMODICHLOROMETHANE	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2	0.5 U
CIS-1,3-DICHLOROPROPENE	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U	0.3	0.5 U
4-METHYL-2-PENTANONE	NA	2 U	NA	NA	NA	NA	2 U
TOLUENE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1	0.5 U
TRANS-1,3-DICHLOROPROPENE	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U	0.3	0.5 U
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5	0.5 U
TETRACHLOROETHENE	NA	0.5 U	NA	NA	NA	NA	0.5 U
2-HEXANONE	NA	2 U	NA	NA	NA	NA	2 U
DIBROMOCHLOROMETHANE	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2	0.5 U
CHLOROBENZENE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1	0.5 U
ETHYLBENZENE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1	0.5 U
XYLENES, TOTAL	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1	0.5 U
STYRENE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1	0.5 U
BROMOFORM	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U	0.3	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1	0.5 U
2-CHLOROETHYL VINYL ETHER	5 U	NA	5 U	5 U	5 U	5	NA
1,2-DICHLOROBENZENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1	NA

GROUNDWATER ANALYTICAL RESULTS
 JULY 1995 - SEPTEMBER 1996
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-0367
 MCB, CAMP LEJEUNE, NORTH CAROLINA
 VOLATILE ORGANICS

SAMPLE ID	02-GW10-96B	02-GW10-96C	02-GW11-95C	02-GW11-95D	02-GW11-96A	02-GW11-96B	02-GW11-96C
DATE SAMPLED	05/03/96	07/25/96	08/01/95	11/02/95	02/02/96	05/02/96	07/23/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES (cont)							
1,3-DICHLOROBENZENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1	NA
1,4-DICHLOROBENZENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1	NA
DICHLORODIFLUOROMETHANE	0.3 U	NA	0.3 U	0.3 U	0.3 U	0.3	NA
TETRACHLOROETHYLENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1	NA
TRANS-1,2-DICHLOROETHENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1	NA
TRICHLOROETHYLENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1	NA
TRICHLOROFUOROMETHANE	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5	NA
BROMOBENZENE	NA	NA	NA	NA	NA	NA	NA
BROMOETHANE	NA	NA	NA	NA	NA	NA	NA
O-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA	NA
P-CHLOROTOLUENE	NA	NA	NA	NA	NA	NA	NA
1,2-DIBROMO-3-CHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA
DIBROMOMETHANE	NA	NA	NA	NA	NA	NA	NA
M-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
O-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
P-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
CIS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA	NA
TRANS-1,2-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROETHYLENE	NA	NA	NA	NA	NA	NA	NA
DICHLOROMETHANE	NA	NA	NA	NA	NA	NA	NA
1,1-DICHLOROPROPENE	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA
2,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPENE (TOTAL)	NA	NA	NA	NA	NA	NA	NA
ETHYLENE DIBROMIDE	NA	NA	NA	NA	NA	NA	NA
1,1,1,2-TETRACHLOROETHANE	NA	NA	NA	NA	NA	NA	NA
1,2,3-TRICHLOROPROPANE	NA	NA	NA	NA	NA	NA	NA
M & P-XYLENE	NA	NA	NA	NA	NA	NA	NA
MANGANESE, DISSOLVED	NA	NA	NA	NA	NA	NA	NA
1,3-DICHLOROPROPENE (TOTAL)	NA	NA	NA	NA	NA	NA	NA
O-XYLENES	NA	NA	NA	NA	NA	NA	NA

GROUNDWATER ANALYTICAL RESULTS
 JULY 1995 - SEPTEMBER 1996
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-0367
 MCB, CAMP LEJEUNE, NORTH CAROLINA
 VOLATILE ORGANICS

SAMPLE ID	02-PRW616-95C	02-PRW616-95D	02-PRW616-96A	02-PRW616-96B	02-PRW616-96C	02-PRW646-96A
DATE SAMPLED	08/01/95	11/01/95	02/01/96	05/02/96	07/24/96	02/01/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES						
CHLOROMETHANE	0.3 U	0.3 U	0.3 U	0.1 U	0.5 U	0.3 U
VINYL CHLORIDE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
BROMOMETHANE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
CHLOROETHANE	0.4 U	0.4 U	0.4 U	0.2 U	0.5 U	0.4 U
1,1-DICHLOROETHENE	0.3 U	0.3 U	0.3 U	NA	0.5 U	0.3 U
ACETONE	NA	NA	NA	NA	2 U	NA
CARBON DISULFIDE	NA	NA	NA	NA	2 U	NA
METHYLENE CHLORIDE	0.2 U	0.2 U	0.2 U	NA	1	0.2 U
1,2-DICHLOROETHENE (TOTAL)	NA	NA	NA	NA	0.5 U	NA
1,1-DICHLOROETHANE	0.2 U	0.2 U	0.2 U	0.1 U	0.5 U	0.2 U
2-BUTANONE	NA	NA	NA	NA	2 U	NA
CHLOROFORM	0.1 U	0.4 U	0.2 U	0.3 U	0.5 U	0.2 U
1,1,1-TRICHLOROETHANE	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U
CARBON TETRACHLORIDE	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U
BENZENE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
1,2-DICHLOROETHANE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
TRICHLOROETHENE	NA	NA	NA	NA	0.5 U	NA
1,2-DICHLOROPROPANE	NA	NA	NA	NA	0.5 U	NA
BROMODICHLOROMETHANE	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U	0.2 U
CIS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	0.5 U	NA
4-METHYL-2-PENTANONE	NA	NA	NA	NA	2 U	NA
TOLUENE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.2 U
TRANS-1,3-DICHLOROPROPENE	NA	NA	NA	NA	0.5 U	NA
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	NA	NA	NA	NA	0.5 U	NA
2-HEXANONE	NA	NA	NA	NA	2 U	NA
DIBROMOCHLOROMETHANE	0.2 U	0.2 U	0.2 U	NA	0.5 U	0.2 U
CHLOROBENZENE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
ETHYLBENZENE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
XYLENES, TOTAL	NA	NA	NA	NA	0.5 U	NA
STYRENE	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U	0.1 U
BROMOFORM	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U	0.3 U
1,1,2,2-TETRACHLOROETHANE	0.1 U	0.1 U	0.1 U	0.2 U	0.5 U	0.1 U
2-CHLOROETHYL VINYL ETHER	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
VOLATILE ORGANICS

