N60087.AR.000567
NAS BRUNSWICK
5090.3a

Final Report

Monitoring Event 6 - June 1996
Sites 1 and 3 and Eastern Plume,
Naval Air Station, Brunswick, Maine

Volume 1 of 2
Text through Appendix C

Contract No. N62472-92-D-1296
Contract Task Order No. 0047

Prepared for

Department of the Navy
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
Mail Stop No. 82
Lester, Pennsylvania 19113-2090

Prepared by

EA Engineering, Science, and Technology
The Maple Building
3 Washington Center
Newburgh, New York 12550

October 1996
296.0047

29600.47

Final Report

Monitoring Event 6 - June 1996
Sites 1 and 3 and Eastern Plume,
Naval Air Station, Brunswick, Maine

Volume 1 of 2
Text through Appendix C

Contract No. N62472-92-D-1296
Contract Task Order No. 0047

Prepared for

Department of the Navy
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway
Mail Stop No. 82
Lester, Pennsylvania 19113-2090

Michael S. Battle 10/3/96

Michael S. Battle, P.G. — Date
CTO Manager

Sam Morekas 9/27/96

Sam Morekas — Date
Program Manager

October 1996

QUALITY REVIEW STATEMENT

Contract No. N62472-92-D-1296
Contract Task Order No. 0047
Activity: Naval Air Station, Brunswick, Maine

EA Project Number: 29600.47.7296

Description of Report/Deliverable:

Final Report, Monitoring Event 6 - June 1996, Sites 1 and 3 and Eastern Plum, Naval Air Station, Brunswick, Maine

EA CTO Manager: Michael S. Battle, P.G.

In compliance with EA's Quality Procedures for review of deliverables outlined in the Quality Management Plan, this final deliverable has been reviewed for quality by the undersigned Senior Technical Reviewer(s). The information presented in this report/deliverable has been prepared in accordance with the approved Implementation Plan for the Contract Task Order (CTO) and reflects a proper presentation of the data and/or the conclusions drawn and/or the analyses or design completed during the conduct of the work. This statement is based upon the standards identified in the CTO and/or the standard of care existing at the time of preparation.

Senior Technical Reviewer(s)

Gloria D. McCleary

Gloria D. McCleary, P.E., Senior Engineer
Maine P.E. Registration No. 4885

9/24/96
(Date)

CONTENTS

Page

LIST OF FIGURES
LIST OF TABLES

1. PROJECT ACTIVITIES 1

1.1 Introduction 1
1.2 Measurement of Water Level Elevations 1
1.3 Ground-Water Monitoring, Sampling, and Analysis 2

1.3.1 Water Quality Indicator Parameter Measurements 3
1.3.2 Analytical Program 3

1.4 Surface Water, Sediment, and Seep Sampling and Analysis 3
1.5 Landfill Gas Monitoring 4
1.6 Quality Assurance/Quality Control 4
1.7 Analytical Data Quality Review 4

2. MONITORING EVENT RESULTS 5

2.1 Water Level Gauging 5
2.2 Water Quality Indicator Parameters 7

2.2.1 Sites 1 and 3 and Eastern Plume 8
2.2.2 Ground-Water Extraction and Treatment System 8

2.3 Ground Water 8

2.3.1 Sites 1 and 3 8
2.3.2 Eastern Plume 9
2.3.3 Ground-Water Extraction and Treatment System 11

2.4 Surface Water 11
2.5 Sediment 11
2.6 Leachate Station Samples 12

2.6.1 Seep 12
2.6.2 Sediment 12

Page

2.7 Landfill Gas Monitoring 12

REFERENCES

APPENDIX A: FIELD MONITORING AND SAMPLING FORMS
APPENDIX B: ANALYTICAL DATA QUALITY REVIEW
APPENDIX C: SUMMARY TABLES FOR ANALYSES OF TENTATIVELY IDENTIFIED COMPOUNDS
APPENDIX D: ANALYTICAL REPORT DATA TABLES (VOLUME 2)

LIST OF FIGURES

Number	Title
1	Site location map for Sites 1 and 3 and Eastern Plume, Naval Air Station, Brunswick, Maine.
2	Site plan for Sites 1 and 3 and Eastern Plume, Naval Air Station, Brunswick, Maine.
3	Monitoring well location plan.
4	Schematic of generalized installation of dedicated submersible pump system in a monitoring well.
5	Interpreted shallow ground-water contour map, 14 May 1996.
6	Interpreted shallow ground-water contour map, 14 June 1996.
7	Interpreted shallow ground-water contour map, 1 July 1996.
8	Interpreted deep ground-water contour map, 14 May 1996.
9	Interpreted deep ground-water contour map, 14 June 1996.
10	Interpreted deep ground-water contour map, 1 July 1996.

LIST OF TABLES

Number	Title
1	Summary of long-term monitoring program at Sites 1 and 3, Naval Air Station, Brunswick, Maine.
2	Summary of long-term monitoring program at Eastern Plume, Naval Air Station, Brunswick, Maine.
3	Monitoring well gauging summary, Sites 1 and 3, Naval Air Station, Brunswick, Maine.
4	Monitoring well gauging summary, Eastern Plume, Naval Air Station, Brunswick, Maine.
5	Summary of water quality indicator parameters measured in ground-water samples collected at Sites 1 and 3, Naval Air Station, Brunswick, Maine.
6	Summary of water quality indicator parameters measured in ground-water samples collected at Eastern Plume, Naval Air Station, Brunswick, Maine.
7	Summary of water quality indicator parameters measured in surface water and seep samples collected on 18-20 June 1996 at Sites 1 and 3, Naval Air Station, Brunswick, Maine.
8	Summary of water quality indicator parameters measured in water samples collected from extraction wells and the treatment plant at Eastern Plume, Naval Air Station, Brunswick, Maine.
9	Summary of analytical results for ground-water samples collected on 18-20 and 26 June 1996 at Sites 1 and 3, Naval Air Station, Brunswick, Maine.
10	Summary of analytical results for ground-water samples collected 20-25 June 1996 at Eastern Plume, Naval Air Station, Brunswick, Maine.
11	Summary of analytical results for water samples collected on 27 June 1996 from the ground-water extraction wells and treatment system, Naval Air Station, Brunswick, Maine.
12	Summary of analytical results for surface water samples collected on 22 June 1996 at Sites 1 and 3, Naval Air Station, Brunswick, Maine.

Number	Title
13	Summary of analytical results for sediment samples collected on 22 June 1996 at Sites 1 and 3, Naval Air Station, Brunswick, Maine.
14	Summary of analytical results for leachate station seep samples collected on 22 June 1996 at Sites 1 and 3, Naval Air Station, Brunswick, Maine.
15	Summary of analytical results for leachate station sediment samples collected on 22 June 1996 at Sites 1 and 3, Naval Air Station, Brunswick, Maine.
16	Summary of landfill gas monitoring conducted on 26 June 1996 at Sites 1 and 3, Naval Air Station, Brunswick, Maine.

1. PROJECT ACTIVITIES

1.1 INTRODUCTION

Under Contract No. N62472-92-D-1296, Contract Task Order (CTO) No. 0047, Northern Division, Naval Facilities Engineering Command contracted with EA Engineering, Science, and Technology to perform long-term monitoring at Sites 1 and 3 and Eastern Plume at Naval Air Station (NAS), Brunswick, Maine. NAS Brunswick is located south of the Androscoggin River between Brunswick and Bath, Maine (Figure 1). The locations of Sites 1 and 3 and the Eastern Plume are provided on Figure 2.

At Sites 1 and 3 and the Eastern Plume, the Navy is required to perform long-term monitoring, maintenance, and corrective measures as part of the long-term remedial actions required by the Record of Decision for a Remedial Action dated June 1992 for Sites 1 and 3 (ABB-ES 1992a) and the Record of Decision Interim Remedial Action dated June 1992 for the Eastern Plume (ABB-ES 1992b). A Long-Term Monitoring Plan (LTMP) was established pursuant to these Records of Decision (ABB-ES 1994). Approval of the LTMP was received from the U.S. Environmental Protection Agency (EPA) and State of Maine Department of Environmental Protection on 23 June 1994. The LTMP document establishes the monitoring and sampling requirements for Sites 1 and 3 and the Eastern Plume. A 5-year review evaluation will provide a basis for continued sampling and proposing refinements/alterations to the monitoring program or remedial activity, if appropriate.

Remedial actions at Sites 1 and 3 included the construction of a low-permeability slurry wall upgradient and surrounding the landfills to a depth of approximately 90 ft, the construction of a low permeability cap atop the landfills, and placement of 2 ground-water extraction wells within the limits of the landfill. Ground water in the Eastern Plume is being remediated by a treatment system consisting of 5 ground-water extraction wells designed to provide hydraulic control of the aquifer and a treatment plant to remove contaminants from the ground water prior to discharge.

This report provides the results for the June 1996 monitoring/sampling event (Monitoring Event 6). Bimonthly water level gauging data collected during May and July 1996 are discussed in this report.

1.2 MEASUREMENT OF WATER LEVEL ELEVATIONS

Water level measurements were obtained during Monitoring Event 6 on 13-14 June 1996 at the well and piezometer locations indicated in Tables 1 and 2 for Sites 1 and 3 and Eastern Plume, respectively. Water level measurements were taken at 54 ground-water monitoring wells, 16 EP-series piezometers, 8 P-series piezometers, and 6 ground-water extraction wells. Water level measurements were not obtained from 1 extraction well (EW-7 had an obstructed gauging port).

Water level data were not obtained from MW-216B because it was abandoned in-place in 1995. Artesian conditions were noted in MW-207A and MW-309A during the June 1996 well gauging event, and in MW207A, MW-309A, and MW-311 during the May and July 1996 well gauging events. Artesian conditions were noted in MW-207A, MW-309A, and MW-311 during the May and June 1996 well gauging events.

Although not required by the LTMP, bimonthly water table elevations were collected from Sites 1 and 3 and Eastern Plume monitoring wells, piezometers, and extraction wells. Bimonthly water table elevations were collected on 14 May and 1 and 3 July 1996, in addition to data collected during Monitoring Event 6. These additional bimonthly water table elevation data were collected to identify any seasonality or significant variation in ground-water flow directions with time.

Figure 3 provides the locations of ground-water monitoring wells, piezometers, and extraction wells at Sites 1 and 3 and Eastern Plume. Sampling and gauging procedures are detailed in the final report for Monitoring Event 4 (EA 1996) and in the LTMP (ABB-ES 1994).

1.3 GROUND-WATER MONITORING, SAMPLING, AND ANALYSIS

The ground-water sampling program was performed during the period of 18-21 and 24-26 June 1996 in accordance with the general methodologies established in the LTMP (ABB-ES 1994). Dedicated Grundfos Redi-Flo2 stainless steel and Teflon® submersible pumping systems were utilized at a majority of the wells to permit sampling using the low flow sampling technique. Two monitoring wells (MW-207A and MW-309A), which are under artesian conditions, required a slip cap with a valve and tubing attachment placed over the well casing for sample collection.

Ground-water samples were collected from 16 of 19 well locations included in the long-term monitoring program at Sites 1 and 3. Monitoring well MW-202B did not yield enough water for sample collection. MW-210A had a bent well riser which did not permit entry of the sampling pump, and this could not be sampled. Well MW-216B has been abandoned. At the Eastern Plume site, ground-water samples were collected from 38 of 39 wells and piezometers, and 3 of 5 extraction wells. One piezometer, P-112, did not yield sufficient water for purging or sampling. Extraction wells EW-1 and EW-4 were offline during sampling activities and, thus, no ground-water sample was collected. Samples were collected from the treatment system combined influent and combined effluent to confirm that the facility is operating effectively and that the effluent meets discharge requirements specified in the LTMP (ABB-ES 1994). Monitoring well MW-311 was frozen during Monitoring Event 5 (March 1996) and a sample was collected on 30 May 1996. The results of the May 1996 sample are presented in this report.

Tables 1 and 2 provide summaries of the wells/piezometers gauged and sampled as part of the long-term monitoring program. Figure 4 provides a schematic of a typical dedicated submersible pump assembly installed in a monitoring well. A detailed description of sample collection methods is provided in the final report for Monitoring Event 4 (EA 1996).

1.3.1 Water Quality Indicator Parameter Measurements

At Sites 1 and 3, all wells sampled reached equilibrium of the water quality indicator parameters prior to sampling, although turbidity was in excess of 10 nephelometric turbidity units (NTU) at 7 wells (MW-202A, MW-203, MW-210B, MW-217A, MW-217B, MW-219, and MW-232A). At the Eastern Plume site, all wells/piezometers reached equilibrium of the water quality indicator parameters during well purging. Twenty-one of 38 wells/piezometers sampled reached equilibrium of turbidity with measurements in excess of 10 NTU. All wells were within the stabilization criteria of less than 10 percent change for dissolved oxygen during the June 1996 sampling event. Although not required by the LTMP, oxidation-reduction (Eh) was recorded for informational purposes during well purging and sampling.

1.3.2 Analytical Program

Ground-water samples collected from Sites 1 and 3 and the Eastern Plume were submitted for analysis of Target Compound List (TCL) volatile organic compounds (VOC) plus a library search of 15 tentatively identified compounds by EPA Method 8260. Ground-water samples collected from Sites 1 and 3 were further analyzed for Target Analyte List (TAL) elements, including metals by trace inductively coupled plasma (EPA Method 6010), mercury by cold vapor atomic adsorption (EPA Method 7470), and cyanide by EPA Method 9010.

1.4 SURFACE WATER, SEDIMENT, AND SEEP SAMPLING AND ANALYSIS

The surface water, sediment, and leachate seep samples at Sites 1 and 3 were collected on 22 June 1996 in accordance with the general methodologies established in the LTMP (ABB-ES 1994). Exceptions to sampling activities specified in the LTMP during Monitoring Event 6 included:

- Leachate station seep samples were collected at 3 of 5 planned locations at the toe of the Sites 1 and 3 landfill footprint. Two seep sampling stations (SEEP-2 and SEEP-4) were dry at the time of sampling.

Table 1 provides a summary of the locations included within the surface water, sediment, and seep sampling program, and the analytical methods performed.

Surface water, sediment, and leachate station seep and sediment samples were collected for analysis of TCL VOC plus a library search of 15 tentatively identified compounds by EPA Method 8260; TAL elements, including metals by trace inductively coupled plasma (EPA Method 6010); mercury by cold vapor atomic adsorption (EPA Method 7470); and cyanide by EPA Method 9010.

1.5 LANDFILL GAS MONITORING

Gas probe monitoring was conducted at Sites 1 and 3 on 26 June 1996 to monitor and identify subsurface gas migration, as specified in the LTMP (ABB-ES 1994). Landfill gas monitoring procedures were performed in accordance with the LTMP (ABB-ES 1994) and the final report for Monitoring Event 4 (EA 1996). Gas measurements were taken at 3 gas probes (GP-04, GP-05, and GP-06) located along the north and west side of the Weapons Compound and at each of the 14 gas vents (GV-01 through GV-14) located along the north and west sides of the landfill. The gas probe casings were all completed and locked, and appeared to be in good condition. Two gas vents (GV-01 and GV-14) were observed to have incomplete impact barriers.

1.6 QUALITY ASSURANCE/QUALITY CONTROL

A rigorous quality assurance/quality control program is required by the LTMP to meet the data quality objectives of the aqueous and sediment sampling program, as outlined in the Quality Assurance Project Plan contained in the LTMP (ABB-ES 1994). The data obtained during the June 1996 sampling event were determined to be of sufficient quality to be used for the objectives specified in the LTMP (ABB-ES 1994). Field record forms are provided in Appendix A.

1.7 ANALYTICAL DATA QUALITY REVIEW

As required by the Quality Assurance Project Plan, a review of laboratory data was performed on selected quality control parameters to evaluate precision, accuracy, representativeness, completeness, and comparability and data quality objective requirements. A summary of the analytical data quality review for chemical data is provided in Appendix B. With consideration of the data qualifiers and notes discussed in Appendix B, the data represented in this report were found to meet specified acceptance criteria and, therefore, represent data in compliance with the Quality Assurance Project Plan contained in the LTMP (ABB-ES 1994).

Three VOC (methylene chloride, acetone, and 2-butanone) were reported at low concentrations in analytical samples and quality assurance/quality control samples. These compounds are used as part of laboratory analytical methods and are generally considered to be laboratory contaminants. The reported presence of these compounds in analytical samples does not compromise the quality of data collected as part of the LTMP.

2. MONITORING EVENT RESULTS

2.1 WATER LEVEL GAUGING

Ground-water potentiometric elevations were measured on 14 May 1996 (bimonthly data), 13-14 June 1996 (Monitoring Event 6 data), and 1 and 3 July 1996 (bimonthly data) at Sites 1 and 3 and Eastern Plume. Calculated ground-water elevation data are provided in Tables 3 and 4 for Sites 1 and 3 and the Eastern Plume, respectively. At Sites 1 and 3, wells and piezometers located within the confines of the landfill footprint were surveyed on 18-19 September 1996. During the well gauging conducted as part of Monitoring Event 6 at Sites 1 and 3 and Eastern Plume, water level measurements were not obtained in well MW-202B which was dry; and EW-5 (obstructed gauging port). Water level data were not obtained from MW-216B because it was abandoned in-place in 1995. Artesian conditions were noted at MW-207A and MW-309A during well gauging. Five extraction wells were in operation at the time water table elevation data were collected as part of the monitoring event on 13-14 June 1996, including: EW-2, EW-3, and EW-5 through EW-7. Pumping rates at each of the extraction wells at the time of sampling on 27 June 1996 were as follows: EW-1 (22 gallons per minute [gpm]), EW-2 (20 gpm), EW-3 (17 gpm), EW-5 (20 gpm), EW-6 (3 gpm), and EW-7 (5 gpm). EW-4 was not in operation due to elevated levels of turbidity in the extracted ground water.

The monitoring locations near Sites 1 and 3 were resurveyed in September 1996 after the final grade of the landfill cap was established. Wells were resurveyed after risers had been extended during landfill cap construction, including MW-201R, MW-210A, MW-210B, MW-211A, MW-211B, MW-215R, MW-216A, MW-217A, MW-217B, MW-232A, MW-233, MW-234R, MW-2101, EW-6, EW-7, EP-16, MW-202A, and MW-202B. One well (MW-NASB-212) in the Eastern Plume was also surveyed. The revised well riser elevations for these points are provided in Tables 3 and 4.

Shallow and deep ground-water contour maps were prepared based on the water level data collected on 14 May 1996, 14 June 1996, and 1 July 1996. The shallow ground-water contour maps contain data for wells and piezometers screened less than 40 ft below surface grade, while the deep ground-water contour maps contain data for wells and piezometers screened greater than 40 ft below surface grade. The distinction between shallow and deep water table elevations was made to reflect changes in potentiometric head observed at depth in wells located across Sites 1 and 3 and Eastern Plume. The interpreted ground-water flow direction for the 14 May 1996, 14 June 1996, and 1 July 1996 gauging events are shown on Figures 5 through 7, respectively, for the shallow portions of the aquifer, and Figures 8 through 10, respectively, for the deep portions of the aquifer.

Anomalous water elevations were noted at deep well MW-233 during the 14 May 1996 gauging event, at deep well MW-217A during the 14 June 1996 gauging event, and at extraction well EW-7 during the 1 July 1996 gauging event. The anomalous elevation data were significantly

different in comparison with previous gauging events, possibly due to equipment or measurement error. The gauging data for these anomalous data were not used during the generation of Figures 5 through 10. Wells MW-210A and MW-211A, located at Sites 1 and 3, are screened in bedrock. The measured water elevations at these bedrock wells were not comparable to nearby wells screened in the deep overburden. Therefore, the data for these bedrock wells were not used in the development of ground-water contour maps.

The predominant direction of ground-water flow in the shallow portion of the aquifer is to the east-southeast, toward Mere Brook and Merriconeag Stream. Potentiometric surface elevations at shallow monitoring points measured on 14 May, 1 June, and 1 July 1996 near extraction wells EW-1, EW-3, and EW-5 show a notable effect of pumping at these extraction wells. A depression in the shallow potentiometric surface near EW-1 extends to the northwest toward Sites 1 and 3. The combination of the emplacement of the slurry wall at Sites 1 and 3, which is approximately 90-ft deep and is keyed into natural clay, and active pumping at extraction wells EW-1, EW-6, and EW-7, have created a ground-water trough located southeast of Site 1 (Figure 5). Notable drawdown was observed at shallow piezometer P-112 during the July 1996 gauging event. This piezometer is located approximately 360 ft southeast of EW-3. The drawdown is likely attributable to the operation of EW-3, which has consistently yielded flow rates of 22 gpm or greater during the period May-July 1996. Extraction wells EW-2 and EW-4 were operated intermittently during the period May-July 1996 due to high levels of turbidity. The pump settings in extraction wells EW-1, EW-2, and EW-4 wells were elevated in late July 1996 to reduce turbidity levels in extracted ground water.

The deep ground-water flow pattens indicate ground-water flow is predominantly toward the south-southeast. Well gauging data collected on 14 May, 1 June, and 1 July 1996 (Figures 5 through 10) indicate that the majority of drawdown due to the operation of extraction wells EW-1 through EW-5 was observed in the shallow overburden monitoring wells. Wells screened in the deep portion of the aquifer (40 ft and greater) suggest limited drawdown due to pumping from the extraction wells. Drawdown in the deep wells is limited to less than 100 ft from the extraction wells.

The deep portion of the aquifer in the vicinity of extraction wells EW-1 through EW-5 has historically reported the highest concentrations of dissolved-phase VOC. In order to increase the effect of pumping from the deep interval, and to maximize the removal of VOC from these extraction wells, the isolation of the deep intervals is proposed. The use of a packer, or similar technology, is proposed to isolate the shallow and deep portions of the screened intervals of the extraction wells and to maximize ground-water extraction from the deep portion of the aquifer.

At Sites 1 and 3, a comparison of water elevation data collected in May 1995 (prior to emplacement of the slurry wall) and water elevation data collected on 14 May, 14 June, and 1 July 1996 indicates water elevations have decreased within the confines of the slurry wall. Water elevations decreased in shallow wells MW-211B and MW-217B an average of 7.74 ft and 6.86 ft, respectively. Water elevation decreased in deep wells MW-216A and MW-232A an

average of 7.17 ft and 8.46 ft, respectively. Comparison of water elevations in well MW-2101 located outside the confines of the slurry wall and well MW-211B located within the confines of the slurry wall indicate an average potentiometric head difference of 8.80 ft is present between these wells. These changes in water elevation are likely due to the emplacement of the slurry wall and landfill cap at Sites 1 and 3.

A comparison of the shallow and deep water table elevation contours indicates that, in general, there is increasing head with depth (upward vertical flow component) in low lying areas, such as near the Merriconeag Stream and Mere Brook. However, a decreasing potentiometric head with depth (downward vertical flow component) is generally observed in upland areas, such as near the Weapons Compound (Building No. 539) and south of Mere Brook.

Based on the 14 June 1996 well gauging data, the hydraulic gradient for the shallow portion of the aquifer shows variation across the study area. The hydraulic gradient ranges from 0.005 ft/ft in the central portion of the study area (from MW-209 to MW-225B), to a maximum of 0.030 ft/ft measured in the vicinity of Sites 1 and 3 (from MW-211B to MW-220). In the deep portion of the aquifer, the hydraulic gradient exhibits less variation and averages approximately 0.008 ft/ft, as measured parallel to the general southeasterly ground-water flow direction (from MW-224 to MW-311).

Artesian conditions were noted at 2 wells (MW-207A and MW-309A) during the 14 June 1996 gauging event, and at 3 wells (MW-207A, MW-309A, and MW-311) during the 14 May and 1 July 1996 gauging events. These wells are screened in the deep portion of the aquifer and are located near Merriconeag Stream, where ground surface elevations are less than deep potentiometric head elevations.

Observations regarding well integrity and well condition were made during the well gauging program. Throughout Sites 1 and 3 and the Eastern Plume, 14 sample locations were found to be unlocked, and 4 locations were uncapped. All wells were labeled. Following Monitoring Event 6, actions were taken to repair, lock, and cap wells in the LTMP program. As of 27 September 1996, wells were capped, locked, and labeled.

2.2 WATER QUALITY INDICATOR PARAMETERS

Water quality indicator parameters were measured during the collection of ground-water, surface water, and leachate seep samples according to the methods specified in the LTMP (ABB-ES 1994). The results of water quality indicator parameter monitoring at the time samples were collected are summarized in Tables 5 and 6 for ground-water samples collected at Sites 1 and 3 and the Eastern Plume, respectively. Table 7 provides a summary of the water quality indicator parameter measured in surface water and seep samples collected at Sites 1 and 3. Water quality indicator parameters measured in water samples collected from extraction wells and treatment plant raw influent and combined effluent samples are summarized in Table 8. The Field Record of Well Gauging, Purging, and Sampling forms are provided in Appendix A.

2.2.1 Sites 1 and 3 and Eastern Plume

Notable results of water quality indicator parameter measurements include:

- With the exception of 7 wells, turbidity did not exceed 10 NTU in any other wells at Sites 1 and 3.
- Elevated levels of conductivity and turbidity were measured at Well MW-217B compared to other wells at Sites 1 and 3. These elevated results may be due to the location of this well within the landfill.
- At the Eastern Plume, turbidity values below 10 NTU were recorded at 21 of 38 monitoring wells and piezometers sampled. Turbidity values stabilized at all locations prior to sample collection.

Surface water and leachate seep sample water quality indicator parameter measurements are summarized in Table 7. Turbidity in surface water showed little variability, with the highest turbidity noted closest to the landfill (SW-01). All seep samples collected reported elevated turbidity measurements (i.e., 283 NTU [SEEP-3] to 700 NTU [SEEP-5]).

2.2.2 Ground-Water Extraction and Treatment System

Five ground-water samples were collected from the extraction well network at Sites 1 and 3 and the Eastern Plume. In addition, raw influent and combined effluent water samples were collected from the ground-water extraction and treatment system. Table 8 summarizes the water quality indicator parameter measurements recorded at these locations. Notable results of water quality indicator parameters measured during Monitoring Event 6 include:

- The turbidity of ground water extracted at EW-6 was recorded at 47 NTU. Elevated conductivity was also observed at this extraction well.
- Elevated dissolved oxygen concentrations were recorded in the combined effluent, which is likely attributable to the addition of hydrogen peroxide in the ultraviolet/peroxidation system, located immediately upstream of the effluent sample port.

2.3 GROUND WATER

2.3.1 Sites 1 and 3

Table 9 provides a summary of the analytical results for the ground-water samples collected at Sites 1 and 3. Appendix C provides a summary table for tentatively identified (VOC) reported in these samples. Summary tables for the analyses performed are provided in Appendix D.

A total of 15 VOC were reported at detectable concentrations at Sites 1 and 3 monitoring wells. VOC were reported in 8 of the 14 monitoring wells sampled at Sites 1 and 3 during the June 1996 sampling event. The majority of VOC were reported at concentrations less than 5 μg/L. One VOC, methylene chloride, was reported in 1 ground-water sample and an associated trip blank, and is considered a laboratory artifact. Acetone was reported in 3 ground-water samples and the associated trip blanks, and is considered a laboratory contaminant.

VOC reported at concentrations above corresponding State Maximum Exposure Guidelines (MEGs) and/or Federal Maximum Contaminant Levels (MCLs) in ground-water samples are summarized below:

- Vinyl chloride was reported in 1 sample at a concentration of 4 μg/L (MW-217B), which exceeds the State MEG of 0.15 μg/L and the Federal MCL of 2 μg/L.

- 1,4-Dichlorobenzene was reported in MW-217B at a concentration of 83 μg/L, which exceeds the State MEG of 27 μg/L and Federal MCL of 75 μg/L.

A total of 21 TAL elements were reported in ground-water samples collected from Sites 1 and 3 wells. TAL elements were reported in all Sites 1 and 3 monitoring wells. TAL elements reported above primary Federal MCLs and State MEGs in ground water are summarized below:

- Aluminum was reported at a concentration which exceeds the State MEG of 1,430 μg/L in 1 well (MW-217B; 30,700 μg/L).

- Arsenic was reported at a concentration of 118 μg/L in MW-218 which exceeds the Federal MCL of 50 μg/L.

- Chromium was reported above the State MEG of 100 μg/L and Federal MCL of 100 μg/L in 1 well (MW-217B; 107 μg/L).

- Manganese was reported in 7 ground-water samples at concentrations above the State MEG of 200 μg/L.

2.3.2 Eastern Plume

Table 10 provides a summary of the analytical results for the ground-water samples collected at the Eastern Plume. Appendix C provides a summary table for tentatively identified compounds (VOC) reported in the samples. The summary tables for these analyses are provided in Appendix D.

A total of 17 VOC were reported at detectable concentrations at Eastern Plume wells. VOC were reported in 24 of 37 monitoring wells sampled during the June 1996 monitoring event. Monitoring well MW-311 was frozen during the Monitoring Event 5 sampling event (March 1996) and a sample was collected on 30 May 1996. The 30 May 1996 data are presented in Table 10. VOC reported in site wells/piezometers at concentrations above Federal MCLs and State MEGs are summarized below:

- 1,1,1-Trichloroethane was reported above the State MEG (200 μg/L) and Federal MCL (200 μg/L) in samples collected from 6 wells (MW-205, MW-306, MW-311 [May and June 1996 samples], MW-1104, P-105, and P-106).

- Total 1,2-Dichloroethane was reported above the State MEG of 70 μg/L and Federal MCL of 70 μg/L in the sample collected from 1 well (MW-306).

- Trichloroethene was reported above the State MEG of 5 μg/L and Federal MCL of 5 μg/L in samples collected from 12 wells/piezometers (MW-205, MW-207A, MW-208, MW-212, MW-225A, MW-229A, MW-306, MW-311 [May and June 1996 samples], MW-319, MW-1104, P-105, and P-106).

- Tetrachloroethene was reported above the State MEG of 3 μg/L and/or Federal MCL of 5 μg/L in samples collected from 8 wells/piezometers (MW-205, MW-207A, MW-208, MW-225, MW-229A, MW-311 [May and June 1996 samples], MW-319, and P-106).

- 1,1-Dichloroethene was reported above the State MEG of 7 μg/L and Federal MCL of 7 μg/L in samples collected from 5 wells/piezometers (MW-205, MW-306, MW-311 [May and June 1996 samples], P-105, and P-106).

- 1,1-Dichloroethane was reported above the State MEG of 70 μg/L in 1 sample (MW-311).

- 1,1,2-Trichloroethane was reported above the State MEG of 3 μg/L and/or Federal MCL of 5 μg/L in 2 samples collected from MW-311 [May and June 1996 samples] and P-106.

- 1,2-Dichloroethane was reported above the State MEG of 5 μg/L and Federal MCL of 5 μg/L in samples collected from 3 wells (MW-311 [May and June 1996 samples], P-105, and P-106).

- Methylene chloride was reported above the Federal MCL of 5 μg/L in MW-311 although this compound was detected in the associated trip blank and is a common laboratory contaminant.

2.3.3 Ground-Water Extraction and Treatment System

Table 11 provides a summary of the VOC and TAL elements reported in ground-water extraction well, treatment system raw influent, and treatment system combined effluent samples collected at the ground-water extraction and treatment system. Appendix C provides a summary table for tentatively identified compounds reported in the samples. Laboratory data are provided in Appendix D.

A total of 24 VOC were reported at detectable concentrations from extraction well and treatment system samples. VOC were reported in all extraction well and treatment system samples. Methylene chloride was reported in 4 extraction well samples and 3 treatment system samples, however, this compound was commonly reported in the associated method blanks and is considered a laboratory artifact.

There were no exceedances of the ground-water treatment plant discharge limits for VOC reported in the combined effluent sample.

A total of 16 TAL elements were reported in extraction well and treatment system samples. TAL elements were reported in all extraction well and treatment system samples. There were no TAL elements were reported at concentrations exceeding the ground-water treatment system discharge limits (ABB-ES 1994).

2.4 SURFACE WATER

Table 12 provides a summary of the VOC and TAL inorganics reported in surface water samples collected at Sites 1 and 3. The reports of laboratory analyses for the surface water samples are provided in Appendix D.

One VOC (acetone) was reported in a single surface water sample (SW-1). Acetone was reported in the rinsate and source water blanks associated with surface water sample and is considered a field or laboratory artifact. A total of 19 TAL elements were reported in surface water samples. Elevated concentrations of iron and aluminum were reported from surface water sample SW-1 which is located at the toe of the landfill.

2.5 SEDIMENT

Table 13 provides a summary of the constituents reported in sediment samples collected at Sites 1 and 3. Appendix C provides a summary table for tentatively identified compounds (VOC) reported in the samples. The reports of laboratory analyses for sediment samples are provided in Appendix D.

A total of 11 VOC were reported in sediment samples. VOC were reported in all sediment samples. Two of 11 VOC detected (acetone and 2-butanone) were reported at low concentrations in the sediment samples, source water blank, or equipment rinsate blank, however, these compounds were detected in an associated method blank and are considered laboratory artifacts. A total of 22 TAL elements were reported in sediment samples. All sediment samples reported detectable concentrations of TAL elements.

2.6 LEACHATE STATION SAMPLES

2.6.1 Seep

Table 14 provides a summary of the constituents reported in leachate seep samples collected at Sites 1 and 3. Seep samples were not collected at 2 of the planned locations (SEEP-2 and SEEP-4) because these locations were dry and no aqueous sample could be obtained. Appendix C provides a summary table for tentatively identified compounds (VOC) reported in the samples. The analytical reports for leachate analyses are provided in Appendix D.

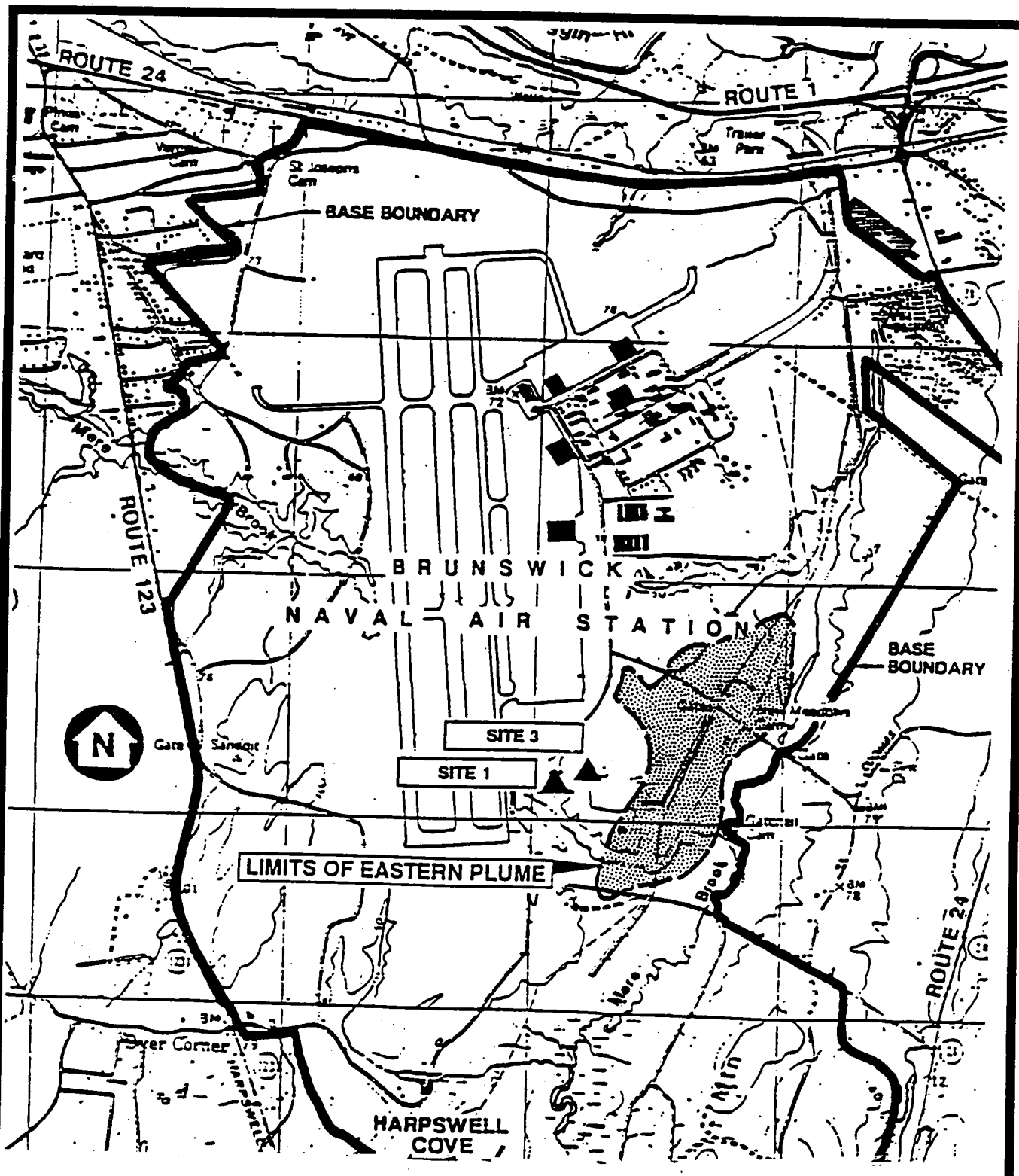
A total of 8 VOC were reported in leachate station seep samples. VOC were reported at detectable concentrations in all leachate station samples. One of 9 VOC detected (acetone) was reported in the seep samples, trip blank, equipment rinsate blank, and source water blank and is considered a laboratory artifact. A total of 24 TAL elements were reported in sediment samples. All sediment samples reported detectable concentrations of TAL elements.

2.6.2 Sediment

Table 15 provides a summary of the constituents reported in leachate sediment samples collected at Sites 1 and 3. A total of 9 VOC were reported in leachate station sediment samples. VOC were reported in all leachate station sediment samples. One of 9 VOC (acetone) was reported in the equipment rinsate blank and source water blank, however, this compound was also reported in an associated method blank, and is considered a laboratory artifact. A total of 23 TAL elements were reported in leachate station sediment samples. TAL elements were reported in all leachate station sediment samples.

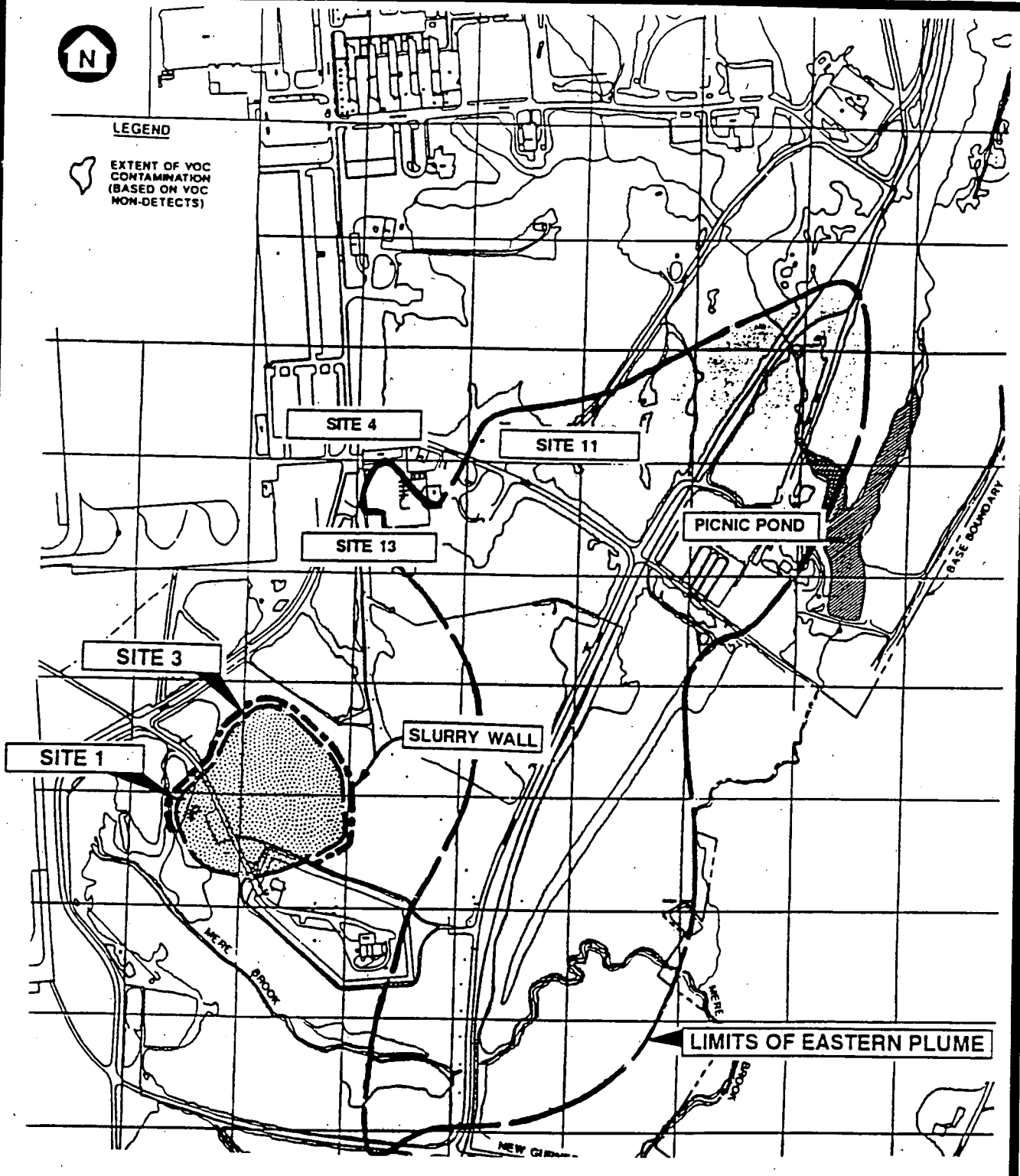
2.7 LANDFILL GAS MONITORING

Table 16 provides a summary of landfill gas monitoring conducted at Sites 1 and 3. Sample data were noted both in field logbooks and on the field record forms provided in Appendix A. The gas pressure from all gas probes and gas vents was below the detection limit of the differential pressure gauge (<0.01 in. water). The lowest percent oxygen measurements were noted at vents GV-1 (14.5 percent) and GV-14 (12.5 percent). Methane was detected at 16 of 17 gas probes and gas vents at concentrations up to 0.3 percent.



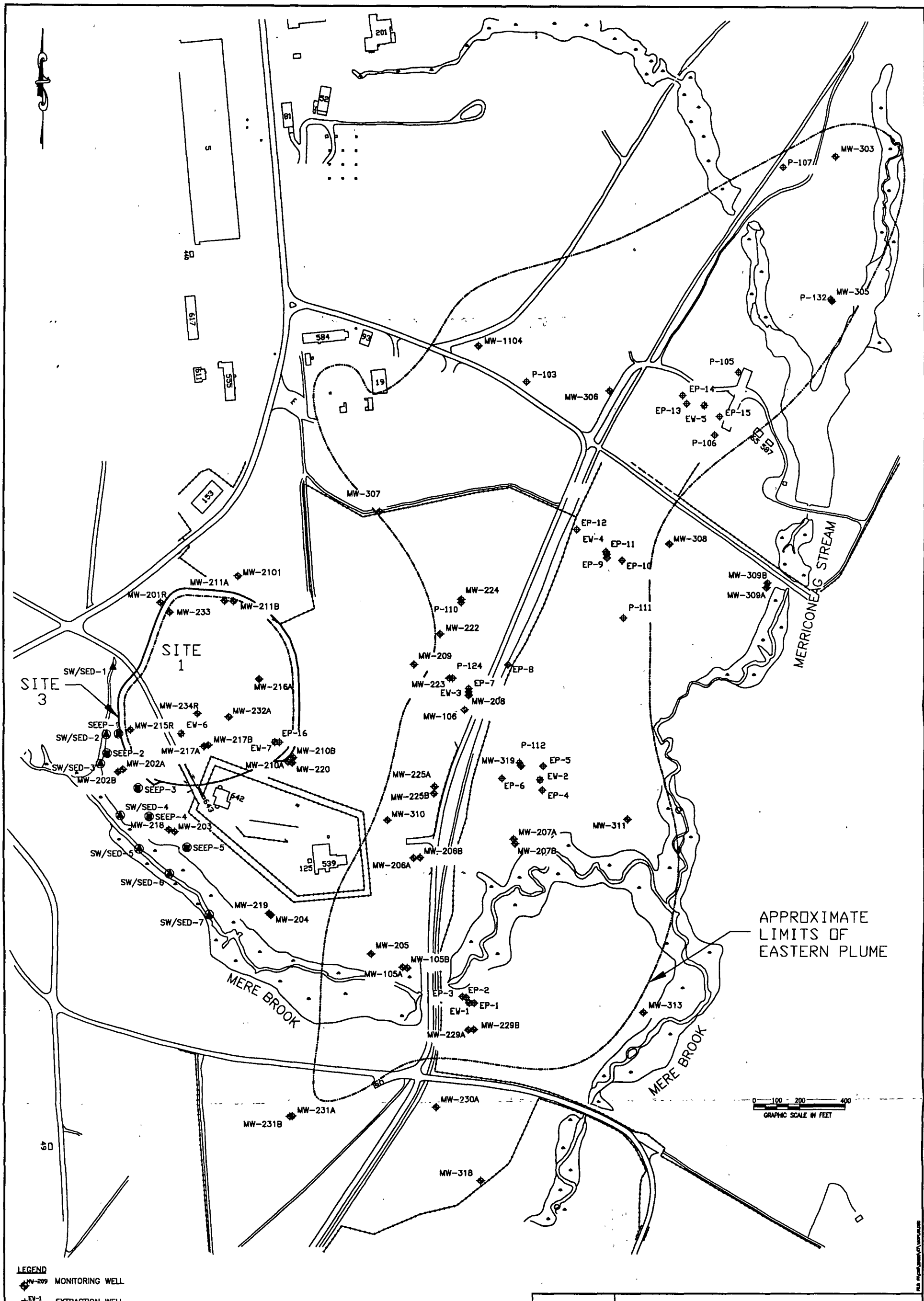
Source: USGS 7.5-minute series topographic maps: Brunswick, Maine, Quadrangles (1980); and Orrs Island, Maine, 1978. Scale 1:24,000.

Figure 1. Site location map for Sites 1 and 3 and Eastern Plume, Naval Air Station, Brunswick, Main .



Source: Figure 1-3 of report titled, "Final Long-Term Monitoring Plan for Building 95, Sites 1 and 3 and Eastern Plume, Naval Air Station, Brunswick, Maine," prepared by ABB Environmental Services, Inc. (August 1994).

Figure 2. Site plan for Sites 1 and 3 and Eastern Plum , Naval Air Station, Brunswick, Maine.



LEGEND

- MW-209 MONITORING WELL
- EW-1 EXTRACTION WELL
- EP-11 PIEZOMETER
- SEEP-6 SEEP SAMPLE STATION
- SW/SED-4 SURFACE WATER/SEDIMENT SAMPLE STATION
- APPROXIMATE LIMITS OF EASTERN PLUME
- APPROXIMATE LIMITS OF SLURRY WALL
- APPROXIMATE LIMITS OF SITES 1 & 3

SITES 1 & 3 AND EASTERN PLUME

NAVAL AIR STATION, BRUNSWICK, MAINE

FIGURE 3

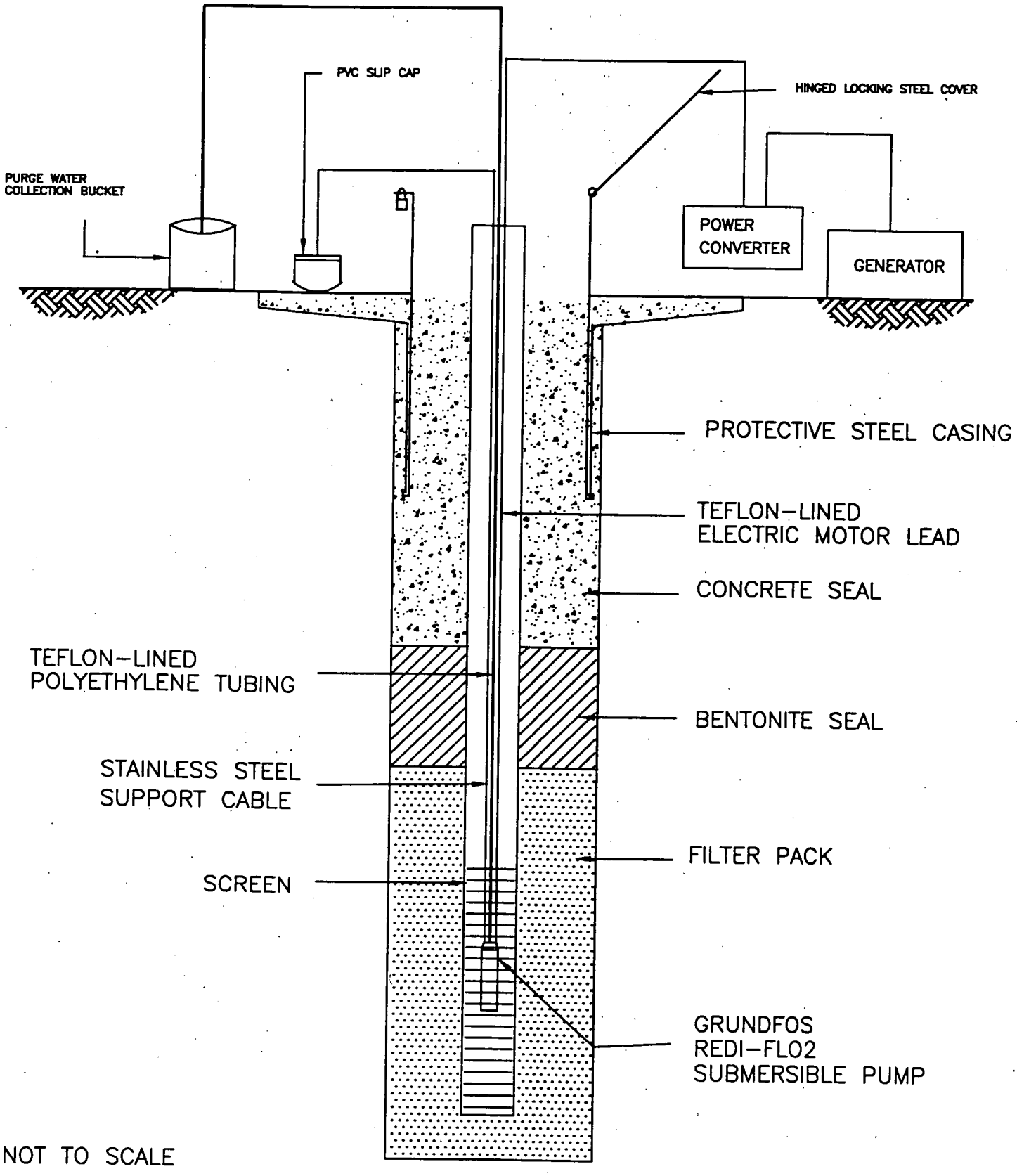
MONITORING WELL LOCATION PLAN

DATE	OCTOBER 3 1996
DESIGNED BY	SY
DRAWN BY	SY
CHECKED BY	PLN
PROJECT MANAGER	MSB
PROJECT NUMBER	29600.47
SCALE	1"=400'
FILE NAME	1&3EPEV5
DRAWING NUMBER	–
SHEET NUMBER	–

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

THE MAPLE BUILDING
3 WASHINGTON CENTER
NEWBURGH, NY 12550
(914) 565-3100

ALASKA, CALIFORNIA, COLORADO, DELAWARE, FLORIDA, GEORGIA, HAWAII, ILLINOIS, MARYLAND, MASSACHUSETTS, NEBRASKA, NEW JERSEY, NEW YORK, NORTH CAROLINA, TEXAS, WASHINGTON



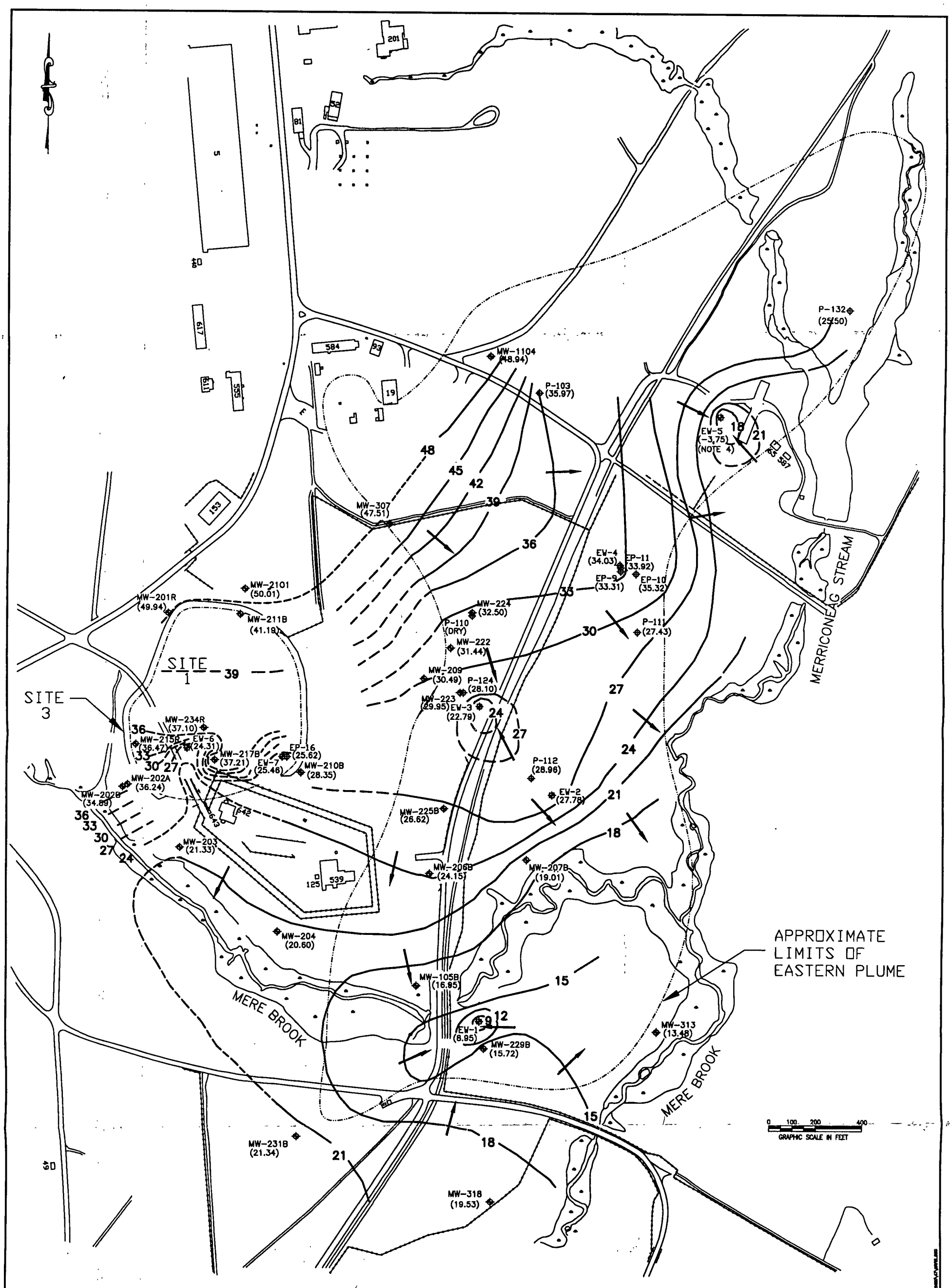
DWG. FILE No. F:\CAD\AGWELL

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

SCHEMATIC OF GENERALIZED INSTALLATION OF DEDICATED SUBMERSIBLE PUMP SYSTEM IN A MONITORING WELL

FIGURE 4

PROJECT MGR	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	DATE	PROJECT NO	FILE No.
MSB		SY		N.T.S.	26 JUNE 1995	29600.47	PUMP



LEGEND

- MW-209 (30.02) MONITORING WELL (WATER TABLE ELEVATION, FT MSL)
- (DRY) (LOCATION DRY AT TIME OF GAUGING)
- EW-1 EXTRACTION WELL (WATER TABLE ELEVATION, FT MSL)
- EP-11 (33.50) PIEZOMETER (WATER TABLE ELEVATION, FT MSL)
- —26— GROUND-WATER CONTOUR (FT MSL) (DASHED WHERE INFERRED)
- INFERRED GROUND-WATER FLOW DIRECTION
- APPROXIMATE LIMITS OF EASTERN PLUME
- APPROXIMATE LIMITS OF SLURRY WALL
- APPROXIMATE LIMITS OF SITES 1 & 3

NOTE:

1. WATER LEVEL DATA COLLECTED 14 MAY 1996.
2. EXTRACTION WELLS EW-1, EW-2, EW-3, EW-5, EW-6, AND EW-7 WERE IN OPERATION DURING WELL GAUGING EVENT.
3. CONTOUR INTERVAL = 3 FT.
4. THE 15, 12, 9, 6, 3, 0 AND -3 FT CONTOURS ENCOMPASS EW-5 ALTHOUGH THEY COULD NOT BE DISPLAYED DUE TO MAP SCALE.

SITES 1 & 3 AND EASTERN PLUME

NAVAL AIR STATION, BRUNSWICK, MAINE

FIGURE 5

INTERPRETED SHALLOW GROUND-WATER CONTOUR MAP

14 MAY 1996

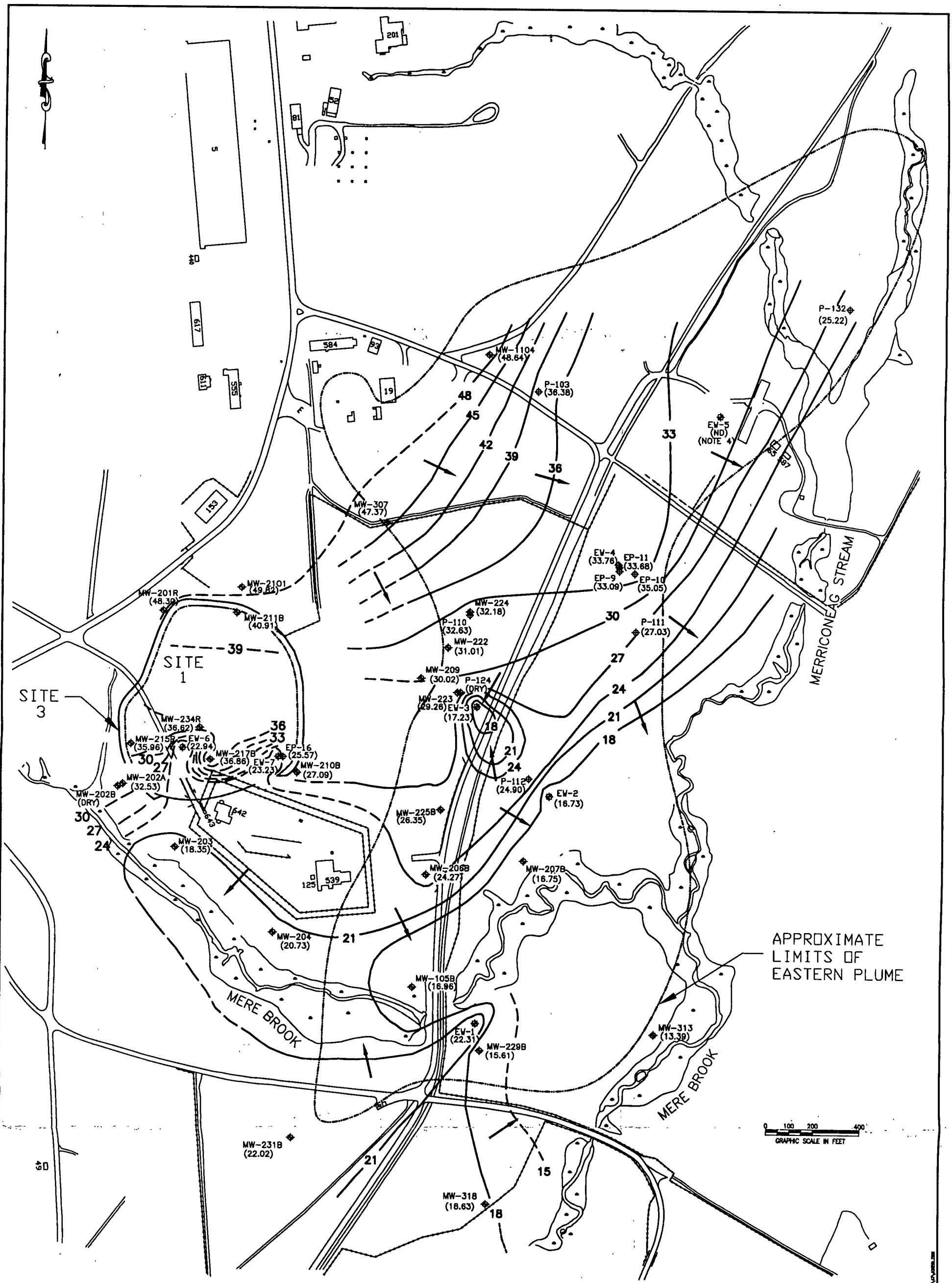
DATE	3 OCTOBER 1996
DESIGNED BY	SY
DRAWN BY	JFW
CHECKED BY	PLN
PROJECT MANAGER	MSB

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

THE MAPLE BUILDING
3 WASHINGTON CENTER
NEWBURGH, NY 12550
(914) 565-6100

ALASKA, CALIFORNIA, COLORADO, DELAWARE, FLORIDA, GEORGIA, HAWAII, ILLINOIS, MARYLAND, MASSACHUSETTS, NEBRASKA, NEW JERSEY, NEW YORK, NORTH CAROLINA, TEXAS, WASHINGTON

PROJECT NUMBER	29600.47
SCALE	1"=400'
FILE NAME	FIGURE6
DRAWING NUMBER	–
SHEET NUMBER	–



LEGEND

- MW-209 (30.02) — MONITORING WELL (WATER TABLE ELEVATION, FT MSL)
- (DRY) — (LOCATION DRY AT TIME OF GAUGING)
- EW-1 (24.56) — EXTRACTION WELL (WATER TABLE ELEVATION, FT MSL)
- EP-11 (33.56) — PIEZOMETER (WATER TABLE ELEVATION, FT MSL)
- —26— — GROUND-WATER CONTOUR (FT MSL) (DASHED WHERE INFERRED)
- INFERRED GROUND-WATER FLOW DIRECTION
- APPROXIMATE LIMITS OF EASTERN PLUME
- APPROXIMATE LIMITS OF SLURRY WALL
- APPROXIMATE LIMITS OF SITES 1 & 3

NOTE:

1. WATER LEVEL DATA COLLECTED 14 JUNE 1996.
2. EXTRACTION WELLS EW-1, EW-2, EW-3, EW-5, EW-6, AND EW-7 WERE IN OPERATION DURING WELL GAUGING EVENT.
3. CONTOUR INTERVAL = 3 FT.
4. NO DATA AVALIABLE. GAUGING PORT BLOCKED.

SITES 1 & 3 AND EASTERN PLUME

NAVAL AIR STATION, BRUNSWICK, MAINE

FIGURE 6
INTERPRETED SHALLOW GROUND-WATER CONTOUR MAP
14 JUNE 1996

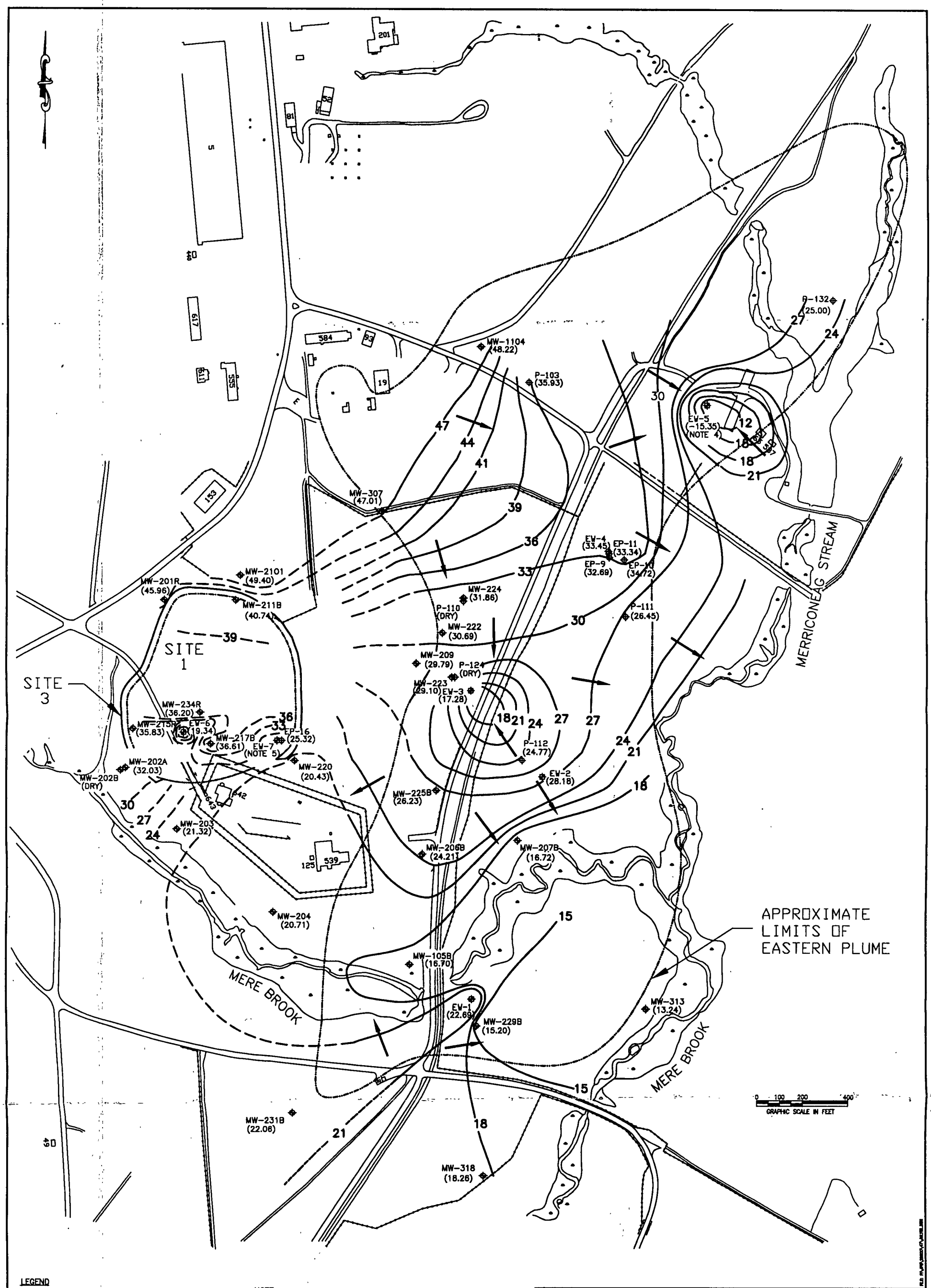
DATE	3 OCTOBER 1996
DESIGNED BY	SY
DRAWN BY	JFW
CHECKED BY	PLN
PROJECT MANAGER	MSB

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

THE MAPLE BUILDING
3 WASHINGTON CENTER
NEWBURGH, NY 12550
(914) 565-6100

ALASKA, CALIFORNIA, COLORADO, DELAWARE, FLORIDA, GEORGIA, HAWAII, ILLINOIS, MARYLAND, MASSACHUSETTS, NEBRASKA, NEW JERSEY, NEW YORK, NORTH CAROLINA, TEXAS, WASHINGTON

PROJECT NUMBER	29600.47
SCALE	1"=400'
FILE NAME	FIGURE7
DRAWING NUMBER	–
SHEET NUMBER	–



LEGEND

- (33.50) MONITORING WELL (WATER TABLE ELEVATION, FT MSL)
- (DRY) (LOCATION DRY AT TIME OF GAUGING)
- EW-1 (33.50) EXTRACTION WELL (WATER TABLE ELEVATION, FT MSL)
- EP-11 (33.50) PIEZOMETER (WATER TABLE ELEVATION, FT MSL)
- —26— GROUND-WATER CONTOUR (FT MSL) (DASHED WHERE INFERRED)
- INFERRED GROUND-WATER FLOW DIRECTION
- APPROXIMATE LIMITS OF EASTERN PLUME
- APPROXIMATE LIMITS OF SLURRY WALL
- APPROXIMATE LIMITS OF SITES 1 & 3

NOTE:

1. WATER LEVEL DATA COLLECTED 1 JULY 1996.
2. EXTRACTION WELLS EW-2, EW-3, EW-5, EW-6 AND EW-7 WERE IN OPERATION DURING WELL GAUGING EVENT.
3. CONTOUR INTERVAL = 3 FT.
4. THE 9, 6, 3, 0, -3, -6, -9 AND -15 FT CONTOUR ENCOMPASS EW- 5 ALTHOUGH THEY COULD NOT BE DISPLAYED DUE TO MAP SCALE.
5. ANOMALOUS WATER ELEVATION, NOT USED DURING CONTOUR MAP GENERATION.

SITES 1 & 3 AND EASTERN PLUME

NAVAL AIR STATION, BRUNSWICK, MAINE

FIGURE 7
INTERPRETED SHALLOW GROUND-WATER CONTOUR MAP
1 JULY 1996

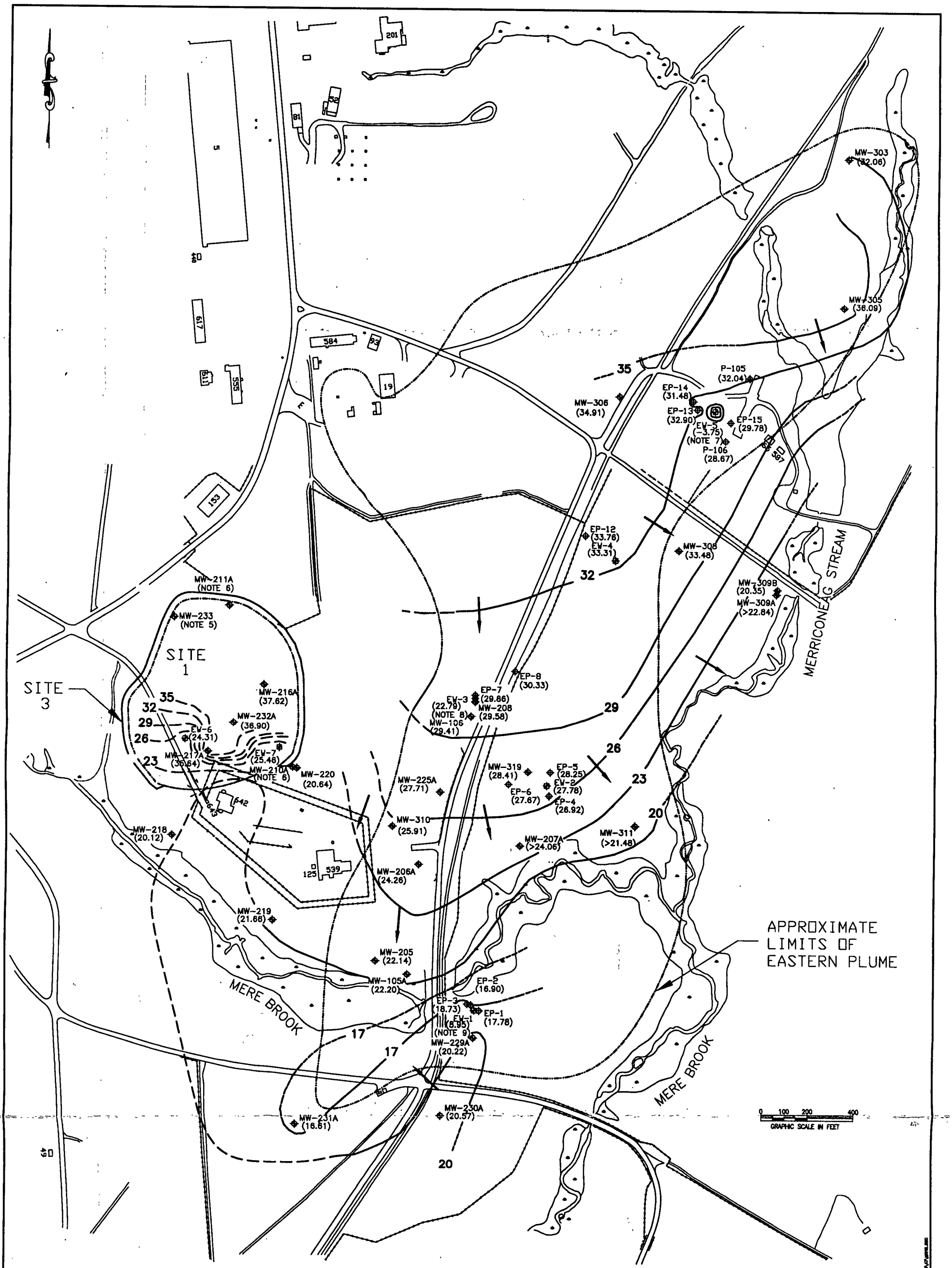
DATE	3 OCTOBER 1996
DESIGNED BY	SY
DRAWN BY	JFW
CHECKED BY	PLN
PROJECT MANAGER	MSB

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

THE MAPLE BUILDING
3 WASHINGTON CENTER
NEWBURGH, NY 12550
(914) 565-6100

ALASKA, CALIFORNIA, COLORADO, DELAWARE, FLORIDA, GEORGIA, HAWAII, ILLINOIS, MARYLAND, MASSACHUSETTS, NEBRASKA, NEW JERSEY, NEW YORK, NORTH CAROLINA, TEXAS, WASHINGTON

PROJECT NUMBER	29600.47
SCALE	1"=400'
FILE NAME	FIGURE5
DRAWING NUMBER	–
SHEET NUMBER	–



LEGEND

- MONITORING WELL (WATER TABLE ELEVATION, FT MSL) — (16.61)
- (DRY) — (LOCATION DRY AT TIME OF GAUGING)
- EW-1 EXTRACTION WELL (WATER TABLE ELEVATION, FT MSL) — (16.61)
- EP-11 PIEZOMETER (WATER TABLE ELEVATION, FT MSL) — (33.50)
- —26— GROUND-WATER CONTOUR (FT MSL) (DASHED WHERE INFERRED)
- INFERRED GROUND-WATER FLOW DIRECTION
- APPROXIMATE LIMITS OF EASTERN PLUME
- APPROXIMATE LIMITS OF SLURRY WALL
- APPROXIMATE LIMITS OF SITES 1 & 3

NOTE:

1. WATER LEVEL DATA COLLECTED 14 MAY 1996.
2. EXTRACTION WELLS EW-1, EW-2, EW-3, EW-5, EW-6, AND EW-7 WERE IN OPERATION DURING WELL GAUGING EVENT.
3. CONTOUR INTERVAL = 3 FT.
4. MONITORING WELLS MW-207A, MW-309A AND MW-311 WERE ARTESIAN DURING WELL GAUGING EVENT.
5. IRREGULAR WATER ELEVATION, NOT USED DURING CONTOUR MAP GENERATION.
6. BEDROCK WELL, WATER ELEVATION NOT USED DURING CONTOUR MAP GENERATION.
7. THE 23, 20, 17, 15, 12, 9, 6, 3, 0 AND -3 FT CONTOURS ENCOMPASS EW-5 ALTHOUGH THEY COULD NOT BE DISPLAYED DUE TO MAP SCALE.
8. THE 26, 23 AND 20 FT CONTOURS ENCOMPASS EW-3 ALTHOUGH THEY COULD NOT BE DISPLAYED DUE TO MAP SCALE.
9. THE 17, 15, 12 AND 9 FT CONTOURS ENCOMPASS EW-1 ALTHOUGH THEY COULD NOT BE DISPLAYED DUE TO MAP SCALE.

SITES 1 & 3 AND EASTERN PLUME

NAVAL AIR STATION, BRUNSWICK, MAINE

FIGURE 8
INTERPRETED DEEP GROUND-WATER CONTOUR MAP
14 MAY 1996

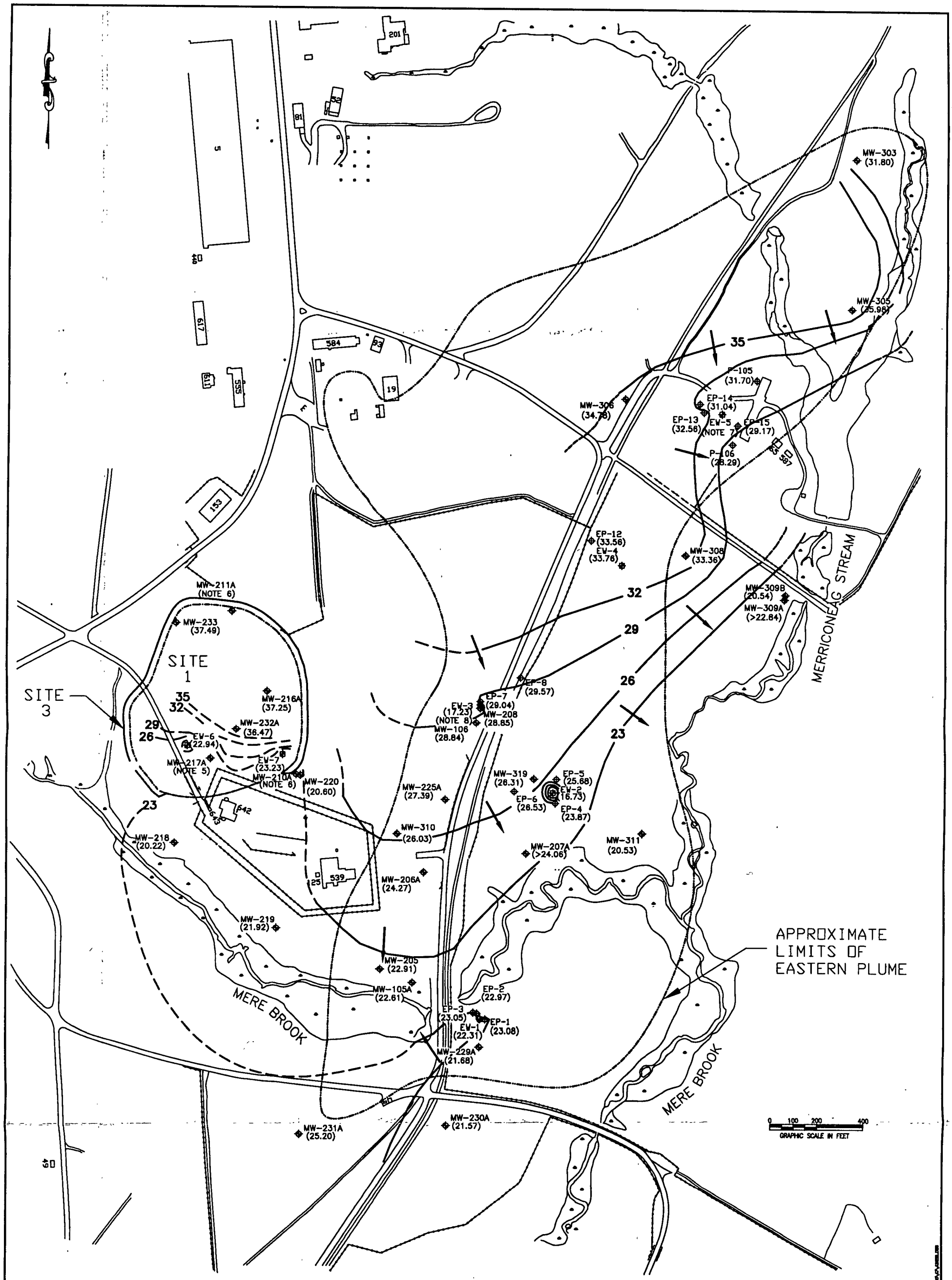
DATE	3 OCTOBER 1996
DESIGNED BY	SY
DRAWN BY	JFW
CHECKED BY	PLN
PROJECT MANAGER	MSB

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

THE MAPLE BUILDING
3 WASHINGTON CENTER
NEWBURGH, NY 12550
(914) 566-6100

ALASKA, CALIFORNIA, COLORADO, DELAWARE, FLORIDA, GEORGIA, HAWAII, ILLINOIS, MARYLAND, MASSACHUSETTS, NEBRASKA, NEW JERSEY, NEW YORK, NORTH CAROLINA, TEXAS, WASHINGTON

PROJECT NUMBER	29600.47
SCALE	1"=400'
FILE NAME	FIGURE6
DRAWING NUMBER	–
SHEET NUMBER	–



LEGEND

- (37.49) MONITORING WELL (WATER TABLE ELEVATION, FT MSL)
- (DRY) EW-1 (LOCATION DRY AT TIME OF GAUGING) EXTRACTION WELL
- EP-11 (33.56) PIEZOMETER (WATER TABLE ELEVATION, FT MSL)
- —26— GROUND-WATER CONTOUR (FT MSL) (DASHED WHERE INFERRED)
- INFERRED GROUND-WATER FLOW DIRECTION
- APPROXIMATE LIMITS OF EASTERN PLUME
- APPROXIMATE LIMITS OF SLURRY WALL
- APPROXIMATE LIMITS OF SITES 1 & 3

NOTE:

1. WATER LEVEL DATA COLLECTED 14 JUNE 1996.
2. EXTRACTION WELLS EW-1, EW-2, EW-3, EW-5, EW-6, AND EW-7 WERE IN OPERATION DURING WELL GAUGING EVENT.
3. MONITORING WELLS MW-207A AND MW-309A WERE ARTESIAN DURING WELL GAUGING EVENT.
4. CONTOUR INTERVAL = 3 FT.
5. ANOMALOUS WATER ELEVATION, NOT USED DURING CONTOUR MAP GENERATION.
6. BEDROCK WELL, WATER ELEVATION NOT USED DURING CONTOUR MAP GENERATION.
7. NO DATA AVILABLE. GAUGING PORT BLOCKED.
8. THE 26, 23 AND 20 FT CONTOURS ENCOMPASS EW-3 ALTHOUGH THEY COULD NOT BE DISPLAYED DUE TO MAP SCALE.