SAMPLE ID	02-PRW616-95C	02-PRW616-95D	02-PRW616-96A	02-PRW616-96B	02-PRW616-96C	02-PRW646-96A
DATE SAMPLED	08/01/95	11/01/95	02/01/96	05/02/96	07/24/96	02/01/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES (cont)						
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA
TETRACHLOROETHYLENE	0.1 U	0.1 U	0.1 U	0.3 U	NA	0.1 U
TRANS-1,2-DICHLOROETHENE	0.1 U	0.1 U	0.1 U	NA	NA	0.1 U
TRICHLOROETHYLENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA
BROMOBENZENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
BROMOETHANE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
O-CHLOROTOLUENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
P-CHLOROTOLUENE	0.1 U	0.1 U	0.1 U	0.4 U	NA	0.1 U
1,2-DIBROMO-3-CHLOROPROPANE	0.4 U	0.4 U	0.4 U	0.1 U	NA	0.4 U
DIBROMOMETHANE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
M-DICHLOROBENZENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
O-DICHLOROBENZENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
P-DICHLOROBENZENE	0.1 U	0.1 U	0.1 U	0.2 U	NA	0.1 U
CIS-1,2-DICHLOROETHYLENE	0.1 U	0.1 U	0.1 U	0.3 U	NA	0.1 U
TRANS-1,2-DICHLOROETHYLENE	NA	NA	NA	0.2 U	NA	NA
1,1-DICHLOROETHYLENE	NA	NA	NA	0.1 U	NA	NA
DICHLOROMETHANE	NA	NA	NA	0.2 U	NA	NA
1,1-DICHLOROPROPENE	NA	NA	NA	0.1 U	NA	0.1 U
1,3-DICHLOROPROPANE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
2,2-DICHLOROPROPANE	0.2 U	0.2 U	0.2 U	0.1 U	NA	0.2 U
1,3-DICHLOROPENE (TOTAL)	NA	NA	NA	0.1 U	NA	NA
ETHYLENE DIBROMIDE	NA	NA	NA	0.1 U	NA	0.1 U
1,1,1,2-TETRACHLOROETHANE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
1,2,3-TRICHLOROPROPANE	0.5 U	0.5 U	0.5 U	0.5 U	NA	0.5 U
M & P-XYLENE	0.1 U	0.1 U	0.1 U	0.1 U	NA	0.1 U
MANGANESE, DISSOLVED	NA	NA	NA	NA	NA	24
1,3-DICHLOROPROPENE (TOTAL)	0.3 U	0.3 U	0.3 U	NA	NA	0.3 U
O-XYLENES	0.1 U	0.1 U	0.1 U	NA	NA	0.1 U

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
VOLATILE ORGANICS

SAMPLE ID	02-PRW646-96B	02-PRW646-96C	02-PRW647-95C	02-PRW647-95D	02-PRW647-96A	02-PRW647-96B	02-PRW647-96C
DATE SAMPLED	05/02/96	07/24/96	08/01/95	11/01/95	02/01/96	05/02/96	07/24/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES							
CHLOROMETHANE	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U
VINYL CHLORIDE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
BROMOMETHANE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
CHLOROETHANE	0.4 U	0.5 U	0.4 U	0.4 U	0.4 U	0.4 U	0.5 U
1,1-DICHLOROETHENE	NA	0.5 U	0.3 U	0.3 U	0.3 U	NA	0.5 U
ACETONE	NA	2 U	NA	NA	NA	NA	2 U
CARBON DISULFIDE	NA	2 U	NA	NA	NA	NA	2 U
METHYLENE CHLORIDE	NA	0.5 U	0.1 U	0.6 U	0.6 U	NA	0.5 U
1,2-DICHLOROETHENE (TOTAL)	NA	0.5 U	NA	NA	NA	NA	0.5 U
1,1-DICHLOROETHANE	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
2-BUTANONE	NA	2 U	NA	NA	NA	NA	2 U
CHLOROFORM	0.1 U	0.5 U	0.1 U	0.2 U	0.4 U	0.1 U	0.5 U
1,1,1-TRICHLOROETHANE	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U
CARBON TETRACHLORIDE	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
BENZENE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
1,2-DICHLOROETHANE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
TRICHLOROETHENE	NA	0.5 U	NA	NA	NA	NA	0.5 U
1,2-DICHLOROPROPANE	NA	0.5 U	NA	NA	NA	NA	0.5 U
BROMODICHLOROMETHANE	0.2 U	0.5 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 U
CIS-1,3-DICHLOROPROPENE	NA	0.5 U	NA	NA	NA	NA	0.5 U
4-METHYL-2-PENTANONE	NA	2 U	NA	NA	NA	NA	2 U
TOLUENE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
TRANS-1,3-DICHLOROPROPENE	NA	0.5 U	NA	NA	NA	NA	0.5 U
1,1,2-TRICHLOROETHANE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
TETRACHLOROETHENE	NA	0.5 U	NA	NA	NA	NA	0.5 U
2-HEXANONE	NA	2 U	NA	NA	NA	NA	2 U
DIBROMOCHLOROMETHANE	NA	0.5 U	0.2 U	0.2 U	0.2 U	NA	0.5 U
CHLOROBENZENE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
ETHYLBENZENE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
XYLENES, TOTAL	NA	0.5 U	NA	NA	NA	NA	0.5 U
STYRENE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
BROMOFORM	0.3 U	0.5 U	0.3 U	0.3 U	0.3 U	0.3 U	0.5 U
1,1,2,2-TETRACHLOROETHANE	0.1 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U	0.5 U
2-CHLOROETHYL VINYL ETHER	NA	NA	NA	NA	NA	NA	NA
1,2-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
VOLATILE ORGANICS

SAMPLE ID	02-PRW646-96B	02-PRW646-96C	02-PRW647-95C	02-PRW647-95D	02-PRW647-96A	02-PRW647-96B	02-PRW647-96C
DATE SAMPLED	05/02/96	07/24/96	08/01/95	11/01/95	02/01/96	05/02/96	07/24/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
VOLATILES (cont)							
1,3-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
1,4-DICHLOROBENZENE	NA	NA	NA	NA	NA	NA	NA
DICHLORODIFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA
TETRACHLOROETHYLENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
TRANS-1,2-DICHLOROETHENE	NA	NA	0.1 U	0.1 U	0.1 U	NA	NA
TRICHLOROETHYLENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
TRICHLOROFLUOROMETHANE	NA	NA	NA	NA	NA	NA	NA
BROMOBENZENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
BROMOETHANE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
O-CHLOROTOLUENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
P-CHLOROTOLUENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	0.4 U	NA	0.4 U	0.4 U	0.4 U	0.4 U	NA
DIBROMOMETHANE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
M-DICHLOROBENZENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
O-DICHLOROBENZENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
P-DICHLOROBENZENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
CIS-1,2-DICHLOROETHYLENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
TRANS-1,2-DICHLOROETHYLENE	0.1 U	NA	NA	NA	NA	0.1 U	NA
1,1-DICHLOROETHYLENE	0.3 U	NA	NA	NA	NA	0.3 U	NA
DICHLOROMETHANE	0.1 U	NA	NA	NA	NA	0.2 U	NA
1,1-DICHLOROPROPENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
1,3-DICHLOROPROPANE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
2,2-DICHLOROPROPANE	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	NA
1,3-DICHLOROPROPENE (TOTAL)	0.3 U	NA	NA	NA	NA	0.3 U	NA
ETHYLENE DIBROMIDE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
1,1,1,2-TETRACHLOROETHANE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
1,2,3-TRICHLOROPROPANE	0.5 U	NA	0.5 U	0.5 U	0.5 U	0.5 U	NA
M & P-XYLENE	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA
MANGANESE, DISSOLVED	NA	NA	22	21	19	NA	NA
1,3-DICHLOROPROPENE (TOTAL)	NA	NA	0.3 U	0.3 U	0.3 U	NA	NA
O-XYLENES	0.1 U	NA	0.1 U	0.1 U	0.1 U	0.1 U	NA

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
TOTAL METALS

SAMPLE ID	02-GW01-95C	02-GW01-95D	02-GW01-96A	02-GW01-96B	02-GW01-96C	02-GW02-95C
DATE SAMPLED	08/01/95	11/02/95	02/01/96	05/03/96	07/23/96	08/01/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
TOTAL METALS						
BARIUM, TOTAL	46	45	54	45	43.3	117
BERYLLIUM, TOTAL	0.2 U	0.2 U	0.2 U	0.2 U	0.7 U	21
CADMIUM, TOTAL	5 U	6	5 U	5 U	2.6 U	5 U
CHROMIUM, TOTAL	50 U	50 U	50 U	50 U	3.3 U	50 U
LEAD, TOTAL	2	1 U	2	14	1.2 U	1 U
MANGANESE, TOTAL	49	52	71	38	42.8	22

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
TOTAL METALS

SAMPLE ID	02-GW02-95D	02-GW02-96A	02GW02-96B	02-GW02-96C	02-GW03-95C	02-GW03-95D
DATE SAMPLED	11/02/95	02/01/96	05/03/96	07/23/96	08/01/95	11/02/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
TOTAL METALS						
BARIUM, TOTAL	66	44	59	38.5	40	37
BERYLLIUM, TOTAL	10.5	5	9.5	0.72	0.2 U	0.2 U
CADMIUM, TOTAL	5 U	5 U	5 U	2.6 U	5 U	8
CHROMIUM, TOTAL	50 U	50 U	50 U	3.3 U	50 U	50 U
LEAD, TOTAL	5	3	80	1.2 U	5	2
MANGANESE, TOTAL	21	14	16	6.1	20	12

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
TOTAL METALS

SAMPLE ID	02-GW03-96A	02GW03-96B	02-GW03-96C	02-GW03DW-95C	02-GW03DW-95D	02-GW03DW-96A
DATE SAMPLED	02/01/96	05/03/96	07/23/96	08/01/95	11/02/95	02/02/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
TOTAL METALS						
BARIUM, TOTAL	43	41	44.2	408	217	126
BERYLLIUM, TOTAL	0.2 U	0.2 U	0.7 U	0.4	0.2 U	0.2 U
CADMIUM, TOTAL	5 U	5 U	2.6 U	5 U	5 U	5 U
CHROMIUM, TOTAL	50 U	50 U	3.3 U	50 U	50 U	50 U
LEAD, TOTAL	3	5	3.1	4	1 U	1
MANGANESE, TOTAL	17	13	11.8	11	10 U	10 U

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
TOTAL METALS

SAMPLE ID	02-GW03DW-96B	02-GW03DW-96C	02-GW04-95C	02-GW04-95D	02-GW04-96A	02GW04-96B
DATE SAMPLED	05/02/96	07/25/96	08/01/95	11/02/95	02/01/96	05/03/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
TOTAL METALS						
BARIUM, TOTAL	1160	1150	78	70	93	103
BERYLLIUM, TOTAL	0.2 U	1	0.6	0.2 U	1	0.8
CADMIUM, TOTAL	5	2.6 U	5 U	5 U	5 U	5 U
CHROMIUM, TOTAL	250	21.3	50 U	50 U	50	50 U
LEAD, TOTAL	73	13.7	5	1 U	1	2
MANGANESE, TOTAL	1290	186	27	15	18	18

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
TOTAL METALS

SAMPLE ID	02-GW04-96C	02-GW05-95C	02-GW05-95D	02-GW05-96A	02GW05-96B	02-GW05-96C
DATE SAMPLED	07/23/96	08/01/95	11/02/95	02/01/96	05/03/96	07/23/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
TOTAL METALS						
BARIUM, TOTAL	89.1	86	79	134	111	87.8
BERYLLIUM, TOTAL	1.3	0.2 U	0.2 U	0.2 U	0.2	1.5
CADMIUM, TOTAL	2.6 U	5 U	5 U	5 U	5 U	2.6 U
CHROMIUM, TOTAL	3.3 U	50 U	50 U	50	50 U	3.3 U
LEAD, TOTAL	1.6	4	1 U	5	5	1.2 U
MANGANESE, TOTAL	15	41	45	90	55	39.4