SITES 1 & 3 AND EASTERN PLUME

NAVAL AIR STATION, BRUNSWICK, MAINE

FIGURE 9
INTERPRETED DEEP GROUND-WATER CONTOUR MAP
14 JUNE 1996

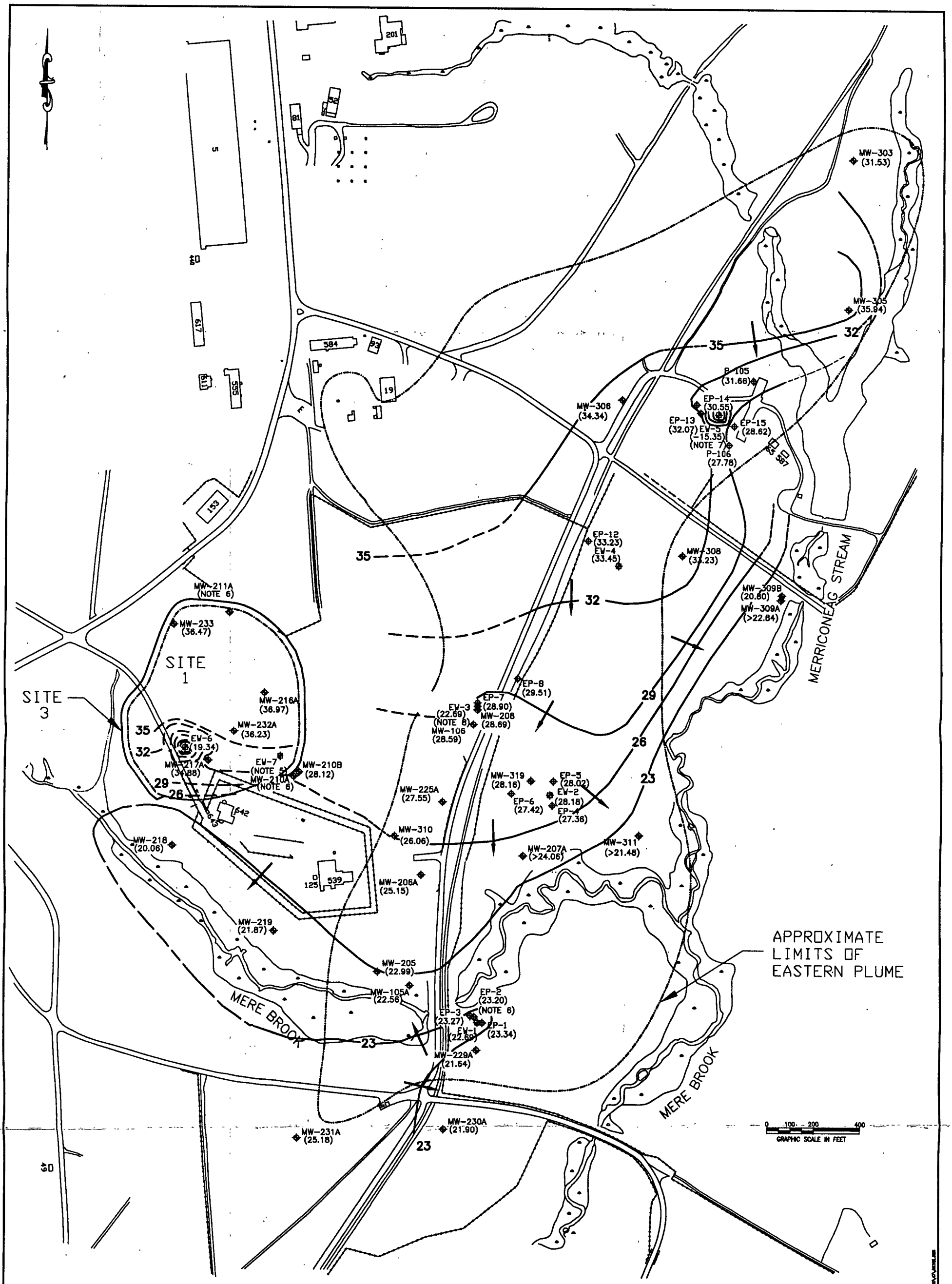
DATE	3 OCTOBER 1996
DESIGNED BY	SY
DRAWN BY	JFW
CHECKED BY	PLN
PROJECT MANAGER	MSB

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

THE MAPLE BUILDING
3 WASHINGTON CENTER
NEWBURGH, NY 12550
(914) 565-6100

ALASKA, CALIFORNIA, COLORADO, DELAWARE, FLORIDA, GEORGIA, HAWAII, ILLINOIS, MARYLAND, MASSACHUSETTS, NEBRASKA, NEW JERSEY, NEW YORK, NORTH CAROLINA, TEXAS, WASHINGTON

PROJECT NUMBER	29600.47
SCALE	1"=400'
FILE NAME	FIGURE7
DRAWING NUMBER	–
SHEET NUMBER	–



LEGEND

- MONITORING WELL (WATER TABLE ELEVATION, FT MSL) — (33.50)
- (DRY) (LOCATION DRY AT TIME OF GAUGING)
- EW-1 EXTRACTION WELL (WATER TABLE ELEVATION, FT MSL) — (33.50)
- EP-11 PIEZOMETER (WATER TABLE ELEVATION, FT MSL) — (33.50)
- —26— GROUND-WATER CONTOUR (FT MSL) (DASHED WHERE INFERRED)
- INFERRED GROUND-WATER FLOW DIRECTION
- APPROXIMATE LIMITS OF EASTERN PLUME
- APPROXIMATE LIMITS OF SLURRY WALL
- APPROXIMATE LIMITS OF SITES 1 & 3

NOTE:

1. WATER LEVEL DATA COLLECTED 1 JULY 1996.
2. EXTRACTION WELLS EW-2, EW-3, EW-5, EW-6 AND EW-7 WERE IN OPERATION DURING WELL GAUGING EVENT.
3. CONTOUR INTERVAL = 3 FT.
4. MONITORING WELLS MW-207A, MW-309A AND MW-311 WERE ARTESIAN DURING WELL GAUGING EVENT.
5. ANOMALOUS WATER ELEVATION, NOT USED DURING CONTOUR MAP GENERATION.
6. BEDROCK WELL, WATER ELEVATION NOT USED DURING CONTOUR MAP GENERATION.
7. THE 20, 17, 14, 11, 9, 6, 3, 0, -3, -6, -9, -12 AND -15 FT COUTOURS ENCOMPASS EW-5 ALTHOUGH THEY COULD NOT BE DISPLAYED DUE TO MAP SCALE.
8. THE 26, 23 AND 20 FT COUTOUR LINES ENCOMPASS EW-3 ALTHOUGH THEY COULD NOT BE DISPLAYED DUE TO MAP SCALE.

SITES 1 & 3 AND EASTERN PLUME

NAVAL AIR STATION, BRUNSWICK, MAINE

FIGURE 10
INTERPRETED DEEP GROUND-WATER CONTOUR MAP
1 JULY 1996

DATE	3 OCTOBER 1996
DESIGNED BY	SY
DRAWN BY	JFW
CHECKED BY	PLN
PROJECT MANAGER	MSB

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

THE MAPLE BUILDING
3 WASHINGTON CENTER
NEWBURGH, NY 12550
(914) 565-6100

ALASKA, CALIFORNIA, COLORADO, DELAWARE, FLORIDA, GEORGIA, HAWAII, ILLINOIS, MARYLAND, MASSACHUSETTS, NEBRASKA, NEW JERSEY, NEW YORK, NORTH CAROLINA, TEXAS, WASHINGTON

PROJECT NUMBER	29600.47
SCALE	1"=400'
FILE NAME	FIGURE5
DRAWING NUMBER	–
SHEET NUMBER	–

TABLE 1 SUMMARY OF LONG-TERM MONITORING PROGRAM AT SITES 1 AND 3, NAVAL AIR STATION, BRUNSWICK, MAINE

Sample Type/Location	Monitoring Frequency	Sample Parameters			Event 6	
		TCL VOC	TAL Elements	Field Parameters[a]	Gauged	Sampled
Monitoring Wells						
MW-202A	Tri-Annual	X	X	X	X	X
MW-202B	Tri-Annual	X	X	X	X	Well dry
MW-203	Tri-Annual	X	X	X	X	X
MW-204	Tri-Annual	X	X	X	X	X
MW-210A	Tri-Annual	X	X	X	X	Bent riser
MW-210B	Tri-Annual	X	X	X	X	X
MW-215R	Tri-Annual	X	X	X	X	X
MW-216A	Tri-Annual	X	X	X	X	X
MW-216B	Tri-Annual	X	X	X	Well abandoned	
MW-217A	Tri-Annual	X	X	X	X	X
MW-217B	Tri-Annual	X	X	X	X	X
MW-218	Tri-Annual	X	X	X	X	X
MW-219	Tri-Annual	X	X	X	X	X
MW-220	Tri-Annual	X	X	X	X	X
MW-232A	Tri-Annual	X	X	X	X	X
MW-234R	Tri-Annual	X	X	X	X	X
MW-2101	Tri-Annual	X	X	X	X	X
EW-6	Tri-Annual	X	X	X	X	X
EW-7	Tri-Annual	X	X	X	X	X
MW-201R	Tri-Annual	NA	NA	X[b]	X[b]	NA
MW-211A	Tri-Annual	NA	NA	X[b]	X[b]	NA
MW-211B	Tri-Annual	NA	NA	X[b]	X[b]	NA
MW-233R	Tri-Annual	NA	NA	X[b]	X[b]	NA
EP-16	Tri-Annual	NA	NA	X[b]	X[b]	NA

(a) Determination of field parameters in accordance with EPA/600/4-79/020 using the following methods: pH (Method 150.1), temperature (Method 170.1), specific conductance (Method 180.1), and dissolved oxygen (Method 360.1). Includes water level measurement and Eh.
(b) Determination of water level only.

NOTE: TAL = Target Analyte List; TCL = Target Compound List; VOC = Volatile organic compounds (EPA SW-846); SED = Sediment; SW = Surface water.
NA = Not applicable.

Sample Type/Location	Monitoring Frequency	Sample Parameters			Event 6	
		TCL VOC	TAL Elements	Field Parameters[a]	Gauged[b]	Sampled
Leachate Station Seep						
SEEP-1	Tri-Annual	X	X	X	X	X
SEEP-2	Tri-Annual	X	X	X	Seep Dry	
SEEP-3	Tri-Annual	X	X	X	X	X
SEEP-4	Tri-Annual	X	X	X	Seep Dry	
SEEP-5	Tri-Annual	X	X	X	X	X
Leachate Station Sediment						
SEEP-1	Tri-Annual	X	X	NA	NA	X
SEEP-2	Tri-Annual	X	X	NA	NA	X
SEEP-3	Tri-Annual	X	X	NA	NA	X
SEEP-4	Tri-Annual	X	X	NA	NA	X
SEEP-5	Tri-Annual	X	X	NA	NA	X
Surface Water						
SW-1	Tri-Annual	X	X	X	X	X
SW-2	Tri-Annual	X	X	X	X	X
SW-3	Tri-Annual	X	X	X	X	X
SW-4	Tri-Annual	X	X	X	X	X
SW-5	Tri-Annual	X	X	X	X	X
SW-6	Tri-Annual	X	X	X	X	X
SW-7	Tri-Annual	X	X	X	X	X
Sediment						
SED-1	Tri-Annual	X	X	NA	NA	X
SED-2	Tri-Annual	X	X	NA	NA	X
SED-3	Tri-Annual	X	X	NA	NA	X
SED-4	Tri-Annual	X	X	NA	NA	X
SED-5	Tri-Annual	X	X	NA	NA	X
SED-6	Tri-Annual	X	X	NA	NA	X
SED-7	Tri-Annual	X	X	NA	NA	X

(b) Measurement of water quality indicator parameters only.

TABLE 2 SUMMARY OF LONG-TERM MONITORING PROGRAM AT EASTERN PLUME, NAVAL AIR STATION, BRUNSWICK, MAINE

Sample Type/Location	Monitoring Frequency	Sample Parameters		Event 6	
		TCL VOC	Field Parameters[a]	Gauged	Sampled
Monitoring Wells					
MW-105 A	Tri-Annual	X	X	X	X
MW-105 B	Tri-Annual	X	X	X	X
MW-106	Tri-Annual	X	X	X	X
MW-205	Tri-Annual	X	X	X	X
MW-206 A	Tri-Annual	X	X	X	X
MW-206 B	Tri-Annual	X	X	X	X
MW-207 A	Tri-Annual	X	X	X	X
MW-207 B	Tri-Annual	X	X	X	X
MW-208	Tri-Annual	X	X	X	X
MW-209	Tri-Annual	X	X	X	X
MW-222	Tri-Annual	X	X	X	X
MW-223	Tri-Annual	X	X	X	X
MW-224	Tri-Annual	X	X	X	X
MW-225 A	Tri-Annual	X	X	X	X
MW-225 B	Tri-Annual	X	X	X	X
MW-229 A	Tri-Annual	X	X	X	X
MW-229 B	Tri-Annual	X	X	X	X
MW-230 A	Tri-Annual	X	X	X	X
MW-231A	Tri-Annual	X	X	X	X
MW-231B	Tri-Annual	X	X	X	X
MW-303	Tri-Annual	X	X	X	X
MW-305	Tri-Annual	X	X	X	X
MW-306	Tri-Annual	X	X	X	X
MW-307	Tri-Annual	X	X	X	X
MW-308	Tri-Annual	X	X	X	X
MW-309 A	Tri-Annual	X	X	X	X
MW-309 B	Tri-Annual	X	X	X	X
MW-310	Tri-Annual	X	X	X	X
MW-311	Tri-Annual	X	X	X	X
MW-313	Tri-Annual	X	X	X	X
MW-318	Tri-Annual	X	X	X	X
MW-319	Tri-Annual	X	X	X	X
MW-1104	Tri-Annual	X	X	X	X
MW-212	Tri-Annual	X	X	X	X

(a) Determination of field parameters in accordance with EPA/600/4-79/020 using the following methods: pH (Method 150.1), temperature (Method 170.1), specific conductance (Method 180.1), and dissolved oxygen (Method 360.1). Includes water level measurement and Eh.

NOTE: TAL = Target Analyte List; TCL = Target Compound List; VOC = Volatile organic compounds (EPA SW-846).

Sample Type/Location	Monitoring Frequency	Sample Parameters		Event 6	
		TCL VOC	Field Parameters[a]	Gauged	Sampled
P-Series Piezometers					
P-103	Tri-Annual	NA	X[b]	X[b]	NA
P-105	Tri-Annual	X	X	X	X
P-106	Tri-Annual	X	X	X	X
P-110	Tri-Annual	NA	X[b]	X[b]	NA
P-111	Tri-Annual	X	X	X	X
P-112	Tri-Annual	X	X	X	Well dry
P-124	Tri-Annual	NA	X[b]	X[b]	NA
P-132	Tri-Annual	X	X	X	X
Extraction Wells					
EW-1	Tri-Annual	X	X	X	Well offline
EW-2	Tri-Annual	X	X	X	X
EW-3	Tri-Annual	X	X	X	X
EW-4	Tri-Annual	X	X	X	Well offline
EW-5	Tri-Annual	X	X	Gauging port obstructed	X
EP-Series Piezometers					
EP-1	Tri-Annual	NA	X[b]	X[b]	NA
EP-2	Tri-Annual	NA	X[b]	X[b]	NA
EP-3	Tri-Annual	NA	X[b]	X[b]	NA
EP-4	Tri-Annual	NA	X[b]	X[b]	NA
EP-5	Tri-Annual	NA	X[b]	X[b]	NA
EP-6	Tri-Annual	NA	X[b]	X[b]	NA
EP-7	Tri-Annual	NA	X[b]	X[b]	NA
EP-8	Tri-Annual	NA	X[b]	X[b]	NA
EP-9	Tri-Annual	NA	X[b]	X[b]	NA
EP-10	Tri-Annual	NA	X[b]	X[b]	NA
EP-11	Tri-Annual	NA	X[b]	X[b]	NA
EP-12	Tri-Annual	NA	X[b]	X[b]	NA
EP-13	Tri-Annual	NA	X[b]	X[b]	NA
EP-14	Tri-Annual	NA	X[b]	X[b]	NA
EP-15	Tri-Annual	NA	X[b]	X[b]	NA

(b) Indicates water level measurement only.

NOTE: Piezometers P-104 and P-107 were removed from the Long-Term Monitoring Program effective July 1995.

TABLE 3 MONITORING WELL GAUGING SUMMARY, SITES 1 AND 3, NAVAL AIR STATION, BRUNSWICK, MAINE

Well Designation	Well Riser Elevation (ft MSL)	Depth to Well Bottom (ft below top of well riser)	Gauging Data (14 May 1996)		Gauging Data (14 June 1996)		Gauging Data (1 July 1996)	
			Depth to Water (ft below top of well riser)	Water Table Elevation (ft MSL)	Depth to Water (ft below top of well riser)	Water Table Elevation (ft MSL)	Depth to Water (ft below top of well riser)	Water Table Elevation (ft MSL)
Monitoring Wells								
MW-201 R	58.88	39.51	8.94	49.94	10.58	48.30	12.92	45.96
MW-202 A	52.40	31.09	16.16	36.24	19.87	32.53	20.37	32.03
MW-202 B	53.04	17.93	18.15	34.89	Well dry	---	Well dry	---
MW-203	52.75	42.04	31.42	21.33	34.40	18.35	31.43	21.32
MW-204	50.50	37.18	29.90	20.60	29.77	20.73	29.79	20.71
MW-210 A	52.17	No data	13.60	38.57	12.06	40.11	Gauging port obstructed	---
MW-210 B	54.77	26.40	26.42	28.35	27.68	27.09	26.65	28.12
MW-211 A	65.59	137.02	23.69	41.90	23.77	41.82	23.95	41.64
MW-211 B	65.44	36.50	24.25	41.19	24.53	40.91	24.70	40.74
MW-215 R	62.26	49.95	25.79	36.47	26.30	35.96	26.43	35.83
MW-216 A	71.17	46.96	33.55	37.62	33.92	37.25	34.20	36.97
MW-217 A	61.78	44.56	26.14	35.64	7.95	53.83	26.90	34.88
MW-217 B	61.26	34.60	24.05	37.21	24.40	36.86	24.65	36.61

NOTE: MSL = Mean sea level.
Dashes (---) indicate data cannot be calculated because survey data are not available or well was dry.

Well Designation	Well Riser Elevation (ft MSL)	Depth to Well Bottom (ft below top of well riser)	Gauging Data (14 May 1996)		Gauging Data (14 June 1996)		Gauging Data (1 July 1996)	
			Depth to Water (ft below top of well riser)	Water Table Elevation (ft MSL)	Depth to Water (ft below top of well riser)	Water Table Elevation (ft MSL)	Depth to Water (ft below top of well riser)	Water Table Elevation (ft MSL)
Monitoring Wells (Continued)								
MW-218	54.16	53.54	34.04	20.12	33.94	20.22	34.10	20.06
MW-219	51.87	71.82	30.21	21.66	29.95	21.92	30.00	21.87
MW-220	47.20	49.87	26.56	20.64	26.60	20.60	26.77	20.43
MW-232 A	71.18	54.76	34.28	36.90	34.71	36.47	34.95	36.23
MW-233	63.94	50.49	39.25	24.69	26.45	37.49	27.47	36.47
MW-234 R	68.55	59.52	31.45	37.10	31.93	36.62	32.35	36.20
MW-2101	61.05	30.00	11.04	50.01	11.23	49.82	11.65	49.40
Extraction Wells								
EW-6	57.74	39.05	33.43	24.31	34.80	22.94	38.40	19.34
EW-7	51.13	50.55	25.67	25.46	27.90	23.23	1.64	49.49
EP Series Piezometers								
EP-16	58.92	49.90	33.30	25.62	33.35	25.57	33.60	25.32

TABLE 4 MONITORING WELL GAUGING SUMMARY
EASTERN PLUME, NAVAL AIR STATION, BRUNSWICK, MAINE

Well Designation	Well Riser Elevation (ft MSL)	Depth to Well Bottom (ft below top of well riser)	Gauging Data (14 May 1996)		Gauging Data (13-14 June 1996)		Gauging Data (3 July 1996)	
			Depth to Water (ft below top of well riser)	Water Table Elevation (ft MSL)	Depth to Water (ft below top of well riser)	Water Table Elevation (ft MSL)	Depth to Water (ft below top of well riser)	Water Table Elevation (ft MSL)
Monitoring Wells								
MW-105 A	24.19	46.87	1.99	22.20	1.58	22.61	1.63	22.56
MW-105 B	24.55	22.91	7.60	16.95	7.59	16.96	7.85	16.70
MW-106	51.26	37.27	21.85	29.41	22.42	28.84	22.67	28.59
MW-205	45.99	78.77	23.85	22.14	23.08	22.91	23.00	22.99
MW-206 A	43.02	74.36	18.76	24.26	18.75	24.27	17.87	25.15
MW-206 B	42.77	27.17	18.62	24.15	18.50	24.27	18.56	24.21
MW-207 A	24.06	73.22	Artesian	>24.06	Artesian	>24.06	Artesian	>24.06
MW-207 B	22.90	27.17	3.89	19.01	6.15	16.75	6.18	16.72
MW-208	49.40	103.33	19.82	29.58	20.55	28.85	20.71	28.69
MW-209	54.84	32.38	24.35	30.49	24.82	30.02	25.05	29.79
MW-222	57.43	45.34	25.99	31.44	26.42	31.01	26.74	30.69
MW-223	53.71	42.61	23.76	29.95	24.45	29.26	24.61	29.10
MW-224	57.63	46.95	25.13	32.50	25.45	32.18	25.77	31.86
MW-225 A	45.95	76.03	18.24	27.71	18.56	27.39	18.40	27.55
MW-225 B	46.25	42.00	19.63	26.62	19.90	26.35	20.02	26.23
MW-229 A	33.83	64.97	13.61	20.22	12.15	21.68	12.19	21.64
MW-229 B	30.08	32.70	14.36	15.72	14.47	15.61	14.88	15.20
MW-230 A	36.32	82.08	15.75	20.57	14.75	21.57	14.42	21.90
MW-231 A	45.41	62.42	28.80	16.61	20.21	25.20	20.23	25.18
MW-231 B	46.31	57.86	24.97	21.34	24.29	22.02	24.25	22.06
MW-303	44.28	71.62	12.22	32.06	12.48	31.80	12.75	31.53

NOTE: MSL = Mean sea level.

Well Designation	Well Riser Elevation (ft MSL)	Depth to Well Bottom (ft below top of well riser)	Gauging Data (14 May 1996)		Gauging Data (13-14 June 1996)		Gauging Data (3 July 1996)	
			Depth to Water (ft below top of well riser)	Water Table Elevation (ft MSL)	Depth to Water (ft below top of well riser)	Water Table Elevation (ft MSL)	Depth to Water (ft below top of well riser)	Water Table Elevation (ft MSL)
Monitoring Wells (Continued)								
MW-305	43.09	54.12	7.00	36.09	7.11	35.98	7.15	35.94
MW-306	52.12	56.98	17.21	34.91	17.34	34.78	17.78	34.34
MW-307	62.70	22.21	15.19	47.51	15.33	47.37	15.69	47.01
MW-308	37.70	72.85	4.22	33.48	4.34	33.36	4.47	33.23
MW-309 A	22.84	72.71	Artesian	>22.84	Artesian	>22.84	Artesian	>22.84
MW-309 B	22.32	59.43	1.97	20.35	1.78	20.54	1.52	20.80
MW-310	53.39	72.83	27.48	25.91	27.36	26.03	27.33	26.06
MW-311	21.48	55.78	Artesian	>21.48	0.95	20.53	Artesian	>21.48
MW-313	21.39	37.14	7.91	13.48	8.00	13.39	8.15	13.24
MW-318	24.28	25.14	4.75	19.53	5.65	18.63	6.02	18.26
MW-319	40.16	72.44	11.75	28.41	13.85	26.31	12.00	28.16
MW-1104	60.09	27.55	11.15	48.94	11.45	48.64	11.87	48.22
MW-212	41.61	67.34	9.85	31.76	10.13	31.48	10.42	31.19
P-Series Piezometers								
P-103	60.35	29.05	24.38	35.97	23.97	36.38	24.42	35.93
P-105	42.08	70.35	10.04	32.04	10.38	31.70	10.42	31.66
P-106	38.83	71.06	10.16	28.67	10.54	28.29	11.05	27.78
P-110	56.70	24.14	Well Dry	---	24.07	32.63	Well Dry	---
P-111	31.48	9.99	4.05	27.43	4.45	27.03	5.03	26.45
P-112	41.12	16.41	12.16	28.96	16.22	24.90	16.35	24.77
P-124	51.12	23.25	23.02	28.10	Well Dry	---	Well Dry	---
P-132	42.95	32.46	17.45	25.50	17.73	25.22	17.95	25.00

NOTE: Dashes (---) indicate data cannot be calculated because survey data are not available or well dry.

Well Designation	Well Riser Elevation (ft MSL)	Depth to Well Bottom (ft below top of well riser)	Gauging Data (14 May 1996)		Gauging Data (13-14 June 1996)		Gauging Data (3 July 1996)	
			Depth to Water (ft below top of well riser)	Water Table Elevation (ft MSL)	Depth to Water (ft below top of well riser)	Water Table Elevation (ft MSL)	Depth to Water (ft below top of well riser)	Water Table Elevation (ft MSL)
Extraction Wells								
EW-1	25.34	99.66	16.39	8.95	3.03	22.31	2.65	22.69
EW-2	31.63	90.86	3.85	27.78	14.90	16.73	3.45	28.18
EW-3	41.18	67.04	18.39	22.79	23.95	17.23	23.90	17.28
EW-4	37.13	69.37	3.10	34.03	3.37	33.76	3.68	33.45
EW-5	36.25	84.99	40.0	-3.75	Gauging port obstructed	---	51.60	-15.35
EP-Series Piezometers								
EP-1	31.67	100.51	13.89	17.78	8.59	23.08	8.33	23.34
EP-2	29.74	99.00	12.84	16.90	6.77	22.97	6.54	23.20
EP-3	27.91	89.21	9.18	18.73	4.86	23.05	4.64	23.27
EP-4	32.59	91.11	5.67	26.92	8.72	23.87	5.23	27.36
EP-5	34.61	79.85	6.36	28.25	8.93	25.68	6.59	28.02
EP-6	40.14	83.51	12.47	27.67	13.61	26.53	12.72	27.42
EP-7	48.49	70.20	18.63	29.86	19.45	29.04	19.59	28.90
EP-8	47.31	80.38	16.98	30.33	17.74	29.57	17.80	29.51
EP-9	37.84	62.46	4.53	33.31	4.75	33.09	5.15	32.69
EP-10	37.78	58.00	2.46	35.32	2.73	35.05	3.06	34.72
EP-11	41.59	65.03	7.67	33.92	7.91	33.68	8.25	33.34
EP-12	49.38	69.61	15.62	33.76	15.82	33.56	16.15	33.23
EP-13	38.96	71.03	6.06	32.90	6.40	32.56	6.89	32.07
EP-14	43.46	80.05	11.98	31.48	12.42	31.04	12.91	30.55
EP-15	45.37	82.68	15.59	29.78	16.20	29.17	16.75	28.62

TABLE 5 SUMMARY OF WATER QUALITY INDICATOR PARAMETERS MEASURED IN GROUND-WATER SAMPLES COLLECTED AT SITES 1 AND 3, NAVAL AIR STATION, BRUNSWICK, MAINE

Well Designation	pH	Temperature (°C)	Conductivity (μmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Eh (mV)
Monitoring Wells						
MW-202 A	6.04	13.7	264	2.38	19	11
MW-202 B	Well dry; no data					
MW-203	5.89	17.0	434	5.95	40	160
MW-204	6.73	10.8	48	9.90	0	103
MW-210 A	Unable to put pump in well; PVC riser obstructed; no data					
MW-210 B	5.79	12.1	136	0.08	26	59
MW-215 R	5.54	13.1	164	0.50	3	152
MW-216 A	6.12	15.5	226	1.18	6	136
MW-217 A	6.67	17.5	462	0.68	21	36
MW-217 B	6.12	12.3	1,988	1.35	288	-82
MW-218	7.48	15.1	978	0.79	8	-165
MW-219	6.39	12.3	96	7.27	16	98
MW-220	7.02	13.6	204	4.42	9	97
MW-232 A	6.24	17.2	324	2.18	13	121
MW-234 R	5.93	14.3	192	0.57	9	163
MW-2101	5.79	15.0	146	7.53	3	137

NOTE: NTU = Nephelometric turbidity unit.

TABLE 6 SUMMARY OF WATER QUALITY INDICATOR PARAMETERS MEASURED IN GROUND-WATER SAMPLES COLLECTED AT EASTERN PLUME, NAVAL AIR STATION, BRUNSWICK, MAINE

Well Designation	pH	Temperature (°C)	Conductivity (μmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Eh (mV)
Monitoring Wells						
MW-105 A	6.47	8.9	48	11.18	106	108
MW-105 B	7.80	16.8	50	8.16	31	100
MW-106	6.13	10.8	68	9.22	5	200
MW-205	9.00	12.5	230	0.71	33	-25
MW-206 A	7.23	9.6	98	7.43	5	100
MW-206 B	6.95	9.7	84	9.06	1	127
MW-207 A	6.40	8.5	182	0.26	5	102
MW-207 B	5.82	11.9	150	3.94	8	50
MW-208	7.10	8.7	148	0.26	42	146
MW-209	5.96	14.6	46	9.47	43	125
MW-222	6.07	12.6	78	9.71	4	119
MW-223	5.75	10.5	74	9.13	1	194
MW-224	6.10	9.8	132	6.70	1	111
MW-225 A	6.02	9.3	128	2.85	20	176
MW-225 B	5.85	10.9	52	11.15	6	164
MW-229 A	7.15	9.3	94	5.75	25	84
MW-229 B	6.69	10.7	56	8.43	11	140
MW-230 A	7.15	9.5	70	0.25	41	-143
MW-231 A	6.44	9.9	60	8.77	68	180
MW-231 B	6.36	11.3	62	9.55	26	154
MW-303	7.26	8.9	190	0.21	0	-161
MW-305	8.95	10.0	210	0.16	40	-167

NOTE: NTU = Nephelometric turbidity unit.

Well Designation	pH	Temperature (°C)	Conductivity (μmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Eh (mV)
Monitoring Wells (Continued)						
MW-306	5.64	10.6	80	4.37	8	200
MW-307	5.85	11.5	102	9.08	40	173
MW-308	8.81	10.4	362	0.29	3	-174
MW-309 A	8.65	8.8	288	0.13	0	-169
MW-309 B	7.49	10.0	228	0.18	4	-83
MW-310	6.30	10.2	74	5.59	28	118
MW-311	6.59	8.5	124	0.55	18	143
MW-313	7.86	12.7	276	0.28	38	-166
MW-318	6.54	12.0	88	5.70	12	33
MW-319	6.45	10.1	158	0.81	9	126
MW-1104	5.92	11.2	230	1.04	2	81
MW-212	6.73	10.3	184	0.21	-2	57
P-Series Piezometers						
P-105	6.83	12.3	118	11.47	721	102
P-106	7.09	8.7	124	2.13	16	99
P-111	6.43	9.6	112	4.57	189	19
P-112	Low water level in piezometer; unable to purge; no data					
P-132	6.87	14.7	22	8.50	46	145

TABLE 7 SUMMARY OF WATER QUALITY INDICATOR PARAMETERS MEASURED IN SURFACE WATER AND SEEP SAMPLES COLLECTED ON 22 JUNE 1996 AT SITES 1 AND 3, NAVAL AIR STATION, BRUNSWICK, MAINE

Sample Designation	pH	Temperature (°C)	Conductivity (μmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Eh (mV)
Surface Water						
SW- 01	6.62	11.5	220	9.03	52	-52
SW-02	6.69	10.6	186	11.36	3	-26
SW-03	6.72	10.8	188	8.58	8	1
SW-04	6.60	11.5	110	10.25	0	63
SW-05	6.47	11.5	114	10.10	0	108
SW-06	6.26	11.5	114	10.26	2	109
SW-07	6.35	11.5	118	9.27	0	127
Seeps						
SP-01	6.75	10.4	296	3.15	417	58
SP-02	Could not sample; insufficient water					
SP-03	6.63	10.9	308	1.66	283	20
SP-04	Could not sample; insufficient water					
SP-05	6.79	12.6	162	8.77	700	-7

NOTE: NTU = Nephelometric turbidity unit.

TABLE 8 SUMMARY OF WATER QUALITY INDICATOR PARAMETERS MEASURED IN WATER SAMPLES COLLECTED FROM EXTRACTION WELLS AND THE TREATMENT PLANT AT EASTERN PLUME, NAVAL AIR STATION, BRUNSWICK, MAINE

Well Designation	pH	Temperature (°C)	Conductivity (μmhos/cm)	Dissolved Oxygen (mg/L)	Turbidity (NTU)	Eh (mV)
Extraction Wells						
EW-1	Well offline; no data					
EW-2	6.94	10.1	118	10.02	0	58
EW-3	7.33	8.7	110	9.46	0	39
EW-4	Well offline; no data					
EW-5	7.10	9.1	118	8.47	0	30
EW-6	6.24	12.6	946	5.74	47	-6
EW-7	6.50	14.2	362	4.86	0	-49
Ground-Water Treatment Plant						
Raw Influent (Sites 1 and 3)	5.79	13.2	734	1.25	2	-22
Raw Influent (Eastern Plume)	6.60	9.7	132	5.09	2	-29
Combined Effluent	6.33	12.8	168	10.95	3	207

NOTE: NTU = Nephelometric turbidity unit.

TABLE 9 SUMMARY OF ANALYTICAL RESULTS FOR GROUND-WATER SAMPLES COLLECTED ON 18-20 AND 26 JUNE 1996 AT SITES 1 AND 3, NAVAL AIR STATION, BRUNSWICK, MAINE

Analyte	PQL[a]	MW-202A	MW-203	MW-204	MW-204 DUP	MW-210B	MW-215R	MW-216A	MW-217A	MW-217A DUP	MEG[b]	MCL[c]
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/L)												
1,1-Dichloroethane	1.0	5J	2	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	70	---
1,2-Dichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	5	5
Total 1,2-Dichloroethene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	70	70
Acetone	5.0	5J	(<5U)	(<5U)	(<5U)	(<5U)	(<2U)	(<5U)	(<5U)	(<5U)	---	---
Benzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	5	5
Chlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	47	100
Ethylbenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	700	700
Methylene chloride	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	---	5
Toluene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	1,400	1,000
Vinyl chloride	2.0	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	0.15	2.0
Total xylenes	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	1	(<1U)	(<1U)	600	10,000
Chloroethane	2.0	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	---	---
1,1,2,2-Tetrachloroethane	1.0	22	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	---	---
Trichloroethene	1.0	4	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	5	5
1,1,1-Trichloroethane	1.0	86	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	200	200
1,2-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	600	600
1,3-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	600	600
1,4-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	2	(<1U)	4	(<1U)	(<1U)	27	75
Tetrachloroethene	1.0	2	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	3	5
1,1,2-Trichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	3	5

(a) PQL = Practical Quantitation Level (μg/L).
(b) MEG (Maximum Exposure Guideline) obtained from State of Maine Department of Human Services Revised Maximum Exposure Guidelines, memorandum dated 23 October 1992. Dashes (---) indicate no MEG applicable.
(c) MCL (Maximum Contamination Level) obtained from 40 CFR Parts 141 and 142 (U.S. EPA 1994). Dashes (---) indicate no MCL applicable.

NOTE: U = Not detected. Sample quantitation limits are shown as (<____U).
J = Estimated concentration below detection limit.
Only those analytes detected in at least one of the samples, and the contaminants of concern listed in the LTMP (ABB-ES 1994), are shown on this table.
Results in bold indicate concentrations above primary Federal MCL and/or State MEG.

Analyte	POL[a]	MW-202A	MW-203	MW-204	MW-204 DUP	MW-210B	MW-215R	MW-216A	MW-217A	MW-217A DUP	MEG[b]	MCL[c]
TARGET ANALYTE ELEMENTS BY EPA SERIES 6000/7000/9000 METHODS (μg/L)												
Aluminum	100.0	12.8B*	24.1B*	19.2B*	21.9B*	231	73.4B*	23.2B*	218	122	1,430	50-200[d]
Antimony	8.0	(<3.6U)	(<3.6U)	(<3.6U)	(<3.6U)	(<3.6U)	(<3.6U)	(<3.6U)	(<3.6U)	(<3.6U)	2.8	6
Arsenic	8.0	(<3.0U)	(<3.0U)	(<3.0U)	(<3.0U)	7.3B*	(<3.0U)	(<3.0U)	(<3.0U)	(<3.0U)	---	50
Barium	5.0	44.1	30.0	1.1B*	1.2B*	19.5	19.8	9.5	17.1	15.9	1,500	2,000
Beryllium	5.0	(<0.20U)	(<0.20U)	(<0.20U)	(<0.20U)	(<0.20U)	(<0.20U)	(<0.20U)	(<0.20U)	(<0.20U)	---	4
Calcium	50.0	22,800	59,200	3,880	4,040	18,700	12,600	23,600	29,500	29,600	---	---
Chromium	15.0	1.3B*	5.9B*	1.3B*	2.1B*	2.5B*	1.4B*	4.2B*	4.0B*	3.2B*	100	100
Cobalt	30.0	18.0B*	(<0.70U)	(<0.70U)	(<0.70U)	4.1B*	(<0.70U)	14.2B*	(<0.70U)	(<0.70U)	---	---
Copper	25.0	0.83B*	0.98B*	(<0.70U)	(<0.70U)	3.4B*	(<0.70U)	(<0.70U)	0.83B*	(<0.70U)	---	1,300[e]
Iron	25.0	12,100	300	44.0B*	(<25.0U)	1,280	91.3	59.7	393	239	---	300[d]
Lead	5.0	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	---	15[e]
Magnesium	50.0	3,690	9,930	1,160	1,190	2,060	2,420	5,760	11,000	10,900	---	---
Manganese	5.0	**1,080**	77.1	(<5.0U)	(<5.0U)	**1,000**	**1,630**	**2,030**	27.6	25.8	200	50[d]
Mercury	0.2	(<0.10U)	(<0.10U)	(<0.10U)	(<0.10U)	(<0.10U)	(<0.10U)	(<0.10U)	(<0.10U)	(<0.10U)	2	2
Nickel	40.0	10.7B*	5.3B*	(<1.0U)	(<1.0U)	5.1B*	2.7B*	5.5B*	3.9B*	3.3B*	100	100
Potassium	1,000.0	8,440	5,060	(<635U)	703B*	4,140	1,060	1,960	2,300	2,380	---	---
Silver	15.0	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	50	100[d]
Sodium	100.0	13,700	19,400	4,990	5,080	5,100	19,300	14,000	41,000	39,300	---	---
Vanadium	25.0	(<0.60U)	0.93B*	0.87B*	0.60B*	(<0.60U)	(<0.60U)	(<0.60U)	0.90B*	(<0.60U)	---	---
Zinc	25.0	5.9B*	4.1B*	2.6B*	4.9B*	6.5B*	3.3B*	6.5B*	5.6B*	3.7B*	---	5,000[d]
Cyanide	20.0	(<1.3U)	(<1.3U)	(<1.3U)	(<1.3U)	(<1.3U)	(<1.3U)	(<1.3U)	(<1.3U)	(<1.3U)	154	200

(d) Secondary MCL, based on taste, odor, or color.
(e) Action level.

NOTE: B* = Analyte concentration is between the Instrument Detection Limit and the Contract Required Detection Limit.

Analyte	PQL[a]	MW-217B	MW-218	MW-219	MW-220	MW-232A	MW-234R	MW-2101	QT-001	QT-002	QT-006	MEG[b]	MCL[c]
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/L)													
1,1-Dichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	70	---
1,2-Dichloroethene	1.0	5	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	5	5
Total 1,2-Dichloroethane	1.0	10	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	70	70
Acetone	5.0	(<5U)	(<5U)	(<5U)	3J	4J	(<5U)	(<5U)	5	4J	4J	---	---
Benzene	1.0	2	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	5	5
Chlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	47	100
Ethylbenzene	1.0	16	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	700	700
Methylene chloride	1.0	3	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	2B	(<1U)	---	5
Toluene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	1,400	1,000
Vinyl chloride	2.0	4	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	0.15	2
Total xylenes	1.0	11	(<1U)	(<1U)	2	(<1U)	(<1U)	(<1U)	1	(<1U)	(<1U)	600	10,000
Chloroethane	2.0	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	---	---
1,1,2,2-Tetrachloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	---	---
Trichloroethene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	5	5
1,1,1-Trichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	2	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	200	200
1,2-Dichlorobenzene	1.0	4	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	1	(<1U)	(<1U)	600	600
1,3-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	1	(<1U)	(<1U)	600	600
1,4-Dichlorobenzene	1.0	83	1	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	2	(<1U)	(<1U)	27	75
Tetrachloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	3	5
1,1,2-Trichloroethane	1.0	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	3	5

NOTE: QT = Trip blank.
B = Compound detected in associated method blank.