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
TOTAL METALS

SAMPLE ID	02-GW06-95C	02-GW06-95D	02-GW06-96A	02GW06-96B	02-GW06-96C	02-GW07-95C
DATE SAMPLED	08/01/95	11/02/95	02/01/96	05/03/96	07/23/96	08/01/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
TOTAL METALS						
BARIUM, TOTAL	72	68	53	73	92.5	73
BERYLLIUM, TOTAL	0.2 U	0.8	0.2 U	0.7	0.89	0.2 U
CADMIUM, TOTAL	5 U	5 U	5 U	5 U	2.6 U	5 U
CHROMIUM, TOTAL	50 U	50 U	50	50 U	3.3 U	50 U
LEAD, TOTAL	4	1 U	1 U	6	2.2	4
MANGANESE, TOTAL	49	41	10 U	17	24	41

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
TOTAL METALS

SAMPLE ID	02-GW07-95D	02-GW07-96A	02GW07-96B	02-GW07-96C	02-GW08-95C	02-GW08-95D
DATE SAMPLED	11/02/95	02/01/96	05/03/96	07/23/96	08/01/95	11/02/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
TOTAL METALS						
BARIUM, TOTAL	65	80	79	82.2	47	41
BERYLLIUM, TOTAL	0.2 U	0.2 U	0.2 U	0.7 U	0.2 U	0.2 U
CADMIUM, TOTAL	5 U	5 U	5 U	2.6 U	5 U	5 U
CHROMIUM, TOTAL	50 U	50 U	50 U	4.3	50 U	50 U
LEAD, TOTAL	1 U	3	2	2.7	1 U	1 U
MANGANESE, TOTAL	28	40	27	29.5	113	52

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
TOTAL METALS

SAMPLE ID	02-GW08-96A	02GW08-96B	02-GW08-96C	02-GW09-95C	02-GW09-95D	02-GW09-96A
DATE SAMPLED	02/01/96	05/03/96	07/24/96	08/01/95	11/02/95	02/02/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
TOTAL METALS						
BARIUM, TOTAL	39	46	67	109	48	44
BERYLLIUM, TOTAL	0.2 U	0.3	0.7 U	0.7	0.2 U	0.6
CADMIUM, TOTAL	5 U	5 U	2.6 U	5 U	5 U	5 U
CHROMIUM, TOTAL	50 U	50 U	3.3 U	50 U	50 U	50 U
LEAD, TOTAL	1 U	2	2.4	5	2	1 U
MANGANESE, TOTAL	44	22	38.4	56	56	42

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
TOTAL METALS

SAMPLE ID	02GW09-96B	02-GW09-96C	02-GW10-95C	02-GW10-95D	02-GW10-96A	02GW10-96B
DATE SAMPLED	05/03/96	07/25/96	08/01/95	11/02/95	02/02/96	05/03/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
TOTAL METALS						
BARIUM, TOTAL	51	49.6	51	41	51	80
BERYLLIUM, TOTAL	0.2 U	1.2	0.2 U	0.2 U	0.2 U	0.2 U
CADMIUM, TOTAL	5 U	2.6 U	5 U	37	14	5 U
CHROMIUM, TOTAL	50 U	3.3 U	50 U	50 U	60	50 U
LEAD, TOTAL	2	2.3	12	6	5	14
MANGANESE, TOTAL	22	35.7	24	27	34	62

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
TOTAL METALS

SAMPLE ID	02-GW10-96C	02-GW11-95C	02-GW11-95D	02-GW11-96A	02GW11-96B	02-GW11-96C
DATE SAMPLED	07/25/96	08/01/95	11/02/95	02/02/96	05/02/96	07/23/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
TOTAL METALS						
BARIUM, TOTAL	38.6	118	103	69	175	75.1
BERYLLIUM, TOTAL	0.7 U	0.2 U	0.2 U	0.2 U	0.5	0.7 U
CADMIUM, TOTAL	2.6 U	5 U	5 U	5 U	5 U	2.6 U
CHROMIUM, TOTAL	3.3 U	50 U	50 U	70	50 U	3.3 U
LEAD, TOTAL	1.3	17	4	1	15	1.2 U
MANGANESE, TOTAL	11.9	67	73	118	91	34.5

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
TOTAL METALS

SAMPLE ID	02-PRW616-95C	02-PRW616-95D	02-PRW616-96A	02-PRW616-96B	02-PRW616-96C	02-PRW646-96A
DATE SAMPLED	08/01/95	11/01/95	02/01/96	05/02/96	07/24/96	02/01/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
TOTAL METALS						
BARIUM, TOTAL	3	5	6	6	6.4	3
BERYLLIUM, TOTAL	0.2 U	0.2 U	0.2 U	0.2 U	0.7 U	0.2 U
CADMIUM, TOTAL	5 U	5 U	5 U	5 U	2.6 U	5 U
CHROMIUM, TOTAL	50 U	50 U	50 U	50 U	3.3 U	50 U
LEAD, TOTAL	1 U	1 U	1	1	1.3	1
MANGANESE, TOTAL	24	24	23	23	20.2	23

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
TOTAL METALS

SAMPLE ID	02-PRW646-96B	02-PRW646-96C	02-PRW647-95C	02-PRW647-95D	02-PRW647-96A	02-PRW647-96B	02-PRW647-96C
DATE SAMPLED	05/02/96	07/24/96	08/01/95	11/01/95	02/01/96	05/02/96	07/24/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
TOTAL METALS							
BARIUM, TOTAL	4	3.8	10	9	9	9	11
BERYLLIUM, TOTAL	0.2 U	0.7 U	0.2 U	0.2 U	0.2 U	0.2 U	0.7 U
CADMIUM, TOTAL	5 U	2.6 U	5 U	5 U	5 U	5 U	2.6 U
CHROMIUM, TOTAL	50 U	3.3 U	50 U	50 U	50 U	50 U	3.3 U
LEAD, TOTAL	1 U	2.2	1 U	2	1	1	3.7
MANGANESE, TOTAL	14	21.7	22	23	18	11	21.2