Analyte	PQL[a]	MW-217B	MW-218	MW-219	MW-220	MW-232A	MW-234R	MW-2101	QT-001	QT-002	QT-006	MEG[b]	MCL[c]
TARGET ANALYTE ELEMENTS BY EPA SERIES 6000/7000/9000 METHODS (μg/L)													
Aluminum	100.0	**30,700**	84.7B*	409	323	36.3B*	27.2	81.1B*	NR	NR	NR	1,430	50-200[d]
Antimony	8.0	(<3.6U)	(<3.6U)	(<3.6U)	(<3.6U)	3.8B*	(<3.6U)	(<3.6U)	NR	NR	NR	2.8	6
Arsenic	8.0	29.5	**118**	(<3.0U)	(<3.0U)	(<3.0U)	(<3.0U)	(<3.0U)	NR	NR	NR	---	50
Barium	5.0	255	2.4B*	5.0	6.5	12.4	7.2	37.7	NR	NR	NR	1,500	2,000
Beryllium	5.0	1.1B*	(<0.20U)	(<0.20U)	(<0.20U)	(<0.20U)	(<0.20U)	(<0.20U)	NR	NR	NR	---	4
Calcium	50.0	138,000	15,000	11,000	14,300	25,200	8,390	20,700	NR	NR	NR	---	---
Chromium	15.0	**107**	6.1B*	18.9	11.7B*	5.9B*	1.7B*	2.8B*	NR	NR	NR	100	100
Cobalt	30.0	48.6	(<0.70U)	(<0.70U)	1.7B*	(<0.70U)	6.0B*	0.85B*	NR	NR	NR	---	---
Copper	25.0	52.9	(<0.70U)	0.77B*	(<0.70U)	23.9B*	0.77B*	1.7B*	NR	NR	NR	---	1,300[e]
Iron	25.0	123,000	2,260	859	637	69.2	36.3B*	71.0	NR	NR	NR	---	300[d]
Lead	5.0	26.3	(<1.0U)	2.1B*	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	NR	NR	NR	---	15[e]
Magnesium	50.0	59,700	7,580	3,780	5,940	9,380	1,930	2,830	NR	NR	NR	---	---
Manganese	5.0	**5,570**	**862**	15.2	28.1	(<5.0U)	**274**	27.2	NR	NR	NR	200	50[d]
Mercury	0.2	0.11B*	(<0.10U)	(<0.10U)	(<0.10U)	(<0.10U)	(<0.10U)	(<0.10U)	NR	NR	NR	2	2
Nickel	40.0	96.2	8.9B*	16.0B*	9.1B*	3.7B*	2.5B*	3.5B*	NR	NR	NR	100	100
Potassium	1,000.0	15,600	8,430	1,380	2,070	2,150	829B*	2,090	NR	NR	NR	---	---
Silver	15.0	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	NR	NR	NR	50	100[d]
Sodium	100.0	148,000	222,000	8,360	21,300	21,400	28,600	5,810	NR	NR	NR	---	---
Vanadium	25.0	77.4	(<0.60U)	1.8B*	1.2B*	(<0.60U)	(<0.60U)	(<0.60U)	NR	NR	NR	---	---
Zinc	25.0	147	35.5	9.6B*	5.0B*	5.5B*	12.2B*	5.7B*	NR	NR	NR	---	5,000[d]
Cyanide	20.0	(<1.3U)	(<1.3U)	(<1.3U)	1.5B*	(<1.3U)	(<1.3U)	(<1.3U)	NR	NR	NR	154	200

NOTE: NR = Analysis not required.

TABLE 10 SUMMARY OF ANALYTICAL RESULTS FOR GROUND-WATER SAMPLES COLLECTED 20-25 JUNE 1996 AT EASTERN PLUME, NAVAL AIR STATION, BRUNSWICK, MAINE

Compound	PQL[a]	MW-105A	MW-105B	MW-106	MW-205	MW-205 DUP	MW-206A	MW-206B	MW-207A	MW-207B	MW-208	MW-208 DUP	MW-209	MEG[b]	MCL[c]
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/L)															
1,1,1-Trichloroethane	1.0	(<1U)	3	(<1U)	**250**	**240**	13	(<1U)	14	(<1U)	8	8	(<1U)	200	200
Total 1,2-Dichloroethene	1.0	(<1U)	(<1U)	(<1U)	40	41	(<1U)	(<1U)	2	(<1U)	5	5	(<1U)	70	70
Methylene chloride	1.0	(<1U)	(<1U)	(<1U)	(<1U)	2	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	---	5
Trichloroethene	1.0	(<1U)	(<1U)	2	**180**	**190**	5	(<1U)	**33**	(<1U)	**12**	**13**	(<1U)	5	5
Tetrachloroethene	1.0	(<1U)	(<1U)	2	**26**	**27**	3	(<1U)	**74**	(<1U)	**4**	**4**	(<1U)	3	5
1,1-Dichloroethene	1.0	(<1U)	(<1U)	(<1U)	**16**	**16**	0.7J	(<1U)	2	(<1U)	1	0.9J	(<1U)	7	7
1,1-Dichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	70	---
Acetone	5.0	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	---	---
Total xylenes	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	600	10,000
1,1,2-Trichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	3	5
1,2-Dichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	5	5
Chloroform	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	---	100
Benzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	5	5
1,2-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	600	600
1,3-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	600	600
1,4-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	27	75
4-Methyl-2-pentanone	3.0	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	---	---
Ethylbenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	700	700
Toluene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	1,400	1,000
2-Butanone	5.0	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	170	---

(a) PQL = Practical Quantitation Level (μg/L).
(b) MEG (Maximum Exposure Guideline) obtained from State of Maine Department of Human Services Revised Maximum Exposure Guidelines, memorandum dated 23 October 1992. Dashes (---) indicate no MEG applicable.
(c) MCL (Maximum Contamination Level) obtained from 40 CFR Parts 141 and 142 (U.S. EPA 1994). Dashes (---) indicate no MCL applicable.

NOTE: U = Not detected. Sample quantitation limits are shown as (<____U).
J = Estimated concentration below detection limit.
Only those analytes detected in at least one of the samples, and the contaminants of concern listed in the LTMP (ABB-ES 1994), are shown on this table.
Results in bold indicate concentrations above Federal MCL and/or State MEG.

Compound	PQL[a]	MW-212	MW-212 DUP	MW-222	MW-223	MW-224	MW-225A	MW-225B	MW-229A	MW-229B	MW-230A	MW-231A	MW-231B	MEG[b]	MCL[c]
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/L)															
1,1,1-Trichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	11	(<1U)	85	(<1U)	(<1U)	(<1U)	(<1U)	200	200
Total 1,2-Dichloroethene	1.0	2	3	(<1U)	(<1U)	4	65	(<1U)	7	(<1U)	(<1U)	(<1U)	(<1U)	70	70
Methylene chloride	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	---	5
Trichloroethene	1.0	**21**	**21**	(<1U)	(<1U)	3	**35**	(<1U)	**54**	(<1U)	(<1U)	(<1U)	(<1U)	5	5
Tetrachloroethene	1.0	2	3	(<1U)	(<1U)	3	**5**	(<1U)	**5**	(<1U)	(<1U)	(<1U)	(<1U)	3	5
1,1-Dichloroethene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	0.9J	(<1U)	5	(<1U)	(<1U)	(<1U)	(<1U)	7	7
1,1-Dichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	70	---
Acetone	5.0	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	---	---
Total xylenes	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	600	10,000
1,1,2-Trichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	3	5
1,2-Dichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	5	5
Chloroform	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	---	100
Benzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	5	5
1,2-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	1	1B	600	600
1,3-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	1B	600	600
1,4-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	1B	1B	27	75
4-Methyl-2-pentanone	3.0	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	2J	---	---
Ethylbenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	700	700
Toluene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	1,400	1,000
2-Butanone	5.0	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	170	---

Compound	PQL[a]	MW-303	MW-305	MW-306	MW-307	MW-308	MW-309A	MW-309B	MW-310	MW-311 (30 May)	MW-311 DUP (30 May)	QT-99 (30 May)	MW-311	MW-313	MEG[b]	MCL[c]
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/L)																
1,1,1-Trichloroethane	1.0	(<1U)	(<1U)	**400**	(<1U)	(<1U)	(<1U)	(<1U)	6	**9,600**	**10,000**	(<1U)	**11,000**	(<1U)	200	200
Total 1,2-Dichloroethene	1.0	(<1U)	(<1U)	**120**	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	10	9	(<1U)	13	(<1U)	70	70
Methylene chloride	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	**60**	**56**	2B	**69**	(<1U)	---	5
Trichloroethene	1.0	(<1U)	(<1U)	**140**	(<1U)	(<1U)	(<1U)	(<1U)	2	**2,500**	**2,600**	(<1U)	**2,700**	(<1U)	5	5
Tetrachloroethene	1.0	(<1U)	(<1U)	**1**	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	**62**	**57**	(<1U)	**62**	(<1U)	3	5
1,1-Dichloroethene	1.0	(<1U)	(<1U)	**13**	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	**900**	**970**	(<1U)	**980**	(<1U)	7	7
1,1-Dichloroethane	1.0	(<1U)	(<1U)	39	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	64	61	(<1U)	**80**	(<1U)	70	---
Acetone	5.0	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	---	---
Total xylenes	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	600	10,000
1,1,2-Trichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	**10**	**10**	(<1U)	**11**	(<1U)	3	5
1,2-Dichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	**24**	**22**	(<1U)	**31**	(<1U)	5	5
Chloroform	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	5	5	(<1U)	6	(<1U)	---	100
Benzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	5	5	(<1U)	(<1U)	(<1U)	5	5
1,2-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	600	600
1,3-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	600	600
1,4-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	27	75
4-Methyl-2-pentanone	3.0	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<1U)	(<3U)	---	---
Ethylbenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	700	700
Toluene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	1,400	1,000
2-Butanone	5.0	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	3JB	3JB	3JB	(<5U)	(<5U)	170	---

Compound	POL[a]	MW-313 DUP	MW-318	MW-319	MW-319 DUP	MW-1104	P-105	P-106	P-111	P-132	QT-002	QT-003	QT-004	QT-005	MEG[b]	MCL[c]
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/L)																
1,1,1-Trichloroethane	1.0	(<1U)	(<1U)	7	7	**400**	**1,400**	**4,500**	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	200	200
Total 1,2-Dichloroethene	1.0	(<1U)	(<1U)	7	6	39	8	19	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	70	70
Methylene chloride	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	2B	(<1U)	(<1U)	(<1U)	---	5
Trichloroethene	1.0	(<1U)	(<1U)	**32**	**30**	**50**	**370**	**1,300**	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	5	5
Tetrachloroethene	1.0	(<1U)	(<1U)	**56**	**52**	(<1U)	2	**21**	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	3	5
1,1-Dichloroethene	1.0	(<1U)	(<1U)	(<1U)	0.5J	5	**100**	**500**	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	7	7
1,1-Dichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	36	29	66	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	70	---
Acetone	5.0	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	4J	(<5U)	(<5U)	(<5U)	---	---
Total xylenes	1.0	(<1U)	(<1U)	(<1U)	(<1U)	4	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	600	10,000
1,1,2-Trichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	**5**	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	3	5
1,2-Dichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	**6**	**9**	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	5	5
Chloroform	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	---	100
Benzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	3	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	5	5
1,2-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	600	600
1,3-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	600	600
1,4-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	27	75
4-Methyl-2-pentanone	3.0	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	(<3U)	---	---
Ethylbenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	700	700
Toluene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	1,400	1,000
2-Butanone	5.0	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	170	---

TABLE 11 SUMMARY OF ANALYTICAL RESULTS FOR WATER SAMPLES COLLECTED ON 27 JUNE 1996 FROM THE GROUND-WATER EXTRACTION WELLS AND TREATMENT SYSTEM, NAVAL AIR STATION, BRUNSWICK, MAINE

Analyte	PQL[a]	EW-02	EW-03	EW-05	EW-06	EW-07	QT-007
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/L)							
Benzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	2	(<1U)
Acetone	5.0	4J	(<5U)	(<5U)	3J	(<5U)	(<1U)
Chlorobenzene	1.0	(<1U)	(<1U)	(<1U)	3	4	(<1U)
Chloroethane	2.0	(<2U)	(<2U)	(<2U)	(<2U)	47	(<2U)
1,1-Dichloroethane	1.0	3	(<1U)	18	6	47	(<1U)
1,1-Dichloroethene	1.0	7	(<1U)	34	(<1U)	0.6J	(<1U)
1,2-Dichloroethane	1.0	(<1U)	(<1U)	1	(<1U)	1	(<1U)
Total 1,2-Dichloroethene	1.0	3	39	13	9	0.4J	(<1U)
Tetrachloroethene	1.0	28	21	3	(<1U)	(<1U)	(<1U)
1,1,1-Trichloroethane	1.0	110	(<1U)	320	(<1U)	80	(<1U)
Trichloroethene	1.0	42	14	130	2	(<1U)	(<1U)
Methylene chloride	1.0	2B	(<1U)	2	2B	2B	(<1U)
Ethylbenzene	1.0	(<1U)	(<1U)	(<1U)	9	8	(<1U)
Toluene	1.0	(<1U)	(<1U)	(<1U)	1	3	(<1U)
Total xylenes	1.0	(<1U)	(<1U)	(<1U)	32	8	(<1U)
Styrene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
Vinyl chloride	2.0	(<2U)	(<2U)	(<2U)	32	4	(<2U)
1,2-Dichloropropane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
Dibromochloromethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
Bromoform	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
1,1,2,2-Tetrachloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
1,2-Dichlorobenzene	1.0	2	(<1U)	(<1U)	4	2	(<1U)
1,3-Dichlorobenzene	1.0	1	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
1,4-Dichlorobenzene	1.0	2	(<1U)	(<1U)	12	9	(<1U)

(a) PQL = Practical Quantitation Level (μg/L).

NOTE: QT = Trip blank. Samples associated with QT-007 were analyzed under a separate sample delivery group shipped on the same day.
U = Not detected. Sample quantitation limits are shown as (<____U).
B = Compound detected in associated method blank.
J = Estimated concentration below detection limit.
Only those analytes detected in at least one of the samples, and the contaminants of concern listed in the LTMP (ABB-ES 1994), are shown on this table.

Analyte	PQL[a]	EW-02	EW-03	EW-05	EW-06	EW-07	QT-007
TARGET ANALYTE ELEMENTS BY EPA SERIES 6000/7000/9000 METHODS (μg/L)							
Aluminum	100.0	NR	NR	NR	36.3B*	47.0B*	NR
Arsenic	8.0	NR	NR	NR	5.4B*	94.0	NR
Barium	5.0	NR	NR	NR	85.8	24.2	NR
Calcium	50.0	NR	NR	NR	59,800	49,100	NR
Chromium	15.0	NR	NR	NR	1.1B*	(<0.70U)	NR
Cobalt	30.0	NR	NR	NR	7.8B*	6.8B*	NR
Copper	25.0	NR	NR	NR	2.4B*	77.3	NR
Iron	25.0	NR	NR	NR	57,800	65,800	NR
Lead	5.0	NR	NR	NR	1.1B*	54.6	NR
Magnesium	50.0	NR	NR	NR	23,600	11,000	NR
Manganese	5.0	NR	NR	NR	2,390	2,590	NR
Mercury	0.2	NR	NR	NR	(<0.10U)	(<0.10U)	NR
Nickel	40.0	NR	NR	NR	11.9B*	6.9B*	NR
Potassium	1,000.0	NR	NR	NR	4,890	5,220	NR
Silver	15.0	NR	NR	NR	(<1.0U)	(<1.0U)	NR
Sodium	100.0	NR	NR	NR	193,000	15,500	NR
Vanadium	25.0	NR	NR	NR	(<0.60U)	0.73B*	NR
Zinc	25.0	NR	NR	NR	71.6	549	NR
Cyanide	20.0	NR	NR	NR	(<1.3U)	(<1.3U)	NR

NOTE: NR = Analysis not required.
B* = Analyte concentration is between the Instrument Detection Limit and the Contract Required Detection Limit.

Analyte	PQL[a]	Sites 1 and 3 Raw Influent	Eastern Plume Raw Influent	Combined Effluent	Combined Effluent	Discharge Limit[c]
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/L)						
Benzene	1.0	2	(<1U)	(<1U)	(<1U)	---
Acetone	5.0	(<5U)	(<5U)	5	4J	---
Chlorobenzene	1.0	4	(<1U)	3	(<1U)	---
Chloroethane	2.0	32	(<2U)	(<2U)	(<2U)	---
1,1-Dichloroethane	1.0	32	8	3	2	94
1,1-Dichloroethene	1.0	(<1U)	15	1	(<1U)	7
1,2-Dichloroethane	1.0	(<1U)	(<1U)	2	(<1U)	---
Total 1,2-Dichloroethene	1.0	5	21	3	(<1U)	70
Tetrachloroethene	1.0	(<1U)	18	2	(<1U)	5
1,1,1-Trichloroethane	1.0	53	190	110	120	750
Trichloroethene	1.0	(<1U)	67	2	(<1U)	5
Methylene chloride	1.0	3B	5B	3B	2B	5
Ethylbenzene	1.0	7	(<1U)	3	(<1U)	---
Toluene	1.0	1	(<1U)	2	(<1U)	---
Total xylenes	1.0	11	(<1U)	8	(<1U)	---
Styrene	1.0	(<1U)	(<1U)	2	(<1U)	---
Vinyl chloride	2.0	20	(<2U)	(<2U)	(<2U)	2
1,2-Dichloropropane	1.0	(<1U)	(<1U)	2	(<1U)	---
Dibromochloromethane	1.0	(<1U)	(<1U)	3	(<1U)	---
Bromoform	1.0	(<1U)	(<1U)	3	(<1U)	---
1,1,2,2-Tetrachloroethane	1.0	(<1U)	(<1U)	3	(<1U)	---
1,2-Dichlorobenzene	1.0	2	(<1U)	6	(<1U)	---
1,3-Dichlorobenzene	1.0	(<1U)	(<1U)	5	(<1U)	---
1,4-Dichlorobenzene	1.0	11	(<1U)	5	(<1U)	---
TARGET ANALYTE ELEMENTS BY EPA SERIES 6000/7000/9000 METHODS (μg/L)						
Aluminum	100.0	21.2B*	65.4B*	32.2B*	62.0B*	---
Arsenic	8.0	10.8	(<3.0U)	(<3.0U)	(<3.0U)	50
Barium	5.0	46.5	3.7B*	3.3B*	3.0B*	---
Calcium	50.0	52,900	10,100	9,360	9,500	---
Chromium	15.0	(<0.70U)	(<0.70U)	(<0.70U)	(<0.70U)	---
Cobalt	30.0	7.0B*	(<0.70U)	(<0.70U)	(<0.70U)	---
Copper	25.0	(<0.70U)	(<0.70U)	(<0.70U)	21.2B*	---
Iron	25.0	49,500	94.3	(<25.0U)	34.1B*	---
Lead	5.0	(<1.0U)	(<1.0U)	(<1.0U)	1.4B*	15
Magnesium	50.0	17,000	3,710	4,780	5,130	---
Manganese	5.0	2,410	74.9	155	172	750
Mercury	0.2	(<0.10U)	(<0.10U)	(<0.10U)	(<0.10U)	---
Nickel	40.0	7.0B*	(<1.0U)	(<1.0U)	2.3B*	78
Potassium	1,000.0	5,030	1,690	3,060	3,780	---
Silver	15.0	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	---
Sodium	100.0	103,000	9,900	50,500	58,000	---
Vanadium	25.0	(<0.60U)	(<0.60U)	(<0.60U)	(<0.60U)	---
Zinc	25.0	52.6	10B*	21.6B*	54.8	200
Cyanide	20.0	(<1.3U)	(<1.3U)	(<1.3U)	(<1.3U)	---

(c) Ground-water treatment plant discharge limits taken from Table 3-11 of the LTMP (ABB-ES 1994).

NOTE: Results in bold indicate concentrations above discharge limit criteria.
Dashes (---) indicate no discharge limit applicable to this compound/analyte.

TABLE 12 SUMMARY OF ANALYTICAL RESULTS FOR SURFACE WATER SAMPLES COLLECTED ON 22 JUNE 1996 AT SITES 1 AND 3, NAVAL AIR STATION, BRUNSWICK, MAINE

Analyte	PQL[a]	SW-1	SW-2	SW-3	SW-4	SW-4 DUP	SW-5	SW-6	SW-7	QT-003	QS-001	QD-001
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/L)												
Acetone	5.0	3J	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	16	22
Methylene chloride	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
2-Butanone	5.0	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	3J	(<5U)
Tetrachloroethene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
1,2-Dichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)

(a) PQL = Practical Quantitation Level (μg/L).

NOTE: QT = Trip blank. Samples associated with QT-003 were analyzed under a separate sample delivery group shipped on the same day.
QS = Equipment rinsate blank.
QD = Source water blank. Samples associated with QD-001 were analyzed under a separate sample delivery group shipped on 18 June 1996.
U = Not detected. Sample quantitation limits are shown as (<____U).
J = Estimated concentration below detection limit.
Only those analytes detected in at least one of the samples, and contaminants of concern listed in the LTMP (ABB-ES 1994), are shown on this table.

Analyte	PQL[a]	SW-1	SW-2	SW-3	SW-4	SW-4 DUP	SW-5	SW-6	SW-7	QT-003	QS-001	QD-001
TARGET ANALYTE LIST ELEMENTS BY EPA 6000/7000/9000 SERIES METHODS (μg/L)												
Aluminum	100.0	2,730	117	49.3B*	152	162	168	173	157	NR	18.0B*	24.2B*
Arsenic	8.0	24.6	(<3.0U)	(<3.0U)	(<3.0U)	(<3.0U)	(<3.0U)	(<3.0U)	(<3.0U)	NR	(<3.0U)	(<3.0U)
Barium	5.0	57.5	21.1	20.5	20.0	19.9	19.9	21.0	20.1	NR	(<1.3U)	0.61B*
Beryllium	5.0	(<0.20U)	(<0.20U)	(<0.20U)	(<0.20U)	(<0.20U)	(<0.20U)	(<0.20U)	(<0.20U)	NR	(<0.20U)	(<0.20U)
Cadmium		0.61B*	(<0.30U)	(<0.30U)	(<0.30U)	(<0.30U)	(<0.30U)	(<0.30U)	(<0.30U)	NR	(<0.30U)	(<0.30U)
Calcium	50.0	25,500	19,100	19,500	8,000	7,990	7,930	8,300	8,290	NR	121	45.2B*
Chromium	15.0	7.8B*	0.87B*	(<0.70U)	1.0B*	0.85B*	1.0B*	(<0.70U)	(<0.70U)	NR	1.3B*	1.1B*
Cobalt	30.0	9.5B*	1.6B*	1.4B*	(<0.70U)	(<0.70U)	1.4B*	0.81B*	(<0.70U)	NR	1.6B*	(<0.70U)
Copper	25.0	5.8B*	(<0.70U)	1.2B*	2.2B*	2.2B*	2.4B*	2.1B*	1.6B*	NR	2.4B*	(<0.70U)
Iron	25.0	80,500	10,000	7,310	820	799	808	1,160	957	NR	37.1B*	(<25.0U)
Lead	5.0	5.0	(<1.0U)	(<1.0U)	2.3B*	2.2B*	1.9B*	2.5B*	2.8B*	NR	(<1.0U)	(<1.0U)
Magnesium	50.0	4,770	3,410	3,570	1,840	1,840	1,870	1,940	1,930	NR	24.6B*	(<7.0U)
Manganese	5.0	2,370	1,020	975	249	248	246	269	267	NR	(<5.0U)	(<5.0U)
Mercury	0.2	0.18B*	0.28	0.21	0.14B*	0.14B*	0.16B*	0.16B*	0.16B*	NR	0.17B*	(<0.10U)
Nickel	40.0	9.7B*	1.8B*	1.6B*	1.5B*	1.1B*	2.2B*	1.7B*	1.5B*	NR	(<1.0U)	(<1.0U)
Potassium	1,000.0	3,770	2,410	2,560	1,450	1,550	1,610	1,530	1,450	NR	(<635U)	(<635U)
Silver	15.0	(<0.10U)	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	(<1.0U)	NR	1.7B*	(<1.0U)
Sodium	100.0	17,500	15,300	15,500	12,100	12,100	12,100	12,300	12,300	NR	135	64.5B*
Thallium	15.0	(<3.9U)	(<3.9U)	(<3.9U)	(<3.9U)	(<3.9U)	(<3.9U)	(<3.9U)	(<3.9U)	NR	(<3.9U)	(<3.9U)
Vanadium	25.0	11.0B*	1.0B*	0.79B*	1.2B*	0.84B*	0.78B*	1.3B*	(<0.60U)	NR	1.5B*	(<0.60U)
Zinc	20.0	155	14.5B*	11.4B*	14.8B*	11.5B*	13.3B*	14.5B*	12.8B*	NR	8.2B*	4.4B*
Cyanide	20.0	2.0B*	(<1.3U)	(<1.3U)	(<1.3U)	1.5B*	(<1.3U)	(<1.3U)	(<1.3U)	NR	(<1.3U)	(<1.3U)

NOTE: B* = Analyte concentration is between the Instrument Detection Limit and the Contract Required Detection Limit.
NR = Analysis not required.

TABLE 13 SUMMARY OF ANALYTICAL RESULTS FOR SEDIMENT SAMPLES COLLECTED ON 22 JUNE 1996 AT SITES 1 AND 3, NAVAL AIR STATION, BRUNSWICK, MAINE

Analyte	PQL[a]	SED-1	SED-2	SED -3[b]	SED-4	SED-4 DUP	SED-5	SED-6	SED-7	QT-003 (μg/L)	QS-002 (μg/L)	QD-001 (μg/L)
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/kg)												
Acetone	5.0	27B	82	35B	(<20U)	7B	76B	180B	21B	(<5U)	16	22
Methylene chloride	1.0	3	6	3	11	(<1.2U)	2	(<1.7U)	(<1.4U)	(<1U)	(<1U)	(<1U)
Total xylenes	1.0	2	3	(<1.3U)	(<3.9U)	(<1.2U)	2	41	(<1.4U)	(<2U)	(<2U)	(<2U)
2-Butanone	5.0	14B	37	15B	(<20U)	6JB	36B	62B	14B	(<5U)	3J	(<5U)
1,1,2,2-Tetrachloroethane	1.0	(<1.2U)	(<1.3U)	(<1.3U)	(<3.9U)	(<1.2U)	(<1.4U)	(<1.7U)	(<1.4U)	(<5U)	(<5U)	(<5U)
1,2-Dichlorobenzene	1.0	(<1.2U)	(<1.3U)	(<1.3U)	(<3.9U)	(<1.2U)	(<1.4U)	5	(<1.4U)	(<1U)	(<1U)	(<1U)
1,4-Dichlorobenzene	1.0	1.5B	1.4	(<1.3U)	(<3.9U)	1.3B	(<1.4U)	8B	(<1.4U)	(<1U)	(<1U)	(<1U)
1,2-Dichloroethane	1.0	(<1.2U)	(<1.3U)	(<1.3U)	(<3.9U)	(<1.2U)	(<1.4U)	(<1.7U)	(<1.4U)	(<1U)	(<1U)	(<1U)
Chlorobenzene	1.0	(<1.2U)	(<1.3U)	(<1.3U)	(<3.9U)	(<1.2U)	(<1.4U)	(<1.7U)	(<1.4U)	(<1U)	(<1U)	(<1U)
Tetrachloroethene	1.0	(<1.2U)	(<1.3U)	(<1.3U)	(<3.9U)	(<1.2U)	(<1.4U)	(<1.7U)	(<1.4U)	(<1U)	(<1U)	(<1U)
Chloroethane	2.0	(<2.4U)	(<2.6U)	(<2.6U)	(<7.8U)	(<2.4U)	(<2.8U)	18	(<2.8U)	(<2U)	(<2U)	(<2U)
4-Methyl-2-Pentanone	3.0	11	31	10	(<12U)	2J	12	(<5.1U)	7	(<3U)	(<3U)	(<3U)
Toluene	1.0	(<1.2U)	4	(<1.3U)	(<3.9U)	(<1.2U)	2	(<1.7U)	(<1.4U)	(<1U)	(<1U)	(<1U)
1,1,1-Trichloroethane	1.0	(<1.2U)	(<1.3U)	(<1.3U)	(<3.9U)	2	(<1.4U)	(<1.7U)	(<1.4U)	(<1U)	(<1U)	(<1U)
Trichloroethane	1.0	(<1.2U)	(<1.3U)	(<1.3U)	(<3.9U)	2	(<1.4U)	(<1.7U)	(<1.4U)	(<1U)	(<1U)	(<1U)

(a) PQL = Practical Quantitation Level (μg/L).
(b) Reanalysis conducted due to low surrogate recovery.

NOTE: QT = Trip blank. Samples associated with QT-003 were analyzed under a separate sample delivery group shipped on the same day.
QS = Equipment rinsate blank. Samples associated with QS-002 were analyzed under a separate sample delivery group shipped on the same day.
QD = Source water blank. Samples associated with QD-001 were analyzed under a separate sample delivery group shipped on 18 June 1996.
U = Not detected. Sample quantitation limits are shown as (<____U).
B = Compound detected in associated method blank.
J = Estimated concentration below detection limit.
Only those analytes detected in at least one of the samples, and contaminants of concern listed in the LTMP (ABB-ES 1994), are shown on this table.

Analyte	PQL[a]	SED-1	SED-2	SED-3[b]	SED-4	SED-4 DUP	SED-5	SED-6	SED-7	QT-003 (µg/L)	QS-002 (µg/L)	QD-001 (µg/L)
TARGET ANALYTE LIST ELEMENTS BY EPA SERIES 6000/7000/9000 METHODS (mg/kg)												
Aluminum	100.0	7,090	3,000	5,540	2,960	2,700	4,600	5,040	4,000	NR	12.7B*	24.2B*
Antimony	8.0	(<0.35U)	(<0.36U)	(<0.38U)	(<0.36U)	(<0.34U)	(<0.39U)	(<0.58U)	(<0.43U)	NR	(<3.6U)	(<3.6U)
Arsenic	8.0	3.7	1.1	1.8	2.5	2.5	10.8	6.6	8.9	NR	(<3.0U)	(<3.0U)
Barium	5.0	48.2	13.0	15.5	19.9	17.8	36.6	40.9	26.8	NR	(<1.3U)	0.61B*
Beryllium	5.0	0.16B*	0.19B*	0.23B*	0.19B*	0.17B*	0.32B*	0.56B*	0.30B*	NR	(<0.20U)	(<0.20U)
Cadmium	10.0	0.18B*	0.08B*	0.17B*	0.12B*	0.12B*	0.36B*	0.60B*	0.27B*	NR	(<0.30U)	(<0.30U)
Calcium	50.0	2,040	465	777	442	416	972	1,310	818	NR	76.0B*	45.2B*
Chromium	15.0	22.0	3.6	8.1	5.7	4.6	55.0	10.2	7.6	NR	(<0.70U)	1.1B*
Cobalt	30.0	5.7	1.5B*	2.9B*	2.9B*	3.2	4.4	6.4	4.7	NR	(<0.70U)	(<0.70U)
Copper	25.0	9.2	1.8B*	5.0	3.4	3.3	6.2	8.1	5.2	NR	0.72B*	(<0.70U)
Iron	25.0	13,100	3,600	8,130	7,750	7,060	15,900	16,400	14,600	NR	70.8	(<25.0U)
Lead	5.0	3.7	2.2	6.4	4.0	4.3	36.6	13.2	7.2	NR	(<1.0U)	(<1.0U)
Magnesium	50.0	3,840	490	1,370	1,180	1,030	1,750	1,660	1,510	NR	8,8B*	(<7.0U)
Manganese	5.0	201	72.9	131	189	241	389	991	397	NR	(<5.0U)	(<5.0U)
Mercury	0.2	(<0.02U)	(<0.03U)	0.07	(<0.02U)	(<0.02U)	(<0.02U)	(<0.03U)	(<0.02U)	NR	0.16B*	(<0.10U)
Nickel	40.0	11.5	1.9B*	6.2	6.3	6.3	8.8	10.9	8.8	NR	1.9B*	(<1.0U)
Potassium	1,000.0	3,400	453	645	404	410	814	836	719	NR	(<635U)	(<635U)
Selenium	10.0	0.54B*	(<0.37U)	0.43B*	(<0.37U)	(<0.35U)	(<0.40U)	0.83B*	0.64B*	NR	(<3.7U)	(<3.7U)
Silver	15.0	(<0.10U)	(<0.10U)	(<0.10U)	(<0.10U)	0.15B*	(<0.11U)	(<0.16U)	(<0.12U)	NR	(<1.0U)	(<1.0U)
Sodium	100.0	107	61.7	59.3	45.1	40.6	97.5	92.5	70.4	NR	63.0B*	64.5B*
Thallium	15.0	0.81B*	(<0.39U)	(<0.41U)	(<0.39U)	(<0.36U)	(<0.42U)	0.84B*	(<0.46U)	NR	(<3.9U)	(<3.9U)
Vanadium	25.0	23.9	6.7	12.3	7.8	7.5	12.7	15.6	12.2	NR	(<0.60U)	(<0.60U)
Zinc	25.0	30.0	5.7	17.6	19.4	18.8	93.6	52.2	34.5	NR	5.5B*	4.4B*
Cyanide	20.0	(<0.07U)	(<0.08U)	(<0.07U)	(<0.07U)	(<0.07U)	(<0.07U)	(<0.09U)	(<0.08U)	NR	(<1.3U)	(<1.3U)

NOTE: NR = Analysis not required.
B* = Analyte concentration is between the Instrument Detection Limit and the Contract Required Detection Limit.

TABLE 14 SUMMARY OF ANALYTICAL RESULTS FOR LEACHATE STATION SEEP SAMPLES COLLECTED ON 22 JUNE 1996 AT SITES 1 AND 3, NAVAL AIR STATION, BRUNSWICK, MAINE

Analyte	PQL[a]	SEEP-1	SEEP-3	SEEP-3 DUP	SEEP-5	QT-001	QS-001	QD-001
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/L)								
1,1-Dichloroethane	1.0	3	7	8	(<1U)	(<1U)	(<1U)	(<1U)
Acetone	5.0	(<5U)	3J	(<5U)	3J	5	16	22
Trichloroethene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
Tetrachloroethene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
1,1,2,2-Tetrachloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
Benzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
Chlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
1,2-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	6	1	(<1U)	(<1U)
1,3-Dichlorobenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	1	(<1U)	(<1U)
1,4-Dichlorobenzene	1.0	(<1U)	1	1	2	(<1U)	(<1U)	(<1U)
1,2-Dichloroethane	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
Methylene chloride	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
Total xylenes	1.0	(<1U)	(<1U)	1	(<1U)	1	(<1U)	(<1U)
Vinyl chloride	2.0	(<2U)	5	5	(<2U)	(<2U)	(<2U)	(<2U)
Carbon disulfide	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
1,1,1-Trichloroethane	1.0	1	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
2-Butanone	5.0	(<5U)	(<5U)	(<5U)	(<5U)	(<5U)	3J	(<5U)
Total 1,2-Dichloroethene	1.0	(<1U)	4	4	(<1U)	(<1U)	(<1U)	(<1U)
Ethylbenzene	1.0	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
Chloroethane	2.0	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)	(<2U)

(a) PQL = Practical Quantitation Level (μg/L).

NOTE: QT = Trip blank. Samples associated with QT-001 were analyzed under a separate sample delivery group number shipped on the same day.
QS = Equipment rinsate blank.
QD = Source water blank. Samples associated with QD-001 were analyzed under a separate sample delivery group number shipped on 18 June 1996.
U = Not detected. Sample quantitation limits are shown as (<____U).
J = Estimated concentration below detection limit.
SEEP-2 and SEEP-4 were dry, therefore, no aqueous samples were collected.
Only those analytes detected in at least one of the samples, and contaminants of concern listed in the LTMP (ABB-ES 1994), are shown on this table.

Analyte	PQL[a]	SEEP-1	SEEP-3	SEEP-3 DUP	SEEP-5	QT-001	QS-001	QD-001
TARGET ANALYTE LIST ELEMENTS BY EPA SERIES 6000/7000/9000 METHODS (μg/L)								
Aluminum	100.0	13,200	1,190	2,390	274	NR	18.0B*	24.2B*
Antimony	8.0	27.1B*	(<3.6U)	(<3.6U)	(<18.0U)	NR	(<3.6U)	(<3.6U)
Arsenic	8.0	75.1	6.6B*	13.4	958	NR	(<3.0U)	(<3.0U)
Barium	5.0	847	82.5	110	78.9	NR	(<1.3U)	0.61B*
Beryllium	5.0	7.7	(<0.20U)	(<0.20U)	(<0.20U)	NR	(<0.20U)	(<0.20U)
Cadmium	10.0	(<1.5U)	0.40B*	0.52B*	(<0.30U)	NR	(<0.30U)	(<0.30U)
Calcium	50.0	83,800	35,800	36,700	19,600	NR	121	45.2B*
Chromium	15.0	25.2	2.7B*	5.1B*	(<0.70U)	NR	1.3B*	1.1B*
Cobalt	30.0	197	3.6B*	5.7B*	26.3B*	NR	1.6B*	(<0.70U)
Copper	25.0	20.1B*	2.7B*	3.2B*	13.5B*	NR	2.4B*	(<0.70U)
Iron	25.0	1,890,000	68,500	106,000	887,000	NR	37.1B*	(<25.0U)
Lead	5.0	100	3.4B*	12.2	(<5.0U)	NR	(<1.0U)	(<1.0U)
Magnesium	50.0	10,600	10,700	11,400	4,940	NR	24.6B*	(<7.0U)
Manganese	5.0	15,400	2,840	3,450	3,230	NR	(<5.0U)	(<5.0U)
Mercury	0.2	1.5	0.15B*	0.21	0.33	NR	0.17B*	(<0.10U)
Nickel	40.0	141	4.0B*	6.1B*	9.2B*	NR	(<1.0U)	(<1.0U)
Potassium	1,000.0	3,990	2,980	2,850	2,890	NR	(<635U)	(<635U)
Selenium	10.0	19.3B*	(<3.7U)	(<3.7U)	(<18.5U)	NR	(<3.7U)	(<3.7U)
Silver	15.0	(<1.0U)	(<1.0U)	(<1.0U)	1.3B*	NR	1.7B*	(<1.0U)
Sodium	100.0	20,500	37,700	37,300	8,700	NR	135	64.5B*
Thallium	15.0	34.7B*	(<3.9U)	(<3.9U)	(<19.5U)	NR	(<3.9U)	(<3.9U)
Vanadium	25.0	108B*	2.9B*	6.6B*	(<0.60U)	NR	1.5B*	(<0.60U)
Zinc	25.0	166	11.6B*	19.3B*	(<4.0U)	NR	8.2B*	4.4B*
Cyanide	20.0	6.5	(<1.3U)	3.0B*	(<1.3U)	NR	(<1.3U)	(<1.3U)

NOTE: NR = Analysis not required.
B* = Analyte concentration is between the Instrument Detection Limit and the Contract Required Detection Limit.

TABLE 15 SUMMARY OF ANALYTICAL RESULTS FOR LEACHATE STATION SEDIMENT SAMPLES COLLECTED ON 22 JUNE 1996 AT SITES 1 AND 3, NAVAL AIR STATION, BRUNSWICK, MAINE

Analyte	PQL[a]	LT-1[b]	LT-2[b]	LT-3[b]	LT-3 DUP	LT-4[b]	LT-5	QT-003 (μg/L)	QS-002 (μg/L)	QD-001 (μg/L)
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/kg)										
Acetone	5.0	85	58	320	590B	(<20U)	(<27U)	(<5U)	16	22
Methylene chloride	1.0	37	21	38	6	13	8	(<1U)	(<1U)	(<1U)
Total xylenes	1.0	(<13U)	(<4.8U)	(<3.5U)	(<3.9U)	(<4U)	(<5.3U)	(<1U)	(<1U)	(<1U)
2-Butanone	5.0	(<65U)	(<24U)	58	140B	(<20U)	(<27U)	(<5U)	3J	(<5U)
Total 1,2-Dichloroethene	1.0	(<13U)	(<4.8U)	(<3.5U)	11	(<4U)	(<5.3U)	(<1U)	(<1U)	(<1U)
Trichloroethene	1.0	(<13U)	(<4.8U)	(<3.5U)	(<3.9U)	(<4U)	(<5.3U)	(<1U)	(<1U)	(<1U)
1,2-Dichlorobenzene	1.0	23	10	8	(<3.9U)	8	(<5.3U)	(<1U)	(<1U)	(<1U)
1,3-Dichlorobenzene	1.0	16	(<4.8U)	4	(<3.9U)	(<4U)	(<5.3U)	(<1U)	(<1U)	(<1U)
1,4-Dichlorobenzene	1.0	44	21	19	17B	20	(<5.3U)	(<1U)	(<1U)	(<1U)
1,1-Dichloroethane	1.0	60	10	5	17	17	(<5.3U)	(<1U)	(<1U)	(<1U)
Chlorobenzene	1.0	(<13U)	(<4.8U)	(<3.5U)	(<3.9U)	(<4U)	(<5.3U)	(<1U)	(<1U)	(<1U)
Tetrachloroethene	1.0	(<13U)	(<4.8U)	(<3.5U)	(<3.9U)	(<4U)	(<5.3U)	(<1U)	(<1U)	(<1U)
Chloroethane	2.0	(<26U)	(<9.6U)	(<7U)	(<7.8U)	(<8U)	(<11U)	(<2U)	(<2U)	(<2U)
Benzene	1.0	(<13U)	(<4.8U)	(<3.5U)	(<3.9U)	(<4U)	(<5.3U)	(<1U)	(<1U)	(<1U)
Stryene	1.0	(<13U)	(<4.8U)	(<3.5U)	(<3.9U)	(<4U)	(<5.3U)	(<1U)	(<1U)	(<1U)
Vinyl chloride	2.0	(<26U)	(<9.6U)	(<7U)	(<7.8U)	(<8U)	(<11U)	(<2U)	(<2U)	(<2U)
Toluene	1.0	(<13U)	(<4.8U)	9	(<3.9U)	(<4U)	(<5.3U)	(<1U)	(<1U)	(<1U)

(a) PQL = Practical Quantitation Level (μg/L).
(b) Reanalysis conducted due to low surrogate recovery.

NOTE: QT = Trip blank. Samples associated with QT-003 were analyzed under a separate sample delivery group shipped on the same day.
QS = Equipment rinsate blank. Samples associated with QS-002 were analyzed under a separate sample delivery group shipped on the same day.
QD = Source water blank. Samples asociated with QD-001 were analyzed under a separate sample delivery group shipped on 18 June 1996.
U = Not detected. Sample quantitation limits are shown as (<____U).
B = Compound detected in associated method blank.
J = Estimated concentration below detection limit.
Only those analytes detected in at least one of the samples, and contaminants of concern listed in the LTMP (ABB-ES 1994), are shown on this table.