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
DISSOLVED METALS

SAMPLE ID	02-GW01-95C	02-GW01-95D	02-GW01-96A	02-GW01-96B	02-GW02-95C	02-GW02-95D	02-GW02-96A
DATE SAMPLED	08/01/95	11/02/95	02/01/96	05/03/96	08/01/95	11/02/95	02/01/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
DISSOLVED METALS							
BARIUM, DISSOLVED	57	48	45	44	51	39	37
BERYLLIUM, DISSOLVED	0.5	0.2 U	0.2 U	0.8	1.3	0.2 U	0.2 U
CADMIUM, DISSOLVED	5 U	5 U	5 U	5 U	5 U	6	5 U
CHROMIUM, DISSOLVED	50 U	50 U	50 U	50 U	50 U	50 U	50 U
LEAD, DISSOLVED	1 U	1 U	1 U	3	1	1	215
MANGANESE, DISSOLVED	55	50	54	40	21	10 U	10 U

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
DISSOLVED METALS

SAMPLE ID	02-GW02-96B	02-GW03-95C	02-GW03-95D	02-GW03-96A	02-GW03-96B	02-GW03DW-95C	02-GW03DW-95D
DATE SAMPLED	05/03/96	08/01/95	11/02/95	02/01/96	05/03/96	08/01/95	11/02/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
DISSOLVED METALS							
BARIUM, DISSOLVED	37	42	32	34	43	2 U	287
BERYLLIUM, DISSOLVED	0.2 U	0.2 U	0.2	0.2 U	0.2 U	0.2 U	0.2 U
CADMIUM, DISSOLVED	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CHROMIUM, DISSOLVED	50 U	50 U	50 U	50 U	50 U	50 U	50 U
LEAD, DISSOLVED	3	1 U	1 U	1 U	2	1 U	1 U
MANGANESE, DISSOLVED	12	12	10 U	20	11	10 U	10 U

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
DISSOLVED METALS

SAMPLE ID	02-GW03DW-96A	02-GW03DW-96B	02-GW04-95C	02-GW04-95D	02-GW04-96A	02-GW04-96B	02-GW05-95C
DATE SAMPLED	02/02/96	05/02/96	08/01/95	11/02/95	02/01/96	05/03/96	08/01/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
DISSOLVED METALS							
BARIUM, DISSOLVED	136	1580	93	83	88	98	100
BERYLLIUM, DISSOLVED	0.2 U	0.4	0.2 U	0.4	0.2 U	0.5	0.2 U
CADMIUM, DISSOLVED	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CHROMIUM, DISSOLVED	50 U	50 U	50 U	50 U	50 U	50 U	50 U
LEAD, DISSOLVED	1 U	2	1 U	1 U	1 U	1	1 U
MANGANESE, DISSOLVED	10 U	10 U	18	16	15	19	39

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
DISSOLVED METALS

SAMPLE ID	02-GW05-95D	02-GW05-96A	02-GW05-96B	02-GW06-95C	02-GW06-95D	02-GW06-96A	02-GW06-96B
DATE SAMPLED	11/02/95	02/01/96	05/03/96	08/01/95	11/02/95	02/01/96	05/03/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
DISSOLVED METALS							
BARIUM, DISSOLVED	91	97	101	84	87	58	77
BERYLLIUM, DISSOLVED	0.2 U	0.9	0.2 U	1.5	0.2 U	0.6	0.8
CADMIUM, DISSOLVED	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CHROMIUM, DISSOLVED	50 U	50 U	50 U	50 U	50 U	50 U	50 U
LEAD, DISSOLVED	1 U	1 U	1	1 U	1 U	1 U	2
MANGANESE, DISSOLVED	46	53	44	58	48	10 U	13

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
DISSOLVED METALS

SAMPLE ID	02-GW07-95C	02-GW07-95D	02-GW07-96A	02-GW07-96B	02-GW08-95C	02-GW08-95D	02-GW08-96A
DATE SAMPLED	08/01/95	11/02/95	02/01/96	05/03/96	08/01/95	11/02/95	02/01/96
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
DISSOLVED METALS							
BARIUM, DISSOLVED	86	78	75	89	65	49	42
BERYLLIUM, DISSOLVED	0.2 U	0.2 U	0.6	0.2	1.4	0.2 U	0.6
CADMIUM, DISSOLVED	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CHROMIUM, DISSOLVED	50 U	50 U	50 U	50 U	50 U	50 U	50 U
LEAD, DISSOLVED	1 U	1 U	1 U	2	1 U	1 U	1 U
MANGANESE, DISSOLVED	45	41	36	35	146	64	43

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
DISSOLVED METALS

SAMPLE ID	02-GW08-96B	02-GW09-95C	02-GW09-95D	02-GW09-96A	02-GW09-96B	02-GW10-95C	02-GW10-95D
DATE SAMPLED	05/03/96	08/01/95	11/02/95	02/02/96	05/03/96	08/01/95	11/02/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
DISSOLVED METALS							
BARIUM, DISSOLVED	52	51	53	44	56	57	40
BERYLLIUM, DISSOLVED	0.2 U	1.2	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CADMIUM, DISSOLVED	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CHROMIUM, DISSOLVED	50 U	50 U	50 U	50 U	50 U	50 U	50 U
LEAD, DISSOLVED	2	2	16	1 U	1	1 U	1 U
MANGANESE, DISSOLVED	28	58	56	48	28	17	12

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
DISSOLVED METALS

SAMPLE ID	02-GW10-96A	02-GW10-96B	02-GW11-95C	02-GW11-95D	02-GW11-96A	02-GW11-96B	02-PRW616-95C
DATE SAMPLED	02/02/96	05/03/96	08/01/95	11/02/95	02/02/96	05/02/96	08/01/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
DISSOLVED METALS							
BARIUM, DISSOLVED	43	59	95	74	60	87	5
BERYLLIUM, DISSOLVED	0.7	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
CADMIUM, DISSOLVED	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CHROMIUM, DISSOLVED	50 U	50 U	50 U	50 U	50 U	50 U	50 U
LEAD, DISSOLVED	1 U	1	1 U	1 U	1 U	1	1 U
MANGANESE, DISSOLVED	14	21	33	43	32	28	

**GROUNDWATER ANALYTICAL RESULTS
 JULY 1995 - SEPTEMBER 1996
 OPERABLE UNIT NO. 5 - SITE 2
 MONITORING AND O&M SUPPORT, CTO-0367
 MCB, CAMP LEJEUNE, NORTH CAROLINA
 DISSOLVED METALS**