Analyte	PQL[a]	LT-1[b]	LT-2[b]	LT-3[b]	LT-3 DUP	LT-4[b]	LT-5	QT-003 (μg/L)	QS-002 (μg/L)	QD-001 (μg/L)
TARGET ANALYTE LIST ELEMENTS BY EPA SERIES 6000/7000/9000 METHODS (mg/kg)										
Aluminum	100.0	18,500	1,470	6,090	3,180	471	152B*	NR	12.7B*	24.2B*
Arsenic	8.0	19.7	38.5	26.2	28.2	32.1	491	NR	(<3.0U)	(<3.0U)
Barium	5.0	180	94.3	227	272	58.9	38.3	NR	(<1.3U)	0.61B*
Beryllium	5.0	4.1B*	0.26B*	0.49B*	0.33B*	(<0.07U)	(<0.09U)	NR	(<0.20U)	(<0.20U)
Cadmium	5.0	8.2B*	(<0.59U)	0.59B*	(<0.11U)	(<0.54U)	(<0.66U)	NR	(<0.30U)	(<0.30U)
Calcium	50.0	19,300	5,090	3,770	3,830	4,160	1,120	NR	76.0B*	45.2B*
Chromium	15.0	38.2	5.0B*	22.0	16.7	0.63B*	(<0.31U)	NR	(<0.70U)	1.1B*
Cobalt	30.0	143	(<1.5U)	12.1	12.0	15.8	20.1	NR	(<0.70U)	(<0.70U)
Copper	25.0	48.4	14.5	10.1	8.7B*	(<1.3U)	(<1.5U)	NR	0.72B*	(<0.70U)
Iron	25.0	60,600	391,000	167,000	263,000	561,000	750,000	NR	70.8	(<25.0U)
Lead	5.0	240	4.7B*	8.7	5.4	(<1.8U)	(<2.2U)	NR	(<1.0U)	(<1.0U)
Magnesium	50.0	4,490	218	2,800	1,490	216	(<15.4U)	NR	8.8B*	(<7.0U)
Manganese	5.0	964	1,040	4,010	3,930	899	789	NR	(<5.0U)	(<5.0U)
Mercury	0.2	8.6	0.13B*	(<0.06U)	0.29	0.21	(<0.08U)	NR	0.16B*	(<0.10U)
Nickel	40.0	148	5.0B*	14.6	9.9B*	5.3B*	8.4B*	NR	1.9B*	(<1.0U)
Potassium	1,000.0	1,950	(<250U)	1,860	1,170	(<227U)	(<280U)	NR	(<635U)	(<635U)
Selenium	10.0	7.3B*	(<7.3U)	(<5.1U)	(<6.7U)	(<6.6U)	(<8.2U)	NR	(<3.7U)	(<3.7U)
Silver	15.0	(<1.1U)	(<0.39U)	0.39B*	0.54B*	(<0.36U)	(<0.44U)	NR	(<1.0U)	(<1.0U)
Sodium	100.0	694	72.8	200	211	213	86.7	NR	63.0B*	64.5B*
Thallium	15.0	4.3B*	(<7.7U)	1.5B*	3.5B*	9.0B*	12.0B*	NR	(<3.9U)	(<3.9U)
Vanadium	25.0	120	6.3B*	19.4	11.7	2.3B*	(<1.3U)	NR	(<0.60U)	(<0.60U)
Zinc	25.0	404	(<0.32U)	22.8	8.3B*	(<1.4U)	(<1.8U)	NR	5.5B*	4.4B*
Cyanide	20.0	(<0.84U)	(<0.32U)	(<0.18U)	(<0.25U)	1.4	0.50B*	NR	(<1.3U)	(<1.3U)

NOTE: NR = Analysis not required.
B* = Analyte concentration is between the Instrument Detection Limit and the Contract Required Detection Limit.

TABLE 16 SUMMARY OF LANDFILL GAS MONITORING CONDUCTED ON 26 JUNE 1996 AT SITES 1 AND 3, NAVAL AIR STATION, BRUNSWICK, MAINE

Gas Vent Designation	Depth to Bottom (ft)	Pressure (in. H_20)	Percent Methane	Percent Oxygen	Percent Carbon Dioxide
Gas Probes					
GP-04	7.26	<0.01	0.1	20.6	0
GP-05	7.21	<0.01	0.0	20.5	0
GP-06	7.22	<0.01	0.1	20.6	0
Gas Vents					
GV-01	6.72	<0.01	0.3	14.5	4.6
GV-02	4.76	<0.01	0.2	20.3	0
GV-03	4.52	<0.01	0.1	20.4	0
GV-04	4.47	<0.01	0.2	20.1	0
GV-05	4.52	<0.01	0.1	20.6	0
GV-06	4.59	<0.01	0.2	20.6	0
GV-07	4.63	<0.01	0.3	20.7	0
GV-08	4.57	<0.01	0.2	20.8	0
GV-09	4.59	<0.01	0.2	20.8	0
GV-10	4.60	<0.01	0.1	20.7	0
GV-11	4.54	<0.01	0.2	20.8	0
GV-12	4.56	<0.01	0.2	20.3	0.1
GV-13	4.56	<0.01	0.2	20.8	0
GV-14	4.56	<0.01	0.2	12.5	0

NOTE: Depth to bottom measured from top of PVC coupling.

REFERENCES

ABB Environmental Services, Inc. (ABB-ES). 1992a. Record of Decision for a Remedial Action, Sites 1 and 3. June.

ABB-ES. 1992b. Record of Decision for an Interim Remedial Action, Eastern Plume. June.

ABB-ES. 1994. Final Long-Term Monitoring Plan for Building 95, Sites 1 and 3 and Eastern Plume, Naval Air Station, Brunswick, Maine. August.

EA Engineering, Science, and Technology. 1996. Final Report, Quarterly Monitoring Event 4 - November 1995, Sites 1 and 3 and Eastern Plume, Naval Air Station, Brunswick, Maine.

State of Maine Department of Human Services. 1992. Summary of State and Federal Drinking Water Guidelines. Revised September. Bureau of Health - Environmental Toxicology Program. 23 October.

U.S. Environmental Protection Agency (U.S. EPA). 1994. National Primary Drinking Water Standards. Office of Water, Washington, D.C. EPA 610-P-94-001. February.

Appendix A

Field Monitoring and Sampling Forms

A.1 Field Record of Well Gauging Forms
A.2 Field Record of Well Gauging, Purging, and Sampling Forms
A.3 Field Record of Surface Water and Sediment Sampling Forms
A.4 Field Record of Seep Sampling Forms
A.5 Field Record of Landfill Gas Monitoring

Appendix A.1

Field Record of Well Gauging Forms

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

Sites 1+3

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick LTMP	Project No: 29600.4	Date: 5/14/96
Weather/Temperature: Sunny, breezy 65°		
EA Personnel: Brian Andersen, Sue Chase	Equipment: OVA, Slope indicator	

	Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm) Air Ambient	VOCs Concentration (ppm) Well Mouth	Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
on	EW-6	Yes/Yes	Yes	0.0	0.0	Good			33.43		
OFF	EW-7	Yes/Yes	Yes	2.0	2.0	Good			25.67		
	MW-234R	Yes/Yes	No	0.0	0.0	Good			31.45		
	MW-232A	Yes/Yes	No	0.0	0.0	Good			34.28		
	MW232B	Yes/Yes	No	0.0	0.0	Good			33.10		
	MW217B	Yes/Yes	No	0.0	0.0	Good			24.05		
	MW217A	Yes/Yes	No	0.0	0.0	Good			26.14		
	MW220	Yes/Yes	No	2.0	2.0	Good			26.56		
	MW210A	Yes/~~No~~	No	2.0	6.7	PVC 5F + bolted top of Steel casing			13.60		
	MW210B	Yes/Yes	No	2.5	12.7	Good			26.42		
	EP-16	Yes/Yes	No	1.1	12.1	Good			33.30		
	MW216A	Yes/Yes	No	0.7	1.7	Good			33.55		
	MW211A	Yes/No	No	1.8	3.0	Good			23.69		

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

Sites 1+3

FIELD RECORD OF WELL GAUGING

Project Name: NAS	Project No: 2960047	Date: 5/14/96
Weather/Temperature: Sunny/breezy, 65°		
EA Personnel: Brian Andersen, Sue Chase	Equipment: OVA, Slope indicator	

Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm)		Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
			Air Ambient	Well Mouth						
MW211B	Yes/No	No	1.8	2.0	Good			24.25		
MW210I	Yes/Yes	No	2.0	14.0	Good			11.04		
MW201R	Yes/Yes	No	1.9	4.3	Good			8.94		
MW223	Yes/Yes	No	1.6	4.0	Good			39.25		
MW215R	Yes/Yes	No	1.3	2.3	Good			25.79		
MW202B	Yes/No	Yes	1.0	1.7	Good			18.15		
MW202A	Yes/Yes	Yes	1.8	2.0	Good			16.16		
MW203	Yes/Yes	No	2.0	8.4	Good			31.42		
MW218	Yes/Yes	Yes	2.3	2.7	Good			34.04		
MW204	Yes/Yes	Yes	2.0	12.0	Good			29.90		
MW219	Yes/Yes	Yes	3.0	6.3	Good			30.21		

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

[redacted] M[redacted] 223 R[redacted] a[redacted] S[redacted] [redacted]
Labelled 223

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick LTMP Event b. Sites 1+3	Project No: 2960047	Date: 6/14/96
Weather/Temperature: Sunny, 80°		
EA Personnel: BDA, SYC, MDC	Equipment: Slope indicator, OVA	

	Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm) Air Ambient	VOCs Concentration (ppm) Well Mouth	Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
	MW-2101	Y/Y	No	0.0	0.0	Label on inside of well			11.23		
	MW-234R	N/Y	No	0.0	>1000/800	Good			31.93		
*	MW-233R	Y/Y	No	0.0	10	Good			26.45		
*	MW-201	Y/Y	No	0.0	10	Good			~~12.57~~ a	10.58	
*	MW-211A	Y/Y	No	0.0	0.0	Good			23.77		
	MW-211B	Y/Y	No	0.0	0.0	Good			24.53		
	MW-216A	Y/Y	No	0.0	0.0	Good			33.92		
*	EP-16	Y/Y	No	0.0	0.0	Good			33.35		
	MW-210B	Y/Y	No	0.0	0.0	Good			27.68		
	MW-220	Y/Y	No	0.0	0.0	Good			26.60		
*	MW-210A	Y/Y	No	0.0	0.0	Good			12.06		
	EW-7	Y/Y	Yes	0.0	500	Y2-1F to Equator in vault			27.90		
*	MW-232B	Y/Y	No	0.0	0.0	Good			33.40		

NOTE: All measurements in feet mean sea level (MSL).

* No PVC cap

a - top of steel casing 12.57 - 1.94 =

f:\wp\29600\47

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick LTMP Event 6 Sites 1+3	Project No: 2960047	Date: 6/14/96
Weather/Temperature: Sunny, 80°		
EA Personnel: BDA, SYC, MDC	Equipment: Slope indicator, OVA	

Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm) Air Ambient	VOCs Concentration (ppm) Well Mouth	Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
MW-232A	Y/Y	No	0.0	0.0	Good			34.71		
MW-217B	Y/Y	No	0.0	0.0	Good			24.40		
MW-217A	Y/Y	No	0.0	0.0	Good			7.95		
EW-6	Y/Y	Yes	0.0	>1,000	½ ft water in vault			34.80		
MW-202A	Y/Y	Yes	0.0	0.0	Good			19.87		
MW-202B	Yes/N	Yes	0.0	0.0	Good			Dry at 18.15		
MW-218	Y/Y	Yes	0.0	0.0	Good			33.94		
MW-203	Y/Y	No	0.0	0.0	Good			34.40		
MW-215R	Y/Y	No	0.0	0.0	Good			26.30		
MW-219	Y/Y	Yes	0.0	0.0	Good			29.95		
MW-204	Y/Y	Yes	0.0	0.0	Good			29.77		

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick LTMP July Wellgauging Sites 1+3	Project No: 2960047	Date: 7/1/96
Weather/Temperature: overcast, 65		
EA Personnel: SYC, MDC	Equipment: OVA, slope indicator, GGI	

Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm)		Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
			Air Ambient	Well Mouth						
MW-215R	Y/Y	No	0.0	>1,000	Good	--	No Data	26.43	49.95	—
MW-234R	Y/Y	No	0.0	>1,000	Good		65.50	32.35	59.52	33.15
EW-6	Y/Y	Yes	0.0	950	Good		57.67	38.40	39.05	19.27
MW-217A	Y/Y	No	0.0	0.0	Good		56.04	26.90	44.56	29.14
MW-217B	Y/Y	No	0.0	>1,000	Good		56.45	24.65	34.60	31.80
MW-232A	Y/Y	No	0.0	0.0	Good		No Data	34.95	54.76	—
MW-216A	Y/Y	No	0.0	100	Good		No Data	34.20	46.96	—
EP-16	Y/N	No	0.0	0.0	Good		58.82	33.60	49.90	25.22
EW-7	Y/Y	Yes	0.0	100	Good		53.00	1.64	50.55	51.36
MW-210B	Y/Y	No	0.0	0.0	Good		No Data	29.65	26.40	—
MW-220	Y/Y	No	0.0	0.0	Good		47.20	26.77	49.87	20.43
MW-210A	Y/N	No	0.0	0.0	PVC needs to be extended		52.31	Blockage at 9.10	No Data	—
MW-202A	Y/Y	Yes	0.0	1.0	Good		52.51	20.37	31.09	32.14

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick LTMP July Well gauging Sites 1+3	Project No: 2960047	Date: 7/1/96
Weather/Temperature: overcast, 65°		
EA Personnel: SYC, MDC	Equipment: Slope indicator, OVA, CGI	

Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm)		Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
			Air Ambient	Well Mouth						
MW-202B	Y/Y	Yes	0.0	0.0	Good	--	53.20	dry at 18.15	17.93	—
MW-218	Y/Y	Yes	0.0	0.0	Good		54.16	34.10	53.54	20.06
MW-203	Y/Y	No	0.0	0.0	Lock tab broke		52.75	31.43	42.04	21.32
MW-204	Y/Y	Yes	0.0	0.0	Good		56.50	29.79	37.18	20.71
MW-219	Y/Y	Yes	0.0	0.0	Good		51.87	30.00	71.82	21.87
MW-201R	Y/N	No	0.0	0.0	Good		58.84	12.92	39.51	45.92
MW-233R	Y/N	No	0.0	0.0	Good		No Data	27.47	50.49	—
MW-210I	Y/Y	No	0.0	0.0	Good		No Data	11.65	30.00	—
MW-211A	Y/Y	No	0.0	0.0	Good		65.68	23.95	137.02	41.73
MW-211B	Y/Y	No	0.0	0.0	Good		65.38	24.70	36.50	40.68

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

Eastern Plume

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick LTMP	Project No: 29600047	Date: 5/14/96
Weather/Temperature: sunny, breezy, 65°		
EA Personnel: Brian Andersen, Sue Chase	Equipment: Mini Rae, Slope indicator	

Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm)		Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
			Air Ambient	Well Mouth						
MW20S	Yes/Yes	Yes	2.7	4.0	Good			23.85		
MW105A	Yes/Yes	No	0.0	0.0	Good			1.99		
MW105B	Yes/No	Yes	0.0	0.0	PVC cap connection popped off			7.60		
MW310	Yes/Yes	Yes	0.0	0.0	Good			27.48		
MW206A	Yes/Yes	Yes	0.0	0.0	Good			18.76		
MW206B	Yes/Yes	Yes	0.0	0.0	Good			18.62		
MW231B	Yes/Yes	Yes	0.8	3.3	Good			24.97		
MW231A	Yes/Yes	Yes	0.9	3.2	Good			28.80		
MW230A	Yes/Yes	Yes	0.0	0.7	Good			15.75		
MW318	Yes/Yes	Yes	2.0	10.7	Good			4.75		
MW313	Yes/Yes	Yes	0.0	1.0	Good			7.91		
MW229B	Yes/Yes	Yes	0.0	0.0	Good			14.36		
MW229A	Yes/Yes	Yes	0.0	0.0	Good			13.61		

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

Eastern Plume

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick	Project No: 29600047	Date: 5/14/96
Weather/Temperature: Sunny breezy 65°		
EA Personnel: Brian Andersen, Sue Chase	Equipment: Mini Rae, Slope indicator	

Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm) Air Ambient	VOCs Concentration (ppm) Well Mouth	Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
EP-3	Yes/No	Yes	0.0	0.0	Good			9.18		
EP-1	Yes/Yes	Yes	2.0	16.4	Good			13.89		
EP2	Yes/No	Yes	2.0	11.7	Good			12.84		
on EW-1	Yes/Yes	Yes	1.5	7.0	Good			16.39		
MW225A	Yes/Yes	Yes	1.8	4.7	Good			18.24		
MW225B	Yes/Yes	Yes	1.7	6.0	Good			19.63		
MW311	Yes/Yes	Yes	0.0	0.0	Good			Artesian No flow		
P112	Yes/Yes	Yes	1.3	3.3	Good			12.16		
MW319	Yes/Yes	Yes	2.0	15.4	Good			11.75		
EP5	Yes/No	Yes	2.0	0.0	Good			6.36		
EP4	Yes/No	Yes	2.1	5.0	Good			5.67		
MW207B	Yes/Yes	Yes	1.7	3.7	Good			3.84		
MW207A	Yes/Yes	Yes	2.0	2.0	1 inch hole in base of Steel Casing			Artesian		

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

Eastern Plume

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick LTMP	Project No: 2960047	Date: 5/14/96
Weather/Temperature: Sunny, breezy 65°		
EA Personnel: Brian Andersen, Sue Chase	Equipment: Mini Rae Slope Indicator	

	Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm) Air Ambient	VOCs Concentration (ppm) Well Mouth	Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
	EP-6	Yes/No	No	2.0	4.3	Good			12.47		
OFF	EW-2	Yes/Yes	No	2.7	3.3	Good			3.85		
	MW-106	Yes/Yes	Yes	1.3	1.6	Good			21.85		
	MW208	Yes/Yes	Yes	1.3	2.4	Good			19.82		
On	EW3	Yes/Yes	Yes	2.0	7.0	Good			18.39		
	EP7	Yes/No	Yes	1.6	3.1	well pad broken			18.63		
	P124	Yes/No	No	0.7	1.8	Good			23.02		
	M223	Yes/Yes	Yes	1.3	5.7	Good			23.76		
	MW209	Yes/Yes	Yes	1.3	2.3	Good			24.35		
	MW222	Yes/Yes	Yes	1.0	12.3	Good			25.99		
	MW224	Yes/Yes	Yes	0.3	1.8	Good			25.13		
	P110	Yes/Yes	No	0.0	0.0	Good			Dry		
	EP-8	Yes/~~No~~	Yes	0.3	0.3	Good			16.98		

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

Eastern Plume

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick LTMP	Project No: 29600.47	Date: 5/14/96
Weather/Temperature: Sunny breezy 65		
EA Personnel: Brian Andersen, Sue Chase	Equipment: Mini Rae, Slope indicator	

	Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm) Air Ambient	VOCs Concentration (ppm) Well Mouth	Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
	EP11	Yes/No	Yes	0.0	0.7	Good			7.67		
	EP10	Yes/No	Yes	0.0	1.0	Good			2.46		
	P111	Yes/Yes	No	0.0	0.7	Good			4.05		
	EP9	Yes/No	Yes	0.0	3.0	Good			4.53		
OFF	EW4	Yes/Yes	No	2.0	10.4	Good			3.10		
	EP12	Yes/No	Yes	1.3	9.4	Good			15.62		
on	EW5	Yes/Yes	Yes	0.3	1.3	Good			40.0		
	EP15	Yes/Yes	Yes	0.0	0.0	Good			15.59		
	P106	Yes/Yes	Yes	0.0	0.0	Good			10.16		
	P105	Yes/Yes	Yes	0.0	0.0	Good			10.04		
	EP14	Yes/Yes	Yes	0.0	0.0	Good			11.98		
	EP13	Yes/Yes	Yes	0.0	0.0	Good			6.06		
	P132	Yes/Yes	Yes	0.0	0.0	Good			17.45		

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

Eastern Plume

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick LTMP	Project No: 2960047	Date: 5/14/96
Weather/Temperature: sunny breezy 65		
EA Personnel: Brian Andersen, Sue Chase	Equipment: Mini Rae, slope indicator	

Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm) Air Ambient	VOCs Concentration (ppm) Well Mouth	Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
MW305	Yes/Yes	Yes	0.0	0.0	Good			7.00		
MW303	Yes/Yes	Yes	0.0	0.0	Good			12.22		
MW212	Yes/Yes	Yes	0.0	0.0	Good			9.85		
MW309A	Yes/Yes	Yes	0.0	0.0	hole in steel casing			Artesian		
MW309B	Yes/Yes	Yes	0.0	0.0	Good			1.97		
MW308	Yes/Yes	Yes	0.0	0.0	Good			4.22		
MW306	Yes/Yes	Yes	0.0	0.0	Good			17.21		
P-103	Yes/No	No	0.0	0.0	Good			24.38		
MW1104	Yes/Yes	Yes	0.0	0.0	Good			11.15		
MW307	Yes/Yes	Yes	0.0	0.0	Good			15.19		

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NASBrunswick LTMP Event 6 Eastern Plume		Project No: 2960047	Date: 6/13/96
Weather/Temperature: Cloudy, 70			
EA Personnel: SYC, BDA		Equipment: Slope indicator, Mini Rae	

Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm) Air Ambient	VOCs Concentration (ppm) Well Mouth	Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
MW305	Y/Y	Yes	0.0	0.0	Good			7.11		
P-132	Y/Y	Yes	0.0	0.0	Good			17.73		
MW303	Y/Y	Yes	0.0	0.6	Good			12.48		
MW-NASB 212	Y/Y	Yes	0.0	6.5	Good			10.13		
P106	Y/N	Yes	0.0	0.0	Good			10.54		
EP-15	Y/Y	Yes	0.0	0.0	Good			16.20		
P105	Y/Y	Yes	0.0	0.0	Good			10.38		
EP14	Y/N	Yes	0.0	0.4	Good			12.42		
EP-13	Y/N	Yes	0.0	1.6	Good			6.40		
MW306	Y/Y	Yes	0.0	2.4	Good			17.34		
P103	Y/N	No	0.0	0.0	no steel casing			23.97		
MW1104	Y/Y	Yes	0.0	10.9	Good			11.45		

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick LTMP Event 6 Eastern Plume	Project No: 2960047	Date: 6/14/96
Weather/Temperature: rainy, cloudy, 70		
EA Personnel: BDA, SYC, MDC	Equipment: Slope indicator, Mini Rae	

Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm)		Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
			Air Ambient	Well Mouth						
MW-205	Y/Y	Yes	0.0	0.0	Good			23.08		
MW-105A	Y/Y	No	0.0	0.0	lock tab broke			1.58		
MW-105B	Y/Y	Yes	0.0	0.0	Good			7.59		
MW-206A	Y/Y	Yes	0.0	0.0	Good			18.75		
MW-206B	Y/Y	Yes	0.0	0.0	Good			18.50		
MW-310	Y/Y	Yes	0.0	0.0	Good			27.36		
MW-231A	Y/Y	Yes	0.0	0.0	Good			20.21		
MW-231B	Y/Y	Yes	0.0	0.0	Good			24.29		
MW-230A	Y/Y	Yes	0.0	0.0	Good			14.75		
MW-318	Y/Y	Yes	0.0	0.0	Good			5.65		
MW-313	Y/Y	Yes	0.0	0.0	Good			8.00		
MW-229A	Y/Y	Yes	0.0	0.0	Good			12.15		
MW-229B	Y/Y	Yes	0.0	0.0	Good			14.47		

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick LTMP Event 6 Eastern Plume	Project No: 2960047	Date: 6/14/96
Weather/Temperature: Sunny 80.		
EA Personnel: BDA, MDC, SYC	Equipment: Slope indicator, Mini Rae	

Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm)		Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
			Air Ambient	Well Mouth						
MW-208	Y/Y	Yes	0.0	0.0	Good			20.55		
MW-106	Y/Y	Yes	0.0	0.0	Good			22.42		
MW-223	Y/Y	Yes	0.0	0.0	Good			24.45		
MW-209	Y/Y	Yes	0.0	0.0	Good			24.82		
EP7	Y/Y	Yes	0.0	0.0	well pad broken			19.45		
EP8	No/Yes	Yes	0.0	0.0	Good			17.74		
P112	Y/Y	Yes	0.0	0.0	Good			16.22		
MW319	Y/Y	Yes	0.0	0.0	Good			13.85		
EP5	Y/Y	Yes	0.0	0.0	Good			8.93		
MW224	Y/Y	Yes	0.0	0.0	Good			25.45		
P110	Y/Y	Yes	0.0	0.0	Good			24.07		
MW222	Y/Y	Yes	0.0	0.0	Good			26.42		
EW3	Y/Y	Yes	0.0	0.0	Good			23.95		

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick LTMP Event 6 Eastern Plume	Project No: 2960047	Date: 6/14/96
Weather/Temperature: sunny, 80° humid		
EA Personnel: BDA, SYC, MDC	Equipment:	

Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm) Air Ambient	VOCs Concentration (ppm) Well Mouth	Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
EP9	Y/Y	Yes	0.0	0.0	Good			4.75		
EP10	Y/Y	Yes	0.0	0.0	Good			2.73		
EP11	Y/Y	Yes	0.0	0.0	Good			7.91		
EP12	Y/Y	Yes	0.0	0.0	Good			15.82		
P111	Y/Y	Yes	0.0	0.0	Good			4.45		
EW-4	Y/Y	Yes	0.0	0.0	Good			3.37		
P124	Y/N	No	0.0	0.0	no steel casing			Dry at 23.25		
* EW5	Y/Y	Yes	0.0	0.0	slight damage to concrete vault			Dry at 7.92		
MW307	Y/Y	Yes	0.0	0.0	Good			15.33		
MW308	Y/Y	Yes	0.0	0.0	Good			4.34		
MW309A	Y/Y	Yes	0.0	0.0	hole in base of steel casing			artesian 0.0		
MW309B	Y/Y	Yes	0.0	0.0	Good			1.78		
EP3	Y/Y	Yes	0.0	0.0	Good			4.86		

NOTE: All measurements in feet mean sea level (MSL).

*water in well is at 50 Ft.

f:\wp\29600\47

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick LTMP Event 6 Eastern Plume	Project No: 29600047	Date: 6/14/96
Weather/Temperature: Sunny, 80°		
EA Personnel: BDA, SYC, MDC	Equipment:	

Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm) Air Ambient	VOCs Concentration (ppm) Well Mouth	Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
EP1	Yes/Yes	Yes	0.0	0.0	Good			8.59		
EP2	Yes/Y	Yes	0.0	0.0	Good			6.77		
EW1	Y/Y	Yes	0.0	0.0	Good			3.03		
MW225A	Y/Y	Yes	0.0	0.0	Good			18.56		
MW225B	Y/Y	Yes	0.0	0.0	Good			19.90		
MW311	Y/Y	Yes	0.0	0.0	Good			6.95		
EP4	Y/Y	Yes	0.0	0.0	Good			8.72		
MW207A	Y/Y	Yes	0.0	0.0	Hole in Steel casing			Artesian 0.00		
MW207B	Y/Y	Yes	0.0	0.0	Good			6.15		
EP-6	Y/Y	No	0.0	0.0	Lock tab broke			13.61		
EW-2	Y/Y	No	0.0	12.1	Good			14.90		

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick LTMP July Wellgauging Eastern Plume	Project No: 2960047	Date: 7/3/96
Weather/Temperature: 60°, overcast, misty		
EA Personnel: SYC, MDC	Equipment: Slope indicator, HNU, CGI	

Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm)		Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
			Air Ambient	Well Mouth						
MW-206A	Y/Y	Yes	0.0	0.0	Good	--	43.02	17.87	74.36	25.15
MW-206B	Y/Y	Yes	0.0	0.0	Good		42.77	18.56	27.17	24.21
MW-313	Y/Y	Yes	0.0	1.5	Good		21.39	8.15	37.14	13.24
EP-2	Y/Y	Yes	0.0	9.8	Good		29.74	6.54	99.00	23.20
EW-1	Y/Y	Yes	0.0	6.1	Good		31.63	2.65	90.86	28.98
MW-311	Y/Y	Yes	0.0	0.0	Good		21.48	Artesian	95.78	>21.48
MW-319	Y/Y	Yes	0.0	11.6	Good		40.16	12.00	72.44	28.16
MW-207A	Y/Y	Yes	0.0	1.6	Good		24.06	Artesian	73.22	>24.06
MW-207B	Y/Y	Yes	0.0	0.9	Good		22.90	6.18	27.17	16.72
MW-208	Y/Y	Yes	0.0	2.4	Good		49.40	20.71	103.33	28.69
MW-106	Y/Y	Yes	0.0	0.8	Good		51.26	22.67	37.27	28.59
MW-223	Y/Y	Yes	0.0	6.9	Good		53.71	24.61	42.61	29.10
P.124	Y/N	No	0.0	1.3	Good		51.12	Dry at 23.25	23.25	—

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick LTMP July well gauging Eastern Plume

Project No: 2960047

Date: 7/3/96

Weather/Temperature: 60° overcast, misty

EA Personnel: SYC, MDC

Equipment: Slope indicator, CGI, HNu

Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm) Air Ambient	VOCs Concentration (ppm) Well Mouth	Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
MW-229A	Y/Y	Yes	0.0	0.0	Good	--	33.83	12.19	64.97	21.64
P-112	Y/N	Yes	0.0	2.6	Good		41.12	16.35	16.41	24.77
EP-5	Y/N	Yes	0.0	9.9	Good		34.61	6.59	79.85	28.02
EP-4	Y/N	Yes	0.0	3.8	Good		32.59	5.23	91.11	27.36
EP-6	Y/N	No	0.0	2.1	Steel cover lock tab broke		40.14	12.72	83.51	27.42
EW-2	Y/Y	No	0.0	1.1	Good		31.63	3.45	90.86	28.18
MW-224	Y/Y	Yes	0.0	1.8	Good		57.63	25.77	46.95	31.86
P-110	Y/N	No	0.0	0.0	Good		56.70	dry at 24.14	24.14	—
MW-222	Y/Y	Yes	0.0	2.3	Good		57.43	26.74	45.34	30.69
MW-209	Y/Y	Yes	0.0	8.1	Good		54.84	25.05	32.38	29.79
EP-7	Y/N	Yes	0.0	1.6	well pad broken		48.49	19.59	70.20	28.90
EP-8	Y/N	Yes	0.0	0.0	Good		47.31	17.80	80.38	29.51
EP-11	Y/N	Yes	0.0	0.0	Good		41.59	8.25	65.03	33.34

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NASBrunswick LTMP July well gauging Eastern Plume

Project No: 2960047

Date: 7/3/96

Weather/Temperature: overcast /misty, 60°

EA Personnel: SYC, MDC

Equipment: Slope Indicator, HNu, CGI

Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm) Air Ambient	VOCs Concentration (ppm) Well Mouth	Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
MW-205	Y/Y	Yes	0.0	3.1	Good		45.99	23.00	78.77	22.99
MW-310	Y/Y	Yes	0.0	0.0	Good		53.39	27.33	72.83	26.06
MW-225A	Y/Y	Yes	0.0	1.6	Good		45.95	18.40	76.03	27.55
MW-225B	Y/Y	Yes	0.0	3.9	Good		46.25	20.02	42.00	26.23
MW-105A	Y/N	No	0.0	0.0	Lock tab broke		24.19	1.63	46.87	22.56
MW-105B	Y/Y	Yes	0.0	0.0	Good		24.55	7.85	22.91	16.70
MW-231A	Y/Y	Yes	0.0	4.3	Good		45.41	20.23	62.42	25.18
MW-231B	Y/Y	Yes	0.0	2.6	Good		46.31	24.25	57.86	22.06
MW-230A	Y/Y	Yes	0.0	0.6	Good		36.32	14.42	82.08	21.90
MW318	Y/Y	Yes	0.0	9.9	Good		24.28	6.02	25.14	18.26
EP3	Y/N	Yes	0.0	0.0	Good		27.91	4.64	89.21	23.27
EP1	Y/Y	Yes	0.0	8.9	Good		31.67	8.33	100.51	23.34
MW229B	Y/Y	Yes	0.0	0.0	Good		30.08	14.88	32.70	15.20

NOTE: All measurements in feet mean sea level (MSL).

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick LTMP July well gauging Eastern Plume	Project No: 2960047	Date: 7/3/96
Weather/Temperature: overcast, 60, misty		
EA Personnel: SYC, MDC	Equipment: Slope indicator, HNu, CGI	

Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm)		Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
			Air Ambient	Well Mouth						
EP-10	Y/N	Yes	0.0	0.0	Good		37.78	3.06	58.00	34.72
EW-4	Y/Y	No	0.0	6.9	Good		37.13	3.68	69.37	33.45
P-105	Y/N	Yes	0.0	0.0	Good		42.08	10.42	70.35	31.66
EW-5	Y/Y	Yes	0.0	1.4	Good		36.25	51.60	84.99	-15.35
EP-14	Y/N	Yes	0.0	0.0	Good		43.46	12.91	80.05	30.55
MW-303	Y/Y	Yes	0.0	0.0	Good		44.28	12.75	71.62	31.53
MW-NASB-212	Y/Y	Yes	0.0	0.0	Good		No Data	10.42	67.34	—
MW-306	Y/Y	Yes	0.0	0.0	Good		52.12	17.78	56.98	34.34
P-103	Y/N	No	0.0	0.6	Good		60.35	24.42	29.05	35.93
MW-1104	Y/Y	Yes	0.0	0.0	Good		60.09	11.87	27.55	48.22
MW-307	Y/Y	Yes	0.0	0.0	Good		62.70	15.69	22.21	47.01
MW-309A	Y/Y	Yes	0.0	0.0	Good		22.84	Artesian	72.71	>22.84
MW-309B	Y/Y	Yes	0.0	0.0	Good		22.32	1.52	59.43	20.80

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF WELL GAUGING

Project Name: NAS Brunswick LTMP July well gauging Eastern Plume	Project No: 2960047	Date: 7/3/96
Weather/Temperature: overcast, 60, misty		
EA Personnel: SYC, MDC	Equipment: slope indicator, H-Nu, CGI	

Well No.	Labeled/ Capped	Well Locked	VOCs Concentration (ppm)		Casing/Seal Condition	Protective Casing Elevation (ft)	PVC Casing Elevation (ft)	Depth to Water (ft)	Measured Well Depth (ft)	Water Table Elevation (ft)
			Air Ambient	Well Mouth						
MW-308	Y/Y	Yes	0.0	0.0	Good		37.70	4.47	72.85	33.23
EW-3	Y/Y	Yes	0.0	6.5	Good		41.18	23.90	67.04	17.28
P-111	Y/N	No	0.0	0.1	Good		31.48	5.09	9.99	26.45
EP-9	Y/N	Yes	0.0	2.5	Good		37.84	5.15	62.46	32.69
EP-12	Y/N	Yes	0.0	8.1	Good		49.38	16.15	69.61	33.23
EP-15	Y/N	Yes	0.0	0.0	Good		45.37	16.75	82.68	28.62
P-106	Y/Y	Yes	0.0	0.0	Good		38.83	11.05	71.06	27.78
EP-13	Y/N	Yes	0.0	0.0	Good		38.96	6.89	71.06	32.07
MW305	Y/Y	Yes	0.0	0.0	Good		43.09	7.15	54.12	35.94
P-132	Y/Y	Yes	0.0	0.0	Good		42.95	17.95	32.46	25.00

NOTE: All measurements in feet mean sea level (MSL).

f:\wp\29600\47

Appendix A.2

Field Record of Well Gauging, Purging, and Sampling Forms

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Site 1 and 3
WELL I.D.: MW 202A
WELL CONDITION: good

PROJECT NUMBER: 096004.47/7.2
WELL LOCK STATUS: locked
WEATHER: sunny, hazy, 70°F

GAUGE DATE: 6/18/96
SOUNDING METHOD: Steel indicator
STICK UP/DOWN (ft): 2.11'

GAUGE TIME: 1420
MEASUREMENT REF: TOC of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/18/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1425
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 31.09'
B. DEPTH TO WATER (ft): 20.20'
C. LIQUID DEPTH (ft) (A-B): 10.89'

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 6.59
F. THREE WELL VOLUMES (L) (E*3): 19.77

Parameter	Beginning	1	2	3	4	5
Time (min)	1429	1433	1437	1441	1444	1448
Depth to Water (ft)	21.70	21.86	21.89	21.91	21.92	21.92
Purge Rate (L/min)	.4L	.4L	.4L	.4L	.4L	.4L
Volume Purged (L)	1.6L	3.2L	4.8L	6.4L	7.6L	9.2L
pH	7.09	6.62	6.39	6.25	6.19	6.13
Temperature (°C)	9.5	11.0	11.8	12.1	12.3	12.4
Conductivity (μmhos/cm)	0.252	0.260	0.254	0.256	0.262	0.270
Dissolved Oxygen (mg/L)	0.51	1.01	2.00	2.48	2.87	2.90
Turbidity (NTU)	272	57	29	29	27	32
Eh (mv)	~~272~~ -19	5	15	18	21	19

TOTAL QUANTITY OF WATER REMOVED (L): 22.8L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1517/1522
SAMPLING DATE: 6/18/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl, NaOH, HNO_3
SAMPLE BOTTLE IDs: BW-06-51-MW005
SAMPLE PARAMETERS: VOAs, Cyanide, Total metals
COMMENTS AND OBSERVATIONS: High iron content

20.2 L of water contained & disposed

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Site Land3	Project No.: 29662.411 720	Date: 6/18/96
Well ID: MW 202A	Field Personnel: BA, KR	

Parameter	6	7	8	9	10	11
Time (min.)	1451	1454	1458	1502	1505	1508
Depth to Water (ft)	22.00	22.00	21.92	21.92	21.88	21.88
Purge Rate (L/min)	.4L	.4L	.4L	.4L	.4L	.4L
Volume Purged (L)	10.4L	~~12.4L~~	13.2L	~~14.8~~ 15.8L	16.0L	~~18.4L~~ 17.2
pH	6.10	6.08	6.06	6.04	6.03	6.03
Temperature (°C)	12.5	12.6	12.9	13.1	13.3	13.4
Conductivity (μmhos/cm)	0.272	0.264	0.246	0.250	0.252	0.250
Dissolved Oxygen (mg/L)	2.96	2.84	2.44	2.39	2.34	2.28
Turbidity (NTU)	27	24	21	21	20	19
Eh (mv)	19	18	16	15	13	11

Parameter	12	13	14	15	16	17
Time (min)	1511	1514				
Depth to Water (ft)	21.74	21.84				
Purge Rate (L/min)	.4L	.4L				
Volume Purged (L)	18.4L	~~19~~ 19.6L				
pH	6.03	6.04				
Temperature (°C)	13.5	13.7				
Conductivity (μmhos/cm)	0.250	0.264				
Dissolved Oxygen (mg/L)	2.37	2.38				
Turbidity (NTU)	19	19				
Eh (mv)	11	11				

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Site 1 and 3
WELL I.D.: MW 202B
WELL CONDITION: good

PROJECT NUMBER: 29600417/17200
WELL LOCK STATUS: locked
WEATHER: sunny, breezy, 70°F

GAUGE DATE: 6/18/96
SOUNDING METHOD: slope indicator
STICK UP/DOWN (ft): 1.75'

GAUGE TIME: 1420
MEASUREMENT REF: top of casing
WELL DIAMETER (in.): 2"

PURGE DATE: Well-Dry
PURGE METHOD: ~~195~~ KR
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME:
FIELD PERSONNEL: KR, BT
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 19.76
B. DEPTH TO WATER (ft): DRY -
C. LIQUID DEPTH (ft) (A-B): 18.15'

D. WELL VOLUME/FT (L): 0.405
E. WELL VOLUME (L) (C*D): NA
F. THREE WELL VOLUMES (L) (E*3): NA

Parameter	Beginning	1	2	3	4	5
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)		Dry				
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

TOTAL QUANTITY OF WATER REMOVED (L): Well - Dry

SAMPLERS:
SAMPLING TIME (START/END):
SAMPLING DATE:
DECONTAMINATION FLUIDS USED:
SAMPLE TYPE:
SAMPLE PRESERVATIVES:
SAMPLE BOTTLE IDs:
SAMPLE PARAMETERS:
COMMENTS AND OBSERVATIONS:
Well Dry - No Sample.

KR

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Site land 3
WELL I.D.: MW 203
WELL CONDITION: good

PROJECT NUMBER: 296.CC.47/1726
WELL LOCK STATUS: locked but no tag
WEATHER: sunny, breezy, 70°F

GAUGE DATE: 6/18/96
SOUNDING METHOD: steel indicator
STICK UP/DOWN (ft): 2.121

GAUGE TIME: 1145
MEASUREMENT REF: TOC
WELL DIAMETER (in.): 2"

PURGE DATE: 6/18/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1200
FIELD PERSONNEL: KR BT
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 42.04
B. DEPTH TO WATER (ft): 31.39
C. LIQUID DEPTH (ft) (A-B): 10.65
D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 6.44
F. THREE WELL VOLUMES (L) (E*3): 19.32

Parameter	Beginning	1	2	3	4	5
Time (min)	1203	1206	1209	1213	1216	1220
Depth to Water (ft)	31.41	31.42	31.42	31.41	31.42	31.45
Purge Rate (L/min)	.2L	.2L	.2L	.2L	.2L	.2L
Volume Purged (L)	0.6L	1.2L	1.8L	2.6L	3.2L	4.0L
pH	5.78	5.86	5.86	5.87	5.88	5.88
Temperature (°C)	12.4	12.2	12.5	14.3	16.0	16.6
Conductivity (μmhos/cm)	0.382	0.376	0.402	0.432	0.438	0.436
Dissolved Oxygen (mg/L)	6.51	6.30	6.14	6.00	6.01	6.00
Turbidity (NTU)	54	43	42	42	30	40
Eh (mv)	166	171	168	163	160	159

TOTAL QUANTITY OF WATER REMOVED (L): 9.6L

SAMPLERS: KR, BT
SAMPLING TIME (START/END): 1225/1248
SAMPLING DATE: 6/18/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1 HCl, NaOH, HNO_3
SAMPLE BOTTLE IDs: BN-06-S1-MW001 MS/MSD
SAMPLE PARAMETERS: VOAs metals, cyanide
COMMENTS AND OBSERVATIONS: MS/MSD duplicate

4.2 L of water containerized & disposed

BT

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Site 1 and 3	Project No.: 20600 40 7250	Date: 6/18/96
Well ID: MW 203	Field Personnel: KR, BA	

Parameter	6	7	8	9	10	11
Time (min.)	1223					
Depth to Water (ft)	31.41					
Purge Rate (L/min)	.2L					
Volume Purged (L)	4.6L					
pH	5.89					
Temperature (°C)	17.0					
Conductivity (μmhos/cm)	0.434					
Dissolved Oxygen (mg/L)	5.95					
Turbidity (NTU)	40					
Eh (mv)	160					

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Sites 1+3
WELL I.D.: MW-204
WELL CONDITION: Good

PROJECT NUMBER: [illegible]
WELL LOCK STATUS: Locked
WEATHER: Sunny, 80

GAUGE DATE: 6-18-96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 1.74

GAUGE TIME: 1200
MEASUREMENT REF: TOC
WELL DIAMETER (in.): 2

PURGE DATE: 6-18-96
PURGE METHOD: low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: 1210
FIELD PERSONNEL: TC, SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 37.18
B. DEPTH TO WATER (ft): 29.84
C. LIQUID DEPTH (ft) (A-B): 7.34

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 4.44
F. THREE WELL VOLUMES (L) (E*3): 13.32

Parameter	Beginning	1	2	3	4	5
Time (min)	1210	1214	1218	1222	1226	1230
Depth to Water (ft)	29.84	29.85	29.86	29.86	29.86	29.86
Purge Rate (L/min)	0 —	0.2	0.2	0.2	0.2	0.2
Volume Purged (L)	—	0.8	1.6	2.4	3.2	4.0
pH	6.94	7.35	7.26	6.98	6.84	6.73
Temperature (°C)	11.2	10.9	10.9	10.8	10.9	10.8
Conductivity (μmhos/cm)	0.064	0.056	0.048	0.052	0.048	0.048
Dissolved Oxygen (mg/L)	11.23	9.92	9.48	10.00	9.95	9.90
Turbidity (NTU)	3	0	0	0	0	0
Eh (mv)	129	132	118	108	103	103

TOTAL QUANTITY OF WATER REMOVED (L): 60

SAMPLERS: TC, SYC
SAMPLING TIME (START/END): 1230
SAMPLING DATE: 6-18-96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCl, NaOH, HNO_3
SAMPLE BOTTLE IDs: BN-06-S1-MW002
SAMPLE PARAMETERS: cyanide, metals, VOC
COMMENTS AND OBSERVATIONS: Duplicate BN-06-S1-XD001

4 L water contained a dispersed pH

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Site 1 & 3
WELL I.D.: MW-210A
WELL CONDITION: good

PROJECT NUMBER: 29600.47/7206
WELL LOCK STATUS: None
WEATHER: partly sunny, breezy

GAUGE DATE: 6/19/96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft):

GAUGE TIME: 1600
MEASUREMENT REF: Top of Pipe
WELL DIAMETER (in.): 2"

PURGE DATE: NA
PURGE METHOD: NA
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: NA
FIELD PERSONNEL: NA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 96.10
B. DEPTH TO WATER (ft): 18.26
C. LIQUID DEPTH (ft) (A-B): 77.84

D. WELL VOLUME/FT (L): .605
E. WELL VOLUME (L) (C*D): 47.09
F. THREE WELL VOLUMES (L) (E*3): 141.28

* See Comments

Parameter	Beginning	1	2	3	4	5
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

TOTAL QUANTITY OF WATER REMOVED (L): NA

SAMPLERS: NA
SAMPLING TIME (START/END): NA
SAMPLING DATE: NA
DECONTAMINATION FLUIDS USED: NA
SAMPLE TYPE: NA
SAMPLE PRESERVATIVES: NA
SAMPLE BOTTLE IDs: NA
SAMPLE PARAMETERS: NA

COMMENTS AND OBSERVATIONS: * Unable to install pump Pipe blocked 8-10' feets below ground surface.

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Site 1 and 3
WELL I.D.: MW 210B
WELL CONDITION: good

PROJECT NUMBER: 29600471.200
WELL LOCK STATUS: no lock
WEATHER: sunny, windy, 70°F

GAUGE DATE: 6/26/96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 2.50'

GAUGE TIME: 1540
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/26/96
PURGE METHOD: low
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1544
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 41.35
B. DEPTH TO WATER (ft): 29.68
C. LIQUID DEPTH (ft) (A-B): 11.67

D. WELL VOLUME/FT (L): 0.65
E. WELL VOLUME (L) (C*D): 7.66
F. THREE WELL VOLUMES (L) (E*3): 23.0

Parameter	Beginning	1	2	3	4	5
Time (min)	1547	1551	1555	1558	1602	1605
Depth to Water (ft)	29.73	29.73	29.73	29.73	29.73	29.75
Purge Rate (L/min)	0.2L	0.2L	0.2L	0.2L	0.2L	0.2L
Volume Purged (L)	0.6L	1.4L	2.2L	2.8L	3.6L	4.2L
pH	7.44	6.46	6.13	6.01	5.82	5.80
Temperature (°C)	12.0	11.9	12.9	13.4	13.8	14.1
Conductivity (μmhos/cm)	0.144	0.146	0.152	0.150	0.146	0.156
Dissolved Oxygen (mg/L)	0.52	0.34	0.33	0.30	0.25	0.22
Turbidity (NTU)	50	29	41	55	105	87
Eh (mv)	130	86	93	94	70	54

TOTAL QUANTITY OF WATER REMOVED (L): ~~14.8L~~ 14.0L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1650/1654
SAMPLING DATE: 6/26/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:HCl, NaOH, HNO3
SAMPLE BOTTLE IDs: BN-06-SI-MW0214
SAMPLE PARAMETERS: VOAs, Total Elements, Cyanide

COMMENTS AND OBSERVATIONS:

* Contaminated water 13.8L

KB

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Site land 3		Project No.: 29600997266	Date: 6/26/96
Well ID: MW 20B		Field Personnel: KR, BA	

Parameter	6	7	8	9	10	11
Time (min.)	1608	1612	1616	1620	1624	1628
Depth to Water (ft)	29.75	29.75	29.75	29.75	29.75	29.75
Purge Rate (L/min)	0.2L	0.2L	0.2L	0.2L	0.2L	0.2L
Volume Purged (L)	4.8L	5.6L	6.4L	7.2L	8.0L	8.8L
pH	5.79	5.77	5.76	5.77	5.79	5.81
Temperature (°C)	13.9	13.7	13.6	13.4	13.4	13.4
Conductivity (μmhos/cm)	0.154	0.146	0.146	0.142	0.136	0.132
Dissolved Oxygen (mg/L)	0.18	0.16	0.15	0.15	0.14	0.13
Turbidity (NTU)	73	66	57	46	38	33
Eh (mv)	47	48	48	47	48	49

Parameter	12	13	14	15	16	17
Time (min)	1632	1636	1640	1645	1648	
Depth to Water (ft)	29.75	29.75	29.75	29.81	29.81	
Purge Rate (L/min)	0.2L	0.2L	0.2L	0.2L	0.2L	
Volume Purged (L)	9.6L	10.4L	11.2L	12.2L	12.8L	
pH	5.82	5.79	5.76	5.79	5.79	
Temperature (°C)	13.4	13.3	12.9	12.3	12.1	
Conductivity (μmhos/cm)	0.142	0.140	0.138	0.136	0.136	
Dissolved Oxygen (mg/L)	0.11	0.12	0.10	0.10	0.08	
Turbidity (NTU)	30	28	25	26	26	
Eh (mv)	49	49	50	58	59	

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Sites 1+3
WELL I.D.: MW-215R
WELL CONDITION: Good

PROJECT NUMBER: 2960047
WELL LOCK STATUS: not locked
WEATHER: Sunny, 80

GAUGE DATE: 6-19-96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 3.20

GAUGE TIME: 1514
MEASUREMENT REF: ~~PVC~~ top of pvc
WELL DIAMETER (in.): 2

PURGE DATE: 6-19-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0

PURGE TIME: 1516
FIELD PERSONNEL: TC SYC
WELL MOUTH VOCs (ppm): Start: 7 1000 15.0 End: 2 7 134

WELL VOLUME

A. WELL DEPTH (ft): 44.63
B. DEPTH TO WATER (ft): 26.38
C. LIQUID DEPTH (ft) (A-B): 18.25

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 11.04
F. THREE WELL VOLUMES (L) (E*3): 33.12

Parameter	Beginning	1	2	3	4	5
Time (min)	1516	1520	1524	1528	1532	
Depth to Water (ft)	26.38	26.61	26.61	26.61	26.61	
Purge Rate (L/min)	—	0.1	0.1	0.1	0.1	
Volume Purged (L)	—	0.4	0.8	1.2	1.6	
pH	6.17	5.56	5.50	5.53	5.54	
Temperature (°C)	11.9	12.3	12.1	12.1	13.1	
Conductivity (μmhos/cm)	0.206	0.194	0.180	0.182	0.164	
Dissolved Oxygen (mg/L)	2.68	1.41	0.62	0.52	0.50	
Turbidity (NTU)	4	4	3	4	3	
Eh (mv)	152	158	154	153	152	

TOTAL QUANTITY OF WATER REMOVED (L): 3.6

SAMPLERS: TC SYC
SAMPLING TIME (START/END): 1535
SAMPLING DATE: 6-19-96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL, NaOH, HNO3
SAMPLE BOTTLE IDs: BN-06-S1-MW008
SAMPLE PARAMETERS: VOC, metals, cyanide

COMMENTS AND OBSERVATIONS:

1.6 L of water containerized & disposed

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Sites 1+3
WELL I.D.: MW-216A
WELL CONDITION: Good

PROJECT NUMBER: 2960047
WELL LOCK STATUS: not locked
WEATHER: Sunny, 75

GAUGE DATE: 6-20-96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft):

GAUGE TIME: 1500
MEASUREMENT REF: ~~TOC~~ top of PVC
WELL DIAMETER (in.): 2

PURGE DATE: 6-20-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: 1505
FIELD PERSONNEL: TRC SYC
WELL MOUTH VOCs (ppm): Start: 9500 End: 2700

WELL VOLUME

A. WELL DEPTH (ft): 46.76 TC ~~39.65~~
B. DEPTH TO WATER (ft): 34.07
C. LIQUID DEPTH (ft) (A-B): 12.89

D. WELL VOLUME/FT (L): TC ~~3.65~~ .605
E. WELL VOLUME (L) (C*D): 7.80
F. THREE WELL VOLUMES (L) (E*3): 23.40

Parameter	Beginning	1	2	3	4	5
Time (min)	1505	1510	1514	1518	1521	1524
Depth to Water (ft)	34.07	34.31	34.31	34.31	34.31	34.31
Purge Rate (L/min)	—	0.1	0.1	0.1	0.1	0.1
Volume Purged (L)	—	0.5	0.9	1.3	1.6	1.9
pH	6.68	6.20	6.16	6.18	6.14	6.12
Temperature (°C)	12.6	12.5	13.3	14.9	15.4	15.5
Conductivity (μmhos/cm)	0.220	0.248	0.240	0.228	0.226	0.226
Dissolved Oxygen (mg/L)	1.16	1.01	1.00	1.08	1.13	1.18
Turbidity (NTU)	10	7	6	6	6	6
Eh (mv)	156	149	144	136	136	136

TOTAL QUANTITY OF WATER REMOVED (L): ~~1.9~~ TC 4L

SAMPLERS: TRC, SYC
SAMPLING TIME (START/END): 1530/1545
SAMPLING DATE: 6-20-96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL, NaOH, HNO3
SAMPLE BOTTLE IDs: BN-06-51-MW-012
SAMPLE PARAMETERS: VOC, Metals, cyanide
COMMENTS AND OBSERVATIONS:

2L contained & disposed

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Sites 1+3
WELL I.D.: MW-217A
WELL CONDITION: Good

PROJECT NUMBER: 2960047
WELL LOCK STATUS: not locked
WEATHER: Sunny, 85, breezy

GAUGE DATE: 6-20-96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 5.1

GAUGE TIME: 0845
MEASUREMENT REF: ~~TOC~~ top of PVC
WELL DIAMETER (in.): 2

PURGE DATE: 6-20-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: 0850
FIELD PERSONNEL: TC, SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 42.00
B. DEPTH TO WATER (ft): 18.50
C. LIQUID DEPTH (ft) (A-B): 23.50

D. WELL VOLUME/FT (L): 0.05
E. WELL VOLUME (L) (C*D): 14.22
F. THREE WELL VOLUMES (L) (E*3): 42.65

Parameter	Beginning	1	2	3	4	5
Time (min)	850	0855	0900	0905	0910	0915
Depth to Water (ft)	18.50	18.50	18.50	18.50	1850	18.50
Purge Rate (L/min)	—	0.2	0.2	0.2	0.2	0.2
Volume Purged (L)	—	1.0	2.0	3.0	4.0	5.0
pH	6.24	6.62	6.66	6.61	6.60	6.54
Temperature (°C)	12.9	12.3	12.3	14.9	16.1	16.5
Conductivity (μmhos/cm)	0.374	0.470	0.406	0.478	0.486	0.484
Dissolved Oxygen (mg/L)	3.96	1.56	1.06	0.89	0.75	0.74
Turbidity (NTU)	49	78	84	86	68	51
Eh (mv)	104	92	81	60	55	52

TOTAL QUANTITY OF WATER REMOVED (L): ~~40~~ Te 15 L

SAMPLERS: TC, SYC
SAMPLING TIME (START/END): 0950 / 1005
SAMPLING DATE: 6-20-96
DECONTAMINATION FLUIDS USED: None
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL, HNO_3, NaOH
SAMPLE BOTTLE IDs: BN-06-SI-MW-010 BN-06-SI-MW-XD2
SAMPLE PARAMETERS: VOC, metals cyanide
COMMENTS AND OBSERVATIONS: Duplicate sample collected

13 L of water containerized & disposed at

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Site 51-3	Project No.: 2960047	Date: 6-20-96
Well ID: MW-217A	Field Personnel: TC, SYC	

Parameter	6	7	8	9	10	11
Time (min.)	0920	0925	0930	0935	0940	0945
Depth to Water (ft)	18.50	18.50	18.50	18.50	18.51	18.51
Purge Rate (L/min)	0.2	0.2	0.2	0.2	0.2	0.2
Volume Purged (L)	6.0	7.0	8.0	9.0	10.0	11.0
pH	6.58	6.62	6.63	6.69	6.70	6.67
Temperature (°C)	16.7	16.9	17.2	17.3	17.5	17.5
Conductivity (μmhos/cm)	0.482	0.478	0.470	0.476	0.464	0.462
Dissolved Oxygen (mg/L)	0.72	0.71	0.65	0.64	0.67	0.68
Turbidity (NTU)	42	34	28	24	22	21
Eh (mv)	49	45	42	39	37	36

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Site land 3
WELL I.D.: mw 217B
WELL CONDITION: good

PROJECT NUMBER: 2960.42/1226
WELL LOCK STATUS: no lock
WEATHER: windy, partly cloudy

GAUGE DATE: 6/26/96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 2.30

GAUGE TIME: 1345
MEASUREMENT REF: Top of Pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/26/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1346
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 100 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 34.60
B. DEPTH TO WATER (ft): 24.75
C. LIQUID DEPTH (ft) (A-B): 9.85

D. WELL VOLUME/FT (L): 0.6025
E. WELL VOLUME (L) (C*D): 5.96
F. THREE WELL VOLUMES (L) (E*3): 17.88

Parameter	Beginning	1	2	3	4	5
Time (min)	1350	1354	1358	1403	1407	1411
Depth to Water (ft)	25.03	25.10	25.50	25.80	25.68	25.65
Purge Rate (L/min)	0.1L	0.1L	0.1L	0.1L	0.1L	0.1L
Volume Purged (L)	0.5L	0.9L	1.3L	1.8L	2.2L	2.6L
pH	5.58	5.77	5.82	5.84	5.87	5.94
Temperature (°C)	11.7	12.9	13.0	12.1	13.1	14.5
Conductivity (μmhos/cm)	0.740	0.780	0.894	0.892	0.920	1.024
Dissolved Oxygen (mg/L)	0.45	0.37	0.22	0.21	0.18	0.22
Turbidity (NTU)	173	167	141	213	173	170
Eh (mv)	-57	-72	-73	-71	-74	-81

TOTAL QUANTITY OF WATER REMOVED (L): 20.0L

SAMPLERS: KR, BA
SAMPLING DATE: 6/26/96
SAMPLE TYPE: Grab
SAMPLE BOTTLE IDs: BN-06-S1-MW013
SAMPLE PARAMETERS: VOAs, TCL Elements, Cyanide

SAMPLING TIME (START/END): 1443/1450
DECONTAMINATION FLUIDS USED: None
SAMPLE PRESERVATIVES: HCl, NaOH, HNO3

COMMENTS AND OBSERVATIONS:
Kept adjusting pump upto 0.1L/min. Purging groundwater from 217B.
* Contaminated water 19.82

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Site 1 and 3	Project No.: 29600.47 7200	Date: 6/26/96
Well ID: MW 217B	Field Personnel: KR, BA,	

Parameter	6	7	8	9	10	11
Time (min.)	1417	1421	1426	1430	1435	1440
Depth to Water (ft)	25.65	25.65	26.03	26.05	26.50	28.00
Purge Rate (L/min)	0.1L	0.1L	0.1L	0.1L	0.1L	1.0L
Volume Purged (L)	3.2L	3.6L	4.1L	4.5L	5.0L	10.0L
pH	5.95	6.00	6.00	5.98	6.05	6.12
Temperature (°C)	15.2	17.7	6.9	10.6	11.4	12.3
Conductivity (μmhos/cm)	1.086	1.374	1.350	1.312	1.690	1.988
Dissolved Oxygen (mg/L)	0.23	0.15	0.30	0.11	0.16	1.35
Turbidity (NTU)	145	176	333	146	207	288
Eh (mv)	-80	-92	-92	-87	-94	-82

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Site 1 and 3
WELL I.D.: MW 2.18
WELL CONDITION: good

PROJECT NUMBER: 29600.47/17.2
WELL LOCK STATUS: locked
WEATHER: sunny, partly 70°F

GAUGE DATE: 6/18/96
SOUNDING METHOD: sliquid indicator
STICK UP/DOWN (ft): 2.61

GAUGE TIME: 1250
MEASUREMENT REF: TOP of Pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/18/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1300
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 53.54
B. DEPTH TO WATER (ft): 33.92
C. LIQUID DEPTH (ft) (A-B): 19.62

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 11.87
F. THREE WELL VOLUMES (L) (E*3): 35.61

Parameter	Beginning	1	2	3	4	5
Time (min)	1303	1307	1311	1314	1317	1321
Depth to Water (ft)	37.34	37.52	37.40	37.38	38.20	38.30
Purge Rate (L/min)	.1L	.1L	.1L	.1L	.1L	.1L
Volume Purged (L)	0.3L	0.7L	1.1L	~~2.0L~~ 1.4L	1.7L	2.1L
pH	6.88	7.27	7.47	7.49	7.48	7.46
Temperature (°C)	12.9	13.3	13.9	13.9	13.8	13.5
Conductivity (µmhos/cm)	0.978	1.102	1.118	1.082	1.066	1.044
Dissolved Oxygen (mg/L)	0.76	0.61	0.57	0.59	0.61	0.62
Turbidity (NTU)	24	22	18	22	20	17
Eh (mv)	-110	-163	-176	-182	-182	-177

TOTAL QUANTITY OF WATER REMOVED (L): 6.0L

SAMPLERS: KK, BA
SAMPLING TIME (START/END): 1346/1400
SAMPLING DATE: 6/18/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl, NaOH, HNO3
SAMPLE BOTTLE IDs: BN-06-S1-MW003
SAMPLE PARAMETERS: VOCs, Cyanide, TAL metals
COMMENTS AND OBSERVATIONS: Sample 00 COX is cloudy [illegible] to Resp Fin going @ 0.1 L/min.

4.2 % water containerized & disposed

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Sigmond 3	Project No.: [illegible]	Date: 6/8/96
Well ID: MW-~~20~~ 218	Field Personnel: KR, JA	

Parameter	6	7	8	9	10	11
Time (min.)	1324	1328	1332	1336	1339	1342
Depth to Water (ft)	38.51	38.51	39.09	39.09	39.09	39.12
Purge Rate (L/min)	.1L	.1L	.1L	.1L	.1L	.1L
Volume Purged (L)	2.4L	2.8L	3.2L	3.6L	3.9L	4.2L
pH	7.45	7.46	7.47	7.48	7.48	7.48
Temperature (°C)	14.0	13.4	13.6	14.2	14.7	15.1
Conductivity (μmhos/cm)	1.002	0.990	0.988	0.976	0.972	0.978
Dissolved Oxygen (mg/L)	0.64	0.70	0.72	0.76	0.77	0.79
Turbidity (NTU)	14	11	10	9	9	8
Eh (mv)	-171	-171	-170	-168	-167	-165

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Sites 1+3
WELL I.D.: MW-219
WELL CONDITION: Good

PROJECT NUMBER: 2960047
WELL LOCK STATUS: Locked
WEATHER: Sunny, 80

GAUGE DATE: 6-18-96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 2.56

GAUGE TIME: 1250
MEASUREMENT REF: TOC
WELL DIAMETER (in.): 2

PURGE DATE: 6-18-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: ~~0256~~ 1256
FIELD PERSONNEL: TC, SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 71.82
B. DEPTH TO WATER (ft): 30.11
C. LIQUID DEPTH (ft) (A-B): 41.71

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 25.23
F. THREE WELL VOLUMES (L) (E*3): 75.69

Parameter	Beginning	1	2	3	4	5
Time (min)	1256	1300	1304	1308	1312	1316
Depth to Water (ft)	30.11	30.14	30.13	30.15	30.14	30.14
Purge Rate (L/min)	—	0.1	0.1	0.1	0.1	0.1
Volume Purged (L)	—	0.4	0.8	1.2	1.6	2.0
pH	6.68	6.54	6.50	6.45	6.44	6.43
Temperature (°C)	11.5	12.2	12.2	11.3	11.5	11.8
Conductivity (μmhos/cm)	0.098	0.082	0.124	0.096	0.096	0.098
Dissolved Oxygen (mg/L)	5.67	5.05	5.64	6.75	6.96	6.69
Turbidity (NTU)	15	24	34	109	102	77
Eh (mv)	86	84	85	89	92	95

TOTAL QUANTITY OF WATER REMOVED (L): ~~[illegible]~~ 8.4

SAMPLERS: TC, SYC
SAMPLING TIME (START/END): ~~[illegible]~~ 1400
SAMPLING DATE: 6-18-96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL, NaOH, HNO_3
SAMPLE BOTTLE IDs: BN-06-S1-MW004
SAMPLE PARAMETERS: Cyanide, metals, VOC

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Sites 1+3	Project No.: 2960047	Date: 6-18-96
Well ID: MW-219	Field Personnel: TC, SYC	

Parameter	6	7	8	9	10	11
Time (min.)	1320	1324	1328	1332	1336	1340
Depth to Water (ft)	30.15	30.15	30.15	30.15	30.15	30.15
Purge Rate (L/min)	0.1	0.1	0.1	0.1	0.1	0.1
Volume Purged (L)	2.4	2.8	3.2	3.6	4.0	4.4
pH	6.42	6.41	6.39	6.39	6.38	6.36
Temperature (°C)	11.8	11.8	11.6	11.9	11.7	11.4
Conductivity (μmhos/cm)	0.112	0.092	0.076	0.088	0.100	0.098
Dissolved Oxygen (mg/L)	6.74	6.85	6.90	6.74	7.22	7.64
Turbidity (NTU)	65	54	45	36	35	27
Eh (mv)	96	99	101	99	101	101

Parameter	12	13	14	15	16	17
Time (min)	1344	1348	1352	1356	1400	
Depth to Water (ft)	30.15	30.15	30.15	30.15	30.15	
Purge Rate (L/min)	0.1	0.1	0.1	0.1	0.1	
Volume Purged (L)	4.8	5.2	5.6	6.0	6.4	
pH	6.40	6.42	6.42	6.39	6.39	
Temperature (°C)	11.7	12.0	12.1	12.0	12.3	
Conductivity (μmhos/cm)	0.088	0.094	0.084	0.090	0.096	
Dissolved Oxygen (mg/L)	7.52	7.22	7.11	7.34	7.27	
Turbidity (NTU)	24	20	16	15	16	
Eh (mv)	97	95	96	99	98	

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Site land 3
WELL I.D.: MW 330
WELL CONDITION: good

PROJECT NUMBER: 29600.47/1720
WELL LOCK STATUS: no lock, not locked
WEATHER: overcast, humid, 70°F

GAUGE DATE: 6/19/96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 2.80' pvc flush w/ casing

GAUGE TIME: 0955
MEASUREMENT REF: top of pipe (PVC)
WELL DIAMETER (in.): 2"

PURGE DATE: 6/19/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1002
FIELD PERSONNEL: BA, KR
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 44.28
B. DEPTH TO WATER (ft): 26.90
C. LIQUID DEPTH (ft) (A-B): 17.38

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 10.64
F. THREE WELL VOLUMES (L) (E*3): 31.92

Parameter	Beginning	1	2	3	4	5
Time (min)	1006	1009	1013	1017	1021	1025
Depth to Water (ft)	26.80	26.80	26.80	26.81	26.81	26.81
Purge Rate (L/min)	.2L	.2L	.2L	.2L	.2L	.2L
Volume Purged (L)	0.8L	1.4L	2.2L	3.0L	3.8L	[illegible]
pH	6.53	6.66	6.81	6.87	6.92	6.94
Temperature (°C)	10.9	10.9	11.4	11.9	12.6	12.9
Conductivity (μmhos/cm)	0.182	0.212	0.212	0.194	0.200	0.192
Dissolved Oxygen (mg/L)	4.52	4.55	4.53	4.51	4.51	4.50
Turbidity (NTU)	66	93	48	38	22	16
Eh (mv)	111	104	97	94	92	91

TOTAL QUANTITY OF WATER REMOVED (L): 11.4L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1052/1059
SAMPLING DATE: 6/19/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl, HNO_3, NaOH
SAMPLE BOTTLE IDs: BN-06-S1-MW0007
SAMPLE PARAMETERS: VOAs, Cyanide, Tal Elements

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Site 13	Project No.: 29000.47 7286	Date: 6/19/96
Well ID: MW220	Field Personnel: KR, BA	

Parameter	6	7	8	9	10	11
Time (min.)	1029	1033	1037	1040	1043	1046
Depth to Water (ft)	26.81	26.82	26.82	26.81	26.81	26.81
Purge Rate (L/min)	.2L	.2L	.2L	.2L	.2L	.2L
Volume Purged (L)	5.4L	~~6.2L~~	7.0L	7.6L	8.2L	8.8L
pH	6.97	6.98	7.00	7.00	7.01	7.01
Temperature (°C)	13.1	13.1	13.4	13.5	13.5	13.5
Conductivity (μmhos/cm)	0.188	0.198	0.202	0.192	0.202	0.206
Dissolved Oxygen (mg/L)	4.45	4.46	4.46	4.45	4.43	4.42
Turbidity (NTU)	13	12	15	12	9	9
Eh (mv)	91	92	93	93	95	96

Parameter	12	13	14	15	16	17
Time (min)	1049					
Depth to Water (ft)	26.81					
Purge Rate (L/min)	.2L					
Volume Purged (L)	9.4L					
pH	7.02					
Temperature (°C)	13.6					
Conductivity (μmhos/cm)	0.204					
Dissolved Oxygen (mg/L)	4.42					
Turbidity (NTU)	9					
Eh (mv)	97					

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Sites 1+3
WELL I.D.: ~~MW~~-232A
WELL CONDITION: Good

PROJECT NUMBER: 2960047
WELL LOCK STATUS: not locked
WEATHER: 75°, cloudy

GAUGE DATE: 6-20-96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 1.8

GAUGE TIME: 1318
MEASUREMENT REF: ~~TOC~~ top of PVC
WELL DIAMETER (in.): 2

PURGE DATE: 6-20-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: 1315
FIELD PERSONNEL: TC SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 54.76 ~~48.41~~ TC
B. DEPTH TO WATER (ft): 34.60
C. LIQUID DEPTH (ft) (A-B): TC ~~13.81~~ 20.16

D. WELL VOLUME/FT (L): .605
E. WELL VOLUME (L) (C*D): ~~8.36~~ TC 12.20
F. THREE WELL VOLUMES (L) (E*3): ~~25.07~~ TC 36.59

Parameter	Beginning	1	2	3	4	5
Time (min)	1320	1325	1330	1335	1340	1345
Depth to Water (ft)	34.60	35.50	35.49	35.46	35.50	35.49
Purge Rate (L/min)	—	0.2	0.2	0.2	0.2	0.2
Volume Purged (L)	—	1.0	2.0	3.0	4.0	5.0
pH	8.69	7.33	6.95	6.56	6.44	6.31
Temperature (°C)	13.3	12.3	13.5	15.6	16.3	16.7
Conductivity (μmhos/cm)	0.170	0.174	0.216	0.302	0.284	0.274
Dissolved Oxygen (mg/L)	4.36	3.28	3.43	2.97	2.64	2.56
Turbidity (NTU)	18	12	12	19	13	13
Eh (mv)	10	102	121	123	120	123

TOTAL QUANTITY OF WATER REMOVED (L): ~~9~~ TC 14 L

SAMPLERS: TC, SYC
SAMPLING TIME (START/END): 1410/1425
SAMPLING DATE: 6-20-96
DECONTAMINATION FLUIDS USED: None
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL, HNO_3, NaOH
SAMPLE BOTTLE IDs: BN-06-S1-MW01R
SAMPLE PARAMETERS: VOC, Metals, Cyanide
COMMENTS AND OBSERVATIONS:

/BH

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: 29 Sites 1+3	Project No.: 2960047	Date: 6-20-96
Well ID: MW-232A	Field Personnel: TRC, SYC	

Parameter	6	7	8	9	10	11
Time (min.)	1350	1355	PB 1400	1405		
Depth to Water (ft)	35.47	35.48	35.48	35.48		
Purge Rate (L/min)	0.2	0.2	0.2	0.2		
Volume Purged (L)	6.0	7.0	8.0	9.0		
pH	6.24	6.25	6.24	6.24		
Temperature (°C)	16.9	17.1	17.3	17.2		
Conductivity (μmhos/cm)	0.322	0.326	0.324	0.324		
Dissolved Oxygen (mg/L)	2.38	2.20	2.21	2.18		
Turbidity (NTU)	11	11	12	13		
Eh (mv)	123	122	121	121		

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Site land3
WELL I.D.: MW234R
WELL CONDITION: good

PROJECT NUMBER: 29600.47/7.2a
WELL LOCK STATUS: no lock, not locked
WEATHER: sunny, breezy, 70°F

GAUGE DATE: 6/19/96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft):

GAUGE TIME: 1505
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/19/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1515
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 200 End: 250

WELL VOLUME

A. WELL DEPTH (ft): 54.85
B. DEPTH TO WATER (ft): 31.54
C. LIQUID DEPTH (ft) (A-B): 23.31

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 14.0
F. THREE WELL VOLUMES (L) (E*3): 42.30

Parameter	Beginning	1	2	3	4	5
Time (min)	1519	1522	1525	1528	1531	1535
Depth to Water (ft)	31.57	31.75	31.75	31.67	31.64	31.64
Purge Rate (L/min)	.1L	.1L	.1L	.1L	.1L	.1L
Volume Purged (L)	0.4L	0.7L	1.0L	1.3L	1.6L	2.0L
pH	6.67	6.14	5.99	5.90	5.88	5.91
Temperature (°C)	12.5	12.0	12.9	13.6	14.4	14.4
Conductivity (μmhos/cm)	0.194	0.182	0.184	0.178	0.174	0.172
Dissolved Oxygen (mg/L)	0.37	0.42	0.45	0.53	0.55	0.58
Turbidity (NTU)	13	11	11	11	10	9
Eh (mv)	177	177	174	179	175	169

TOTAL QUANTITY OF WATER REMOVED (L): 3.6L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1546/1551
SAMPLING DATE: 6/19/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl, NaOH, HNO_3
SAMPLE BOTTLE IDs: BN-06-S1-MW0009
SAMPLE PARAMETERS: VOCs, Cyanide, Total Elements

COMMENTS AND OBSERVATIONS:

JAK

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Site 1an13	Project No.: 29655.977 / 7200	Date: 6/19/96
Well ID: MW-234R	Field Personnel: KR, BA	

Parameter	6	7	8	9	10	11
Time (min.)	1538	1541				
Depth to Water (ft)	31.65	31.65				
Purge Rate (L/min)	.1L	.1L				
Volume Purged (L)	2.3L	2.6L				
pH	5.94	5.93				
Temperature (°C)	14.2	14.3				
Conductivity (μmhos/cm)	0.186	0.192				
Dissolved Oxygen (mg/L)	0.57	0.57				
Turbidity (NTU)	9	9				
Eh (mv)	163	163				

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Sites 1+3
WELL I.D.: MW-2101
WELL CONDITION: Good

PROJECT NUMBER: 2960047
WELL LOCK STATUS: not locked
WEATHER: Sunny 75

GAUGE DATE: 6-19-96
SOUNDING METHOD: slope indicator
STICK UP/DOWN (ft): 2.55

GAUGE TIME: 1020
MEASUREMENT REF: TOC
WELL DIAMETER (in.): 2

PURGE DATE: 6-19-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: 1021
FIELD PERSONNEL: TC SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 30.00
B. DEPTH TO WATER (ft): 11.51
C. LIQUID DEPTH (ft) (A-B): 18.49

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 11.19
F. THREE WELL VOLUMES (L) (E*3): 33.56

Parameter	Beginning	1	2	3	4	5
Time (min)	1021	1030	1034	1038	1042	1046
Depth to Water (ft)	11.51	11.52	11.52	11.52	11.52	11.53
Purge Rate (L/min)	—	0.15	0.15	0.15	0.15	0.15
Volume Purged (L)	—	0.6	1.2	1.8	2.4	3.2
pH	6.03	6.22	6.06	5.96	5.87	5.85
Temperature (°C)	10.9	11.7	11.5	12.2	12.9	13.7
Conductivity (µmhos/cm)	0.176	0.150	0.150	0.150	0.146	0.134
Dissolved Oxygen (mg/L)	9.21	9.14	7.72	7.30	7.36	7.67
Turbidity (NTU)	7	11	6	4	3	3
Eh (mv)	119	124	128	131	132	135

TOTAL QUANTITY OF WATER REMOVED (L): 4.2

SAMPLERS: TC SYC
SAMPLING TIME (START/END): 1100
SAMPLING DATE: 6-19-96
DECONTAMINATION FLUIDS USED: None
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL, NaOH, HNO_3
SAMPLE BOTTLE IDs: BN-06-S1-MW0106
SAMPLE PARAMETERS: VOC, metals, cyanide
COMMENTS AND OBSERVATIONS: pump shut off at 1025- added oil to generator Turned on at 1030

JA

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Sites 1+3	Project No.: 2960047	Date: 6-19-96
Well ID: MW-2101	Field Personnel: TC SYC	

Parameter	6	7	8	9	10	11
Time (min.)	1050	1054				
Depth to Water (ft)	11.53	11.53				
Purge Rate (L/min)	0.15	0.15				
Volume Purged (L)	3.6	4.2				
pH	5.82	5.79				
Temperature (°C)	14.4	15.0				
Conductivity (μmhos/cm)	0.140	0.146				
Dissolved Oxygen (mg/L)	7.68	7.53				
Turbidity (NTU)	3	3				
Eh (mv)	136	137				

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Treatment Plant
WELL I.D.: Sit land 3 Influent
WELL CONDITION: NA

PROJECT NUMBER: 29600.47/7206
WELL LOCK STATUS: NA
WEATHER: NA

GAUGE DATE: NA
SOUNDING METHOD: NA
STICK UP/DOWN (ft): NA

GAUGE TIME: NA
MEASUREMENT REF: NA
WELL DIAMETER (in.): NA

PURGE DATE: NA
PURGE METHOD: NA
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: NA
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): NA
B. DEPTH TO WATER (ft): NA
C. LIQUID DEPTH (ft) (A-B): NA

D. WELL VOLUME/FT (L): NA
E. WELL VOLUME (L) (C*D): NA
F. THREE WELL VOLUMES (L) (E*3): NA

Parameter	Beginning	1	2	3	4	5
Time (min)	1248					
Depth to Water (ft)	NA					
Purge Rate (L/min)	NA					
Volume Purged (L)	NA					
pH	5.79					
Temperature (°C)	13.2					
Conductivity (μmhos/cm)	0.734					
Dissolved Oxygen (mg/L)	1.25					
Turbidity (NTU)	-2					
Eh (mv)	-27					

TOTAL QUANTITY OF WATER REMOVED (L): NA

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1255
SAMPLING DATE: 6/27/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl, NaOH, HNO_3
SAMPLE BOTTLE IDs: BN-06-31-RI 003
SAMPLE PARAMETERS: VOAS, Cyanide, Total Elements

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW 105A
WELL CONDITION: good

PROJECT NUMBER: 2960.47/172cc
WELL LOCK STATUS: lock, but not locked
WEATHER: sunny, warm, 80°F

GAUGE DATE: 6/25/96
SOUNDING METHOD: slope indicator
STICK UP/DOWN (ft): 3.17'

GAUGE TIME: 1345
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/25/96
PURGE METHOD: low flow-peristaltic
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 13:50
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 46.87
B. DEPTH TO WATER (ft): 1.82
C. LIQUID DEPTH (ft) (A-B): 45.05

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 27.26
F. THREE WELL VOLUMES (L) (E*3): 81.78

Parameter	Beginning	1	2	3	4	5
Time (min)	1353	1356	1359	1403	1407	1410
Depth to Water (ft)	1.91	1.92	1.92	1.93	1.95	1.95
Purge Rate (L/min)	1.0L	1.0L	1.0L	1.0L	1.0L	1.0L
Volume Purged (L)	3.0L	6.0L	9.0L	13.0L	17.0L	20.0L
pH	6.98	6.72	6.52	6.44	6.45	6.46
Temperature (°C)	9.3	9.1	9.1	9.1	9.0	9.0
Conductivity (μmhos/cm)	0.054	0.050	0.050	0.048	0.048	0.048
Dissolved Oxygen (mg/L)	10.92	11.14	11.18	11.08	11.12	11.11
Turbidity (NTU)	7	14	32	48	86	91
Eh (mv)	71	82	95	102	104	107

TOTAL QUANTITY OF WATER REMOVED (L): 26.0L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1415/1416

SAMPLING DATE: 6/25/96
DECONTAMINATION FLUIDS USED: none

SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1.1 HCl

SAMPLE BOTTLE IDs: BN-06-EP-MW036

SAMPLE PARAMETERS: VOAs

COMMENTS AND OBSERVATIONS: Had peristaltic pump set to lowest setting possible. Tube had air in it, couldn't control it.