SAMPLE ID	02-PRW616-95D	02-PRW616-96A	02-PRW616-96B	02-PRW646-96A	02-PRW646-96B	02-PRW647-95C	02-PRW647-95D
DATE SAMPLED	11/01/95	02/01/96	05/02/96	02/01/96	05/02/96	08/01/95	11/01/95
UNITS	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
DISSOLVED METALS							
BARIUM, DISSOLVED	5	5	5	4	3	2 U	8
BERYLLIUM, DISSOLVED	0.2 U	0.9	0.9	0.2 U	0.2 U	0.4	0.2 U
CADMIUM, DISSOLVED	5 U	5 U	5 U	5 U	5 U	5 U	5 U
CHROMIUM, DISSOLVED	50 U	50 U	50 U	50 U	50 U	50 U	50 U
LEAD, DISSOLVED	1 U	1 U	1	1	1 U	1 U	1 U
MANGANESE, DISSOLVED			21		18		

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
DISSOLVED METALS

SAMPLE ID	02-PRW647-96A	02-PRW647-96B
DATE SAMPLED	02/01/96	05/02/96
UNITS	UG/L	UG/L
DISSOLVED METALS		
BARIUM, DISSOLVED	8	9
BERYLLIUM, DISSOLVED	0.2 U	0.2 U
CADMIUM, DISSOLVED	5 U	5 U
CHROMIUM, DISSOLVED	50 U	50 U
LEAD, DISSOLVED	1 U	1 U
MANGANESE, DISSOLVED		13

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
SUSPENDED AND DISSOLVED SOLIDS

SAMPLE ID	02-GW01-95C	02-GW01-95D	02-GW01-96A	02-GW01-96B	02-GW01-96C	02-GW02-95C	02-GW02-95D
DATE SAMPLED	08/01/95	11/02/95	02/01/96	05/03/96	07/23/96	08/01/95	11/02/95
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
TOTAL DISSOLVED SOLIDS	173	150	160	161	190	168	81
TOTAL SUSPENDED SOLIDS	187	320	467	229	10	2680	1920

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
SUSPENDED AND DISSOLVED SOLIDS

SAMPLE ID	02-GW02-96A	02-GW02-96B	02-GW02-96C	02-GW03-95C	02-GW03-95D	02-GW03-96A	02-GW03-96B
DATE SAMPLED	02/01/96	05/03/96	07/23/96	08/01/95	11/02/95	02/01/96	05/03/96
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
TOTAL DISSOLVED SOLIDS	121	90	82	96	131	102	124
TOTAL SUSPENDED SOLIDS	2220	904	12	80	308	46	83

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
SUSPENDED AND DISSOLVED SOLIDS

SAMPLE ID	02-GW03-96C	02-GW03DW-95C	02-GW03DW-95D	02-GW03DW-96A	02-GW03DW-96B	02-GW03DW-96C
DATE SAMPLED	07/23/96	08/01/95	11/02/95	02/02/96	05/02/96	07/25/96
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
TOTAL DISSOLVED SOLIDS	110	819	725	5.6	876	1000
TOTAL SUSPENDED SOLIDS	9	56	1 U	0.09	42420	290

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
SUSPENDED AND DISSOLVED SOLIDS

SAMPLE ID	02-GW04-95C	02-GW04-95D	02-GW04-96A	02-GW04-96B	02-GW04-96C	02-GW05-95C	02-GW05-95D
DATE SAMPLED	08/01/95	11/02/95	02/01/96	05/03/96	07/23/96	08/01/95	11/02/95
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
TOTAL DISSOLVED SOLIDS	94	105	93	132	110	158	164
TOTAL SUSPENDED SOLIDS	128	23	287	314	10	193	50

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
SUSPENDED AND DISSOLVED SOLIDS

SAMPLE ID	02-GW05-96A	02-GW05-96B	02-GW05-96C	02-GW06-95C	02-GW06-95D	02-GW06-96A	02-GW06-96B
DATE SAMPLED	02/01/96	05/03/96	07/23/96	08/01/95	11/02/95	02/01/96	05/03/96
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
TOTAL DISSOLVED SOLIDS	160	206	220	161	161	112	159
TOTAL SUSPENDED SOLIDS	1260	504	10	36	27	28	48

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
SUSPENDED AND DISSOLVED SOLIDS

SAMPLE ID	02-GW06-96C	02-GW07-95C	02-GW07-95D	02-GW07-96A	02-GW07-96B	02-GW07-96C	02-GW08-95C
DATE SAMPLED	07/23/96	08/01/95	11/02/95	02/01/96	05/03/96	07/23/96	08/01/95
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
TOTAL DISSOLVED SOLIDS	170	113	155	157	163	190	202
TOTAL SUSPENDED SOLIDS	14	11	25	39	38	12	26

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
SUSPENDED AND DISSOLVED SOLIDS

SAMPLE ID	02-GW08-95D	02-GW08-96A	02-GW08-96B	02-GW08-96C	02-GW09-95C	02-GW09-95D	02-GW09-96A
DATE SAMPLED	11/02/95	02/01/96	05/03/96	07/24/96	08/01/95	11/02/95	02/02/96
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
TOTAL DISSOLVED SOLIDS	178	12.1	84	120	200	178	208
TOTAL SUSPENDED SOLIDS	4	22	27	10	308	6	9

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
SUSPENDED AND DISSOLVED SOLIDS

SAMPLE ID	02-GW09-96B	02-GW09-96C	02-GW10-95C	02-GW10-95D	02-GW10-96A	02-GW10-96B	02-GW10-96C
DATE SAMPLED	05/03/96	07/25/96	08/01/95	11/02/95	02/02/96	05/03/96	07/25/96
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
TOTAL DISSOLVED SOLIDS	219	230	204	129	160	177	190
TOTAL SUSPENDED SOLIDS	31	5 U	470	129	477	229	12

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
SUSPENDED AND DISSOLVED SOLIDS

SAMPLE ID	02-GW11-95C	02-GW11-95D	02-GW11-96A	02-GW11-96B	02-GW11-96C	02-PRW616-95C
DATE SAMPLED	08/01/95	11/02/95	02/02/96	05/02/96	07/23/96	08/01/95
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
TOTAL DISSOLVED SOLIDS	132	208	120	128	150	221
TOTAL SUSPENDED SOLIDS	770	300	304	1330	8	1 U