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eastern Plume	Project No.: 29600.90 H206	Date: 6/25/96
Well ID: MW 105A	Field Personnel: KR, BA	

Parameter	6	7	8	9	10	11
Time (min.)	1413					
Depth to Water (ft)	1.94					
Purge Rate (L/min)	1.0L					
Volume Purged (L)	23.0L					
pH	6.47					
Temperature (°C)	8.9					
Conductivity (μmhos/cm)	0.048					
Dissolved Oxygen (mg/L)	11.18					
Turbidity (NTU)	106					
Eh (mv)	108					

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW-105B
WELL CONDITION: good

PROJECT NUMBER: 2960047
WELL LOCK STATUS: locked
WEATHER: Sunny, 80

GAUGE DATE: 6-24-96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 3.20

GAUGE TIME: 1133
MEASUREMENT REF: to ~~TOC~~ top of pipe
WELL DIAMETER (in.): 2

PURGE DATE: 6-24-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: 1135
FIELD PERSONNEL: TRC, SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 46.87
B. DEPTH TO WATER (ft): 7.68
C. LIQUID DEPTH (ft) (A-B): 39.19

D. WELL VOLUME/FT (L): .605
E. WELL VOLUME (L) (C*D): 23.71
F. THREE WELL VOLUMES (L) (E*3): 71.13

Parameter	Beginning	1	2	3	4	5
Time (min)	1135	1140	1145	1150	1155	1158
Depth to Water (ft)	7.68	7.77	7.75	7.75	7.75	7.72
Purge Rate (L/min)	—	0.2	0.2	0.2	0.2	0.2
Volume Purged (L)	—	1.0	2.0	3.0	4.0	4.6
pH	9.69	8.74	8.46	8.31	8.08	7.98
Temperature (°C)	11.1	11.3	11.6	13.6	16.2	16.2
Conductivity (μmhos/cm)	0.064	0.050	0.040	0.052	0.054	0.052
Dissolved Oxygen (mg/L)	9.80	8.58	7.90	8.83	7.81	8.31
Turbidity (NTU)	20	19	16	16	20	23
Eh (mv)	14	33	52	63	84	92

TOTAL QUANTITY OF WATER REMOVED (L): 6

SAMPLERS: TRC, SYC
SAMPLING TIME (START/END): 1205

SAMPLING DATE: 6/24/96
DECONTAMINATION FLUIDS USED: none

SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL

SAMPLE BOTTLE IDs: BN-06-EP-MW020

SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eastern Plume	Project No.: 2960047	Date: 6-24-96
Well ID: MW-105B	Field Personnel: TRC, SYC	

Parameter	6	7	8	9	10	11
Time (min.)	1201	1204				
Depth to Water (ft)	7.72	7.72				
Purge Rate (L/min)	0.2	0.2				
Volume Purged (L)	5.2	5.8				
pH	7.88	7.80				
Temperature (°C)	16.2	16.8				
Conductivity (μmhos/cm)	0.050	0.050				
Dissolved Oxygen (mg/L)	8.25	8.16				
Turbidity (NTU)	29	31				
Eh (mv)	96	100				

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW 106
WELL CONDITION: good

PROJECT NUMBER: 29600471.026
WELL LOCK STATUS: locked
WEATHER: rainy, cool, 55°F

GAUGE DATE: 6/21/96
SOUNDING METHOD: slope indicator
STICK UP/DOWN (ft): 3.70

GAUGE TIME: 1355
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/21/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1400
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 37.27
B. DEPTH TO WATER (ft): 22.42
C. LIQUID DEPTH (ft) (A-B): 14.85

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 8.98
F. THREE WELL VOLUMES (L) (E*3): 26.94

Parameter	Beginning	1	2	3	4	5
Time (min)	1404	1407	1410	1413	1416	1419
Depth to Water (ft)	22.32	22.32	22.40	22.40	22.40	22.40
Purge Rate (L/min)	0.3L	0.3L	0.3L	0.3L	0.3L	0.3L
Volume Purged (L)	1.2L	2.1L	3.0L	3.9L	4.8L	5.7L
pH	7.10	6.85	6.68	6.47	6.30	6.13
Temperature (°C)	8.2	8.8	9.9	10.6	10.9	10.8
Conductivity (μmhos/cm)	0.076	0.060	0.060	0.070	0.069	0.068
Dissolved Oxygen (mg/L)	9.36	9.28	9.28	9.26	9.21	9.22
Turbidity (NTU)	6	4	3	4	4	5
Eh (mv)	165	177	181	190	195	200

TOTAL QUANTITY OF WATER REMOVED (L): 8.4 L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1425 / 1428
SAMPLING DATE: 06/21/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl
SAMPLE BOTTLE IDs: BN-06-EP-MW011
SAMPLE PARAMETERS: VOAS

COMMENTS AND OBSERVATIONS:

* Water was contained. 8L Disposed

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW-205
WELL CONDITION: Good

PROJECT NUMBER: 2960047 7206
WELL LOCK STATUS: Locked
WEATHER: Sunny, 75

GAUGE DATE: 6/24/96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 1.94'

GAUGE TIME: 0918
MEASUREMENT REF: ~~TOC~~ top of pipe
WELL DIAMETER (in.): 2

PURGE DATE: 6/24/96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: ~~0942~~ 0920
FIELD PERSONNEL: TRC SYC
WELL MOUTH VOCs (ppm): Start: 7.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 78.77
B. DEPTH TO WATER (ft): 23.10
C. LIQUID DEPTH (ft) (A-B): 55.67

D. WELL VOLUME/FT (L): .605
E. WELL VOLUME (L) (C*D): 33.69
F. THREE WELL VOLUMES (L) (E*3): 101.07

Parameter	Beginning	1	2	3	4	5
Time (min)	0920	0925	0930	0935	0940	0945
Depth to Water (ft)	23.16	23.27	23.30	23.30	23.30	23.30
Purge Rate (L/min)	—	0.1	0.1	0.1	0.1	0.1
Volume Purged (L)	—	0.5	1.0	1.5	2.0	2.5
pH	5.62	6.76	6.80	6.85	7.05	7.40
Temperature (°C)	9.6	9.8	9.5	9.6	10.0	10.4
Conductivity (μmhos/cm)	0.160	0.178	0.170	0.200	0.190	0.238
Dissolved Oxygen (mg/L)	5.81	3.52	1.58	0.92	0.87	0.87
Turbidity (NTU)	4	16	96	110	95	81
Eh (mv)	118	97	89	85	75	59

TOTAL QUANTITY OF WATER REMOVED (L): 11.5

SAMPLERS: TRC SYC
SAMPLING TIME (START/END): 1115
SAMPLING DATE: 6/24/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-06-EP-MW018
SAMPLE PARAMETERS: VOC
COMMENTS AND OBSERVATIONS: Duplicate sample BN-06-EP-MW003

Contaminated water 11.3L

pd

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eastern Plume	Project No.: 2960047	Date: 6-24-96
Well ID: MW-205	Field Personnel: TRC, SYC	

Parameter	6	7	8	9	10	11
Time (min.)	0950	0955	1000	1005	1010	1015
Depth to Water (ft)	23.30	23.30	23.30	23.30	23.30	23.30
Purge Rate (L/min)	0.1	0.1	0.1	0.1	0.1	0.1
Volume Purged (L)	3.0	3.5	4.0	4.5	5.0	5.5
pH	7.93	8.14	8.34	8.50	8.69	8.84
Temperature (°C)	10.8	10.9	11.1	11.3	11.6	11.5
Conductivity (μmhos/cm)	0.196	0.210	0.214	0.206	0.204	0.206
Dissolved Oxygen (mg/L)	0.87	0.87	0.89	0.87	0.85	0.81
Turbidity (NTU)	64	61	55	51	45	43
Eh (mv)	41	35	27	21	14	7

Parameter	12	13	14	15	16	17
Time (min)	1020	1025	1030	1035	1040	1045
Depth to Water (ft)	23.30	23.30	23.30	23.30	23.30	23.30
Purge Rate (L/min)	0.1	0.1	0.1	0.1	0.1	0.1
Volume Purged (L)	6.0	6.5	7.0	7.5	8.0	8.5
pH	8.91	8.96	9.02	9.05	9.06	9.05
Temperature (°C)	11.5	11.4	11.6	12.0	12.1	12.0
Conductivity (μmhos/cm)	0.204	0.210	0.218	0.216	0.216	0.212
Dissolved Oxygen (mg/L)	0.80	0.81	0.79	0.77	0.75	0.74
Turbidity (NTU)	42	40	39	37	35	34
Eh (mv)	4	1	-2	-5	-9	-12

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eastern Plume	Project No.: 2960047	Date: 6-24-96
Well ID: MW-205	Field Personnel: TRC, SYC	

Parameter	6	7	8	9	10	11
Time (min.)	1050	1055	1100	1105		
Depth to Water (ft)	23.30	23.30	23.30	23.30		
Purge Rate (L/min)	0.1	0.1	0.1	0.1		
Volume Purged (L)	9.0	9.5	10.0	10.5		
pH	9.04	9.03	9.02	9.00		
Temperature (°C)	12.0	12.2	12.4	12.5		
Conductivity (μmhos/cm)	0.220	0.226	0.222	0.230		
Dissolved Oxygen (mg/L)	0.73	0.74	0.73	0.71		
Turbidity (NTU)	33	33	33	33		
Eh (mv)	-15	-19	-22	-25		

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW-206A
WELL CONDITION: Good

PROJECT NUMBER: 29600471
WELL LOCK STATUS: locked
WEATHER: overcast, 65

GAUGE DATE: 6-24-96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 2.40

GAUGE TIME: 1403
MEASUREMENT REF: to ~~TOC~~ top of pipe
WELL DIAMETER (in.): 2

PURGE DATE: 6-24-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: 1405
FIELD PERSONNEL: TRC, SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 74.36
B. DEPTH TO WATER (ft): 18.21
C. LIQUID DEPTH (ft) (A-B): 56.15

D. WELL VOLUME/FT (L): .605
E. WELL VOLUME (L) (C*D): 33.97
F. THREE WELL VOLUMES (L) (E*3): 101.91

Parameter	Beginning	1	2	3	4	5
Time (min)	1405	1410	1415	1420	1425	1428
Depth to Water (ft)	18.21	18.30	18.30	18.30	18.30	18.30
Purge Rate (L/min)	—	0.3	0.3	0.3	0.3	0.3
Volume Purged (L)	—	1.5	3.0	4.5	6.0	6.9
pH	8.91	7.83	7.56	7.37	7.28	7.23
Temperature (°C)	9.1	9.4	9.3	9.3	9.5	9.6
Conductivity (μmhos/cm)	0.094	0.098	0.094	0.094	0.092	0.098
Dissolved Oxygen (mg/L)	9.82	7.65	7.55	7.37	7.38	7.43
Turbidity (NTU)	0	6	11	7	6	5
Eh (mv)	89	98	101	101	99	100

TOTAL QUANTITY OF WATER REMOVED (L): 7.5

SAMPLERS: TRC, SYC
SAMPLING TIME (START/END): 1430
SAMPLING DATE: 6-24-96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-06-EP-MW-022
SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS:

Containing water ~ 7.3L

BTV

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW-206B
WELL CONDITION: Good

PROJECT NUMBER: 2960047
WELL LOCK STATUS: locked
WEATHER: overcast 65

GAUGE DATE: 6-24-96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 2.40

GAUGE TIME: 1430
MEASUREMENT REF: ~~tc~~ top of pipe
WELL DIAMETER (in.): 2

PURGE DATE: 6-24-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: 1431
FIELD PERSONNEL: TRC SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 27.17
B. DEPTH TO WATER (ft): 18.56
C. LIQUID DEPTH (ft) (A-B): ~~27.17~~ TC 8.61

D. WELL VOLUME/FT (L): .605
E. WELL VOLUME (L) (C*D): 5.21
F. THREE WELL VOLUMES (L) (E*3): 15.63

Parameter	Beginning	1	2	3	4	5
Time (min)	1431	1436	1439	1442	1445	
Depth to Water (ft)	18.56	18.56	18.56	18.56	18.56	
Purge Rate (L/min)	—	0.1	0.1	0.1	0.1	
Volume Purged (L)	—	0.5	0.8	1.2	1.5	
pH	7.29	7.15	7.10	7.01	6.95	
Temperature (°C)	7.8	9.0	9.3	9.6	9.7	
Conductivity (µmhos/cm)	0.082	0.086	0.088	0.084	0.084	
Dissolved Oxygen (mg/L)	11.65	9.65	8.93	9.07	9.06	
Turbidity (NTU)	4	1	1	1	1	
Eh (mv)	87	113	119	124	127	

TOTAL QUANTITY OF WATER REMOVED (L): 2.5

SAMPLERS: TRC SYC
SAMPLING TIME (START/END): 1455

SAMPLING DATE: 6/24/96
DECONTAMINATION FLUIDS USED: none

SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL

SAMPLE BOTTLE IDs: BN-06 EP-MW 024

SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW 207 A
WELL CONDITION: good

PROJECT NUMBER: 29600.07/0200
WELL LOCK STATUS: locked
WEATHER: Partly cloudy, 70°F

GAUGE DATE: 6/24/96
SOUNDING METHOD: steel measuring tape
STICK UP/DOWN (ft): 2.50'

GAUGE TIME: 1058
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/24/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1100
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 73.22
B. DEPTH TO WATER (ft): 0.00
C. LIQUID DEPTH (ft) (A-B): 73.22

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 44.30
F. THREE WELL VOLUMES (L) (E*3): 132.90

Parameter	Beginning	1	2	3	4	5
Time (min)	1103	1107	1111	1115	1118	1121
Depth to Water (ft) 2.04	~~2.04~~	2.07	2.07	2.16	2.19	2.15
Purge Rate (L/min)	2.0L	2.0L	2.0L	2.0L	2.0L	2.0L
Volume Purged (L)	~~2~~ 6.0L	14.0L	22.0L	30.0L	36.0L	42.0L
pH	5.96	6.12	6.22	6.33	6.36	6.40
Temperature (°C)	8.2	8.4	8.4	8.5	8.5	8.5
Conductivity (µmhos/cm)	0.184	0.186	0.178	0.182	0.184	0.182
Dissolved Oxygen (mg/L)	0.29	0.28	0.26	0.27	0.26	0.26
Turbidity (NTU)	111	42	42	9	7	5
Eh (mv)	99	98	98	99	100	102

TOTAL QUANTITY OF WATER REMOVED (L): 48.0L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1123 / 1124
SAMPLING DATE: 6/24/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl
SAMPLE BOTTLE IDs: 3N-06-EP-MW021
SAMPLE PARAMETERS: VOAs

COMMENTS AND OBSERVATIONS: Artesian well, H00 pump set to the lowest possible flow

* contaminated water 47.8L

BA ✓

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW 207A B
WELL CONDITION: good
PROJECT NUMBER: 2960047/1206
WELL LOCK STATUS: locked
WEATHER: Partly cloudy, 70°F

GAUGE DATE: 6/24/96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 2.00'
GAUGE TIME: 1018
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/24/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0
PURGE TIME: 1030
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 9.01
B. DEPTH TO WATER (ft): 6.26
C. LIQUID DEPTH (ft) (A-B): 2.75
D. WELL VOLUME/FT (L): 0.665
E. WELL VOLUME (L) (C*D): 1.66
F. THREE WELL VOLUMES (L) (E*3): 4.98

Parameter	Beginning	1	2	3	4	5
Time (min)	1033	1037	1041	1044	1047	1050
Depth to Water (ft)	6.80	6.90	6.95	6.96	6.86	6.85
Purge Rate (L/min)	0.2L	0.2L	0.2L	0.2L	0.2L	0.2L
Volume Purged (L)	0.6L	1.4L	2.2L	2.8L	3.4L	4.0L
pH	6.24	6.07	5.90	5.91	5.86	5.82
Temperature (°C)	10.3	10.4	11.4	11.5	11.6	11.9
Conductivity (μmhos/cm)	0.088	0.124	0.140	0.144	0.146	0.150
Dissolved Oxygen (mg/L)	0.89	2.49	3.60	3.81	4.04	3.94
Turbidity (NTU)	46	18	10	9	8	8
Eh (mv)	54	16	33	39	47	50

TOTAL QUANTITY OF WATER REMOVED (L): 5.0L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1054/1055
SAMPLING DATE: 6/24/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl
SAMPLE BOTTLE IDs: BN-06-EP-M0019
SAMPLE PARAMETERS: VOAS

COMMENTS AND OBSERVATIONS: * Put pump into well removed it when done 4.8L + Contaminated water + Turned pump slightly to clear turbidity, then turned down.

BA

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW 208
WELL CONDITION: good

PROJECT NUMBER: 29600.47/7206
WELL LOCK STATUS: locked
WEATHER: rainy, cool, 55°F

GAUGE DATE: 6/21/96
SOUNDING METHOD: slope indicator
STICK UP/DOWN (ft): 1.75

GAUGE TIME: 1312
MEASUREMENT REF: ~~top of pipe~~
WELL DIAMETER (in.): 2"

PURGE DATE: 6/21/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1315
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 103.33 ~~21.40~~ KR
B. DEPTH TO WATER (ft): 20.31
C. LIQUID DEPTH (ft) (A-B): 83.02

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 50.23
F. THREE WELL VOLUMES (L) (E*3): 150.69

Parameter	Beginning	1	2	3	4	5
Time (min)	1318	1321	1325	1329	1333	1337
Depth to Water (ft)	21.40	21.40	21.38	21.38	21.38	21.31
Purge Rate (L/min)	0.2L	0.2L	0.2L	0.2L	0.2L	0.2L
Volume Purged (L)	0.6L	1.2L	2.0L	2.8L	3.6L	4.4L
pH	6.67	6.66	6.68	6.78	6.85	6.92
Temperature (°C)	8.0	7.8	7.9	8.1	8.3	8.4
Conductivity (μmhos/cm)	0.148	0.144	0.144	0.144	0.146	0.142
Dissolved Oxygen (mg/L)	3.00	1.63	0.64	0.45	0.38	0.32
Turbidity (NTU)	14	35	43	42	40	38
Eh (mv)	190	186	180	172	166	161

TOTAL QUANTITY OF WATER REMOVED (L): 8.0L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1351 / 1355
SAMPLING DATE: 6/21/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl
SAMPLE BOTTLE IDs: BN-06-EP-MW009
SAMPLE PARAMETERS: VOAs

COMMENTS AND OBSERVATIONS: Duplicate are here, BN-06-EP-~~MW009~~ MWXD2
*Water was contained for this well. 7.82 disposed

KR

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eooten Plume	Project No.: 29600247.7206	Date: 6/21/96
Well ID: MW208	Field Personnel: KR, BA	

Parameter	6	7	8	9	10	11
Time (min.)	1341	1344	1347			
Depth to Water (ft)	21.31	21.31	21.31			
Purge Rate (L/min)	0.2L	0.2L	0.2L			
Volume Purged (L)	5.2L	5.8L	6.4L			
pH	7.00	7.06	7.10			
Temperature (°C)	8.6	8.7	8.7			
Conductivity (μmhos/cm)	0.142	0.148	0.148			
Dissolved Oxygen (mg/L)	0.29	0.28	0.26			
Turbidity (NTU)	43	41	42			
Eh (mv)	154	149	146			

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW-209
WELL CONDITION: good

PROJECT NUMBER: 2960047
WELL LOCK STATUS: locked
WEATHER: rainy, 60

GAUGE DATE: 6-21-96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 1.90

GAUGE TIME: ~1428
MEASUREMENT REF: ~~PVC~~ Top of PVC
WELL DIAMETER (in.): 2

PURGE DATE: 6-21-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 00

PURGE TIME: 1430
FIELD PERSONNEL: TRC, SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 32.38
B. DEPTH TO WATER (ft): 24.91
C. LIQUID DEPTH (ft) (A-B): 7.47

D. WELL VOLUME/FT (L): 0.65
E. WELL VOLUME (L) (C*D): 4.52
F. THREE WELL VOLUMES (L) (E*3): 13.56

Parameter	Beginning	1	2	3	4	5
Time (min)	1430	1434	1437	1440	1445	1450
Depth to Water (ft)	24.91	24.95	24.95	24.95	24.95	24.95
Purge Rate (L/min)	—	0.1	0.1	0.1	0.1	0.1
Volume Purged (L)	—	0.4	0.7	1.0	1.5	2.0
pH	6.28	6.22	6.14	6.05	6.08	6.05
Temperature (°C)	7.6	7.9	7.9	8.9	11.2	14.3
Conductivity (µmhos/cm)	0.050	0.044	0.044	0.042	0.044	0.050
Dissolved Oxygen (mg/L)	9.85	9.86	9.87	9.59	9.72	8.60
Turbidity (NTU)	56	47	88	55	34	31
Eh (mv)	114	121	126	128	128	125

TOTAL QUANTITY OF WATER REMOVED (L): 4.6

SAMPLERS: TRC, SYC
SAMPLING TIME (START/END): 1515

SAMPLING DATE: 6-21-96
DECONTAMINATION FLUIDS USED: none

SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL

SAMPLE BOTTLE IDs: BN-06-EPMW014

SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS: Had 6 steady readings for water level. Other slope indicator probe, so the other team borrowed. Assumed depth to water would be the same. When the depth to water was measured at 1510 it was 30.25 ft. Flow of water from flow cell was not constant (spurting). Assumed water was pumped to top of pump. Allowed well to recharge. Sampled

18

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eastern Plume	Project No.: 2960047	Date: 6-21-96
Well ID: MW-209	Field Personnel: TRC, SYC	

Parameter	6	7	8	9	10	11
Time (min.)	1455	1500	1505			
Depth to Water (ft)	24.95	24.95	24.95			
Purge Rate (L/min)	0.1	0.1	0.1			
Volume Purged (L)	2.5	3.0	3.5			
pH	5.95	5.99	5.96			
Temperature (°C)	14.2	14.6	14.6			
Conductivity (μmhos/cm)	0.046	0.044	0.046			
Dissolved Oxygen (mg/L)	8.69	9.56	9.47			
Turbidity (NTU)	42	37	43			
Eh (mv)	128	129	125			

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW-222
WELL CONDITION: Good

PROJECT NUMBER: 2960047
WELL LOCK STATUS: locked
WEATHER: 60, rainy

GAUGE DATE: 6-21-96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 3.00

GAUGE TIME: 1347
MEASUREMENT REF: ~~Bl TOC~~ top of PVC
WELL DIAMETER (in.): 2

PURGE DATE: 6-21-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: 1349
FIELD PERSONNEL: TRC, SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 45.34
B. DEPTH TO WATER (ft): 26.55
C. LIQUID DEPTH (ft) (A-B): 18.79

D. WELL VOLUME/FT (L): .605
E. WELL VOLUME (L) (C*D): 11.37
F. THREE WELL VOLUMES (L) (E*3): 34.10

Parameter	Beginning	1	2	3	4	5
Time (min)	1349	1352	1357	1401	1405	1408
Depth to Water (ft)	26.55	26.56	26.56	26.56	26.56	26.56
Purge Rate (L/min)	—	0.1	0.1	0.1	0.1	0.1
Volume Purged (L)	—	0.3	0.8	1.2	1.6	1.9
pH	6.42	6.29	6.17	6.16	6.14	6.11
Temperature (°C)	7.8	8.2	8.1	8.2	11.2	12.0
Conductivity (μmhos/cm)	0.074	0.070	0.068	0.072	0.070	0.070
Dissolved Oxygen (mg/L)	10.64	9.92	9.59	9.66	9.42	9.41
Turbidity (NTU)	17	29	16	8	6	5
Eh (mv)	97	108	116	116	116	117

TOTAL QUANTITY OF WATER REMOVED (L): 2.6

SAMPLERS: TRC, SYC
SAMPLING TIME (START/END): 1415
SAMPLING DATE: 6-21-96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-06-EP-MW-012
SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Sites 1+3	Project No.: 2960047	Date: 6-21-96
Well ID: MW-222	Field Personnel: TC, SYC	

Parameter	6	7	8	9	10	11
Time (min.)	1411	1414				
Depth to Water (ft)	26.56	26.56				
Purge Rate (L/min)	0.1	0.1				
Volume Purged (L)	2.2	2.5				
pH	6.09	6.07				
Temperature (°C)	12.3	12.6				
Conductivity (μmhos/cm)	0.078	0.078				
Dissolved Oxygen (mg/L)	9.71	9.71				
Turbidity (NTU)	5	4				
Eh (mv)	117	119				

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW 223
WELL CONDITION: good

PROJECT NUMBER: 2960.47/72CL
WELL LOCK STATUS: locked
WEATHER: rainy, cool, 55°F

GAUGE DATE: 6/21/96
SOUNDING METHOD: sloped indicator
STICK UP/DOWN (ft): 2.20

GAUGE TIME: 1435
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/21/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1441
FIELD PERSONNEL: KK, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 42.41
B. DEPTH TO WATER (ft): 22.45
C. LIQUID DEPTH (ft) (A-B): 20.16

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 12.20
F. THREE WELL VOLUMES (L) (E*3): 36.60

Parameter	Beginning	1	2	3	4	5
Time (min)	1445	1448	1451	1454	1457	1500
Depth to Water (ft)	24.45	24.45	24.46	24.46	24.46	24.51
Purge Rate (L/min)	0.3L	0.3L	0.3L	0.3L	0.3L	0.3L
Volume Purged (L)	1.2L	2.1L	3.0L	3.9L	4.8L	5.7L
pH	5.97	5.82	5.80	5.80	5.78	5.75
Temperature (°C)	7.9	8.1	9.4	10.3	10.4	10.5
Conductivity (μmhos/cm)	0.074	0.084	0.082	0.074	0.076	~~0.074~~ 0.074
Dissolved Oxygen (mg/L)	8.97	8.94	8.92	8.96	9.11	9.13
Turbidity (NTU)	4	3	2	1	1	1
Eh (mv)	207	199	188	189	191	194

TOTAL QUANTITY OF WATER REMOVED (L): ~~7.8L~~ 8.1L

SAMPLERS: KK, BA
SAMPLING DATE: 6/21/96
SAMPLE TYPE: Grab
SAMPLE BOTTLE IDs: BN-06-EP-MW013
SAMPLE PARAMETERS: VOAS

SAMPLING TIME (START/END): 1505/1508
DECONTAMINATION FLUIDS USED: none
SAMPLE PRESERVATIVES: 1:1 HCl

COMMENTS AND OBSERVATIONS:

* Water was contained. 7L Disposed

KK

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW-224
WELL CONDITION: Good

PROJECT NUMBER: 2960047
WELL LOCK STATUS: locked
WEATHER: rainy, 60

GAUGE DATE: 6-21-96
SOUNDING METHOD: Slope navigator
STICK UP/DOWN (ft): 2.55

GAUGE TIME: 1310
MEASUREMENT REF: ~~TOCM~~ top of PVC
WELL DIAMETER (in.): 2

PURGE DATE: 6-21-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: 1314
FIELD PERSONNEL: TRC SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 46.95
B. DEPTH TO WATER (ft): 25.56
C. LIQUID DEPTH (ft) (A-B): 21.39

D. WELL VOLUME/FT (L): .605
E. WELL VOLUME (L) (C*D): 12.94
F. THREE WELL VOLUMES (L) (E*3): 38.82

Parameter	Beginning	1	2	3	4	5
Time (min)	1314	1318	1322	1326	1328	1330
Depth to Water (ft)	25.56	25.60	25.60	25.60	25.60	25.60
Purge Rate (L/min)	—	0.1	0.1	0.1	0.1	0.1
Volume Purged (L)	—	0.4	0.8	1.2	1.5	1.8
pH	7.50	6.81	6.57	6.32	6.20	6.10
Temperature (°C)	8.2	8.7	9.2	9.5	9.6	9.8
Conductivity (μmhos/cm)	0.138	0.136	0.130	0.136	0.138	0.132
Dissolved Oxygen (mg/L)	8.24	6.76	6.68	6.69	6.64	6.70
Turbidity (NTU)	3	1	1	1	1	1
Eh (mv)	53	89	100	107	110	111

TOTAL QUANTITY OF WATER REMOVED (L): 2.3

SAMPLERS: TRC, SYC
SAMPLING TIME (START/END): 1335
SAMPLING DATE: 6-21-96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-06-EP-MW010
SAMPLE PARAMETERS: VOC
COMMENTS AND OBSERVATIONS: collected water in drum ~ 2 liters

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Ecoten Plume
WELL I.D.: MW 225A
WELL CONDITION: good

PROJECT NUMBER: 29600.47/7206
WELL LOCK STATUS: locked
WEATHER: overcast, cool, 60°F

GAUGE DATE: 6/21/96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 2.81

GAUGE TIME: 1538
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/21/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1541
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 76.03
B. DEPTH TO WATER (ft): 18.73
C. LIQUID DEPTH (ft) (A-B): 57.30

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 34.67
F. THREE WELL VOLUMES (L) (E*3): 104.01

Parameter	Beginning	1	2	3	4	5
Time (min)	1544	1548	1552	1556	1600	1604
Depth to Water (ft)	18.79	18.79	18.81	18.81	18.89	18.89
Purge Rate (L/min)	0.2L	0.2L	0.2L	0.2L	0.2L	0.2L
Volume Purged (L)	0.6L	1.4L	2.2L	3.0L	3.8L	4.6L
pH	5.97	5.85	5.88	6.01	6.06	6.05
Temperature (°C)	8.5	8.5	8.9	9.4	9.5	9.1
Conductivity (μmhos/cm)	0.132	0.136	0.128	0.130	0.136	0.134
Dissolved Oxygen (mg/L)	3.51	2.52	2.50	2.59	2.70	2.77
Turbidity (NTU)	82	38	27	23	21	20
Eh (mv)	199	191	184	177	177	177

TOTAL QUANTITY OF WATER REMOVED (L): 7.0L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1614 / 1616
SAMPLING DATE: 6/21/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl
SAMPLE BOTTLE IDs: BN-06-EP-MW015
SAMPLE PARAMETERS: VOAs

COMMENTS AND OBSERVATIONS:
Contaminated water disposed of 6.5 L

KR

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name:	Eastern Plume	Project No.: 29-00-47/7200	Date: 6/21/96
Well ID:	MW 225A	Field Personnel:	KR, BA

Parameter	6	7	8	9	10	11
Time (min.)	1608	1611				
Depth to Water (ft)	18.79	18.79				
Purge Rate (L/min)	0.2L	0.2L				
Volume Purged (L)	5.4L	6.0L				
pH	6.02	6.02				
Temperature (°C)	9.2	9.3				
Conductivity (μmhos/cm)	0.130	0.128				
Dissolved Oxygen (mg/L)	2.81	2.85				
Turbidity (NTU)	20	20				
Eh (mv)	177	176				

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Easton Plume
WELL I.D.: MW225A/B
WELL CONDITION: good

PROJECT NUMBER: 29600.49.17266
WELL LOCK STATUS: locked
WEATHER: Partly sunny, 70°F

GAUGE DATE: 6/24/96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 2.35'

GAUGE TIME: 0913
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/24/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 0915
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 42.00 ~~76.03~~
B. DEPTH TO WATER (ft): 20.03
C. LIQUID DEPTH (ft) (A-B): ~~56.00~~ 21.97

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): ~~33.12~~ 13.29
F. THREE WELL VOLUMES (L) (E*3): ~~101.46~~ 39.87

Parameter	Beginning	1	2	3	4	5
Time (min)	0919	0922	0925	0928	0931	0934
Depth to Water (ft)	20.10	20.10	20.10	20.03	20.03	20.03
Purge Rate (L/min)	0.2L	0.2L	0.2L	0.2L	0.2L	0.2L
Volume Purged (L)	0.8L	1.4L	2.0L	2.6L	3.2L	3.8L
pH	6.66	6.32	6.07	5.97	5.88	5.85
Temperature (°C)	9.4	9.7	9.8	10.0	10.5	10.9
Conductivity (μmhos/cm)	0.050	0.050	0.056	0.052	0.052	0.052
Dissolved Oxygen (mg/L)	11.71	11.32	11.31	11.28	11.18	11.15
Turbidity (NTU)	13	9	8	7	6	6
Eh (mv)	159	161	162	163	164	164

TOTAL QUANTITY OF WATER REMOVED (L): 5.0L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 0936/0940
SAMPLING DATE: 6/24/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl
SAMPLE BOTTLE IDs: BN-06-EP-MW017
SAMPLE PARAMETERS: VOAs

COMMENTS AND OBSERVATIONS: MS/MSD done here! Had to turn pump upsightly to sample well.
* Contaminated water 4.6

KR

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: 777 Eastern Plume
WELL I.D.: MW 329A
WELL CONDITION: good

PROJECT NUMBER: 29600.47/17206
WELL LOCK STATUS: locked
WEATHER: partly cloudy

GAUGE DATE: 6/24/96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 2.76'

GAUGE TIME: 1723
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/24/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1725
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 64.97
B. DEPTH TO WATER (ft): 12.20
C. LIQUID DEPTH (ft) (A-B): 52.77

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 31.93
F. THREE WELL VOLUMES (L) (E*3): 95.79

Parameter	Beginning	1	2	3	4	5
Time (min)	1729	1734	1739	1744	1749	1754
Depth to Water (ft)	12.44	12.43	12.44	12.45	12.47	12.46
Purge Rate (L/min)	.2	.2	.2	.4	.2	.2
Volume Purged (L)	.8	1.8	2.8	4.8	3.8	4.8
pH	6.69	6.91	7.01	7.05	7.08	7.08
Temperature (°C)	8.0	8.2	8.6	8.7	9.0	9.1
Conductivity (μmhos/cm)	0.088	0.088	0.080	0.086	0.088	0.086
Dissolved Oxygen (mg/L)	5.76	5.49	5.42	5.49	5.67	5.73
Turbidity (NTU)	70	48	44	34	28	25
Eh (mv)	117	99	92	90	87	87

TOTAL QUANTITY OF WATER REMOVED (L): 9.0

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1815/1816
SAMPLING DATE: 6/24/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl
SAMPLE BOTTLE IDs: BN-CG-EP MW029
SAMPLE PARAMETERS: VOAs

COMMENTS AND OBSERVATIONS:

Containerize fluids, dispose 8.62 to plant

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eastern Plume	Project No.: 29600.47 Date: 6/24/94
Well ID: MW 229A	Field Personnel: KAR BDA

Parameter	6	7	8	9	10	11
Time (min.)	1759	1804	1809	1814		
Depth to Water (ft)	12.54	12.54	12.54	12.54		
Purge Rate (L/min)	.2	.2	.2	.2		
Volume Purged (L)	5.8	6.8	7.8	8.8		
pH	7.10	7.11	7.15	7.15		
Temperature (°C)	9.2	9.3	9.5	9.3		
Conductivity (μmhos/cm)	0.090	0.088	0.092	0.094		
Dissolved Oxygen (mg/L)	5.72	5.72	5.71	5.75		
Turbidity (NTU)	25	23	24	25		
Eh (mv)	86	85	83	84		

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW 224 B
WELL CONDITION: good

PROJECT NUMBER: 29600.47/724
WELL LOCK STATUS: locked
WEATHER: partly cloudy, 70°F

GAUGE DATE: 6/24/96
SOUNDING METHOD: dipper indicator
STICK UP/DOWN (ft): 2.55

GAUGE TIME: 1645
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/24/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: ~~1449~~ 1649
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 33.70
B. DEPTH TO WATER (ft): 15.91
C. LIQUID DEPTH (ft) (A-B): 17.79

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 10.76
F. THREE WELL VOLUMES (L) (E*3): 32.28

Parameter	Beginning	1	2	3	4	5
Time (min)	1653	1657	1701	1705	1709	1713
Depth to Water (ft)	15.41	15.74	15.51	15.51	15.71	15.51
Purge Rate (L/min)	.1L	.1L	.1L	.1L	.1L	.1L
Volume Purged (L)	0.4L	0.8L	1.2L	1.6L	2.0L	2.4L
pH	8.05	7.55	7.22	7.10	7.04	6.99
Temperature (°C)	8.2	9.4	10.1	10.5	10.6	10.7
Conductivity (μmhos/cm)	0.050	0.052	0.050	0.054	0.052	0.054
Dissolved Oxygen (mg/L)	8.09	8.21	8.33	8.36	8.38	8.45
Turbidity (NTU)	52	37	27	22	17	17
Eh (mv)	116	114	117	121	123	125

TOTAL QUANTITY OF WATER REMOVED (L): 5.8L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1745 / 1747
SAMPLING DATE: 6/24/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl
SAMPLE BOTTLE IDs: BW-G-EP-MW027
SAMPLE PARAMETERS: VOAS

COMMENTS AND OBSERVATIONS:
* Contaminated water 5.8L

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Easten Plume	Project No.: 2969.477 7206	Date: 6/24/94
Well ID: MW 234B	Field Personnel: KR, BA	

Parameter	6	7	8	9	10	11
Time (min.)	1717	1721	1725	1729	1733	1736
Depth to Water (ft)	15.63	15.71	15.78	15.48	15.51	15.43
Purge Rate (L/min)	.1L	.1L	.1L	.1L	.1L	.1L
Volume Purged (L)	2.8L	3.2L	3.6L	4.0L	4.4L	4.7L
pH	6.93	6.87	6.83	6.79	6.76	6.75
Temperature (°C)	10.7	10.7	10.8	10.8	10.8	10.7
Conductivity (μmhos/cm)	0.054	0.054	0.054	0.056	0.044	0.054
Dissolved Oxygen (mg/L)	8.47	8.48	8.46	8.40	8.47	8.49
Turbidity (NTU)	13	12	11	12	11	11
Eh (mv)	128	131	134	136	137	138

Parameter	12	13	14	15	16	17
Time (min)	1739	1742				
Depth to Water (ft)	15.45	15.41				
Purge Rate (L/min)	.1L	.1L				
Volume Purged (L)	5.0L	5.3L				
pH	6.73	6.69				
Temperature (°C)	10.7	10.7				
Conductivity (μmhos/cm)	0.056	0.056				
Dissolved Oxygen (mg/L)	8.45	8.43				
Turbidity (NTU)	11	11				
Eh (mv)	139	140				

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW-230A
WELL CONDITION: Good

PROJECT NUMBER: 2960047
WELL LOCK STATUS: locked
WEATHER: rainy, 60

GAUGE DATE: 6-21-96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 2.21

GAUGE TIME: 1045
MEASUREMENT REF: ~~NTOC~~ top of PVC
WELL DIAMETER (in.): 2"

PURGE DATE: 6-21-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: 1046
FIELD PERSONNEL: TC, SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 82.98
B. DEPTH TO WATER (ft): 15.07
C. LIQUID DEPTH (ft) (A-B): 67.91

D. WELL VOLUME/FT (L): .605
E. WELL VOLUME (L) (C*D): 40.54
F. THREE WELL VOLUMES (L) (E*3): 121.62

Parameter	Beginning	1	2	3	4	5
Time (min)	1046	1050	1053	1056	1100	1104
Depth to Water (ft)	15.07	15.40	15.40	15.40	15.40	15.40
Purge Rate (L/min)	—	0.3	0.3	0.3	0.3	0.3
Volume Purged (L)	—	1.2	2.1	3.0	4.2	5.4
pH	6.52	6.33	6.45	6.53	6.81	6.96
Temperature (°C)	7.4	7.6	7.7	8.0	8.5	8.9
Conductivity (μmhos/cm)	0.086	0.082	0.082	0.084	0.064	0.062
Dissolved Oxygen (mg/L)	5.24	1.75	0.52	0.43	0.34	0.29
Turbidity (NTU)	5	53	67	53	35	51
Eh (mv)	80	66	-50	-63	-97	-110

TOTAL QUANTITY OF WATER REMOVED (L): 13.2

SAMPLERS: TRC, SYC
SAMPLING TIME (START/END): 1130
SAMPLING DATE: 6-21-96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-06-EP-MW-008
SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS:

/pl

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eastern Plume	Project No. 2960047	Date: 6-21-96
Well ID: MW-230A	Field Personnel: TRC, SYC	

Parameter	6	7	8	9	10	11
Time (min.)	1108	1112	1116	1120	1124	1128
Depth to Water (ft)	15.40	15.40	15.40	15.40	15.40	15.40
Purge Rate (L/min)	0.3	0.3	0.3	0.3	0.3	0.3
Volume Purged (L)	6.6	7.8	9.0	10.2	11.4	12.6
pH	7.01	7.04	7.07	7.09	7.14	7.15
Temperature (°C)	9.1	9.2	9.3	9.4	9.4	9.5
Conductivity (μmhos/cm)	0.062	0.062	0.064	0.068	0.074	0.078
Dissolved Oxygen (mg/L)	0.29	0.28	0.26	0.27	0.26	0.25
Turbidity (NTU)	42	33	37	31	33	41
Eh (mv)	-123	-127	-130	-136	-141	-143

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastin Plume
WELL I.D.: MW 231A
WELL CONDITION: good

PROJECT NUMBER: 29600.47/1720e
WELL LOCK STATUS: locked
WEATHER: drizzling, cool, 60°F

GAUGE DATE: 6/21/96
SOUNDING METHOD: slope indicator
STICK UP/DOWN (ft): 2.65'

GAUGE TIME: 0935
MEASUREMENT REF: Top of Pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/21/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 0940
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 62.42
B. DEPTH TO WATER (ft): ~~42.5~~ 20.2
C. LIQUID DEPTH (ft) (A-B): ~~49.9~~ 42.2
D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): ~~30.20~~ 25.54
F. THREE WELL VOLUMES (L) (E*3): ~~90.60~~ 76.62

Parameter	Beginning	1	2	3	4	5*
Time (min)	0943	0947	0951	0954	0958	1002
Depth to Water (ft)	20.50	20.50	20.50	20.62	20.62	20.70
Purge Rate (L/min)	0.2L	0.2L	0.2L	0.2L	0.2L	0.4L
Volume Purged (L)	0.6L	1.4L	2.2L	2.8L	3.6L	5.2L
pH	6.09	6.15	6.20	6.23	6.24	6.21
Temperature (°C)	7.9	8.1	8.2	8.9	9.1	9.7
Conductivity (μmhos/cm)	0.076	0.068	0.066	0.062	0.066	0.070
Dissolved Oxygen (mg/L)	8.72	9.06	9.14	9.03	9.00	8.75
Turbidity (NTU)	175	179	150	140	131	123
Eh (mv)	264	237	207	200	199	196

TOTAL QUANTITY OF WATER REMOVED (L): 29.6L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1056/1057
SAMPLING DATE: 6/21/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl
SAMPLE BOTTLE IDs: BN-06-EP-MW005
SAMPLE PARAMETERS: VOAS

COMMENTS AND OBSERVATIONS: *Had to keep adjusting rate, to clear turbidity. Turned pump down after turbidity rates dropped No Drawdown occured.