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
SUSPENDED AND DISSOLVED SOLIDS

SAMPLE ID	02-PRW616-95D	02-PRW616-96A	02-PRW616-96B	02-PRW616-96C	02-PRW646-96A	02-PRW646-96B
DATE SAMPLED	11/01/95	02/01/96	05/02/96	07/24/96	02/01/96	05/02/96
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
TOTAL DISSOLVED SOLIDS	219	229	229	230	235	232
TOTAL SUSPENDED SOLIDS	7	7	7	11	7	2

GROUNDWATER ANALYTICAL RESULTS
JULY 1995 - SEPTEMBER 1996
OPERABLE UNIT NO. 5 - SITE 2
MONITORING AND O&M SUPPORT, CTO-0367
MCB, CAMP LEJEUNE, NORTH CAROLINA
SUSPENDED AND DISSOLVED SOLIDS

SAMPLE ID	02-PRW646-96C	02-PRW647-95C	02-PRW647-95D	02-PRW647-96A	02-PRW647-96B	02-PRW647-96C
DATE SAMPLED	07/24/96	08/01/95	11/01/95	02/01/96	05/02/96	07/24/96
UNITS	MG/L	MG/L	MG/L	MG/L	MG/L	MG/L
TOTAL DISSOLVED SOLIDS	240	223	218	208	186	230
TOTAL SUSPENDED SOLIDS	10	1 U	7	6	3	9

ATTACHMENT F
TEST BORING AND WELL CONSTRUCTION RECORD



Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Site 2 - Former Nursery/Day Care Center

S.O. NO.: 19174

BORING NO.: 2 GW 3D

COORDINATES: EAST: _____

NORTH: _____

ELEVATION: SURFACE: _____

TOP OF PVC CASING: _____

RIG: B - 47									
	SPLIT SPOON	CASING	AUGERS	CORE BARREL	DATE	PROGRESS (FT)	WEATHER	WATER DEPTH (FT)	TIME
SIZE (DIAM.)	1 3/8" ID	4.0"	8 1/4" ID		4-22-93	0-22	CLEAR MILD		
LENGTH	2.0'		5.0		4-23-93	22-100	WARM		
TYPE	Std.	PVC Sch 40	HSA						
HAMMER WT.	140#								
FALL	30"								
STICK UP									

REMARKS: TYPE III MONITORING WELL INSTALLED

SAMPLE TYPE		WELL INFORMATION	DIAM	TYPE	TOP DEPTH (FT)	BOTTOM DEPTH (FT)
S = Split Spoon	A = Auger	Well Casing	4.0"	PVC Sch 40	0	20
T = Shelby Tube	W = Wash	Well Screen	4.0"	PVC Sch 40 - 10 Slot	0	99.39
R = Air Rotary	C = Core					
D = Denison	P = Piston					
N = No Sample						

Depth (Ft.)	Sample Type and No.	Samp. Rec. Ft. & %	SPT or RQD	Lab. Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation
1	S-1	1.41 / 2	7 / 11		0	3" Top Soil CLAY TRACE SAND-FINE VERY STIFF DAY BLACK BROWN		
2		71%	9					
3	S-2	1.75 / 2	3 / 2		0	SILT TRACE CLAY LITTLE SAND-FINE GRAY LOOSE	0 7 0	
4		83%	2					
5	S-3	1.67 / 2	3 / 5		0	SILT AND CLAY TRACE SAND-FINE GRAY MED. DENSE		
6		79%	11					
7								
8	A-N							
9								
10								

Match to Sheet 2

DRILLING CO.: Hardin Huber

BAKER REP.: Kenneth A. Tua

DRILLER: Tom Kramer Royce Keenan

BORING NO.: 2 GW 3D

SHEET 1 OF 4

Baker Environmental, Inc.

PROJECT: Site 2 - Former Nursery/Day Care Center

S.O. NO.: 19174

BORING NO.: 2 GW 30

SAMPLE TYPE						DEFINITIONS				
S = Split Spoon	A = Auger				SPT = Standard Penetration Test (ASTM D-1586) (Blows/0.5')					
T = Shelby Tube	W = Wash				RQD = Rock Quality Designation (%)					
R = Air Rotary	C = Core				Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)					
D = Denison	P = Piston				PIF = Photoionization Detector					
N = No Sample										
Depth (Ft.)	Sample Type and No.	Samp. Rec. (Ft. & %)	SPT or RQD	Lab. Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail			Elevation
11	S-4	1.16 2	3		0	Continued from Sheet 1 SILT AND SAND-FINE GRAY, WET, LOOSE				
12		58%	3							
13			5							
14										
15	S-5	2 2	3		0	CLAY, GRAY, SOFT		7	0	
16			3							
17		100%	W4H							
18										
19										
20	S-6	5 2	8		0	5" SAND-FINE, GRAY, WET 1" SAND-FINE, WHITE VERY DRY MED. DENSE POWDERY				
21			14							
22		25%	14							
23	S-7	83 2	10		0	SAND-FINE TRACE SILT DAMP GRAY, MED. DENSE				
24			11							
25		42%	17							
26	S-8	1 2	8		0	1" LIMESTONE GRAVEL-FINE, GRAY SAND-FINE SOME SILT GRAY, WET, MED. DENSE				
27			10							
28		50%	9							
29	S-9	8 2	4		0	CLAY, WET, GRAY, STIFF 6" SAND-FINE SOME CLAY GRAY, MOIST				
30			4							
31			5							
32	S-10	100%	9		0	SAND-FINE AND CLAY GRAY, WET, STIFF				
33			6							
34		8 2	6							
35		100%	6							

Match to Sheet 3

DRILLING CO.: Hardin Huber

DRILLER: Tom Kramer Royce KEENAN

BAKER REP.: Kenneth A. Tua

BORING NO.: 2 GW 30

SHEET 2 OF

Baker Environmental, Inc.

PROJECT: Site 2 - Former Nursery/Day Care Center

S.O. NO.: 19174

BORING NO.: 2 GW 3D

SAMPLE TYPE						DEFINITIONS				
S = Split Spoon	A = Auger					SPT = Standard Penetration Test (ASTM D-1586) (Blows/0.5')				
T = Shelby Tube	W = Wash					RQD = Rock Quality Designation (%)				
R = Air Rotary	C = Core					Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)				
D = Denison	P = Piston					PIF = Photoionization Detector				
N = No Sample										
Depth (Ft.)	Sample Type and No.	Samp. Rec. (Ft. & %)	SPT or RQD	Lab. Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail			Elevation
31						Continued from Sheet 1				
32	A-N									
33										
34										
35										
36	S-11	$\frac{1.33}{2}$ 67%	6 6 12 20		0	SAND-FINE LITTLE SILT GRAY, WET, MED DENSE				
37										
38	A-N									
39										
40										
41	S-12	$\frac{.75}{2}$ 35%	8 12 19 20		0	SAND-FINE LITTLE SILT GRAY, WET, DENSE				
42										
43	A-N									
44										
45										
46	S-13	$\frac{1}{2}$ 50%	4 8 20 22		0	SAND-FINE LITTLE SILT GRAY, WET, MED DENSE				
47										
48	A-N									
49										
50										

Match to Sheet 3

DRILLING CO.: Hardin Huber

DRILLER: Tom Kramer Royce Keenan

BAKER REP.: Kenneth A. Tua

BORING NO.: 2 GW 3D

SHEET 2 OF 1

Baker Environmental, Inc.

PROJECT: Site 2 - Former Nursery/Day Care Center

S.O. NO.: 19174

BORING NO.: 2 GN 30

SAMPLE TYPE						DEFINITIONS				
S = Split Spoon	A = Auger					SPT = Standard Penetration Test (ASTM D-1586) (Blows/0.5')				
T = Shelby Tube	W = Wash					RQD = Rock Quality Designation (%)				
R = Air Rotary	C = Core					Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)				
D = Denison	P = Piston					PIF = Photoionization Detector				
N = No Sample										
Depth (Ft.)	Sample Type and No.	Samp. Rec. (Ft. & %)	SPT or RQD	Lab. Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail			Elevation
51	S-14	.75 2	29 34 50 1/6		0	Continued from Sheet 1 SAND-FINE, LITTLE SILT VERY DENSE GRAY, WET				
52		37%								
53							0	7	0	
54	A-N									
55										
56	S-15	.58 2	29 51 1/6		0	SAND-FINE, LITTLE SILT VERY DENSE GRAY, WET				
57		29%								
58										
59	A-N									
60										
61	S-16	.17 2	53 1/6		0	SAND-FINE, LITTLE SILT. VERY DENSE GRAY, WET				
62		8%								
63										
64	A-N									
65										
66	S-17	.53 2	50 1/5		0	SAND-FINE, WET VERY DENSE				
67		29%								
68										
69	A-N									
70										

Match to Sheet 3

DRILLING CO.: Hardin Huber

DRILLER: Tom Kramer Royce Keenan

BAKER REP.: Kenneth A. Tua

BORING NO.: 2 GN 30

SHEET 2 OF

Baker Environmental, Inc.

PROJECT: Site 2 - Former Nursery/Day Care Center

S.O. NO.: 19174

BORING NO.: 2 GW 3D

SAMPLE TYPE						DEFINITIONS				
S = Split Spoon	A = Auger					SPT = Standard Penetration Test (ASTM D-1586) (Blows/0.5')				
T = Shelby Tube	W = Wash					RQD = Rock Quality Designation (%)				
R = Air Rotary	C = Core					Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)				
D = Denison	P = Piston					PIF = Photoionization Detector				
N = No Sample										
Depth (Ft.)	Sample Type and No.	Samp. Rec. (Ft. & %)	SPT or RQD	Lab. Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail			Elevation
71	S-18	1.25 2	20 25 31 42		0	Continued from Sheet 1 SAND-FINE LITTLE SILT VERY DENSE GREEN, WET				
72		63%								
73										
74										
75	S-19	2 2	3 3 4 6		0	SAND-FINE AND SILT TRACE CLAY. GREEN, WET, LOOSE				
76										
77		100%								
78										
79										
80	S-20	2.18 2	2 3 4 7		0	SAND-FINE AND SILT, LOOSE GREEN, WET	0		0	
81										
82		100%								
83										
84							2		2	
85	S-21	1.41 2	15 26 51 50		0	SAND-FINE AND SILT TRACE CLAY. GREEN 3" SAND-FINE AND SILT TRACE CLAY. TRACE SHELL FRAG. GREEN, WET				
86										
87		73%						5		5
88								7		
89										
90										

Match to Sheet 3

DRILLING CO.: Hardin Huber

BAKER REP.: Kenneth A. Tua

DRILLER: Tom Kramer Royce Keenan

BORING NO.: 2 GW 3D

SHEET 2 OF

Baker Environmental, Inc.

PROJECT: Site 2 - Former Nursery/Day Care Center

S.O. NO.: 19174

BORING NO.: 2 GW 30

SAMPLE TYPE						DEFINITIONS			
S = Split Spoon	A = Auger					SPT = Standard Penetration Test (ASTM D-1586) (Blows/0.5')			
T = Shelby Tube	W = Wash					RQD = Rock Quality Designation (%)			
R = Air Rotary	C = Core					Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)			
D = Denison	P = Piston					PIF = Photoionization Detector			
N = No Sample									
Depth (Ft.)	Sample Type and No.	Samp. Rec. (Ft. & %)	SPT or RQD	Lab. Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail		Elevation
91	S-22	8/2	15		0	Continued from Sheet 1 SAND-FINE AND SILT AND CLAY GREEN, WET VERY DENSE	7		
92		100%	18				5		
93			25					5	
94			5 1/2				8		
95						SAND-FINE LIMESTONE FRAG. WHITE, LIME MUD. VERY DENSE.			
96	S-23	1.5L/2	15		0				
97		71%	20						
98			39						
99	S-23	1.5L/2	45						
100		71%				END OF BORING 100'	7		
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									

Match to Sheet 3

DRILLING CO.: Hardin Huber

DRILLER: Tom Kramer Royce Keenan

BAKER REP.: Kenneth A. Tua

BORING NO.: 2 GW 30

SHEET 2 OF 2