JK

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Canton Plume	Project No.: 29600.471 7206	Date: 6/21/96
Well ID: MW 231A	Field Personnel: KR, BA	

Parameter	6	7	8	* 9	10	11
Time (min.)	1006	1010	1014	1018	1022	1026
Depth to Water (ft)	20.67	20.77	20.78	20.57	20.57	20.57
Purge Rate (L/min)	.4L	.4L	1.0L	0.4L	0.4L	0.4L
Volume Purged (L)	6.8L	8.4L	12.4L	14.0L	15.6L	17.2L
pH	6.26	6.23	6.30	6.30	6.32	6.34
Temperature (°C)	9.5	9.3	9.1	9.2	9.1	9.5
Conductivity (μmhos/cm)	0.054	0.060	0.056	0.062	0.056	0.058
Dissolved Oxygen (mg/L)	9.11	9.15	9.20	9.22	9.23	8.88
Turbidity (NTU)	144	111	114	96	80	75
Eh (mv)	196	196	196	196	195	191

Parameter	12	13	14	15	16	17
Time (min)	1030	1034	1038	1041	1044	
Depth to Water (ft)	20.57	20.54	20.55	20.55	20.63	
Purge Rate (L/min)	0.4L	0.4L	0.4L	0.4L	0.4L	
Volume Purged (L)	18.8L	20.4L	22.0L	23.2L	24.4L	
pH	6.33	6.38	6.37	6.42	6.44	
Temperature (°C)	9.7	9.8	9.9	9.9	9.9	
Conductivity (μmhos/cm)	0.058	0.052	0.056	0.064	0.060	
Dissolved Oxygen (mg/L)	8.81	8.63	8.54	8.73	8.77	
Turbidity (NTU)	75	61	65	61	68	
Eh (mv)	187	185	183	182	180	

OMMENTS AND OBSERVATIONS * adjust flow down to lower flow

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Ecotin Plume
WELL I.D.: MW 231B
WELL CONDITION: good

PROJECT NUMBER: 29600.47 17206
WELL LOCK STATUS: locked
WEATHER: rainy, cool, 55°F

GAUGE DATE: 06/21/96
SOUNDING METHOD: slope indicator
STICK UP/DOWN (ft): 3.00

GAUGE TIME: 1059
MEASUREMENT REF: Top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 06/21/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1101
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 57.86
B. DEPTH TO WATER (ft): 24.38
C. LIQUID DEPTH (ft) (A-B): 33.48

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 20.26
F. THREE WELL VOLUMES (L) (E*3): 60.78

Parameter	Beginning	1	2	3	4	5
Time (min)	1106	1109	1113	1117	1121	1125
Depth to Water (ft)	25.12	25.12	24.96	24.96	24.80	24.96
Purge Rate (L/min)	0.2L	0.2L	0.2L	0.2L	0.2L	0.2L
Volume Purged (L)	1.0L	1.6L	2.4L	3.2L	4.0L	4.8L
pH	6.29	6.42	6.46	6.41	6.38	6.37
Temperature (°C)	9.4	10.1	10.4	10.8	11.1	11.2
Conductivity (μmhos/cm)	0.076	0.064	0.064	0.064	0.064	0.062
Dissolved Oxygen (mg/L)	9.27	9.40	9.49	9.31	9.50	9.54
Turbidity (NTU)	46	37	32	26	25	28
Eh (mv)	179	164	159	157	155	154

TOTAL QUANTITY OF WATER REMOVED (L): ~~6.0L~~ 7.0L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1134/1136 ~~1156/1157~~
SAMPLING DATE: 06/21/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl
SAMPLE BOTTLE IDs: BN-06-EP-MW007
SAMPLE PARAMETERS: VOAs

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eastern Plume	Project No.: 29600.471 7206	Date: 6/21/96	
Well ID: MW 231 B	Field Personnel: KR, BA		

Parameter	6	7	8	9	10	11
Time (min.)	1128					
Depth to Water (ft)	95.01					
Purge Rate (L/min)	0.2L					
Volume Purged (L)	5.4L					
pH	6.36					
Temperature (°C)	11.3					
Conductivity (μmhos/cm)	0.062					
Dissolved Oxygen (mg/L)	9.55					
Turbidity (NTU)	26					
Eh (mv)	154					

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eooten Plume
WELL I.D.: MW 323
WELL CONDITION: good

PROJECT NUMBER: 29160.47/7280
WELL LOCK STATUS: locked
WEATHER: overcast, breezy, 70°F

GAUGE DATE: 6/20/96
SOUNDING METHOD: slope indicator
STICK UP/DOWN (ft): 1.81'

GAUGE TIME: 1015
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/20/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1016
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 71.62
B. DEPTH TO WATER (ft): 12.46
C. LIQUID DEPTH (ft) (A-B): 59.16

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 35.80
F. THREE WELL VOLUMES (L) (E*3): 107.40

Parameter	Beginning	1	2	3	4	5
Time (min)	1020	1023	1027	1030	1033	1036
Depth to Water (ft)	12.62	12.62	12.62	12.62	12.63	12.63
Purge Rate (L/min)	0.2L	0.2L	0.2L	0.2L	0.2L	0.2L
Volume Purged (L)	0.8L	1.4L	2.2L	2.8L	3.4L	4.0L
pH	6.77	6.80	6.89	6.98	7.05	7.12
Temperature (°C)	8.0	7.9	7.9	8.2	8.5	8.6
Conductivity (μmhos/cm)	0.192	0.196	0.200	0.200	0.198	0.198
Dissolved Oxygen (mg/L)	0.96	0.56	0.40	0.34	0.28	0.26
Turbidity (NTU)	10	10	8	6	5	1
Eh (mv)	-19	-62	-97	-111	-129	-141

TOTAL QUANTITY OF WATER REMOVED (L): ~~5.8L~~ KR 8.2L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1053/1057
SAMPLING DATE: 6/20/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1 HCl
SAMPLE BOTTLE IDs: EN-06-EP-MW002 MS/MSD
SAMPLE PARAMETERS: VOAs
COMMENTS AND OBSERVATIONS: MS/MSD done here

JBt

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Canton Plume	Project No.: 29[illegible] 7236	Date: 6/20/96
Well ID: MW 303	Field Personnel: KR. BA	

Parameter	6	7	8	9	10	11
Time (min.)	1039	1042	1045			
Depth to Water (ft)	12.63	12.63	12.63			
Purge Rate (L/min)	.2L	.2L	.2L			
Volume Purged (L)	4.6L	5.2L	5.8L			
pH	7.18	7.22	7.26			
Temperature (°C)	8.7	8.8	8.9			
Conductivity (μmhos/cm)	0.200	0.194	0.190			
Dissolved Oxygen (mg/L)	0.23	0.22	0.21			
Turbidity (NTU)	0	0	0			
Eh (mv)	-150	-157	-161			

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW-305
WELL CONDITION: Good

PROJECT NUMBER: 296047
WELL LOCK STATUS: locked
WEATHER: overcast, 70

GAUGE DATE: 6-24-96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 2.70

GAUGE TIME: 1459
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6-24-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: 1500
FIELD PERSONNEL: TRC, SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 54.12
B. DEPTH TO WATER (ft): 7.11
C. LIQUID DEPTH (ft) (A-B): 47.01

D. WELL VOLUME/FT (L): .605
E. WELL VOLUME (L) (C*D): 28.44
F. THREE WELL VOLUMES (L) (E*3): 85.32

Parameter	Beginning	1	2	3	4	5
Time (min)	1500	1505	1510	515	1520	1525
Depth to Water (ft)	7.11	8.75	8.79	8.88	8.90	8.91
Purge Rate (L/min)	—	0.2	0.2	0.2	0.2	0.2
Volume Purged (L)	—	1.0	2.0	3.0	4.0	5.0
pH	7.14	7.43	8.06	8.31	8.51	8.63
Temperature (°C)	7.6	8.2	8.5	9.1	9.4	9.5
Conductivity (μmhos/cm)	0.280	0.270	0.226	0.238	0.244	0.228
Dissolved Oxygen (mg/L)	3.13	0.48	0.23	0.21	0.18	0.22
Turbidity (NTU)	13	228	217	133	98	63
Eh (mv)	90	15	-97	-113	-133	-144

TOTAL QUANTITY OF WATER REMOVED (L): 12.0

SAMPLERS: TRC, SYC
SAMPLING TIME (START/END): 1600
SAMPLING DATE: 6-24-96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-06-EP-MW-026
SAMPLE PARAMETERS: VOC
COMMENTS AND OBSERVATIONS:

BTV

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eastern Plume	Project No.: 2960047	Date: 6-24-96
Well ID: MW-305	Field Personnel: TRC, SYC	

Parameter	6	7	8	9	10	11
Time (min.)	1530	1535	1540	1545	1550	1555
Depth to Water (ft)	8.94	8.91	8.91	8.91	8.91	8.91
Purge Rate (L/min)	0.2	0.2	0.2	0.2	0.2	0.2
Volume Purged (L)	6.0	7.0	8.0	9.0	10.0	11.0
pH	8.75	8.82	8.87	8.91	8.94	8.95
Temperature (°C)	9.7	9.8	9.9	10.0	10.0	10.0
Conductivity (μmhos/cm)	0.216	0.210	0.192	0.206	0.212	0.210
Dissolved Oxygen (mg/L)	0.22	0.22	0.19	0.16	0.17	0.16
Turbidity (NTU)	51	49	42	40	40	40
Eh (mv)	-153	-158	-162	-164	-167	-167

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW 306
WELL CONDITION: good

PROJECT NUMBER: 29600.47/1206
WELL LOCK STATUS: locked
WEATHER: sunny, breezy, 70°F

GAUGE DATE: 6/20/96
SOUNDING METHOD: sight indicator
STICK UP/DOWN (ft): 2.35'

GAUGE TIME: 1513
MEASUREMENT REF: Top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/20/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1515
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 56.98
B. DEPTH TO WATER (ft): 17.55
C. LIQUID DEPTH (ft) (A-B): 39.43
D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 23.86
F. THREE WELL VOLUMES (L) (E*3): 71.58

Parameter	Beginning	1	2	3	4	5
Time (min)	1519	1523	1528	1532	1536	1540
Depth to Water (ft)	~~17.6~~ 17.64	17.66	17.62	17.62	17.62	17.62
Purge Rate (L/min)	.2L	.2L	.4L	.2L	.2L	.2L
Volume Purged (L)	0.8L	1.6L	2.6L	3.4L	4.2L	5.0L
pH	7.20	6.68	6.26	6.04	5.88	5.78
Temperature (°C)	9.2	9.3	10.3	10.3	10.5	10.5
Conductivity (μmhos/cm)	0.082	0.082	0.086	0.076	0.076	0.080
Dissolved Oxygen (mg/L)	4.74	4.60	4.35	4.35	4.37	4.40
Turbidity (NTU)	247	179	52	37	26	19
Eh (mv)	139	167	186	189	193	194

TOTAL QUANTITY OF WATER REMOVED (L): 9.4L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1600 / 1602
SAMPLING DATE: 6/20/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl
SAMPLE BOTTLE IDs: BN-06-EP-MW004
SAMPLE PARAMETERS: VOAs

COMMENTS AND OBSERVATIONS:

Contaminated H2O discovered @ 9.2

BA.

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eastern Plume	Project No.: 29600.97 7200	Date: 6/20/96
Well ID: BN-06-EP-MW004	Field Personnel: KR, BA	

Parameter	6	7	8	9	10	11
Time (min.)	1544	1547	1550	1553	1556	
Depth to Water (ft)	17.62	17.62	17.62	17.62	17.62	
Purge Rate (L/min)	.2L	.2L	.2L	.2L	.2L	
Volume Purged (L)	5.8L	6.4L	7.0L	7.6L	8.2L	
pH	5.71	5.69	5.67	5.65	5.64	
Temperature (°C)	10.6	10.6	10.6	10.6	10.6	
Conductivity (μmhos/cm)	0.076	0.080	0.080	0.080	0.080	
Dissolved Oxygen (mg/L)	4.33	4.30	4.32	4.34	4.37	
Turbidity (NTU)	12	10	9	7	8	
Eh (mv)	196	197	198	199	200	

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW307
WELL CONDITION: good

PROJECT NUMBER: 29600.47/7206
WELL LOCK STATUS: locked
WEATHER: Overcast, 65°F

GAUGE DATE: 6/25/96
SOUNDING METHOD: Sheen indicator
STICK UP/DOWN (ft): 2.00'

GAUGE TIME: 0920
MEASUREMENT REF: Top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/25/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 0944
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 22.21
B. DEPTH TO WATER (ft): 15.58
C. LIQUID DEPTH (ft) (A-B): 6.63

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 4.01
F. THREE WELL VOLUMES (L) (E*3): 12.03

Parameter	Beginning	1	2	3	4	5
Time (min)	0947	0951	0955	0959	1003	1007
Depth to Water (ft)	15.60	15.59	15.56	15.56	15.57	15.65
Purge Rate (L/min)	0.2L	0.2L	0.2L	0.2L	0.2L	0.2L
Volume Purged (L)	0.6L	1.4L	2.2L	2.6L	3.4L	4.2L
pH	5.51	5.51	5.70	5.79	5.81	5.83
Temperature (°C)	9.2	9.7	11.8	12.6	14.2	15.7
Conductivity (μmhos/cm)	0.162	0.164	0.164	0.156	0.140	0.150
Dissolved Oxygen (mg/L)	6.29	6.54	6.80	7.19	7.46	7.75
Turbidity (NTU)	100	80	59	57	46	34
Eh (mv)	235	223	199	187	174	157

TOTAL QUANTITY OF WATER REMOVED (L): 14.0L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1045/1050
SAMPLING DATE: 6/25/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl
SAMPLE BOTTLE IDs: BN-06-EP-MW033
SAMPLE PARAMETERS: VOAS

COMMENTS AND OBSERVATIONS: MS/MSD done here!
Keep adjusting the flow up to 0.2L/min.
+ Had to turn pump up slightly to compen.

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eaton Plume	Project No.: 29600.471 7206	Date: 6/25/96
Well ID: MW 307	Field Personnel: KR, BA	

Parameter	6	7	8	9	10	11
Time (min.)	1011	1015	1019	1023	1027	1031
Depth to Water (ft)	15.65	15.75	15.65	15.65	15.60	15.60
Purge Rate (L/min)	0.2L	0.2L	0.2L	0.2L	0.2L	0.2L
Volume Purged (L)	5.0L	5.8L	6.6L	7.4L	8.2L	9.0L
pH	5.85	5.88	5.76	5.82	5.85	5.89
Temperature (°C)	14.2	10.4	11.8	12.1	12.6	11.9
Conductivity (μmhos/cm)	0.144	0.124	0.120	0.126	0.112	0.108
Dissolved Oxygen (mg/L)	8.26	8.62	8.36	8.84	8.85	9.05
Turbidity (NTU)	36	77	65	43	36	36
Eh (mv)	151	157	165	163	164	165

Parameter	12	13	14	15	16	17
Time (min)	1034	1037				
Depth to Water (ft)	15.68	15.62				
Purge Rate (L/min)	0.2L	0.6L				
Volume Purged (L)	9.6L	11.4L				
pH	5.84	5.85				
Temperature (°C)	11.8	11.5				
Conductivity (μmhos/cm)	0.100	0.102				
Dissolved Oxygen (mg/L)	9.31	9.08				
Turbidity (NTU)	40	40				
Eh (mv)	167	173				

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW-308
WELL CONDITION: Good
PROJECT NUMBER: 2960047
WELL LOCK STATUS: locked
WEATHER: Overcast 65

GAUGE DATE: 6-25-96
SOUNDING METHOD: Sbp. indicator
STICK UP/DOWN (ft): 2.44
GAUGE TIME: 1035
MEASUREMENT REF: TOC
WELL DIAMETER (in.): 2

PURGE DATE: 6-25-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0
PURGE TIME: 1040
FIELD PERSONNEL: TRC, SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 72.85
B. DEPTH TO WATER (ft): 4.47
C. LIQUID DEPTH (ft) (A-B): 68.38
D. WELL VOLUME/FT (L): .605
E. WELL VOLUME (L) (C*D): 41.37
F. THREE WELL VOLUMES (L) (E*3): 124.11

Parameter	Beginning	1	2	3	4	5
Time (min)	1040	1045	1050	1055	1100	1105
Depth to Water (ft)	4.47	4.81	4.84	4.85	4.86	4.86
Purge Rate (L/min)	—	0.3	0.3	0.3	0.3	0.3
Volume Purged (L)	—	1.5	3.0	4.5	6.0	7.5
pH	8.80	8.75	8.67	8.68	8.76	8.81
Temperature (°C)	11.0	16.0	9.9	10.0	10.3	10.4
Conductivity (μmhos/cm)	0.356	0.338	0.348	0.356	0.368	0.362
Dissolved Oxygen (mg/L)	1.34	0.64	0.40	0.34	0.31	0.29
Turbidity (NTU)	0	0	9	7	5	3
Eh (mv)	-27	-62	-126	-158	-167	-174

TOTAL QUANTITY OF WATER REMOVED (L): 9

SAMPLERS: trc, syc
SAMPLING TIME (START/END): 1110
SAMPLING DATE: 6-25-96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-06-EP-MW032
SAMPLE PARAMETERS: VOC
COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW-309A
WELL CONDITION: holein steel casing

PROJECT NUMBER: 2960047
WELL LOCK STATUS: locked
WEATHER: rainy 60

GAUGE DATE: 6-25-96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 2.49

GAUGE TIME: 1014
MEASUREMENT REF: TOC
WELL DIAMETER (in.): 2

PURGE DATE: 6-25-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: 1015
FIELD PERSONNEL: TRC SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 72.71
B. DEPTH TO WATER (ft): Artesian
C. LIQUID DEPTH (ft) (A-B): 72.71
D. WELL VOLUME/FT (L): .605
E. WELL VOLUME (L) (C*D): 43.99
F. THREE WELL VOLUMES (L) (E*3): 131.97

Parameter	Beginning	1	2	3	4	5
Time (min)	1015	1020	1023	1026	1029	
Depth to Water (ft)	Artesian	Artesian	Artesian	Artesian	Artesian	
Purge Rate (L/min)	—	3	3	3	3	
Volume Purged (L)	-	15	24	33	42	
pH	7.69	8.14	8.36	8.55	8.65	
Temperature (°C)	8.4	8.5	8.6	8.7	8.8	
Conductivity (μmhos/cm)	0.284	0.286	0.288	0.290	0.288	
Dissolved Oxygen (mg/L)	1.70	0.18	0.15	0.14	0.13	
Turbidity (NTU)	18	0	0	0	0	
Eh (mv)	-96	-144	-155	-169	-169	

TOTAL QUANTITY OF WATER REMOVED (L): 45

SAMPLERS: TRC, SYC
SAMPLING TIME (START/END): 1030
SAMPLING DATE: 6-25-96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-06- [illegible] -EP-MW031
SAMPLE PARAMETERS: VOC
COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME:	Eastern Plume	PROJECT NUMBER:	2960047
WELL I.D.:	MW-3 09B	WELL LOCK STATUS:	locked
WELL CONDITION:	Good	WEATHER:	rainy, 60
GAUGE DATE:	6-25-96	GAUGE TIME:	933
SOUNDING METHOD:	slope indicator	MEASUREMENT REF:	TOC
STICK UP/DOWN (ft):	2.42	WELL DIAMETER (in.):	2
PURGE DATE:	6-25-96	PURGE TIME:	0940
PURGE METHOD:	Low Flow	FIELD PERSONNEL:	TRC, SYC
AMBIENT AIR VOCs (ppm)	Start: 0.0 End: 0.0	WELL MOUTH VOCs (ppm):	Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft):	59.43	D. WELL VOLUME/FT (L):	.605
B. DEPTH TO WATER (ft):	1.86	E. WELL VOLUME (L) (C*D):	34.83
C. LIQUID DEPTH (ft) (A-B):	57.57	F. THREE WELL VOLUMES (L) (E*3):	104.49

Parameter	Beginning	1	2	3	4	5
Time (min)	0940	0945	0948	0951	0955	1000
Depth to Water (ft)	1.86	3.90	4.40	5.62	6.15	7.98
Purge Rate (L/min)	—	20.2	20.2	20.2	20.2	20.2
Volume Purged (L)	—	1.0	1.6	2.2	3.0	4.0
pH	5.99	6.31	6.52	6.67	6.94	7.23
Temperature (°C)	9.3	9.1	9.1	9.1	9.1	9.3
Conductivity (μmhos/cm)	0.236	0.240	0.242	0.240	0.232	0.232
Dissolved Oxygen (mg/L)	3.51	0.50	0.49	0.40	0.45	0.23
Turbidity (NTU)	0	5	9	11	7	5
Eh (mv)	130	-26	-58	-62	-70	-74

TOTAL QUANTITY OF WATER REMOVED (L): 6.0

SAMPLERS:	TRC, SYC	SAMPLING TIME (START/END):	1010
SAMPLING DATE:	6-25-96	DECONTAMINATION FLUIDS USED:	none
SAMPLE TYPE:	Grab	SAMPLE PRESERVATIVES:	HCl

SAMPLE BOTTLE IDs: B.N.-C.-EP-MW-030

SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS: Flow rate constantly needs to be adjusted. No steady flow rate

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eastern Plume	Project No.: 29600477206	Date: 6-25-96
Well ID: MW 309 B	Field Personnel: TRC SYC	

Parameter	6	7	8	9	10	11
Time (min.)	1003	1006				
Depth to Water (ft)	9.40	11.15				
Purge Rate (L/min)	0.2	0.2				
Volume Purged (L)	4.6	5.2				
pH	7.39	7.49				
Temperature (°C)	9.8	10.0				
Conductivity (μmhos/cm)	0.236	0.228				
Dissolved Oxygen (mg/L)	0.20	0.18				
Turbidity (NTU)	5	4				
Eh (mv)	-79	-83				

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

JBd

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME:	Eastern Plume	PROJECT NUMBER:	2960047
WELL I.D.:	MW ~~205~~ 210	WELL LOCK STATUS:	not locked
WELL CONDITION:	Good	WEATHER:	rainy, 60
GAUGE DATE:	6-21-96	GAUGE TIME:	1530
SOUNDING METHOD:	Slope indicator	MEASUREMENT REF:	~~PVC~~ Top of PVC
STICK UP/DOWN (ft):	2.57	WELL DIAMETER (in.):	2
PURGE DATE:	6-21-96	PURGE TIME:	1532
PURGE METHOD:	Low Flow	FIELD PERSONNEL:	TRC, SYC
AMBIENT AIR VOCs (ppm)	Start: 0.0 End: 0.0	WELL MOUTH VOCs (ppm):	Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft):	72.83	D. WELL VOLUME/FT (L):	.605
B. DEPTH TO WATER (ft):	27.61	E. WELL VOLUME (L) (C*D):	27.36
C. LIQUID DEPTH (ft) (A-B):	45.22	F. THREE WELL VOLUMES (L) (E*3):	82.07

Parameter	Beginning	1	2	3	4	5
Time (min)	1532	1537	1542	1547	1552	1557
Depth to Water (ft)	27.61	27.61	27.65	27.65	27.65	27.65
Purge Rate (L/min)	—	0.2	0.2	0.2	0.2	0.2
Volume Purged (L)	—	1.0	2.0	3.0	4.0	5.0
pH	6.01	5.98	6.06	6.23	6.25	6.27
Temperature (°C)	8.5	8.1	8.4	9.5	9.9	10.1
Conductivity (μmhos/cm)	0.078	0.072	0.080	0.076	0.078	0.072
Dissolved Oxygen (mg/L)	7.76	6.00	5.83	5.74	5.60	5.55
Turbidity (NTU)	12	60	41	36	30	29
Eh (mv)	117	124	119	113	114	115

TOTAL QUANTITY OF WATER REMOVED (L): 8.6

SAMPLERS:	~~Kira~~ TRC, SYC	SAMPLING TIME (START/END):	1615
SAMPLING DATE:	6-21-96	DECONTAMINATION FLUIDS USED:	None
SAMPLE TYPE:	Grab	SAMPLE PRESERVATIVES:	HCL
SAMPLE BOTTLE IDs:	BN-06 & P-MW016		
SAMPLE PARAMETERS:	VOC		

COMMENTS AND OBSERVATIONS: Containerized water & dispersed.

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eastern Plume	Project No.: 2960047	Date: 6-21-96
Well ID: MW-~~205~~ TO 310	Field Personnel: TRC, SYC	

Parameter	6	7	8	9	10	11
Time (min.)	1602	1607	1612			
Depth to Water (ft)	27.65	27.65	27.65			
Purge Rate (L/min)	0.2	0.2	0.2			
Volume Purged (L)	6.0	7.0	8.0			
pH	6.27	6.29	6.30			
Temperature (°C)	10.1	10.1	10.2			
Conductivity (μmhos/cm)	0.074	0.068	0.074			
Dissolved Oxygen (mg/L)	5.62	5.57	5.59			
Turbidity (NTU)	28	28	28			
Eh (mv)	116	117	118			

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW 311
WELL CONDITION: good

PROJECT NUMBER: 29650.40/1226
WELL LOCK STATUS: locked
WEATHER: partly sunny, 70°F

GAUGE DATE: 6/24/96
SOUNDING METHOD: sheen indicator
STICK UP/DOWN (ft): 2.30'

GAUGE TIME: 1342
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/24/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1355
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 55.78
B. DEPTH TO WATER (ft): 0.96
C. LIQUID DEPTH (ft) (A-B): 54.82

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 33.17
F. THREE WELL VOLUMES (L) (E*3): 99.51

Parameter	Beginning	1	2	3	4	5
Time (min)	1358	1402	1406	1410	1414	1418
Depth to Water (ft)	2.65	2.62	2.67	2.68	2.66	2.78
Purge Rate (L/min)	2.0L	2.0L	2.0L	2.0L	2.0L	2.0L
Volume Purged (L)	6.0L	14.0L	22.0L	30.0L	38.0L	46.0L
pH	7.26	6.94	6.78	6.76	6.69	6.67
Temperature (°C)	8.3	8.5	8.6	8.6	8.6	8.6
Conductivity (μmhos/cm)	0.124	0.124	0.124	0.124	0.124	0.124
Dissolved Oxygen (mg/L)	0.69	0.65	0.62	0.59	0.58	0.57
Turbidity (NTU)	75	81	31	25	20	20
Eh (mv)	157	159	154	150	148	146

TOTAL QUANTITY OF WATER REMOVED (L): 116.0L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1452/1453
SAMPLING DATE: 6/24/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl
SAMPLE BOTTLE IDs: BN-06-SP-MW023
SAMPLE PARAMETERS: VOAs

COMMENTS AND OBSERVATIONS: * Antecian well, had pump/grundfos box at lowest setting

* Containing water. 115.8 L

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name:	Eastern Plume	Project No.: 24600.411 7200	Date: 6/24/96
Well ID:	MW 311	Field Personnel:	KR, BA

Parameter	6	7	8	9	10	11
Time (min.)	1422	1426	1429	1432	1436	1440
Depth to Water (ft)	2.81	2.65	2.78	2.78	2.75	2.78
Purge Rate (L/min)	2 CL	2.CL	2.CL	2.CL	2.CL	2.CL
Volume Purged (L)	54.CL	62.CL	68.CL	74.CL	82.CL	90.CL
pH	6.65	6.62	6.60	6.60	6.60	6.59
Temperature (°C)	8.6	8.4	8.6	8.6	8.6	8.5
Conductivity (μmhos/cm)	0.124	0.124	0.124	0.124	0.124	0.124
Dissolved Oxygen (mg/L)	0.56	0.56	0.56	0.55	0.55	0.55
Turbidity (NTU)	19	20	20	18	18	18
Eh (mv)	144	144	143	143	143	143

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW-313
WELL CONDITION: Good

PROJECT NUMBER: 2960047
WELL LOCK STATUS: locked
WEATHER: Sunny, 80

GAUGE DATE: 6-25-96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 3.35

GAUGE TIME: 1330
MEASUREMENT REF: TOC
WELL DIAMETER (in.): 2

PURGE DATE: 6-25-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: 1333
FIELD PERSONNEL: TRC, SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 37.14
B. DEPTH TO WATER (ft): 7.91
C. LIQUID DEPTH (ft) (A-B): 29.23

D. WELL VOLUME/FT (L): .605
E. WELL VOLUME (L) (C*D): 17.68
F. THREE WELL VOLUMES (L) (E*3): 53.05

Parameter	Beginning	1	2	3	4	5
Time (min)	1333	1340	1350	1400	1410	1420
Depth to Water (ft)	7.91	8.60	8.65	8.80	9.10	9.15
Purge Rate (L/min)	—	0.2	0.2	0.2	0.2	0.2
Volume Purged (L)	—	1.4	3.4	5.4	7.4	9.4
pH	8.45	7.96	7.95	8.01	8.02	7.97
Temperature (°C)	8.4	9.5	10.3	11.7	12.2	12.1
Conductivity (µmhos/cm)	0.208	0.254	0.288	0.248	0.302	0.312
Dissolved Oxygen (mg/L)	2.04	0.40	0.29	0.22	0.55	0.28
Turbidity (NTU)	293	391	350	195	112	67
Eh (mv)	-10	-121	-140	-167	-158	-164

TOTAL QUANTITY OF WATER REMOVED (L): 20.4

SAMPLERS: TRC
SAMPLING DATE: 6-25-96
SAMPLE TYPE: Grab
SAMPLE BOTTLE IDs: BN-06-EP-MW034
SAMPLE PARAMETERS: VOC

SAMPLING TIME (START/END): 1515
DECONTAMINATION FLUIDS USED: none
SAMPLE PRESERVATIVES: HCL

COMMENTS AND OBSERVATIONS: Duplicate BN-06-EP-MWXD5

VB

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eastern Plume	Project No.: 2960047	Date: 6-25-96
Well ID: MW-313	Field Personnel: TRC-SYC	

Parameter	6	7	8	9	10	11
Time (min.)	1430	1440	1450	1500	1505	1510
Depth to Water (ft)	9.18	9.21	9.24	9.26	9.26	9.26
Purge Rate (L/min)	0.2	0.2	0.2	0.2	0.2	0.2
Volume Purged (L)	11.4	13.4	15.4	17.4	18.4	19.4
pH	7.96	7.92	7.88	7.85	7.86	7.86
Temperature (°C)	12.3	12.5	12.6	12.6	12.7	12.7
Conductivity (μmhos/cm)	0.320	0.286	0.266	0.276	0.274	0.276
Dissolved Oxygen (mg/L)	0.28	0.27	0.28	0.29	0.28	0.28
Turbidity (NTU)	54	46	42	38	38	38
Eh (mv)	-166	-165	-164	-164	-165	-166

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW-313
WELL CONDITION: Good

PROJECT NUMBER: 296-0017
WELL LOCK STATUS: locked
WEATHER: Cloudy, 60

GAUGE DATE: 6-21-96
SOUNDING METHOD: ~~int~~ slope indicator
STICK UP/DOWN (ft): 2.57

GAUGE TIME: 0942
MEASUREMENT REF: ~~NTC~~ top of PVC
WELL DIAMETER (in.): 2

PURGE DATE: 6-21-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: 0945
FIELD PERSONNEL: TRC, SYC
WELL MOUTH VOCs (ppm): Start: [illegible] End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 25.14
B. DEPTH TO WATER (ft): 6.00
C. LIQUID DEPTH (ft) (A-B): 19.14
D. WELL VOLUME/FT (L): .605
E. WELL VOLUME (L) (C*D): 11.58
F. THREE WELL VOLUMES (L) (E*3): 34.74

Parameter	Beginning	1	2	3	4	5
Time (min)	0945	0950	0955	~~0~~1000	1004	1008
Depth to Water (ft)	6.00	6.34	6.34	6.34	6.34	6.34
Purge Rate (L/min)	—	0.2	0.2	0.2	0.2	0.2
Volume Purged (L)	—	1.0	2.0	3.0	~~4.0~~ 3.8	4.6
pH	6.73	5.74	6.19	6.64	6.62	6.58
Temperature (°C)	9.1	8.4	10.2	11.4	11.7	11.8
Conductivity (μmhos/cm)	0.046	0.010	0.108	0.110	0.088	0.080
Dissolved Oxygen (mg/L)	5.44	0.63	1.19	3.52	4.38	5.10
Turbidity (NTU)	75	114	51	23	17	14
Eh (mv)	161	27	0	3	21	32

TOTAL QUANTITY OF WATER REMOVED (L): 8.0

SAMPLERS: TRC, SYC
SAMPLING TIME (START/END): 1025
SAMPLING DATE: 6-21-96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-06-EP-MW-006
SAMPLE PARAMETERS: VOC
COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eastern Plume	Project No.: 2960047	Date: 6-21-96
Well ID: MW-318	Field Personnel: TRC, SYC	

Parameter	6	7	8	9	10	11
Time (min.)	1012	1016	1020			
Depth to Water (ft)	6.34	6.34	6.34			
Purge Rate (L/min)	0.2	0.2	0.2			
Volume Purged (L)	5.4	6.2	7.0			
pH	6.56	6.55	6.54			
Temperature (°C)	11.9	11.9	12.0			
Conductivity (μmhos/cm)	0.082	0.090	0.088			
Dissolved Oxygen (mg/L)	5.30	5.54	5.70			
Turbidity (NTU)	12	12	12			
Eh (mv)	34	34	33			

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Ecotein Plume
WELL I.D.: MW 319
WELL CONDITION: good

PROJECT NUMBER: 29600.49/72.04
WELL LOCK STATUS: locked
WEATHER: Partly cloudy, 70°F

GAUGE DATE: 6/24/96
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft): 2.30'

GAUGE TIME: 1510
MEASUREMENT REF: Top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/24/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1512
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 72.44
B. DEPTH TO WATER (ft): 14.05
C. LIQUID DEPTH (ft) (A-B): 58.39

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 35.33
F. THREE WELL VOLUMES (L) (E*3): 105.99

Parameter	Beginning	1	2	3	4	5
Time (min)	1515	1518	1521	1525	1529	1533
Depth to Water (ft)	14.15	14.15	14.13	14.11	14.14	14.12
Purge Rate (L/min)	0.2L	0.2L	0.2L	0.2L	0.2L	0.2L
Volume Purged (L)	0.6L	1.2L	1.8L	2.6L	3.4L	4.2L
pH	6.83	6.78	6.63	6.57	6.53	6.48
Temperature (°C)	9.7	9.2	9.1	9.5	9.7	10.0
Conductivity (μmhos/cm)	0.152	0.156	0.156	0.156	0.158	0.158
Dissolved Oxygen (mg/L)	2.57	1.49	1.22	1.07	1.00	0.89
Turbidity (NTU)	6	32	21	14	12	9
Eh (mv)	127	129	126	124	124	124

TOTAL QUANTITY OF WATER REMOVED (L): 7.2L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1545 / 1548

SAMPLING DATE: 6/24/96
DECONTAMINATION FLUIDS USED: none

SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl

SAMPLE BOTTLE IDs: BN-06-EP-MW025

SAMPLE PARAMETERS: VOAs

COMMENTS AND OBSERVATIONS: Duplicate done here, BN-06-EP-MW-DU
* Containerize water 7L

KR

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eastern Plume	Project No.: 20.30.07 7206	Date: 6/24/96
Well ID: MW 319	Field Personnel: K.R, BA	

Parameter	6	7	8	9	10	11
Time (min.)	1537	1540				
Depth to Water (ft)	14.15	14.18				
Purge Rate (L/min)	0.2L	0.2L				
Volume Purged (L)	5.0L	5.6L				
pH	6.47	6.45				
Temperature (°C)	10.0	10.1				
Conductivity (μmhos/cm)	0.162	0.158				
Dissolved Oxygen (mg/L)	0.85	0.81				
Turbidity (NTU)	9	9				
Eh (mv)	125	126				

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW-104
WELL CONDITION: good

PROJECT NUMBER: 29600497/1200
WELL LOCK STATUS: locked
WEATHER: sunny, breezy, 70°F

GAUGE DATE: 6/20/96
SOUNDING METHOD: Steel indicated
STICK UP/DOWN (ft): 2.25

GAUGE TIME: 0920
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/20/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 0922
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 9 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 27.55
B. DEPTH TO WATER (ft): 11.89
C. LIQUID DEPTH (ft) (A-B): 15.66

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 9.47
F. THREE WELL VOLUMES (L) (E*3): 28.41

Parameter	Beginning	1	2	3	4	5
Time (min)	0926	0930	0934	0938	0941	
Depth to Water (ft)	11.75	11.75	11.75	11.75	11.75	
Purge Rate (L/min)	.2L	.2L	.2L	.3L	.3L	
Volume Purged (L)	0.8L	1.6L	2.4L	3.6L	4.5L	
pH	5.85	5.78	5.84	5.89	5.92	
Temperature (°C)	9.9	10.9	11.0	11.2	11.2	
Conductivity (µmhos/cm)	0.240	0.250	0.250	0.230	0.230	
Dissolved Oxygen (mg/L)	1.61	1.32	1.15	1.12	1.04	
Turbidity (NTU)	10	4	4	3	2	
Eh (mv)	143	103	93	85	81	

TOTAL QUANTITY OF WATER REMOVED (L): 6.6L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 0946/0948
SAMPLING DATE: 6/20/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl
SAMPLE BOTTLE IDs: BU-06-EP-MW001
SAMPLE PARAMETERS: VOAs
COMMENTS AND OBSERVATIONS: Manning Demo-well

Containerized water dispersed @ 6.4

KR

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: MW-NASB-212 ~~[illegible]~~
WELL CONDITION: good

PROJECT NUMBER: 29600.47/1720
WELL LOCK STATUS: locked
WEATHER: excellent, sunny, 70°F

GAUGE DATE: 6/20/96
SOUNDING METHOD: slope indicator
STICK UP/DOWN (ft): 2.96

GAUGE TIME: ~~1420~~ 1415
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/20/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1420
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 67.34'
B. DEPTH TO WATER (ft): 10.26'
C. LIQUID DEPTH (ft) (A-B): 57.08

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 34.53
F. THREE WELL VOLUMES (L) (E*3): 103.59

Parameter	Beginning	1	2	3	4	5
Time (min)	1423	1427	1430	1434	1438	1441
Depth to Water (ft)	10.28	10.27	10.27	10.27	0.5	10.5
Purge Rate (L/min)	.1L	.1L	.1L	.1L	.1L	.1L
Volume Purged (L)	0.3L	0.7L	1.0L	1.4L	1.8L	2.1L
pH	6.86	6.71	6.68	6.69	6.71	6.72
Temperature (°C)	10.2	9.8	9.9	10.1	10.3	10.3
Conductivity (µmhos/cm)	0.186	0.182	0.188	0.178	0.186	0.182
Dissolved Oxygen (mg/L)	2.04	0.72	0.45	0.31	0.27	0.24
Turbidity (NTU)	1	2	1	-1	-1	-1
Eh (mv)	83	80	75	67	62	59

TOTAL QUANTITY OF WATER REMOVED (L): 3.4L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): ~~1515~~ 1450/1454
SAMPLING DATE: 6/20/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl
SAMPLE BOTTLE IDs: BN-06-EP-MW0003
SAMPLE PARAMETERS: 10 Ts.
COMMENTS AND OBSERVATIONS: Duplicate due here, BN-06-EP-MW XD1
~~"Dome well" - after man KR~~

Contaminated water disposed of 3.2L

✓ BA

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eastern Plume		Project No.: 24.CC.47/7266	Date: 6/20/96
Well ID: ~~New well~~ MW-NASB-212		Field Personnel: KR, BA	

Parameter	6	7	8	9	10	11
Time (min.)	1444	1447				
Depth to Water (ft)	10.15	10.15				
Purge Rate (L/min)	.1L	.1L				
Volume Purged (L)	2.4L	2.7L				
pH	6.72	6.73				
Temperature (°C)	10.4	10.3				
Conductivity (μmhos/cm)	0.184	0.184				
Dissolved Oxygen (mg/L)	0.22	0.21				
Turbidity (NTU)	-2	-2				
Eh (mv)	57	57				

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Epstein Plume
WELL I.D.: P-105
WELL CONDITION: good

PROJECT NUMBER: 29600.47/1200
WELL LOCK STATUS: locked
WEATHER: sunny, warm, 80°F

GAUGE DATE: 6/25/96
SOUNDING METHOD: sloper indicator
STICK UP/DOWN (ft): 2.24

GAUGE TIME: 1435
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/25/96
PURGE METHOD: low flow - peristaltic
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1444
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 70.35
B. DEPTH TO WATER (ft): 10.38
C. LIQUID DEPTH (ft) (A-B): 59.97

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 36.28
F. THREE WELL VOLUMES (L) (E*3): 108.84

Parameter	Beginning	1	2	3	4	5
Time (min)	1447	1451	1454	1456		
Depth to Water (ft)				went		
Purge Rate (L/min)	.1L	.1L	.1L	dry		
Volume Purged (L)	0.3L	0.7L	1.0L			
pH	6.85	6.82	6.83	turned pump off		
Temperature (°C)	11.4	12.1	12.3			
Conductivity (μmhos/cm)	0.118	0.118	0.118			
Dissolved Oxygen (mg/L)	9.83	11.59	11.47			
Turbidity (NTU)	387	1087	721			
Eh (mv)	106	104	102			

TOTAL QUANTITY OF WATER REMOVED (L): 1.2L

SAMPLERS: KR, BA
SAMPLING DATE: 6/25/96
SAMPLE TYPE: Grab
SAMPLE BOTTLE IDs: BN-06-EP-mw037
SAMPLE PARAMETERS: VOAS

SAMPLING TIME (START/END): 1445/1446
DECONTAMINATION FLUIDS USED: none
SAMPLE PRESERVATIVES: 1:1 HCl

COMMENTS AND OBSERVATIONS: * Had peristaltic set to lowest possible setting. Couldn't measure water depth while pumping - more air in tube than water. * Collected samples after initial startup. * Contaminated water IR

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: P-106
WELL CONDITION: good

PROJECT NUMBER: 29UC0.47/12CG
WELL LOCK STATUS: locked
WEATHER: sunny, pleasant, 80°F

GAUGE DATE: 6/25/96
SOUNDING METHOD: slope indicator
STICK UP/DOWN (ft): 2.53

GAUGE TIME: 1505
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/25/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1512
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 71.04
B. DEPTH TO WATER (ft): 10.54
C. LIQUID DEPTH (ft) (A-B): 60.52

D. WELL VOLUME/FT (L): 0.065
E. WELL VOLUME (L) (C*D): 3.6(4)
F. THREE WELL VOLUMES (L) (E*3): 10.9 x 3

Parameter	Beginning	1	2	3	4	5
Time (min)	1516	1520	1523	1526	1529	
Depth to Water (ft)						
Purge Rate (L/min)	1.2L	1.2L	1.2L	1.2L	1.2L	
Volume Purged (L)	4.8L	9.6L	13.2L	16.8L	~~20.4L~~	20.4L
pH	7.15	7.07	7.08	7.08	7.09	
Temperature (°C)	8.7	8.7	8.7	8.7	8.7	
Conductivity (μmhos/cm)	0.124	0.124	0.124	0.124	0.124	
Dissolved Oxygen (mg/L)	2.00	2.13	2.13	2.13	2.13	
Turbidity (NTU)	59	15	15	16	16	
Eh (mv)	98	100	99	99	99	

TOTAL QUANTITY OF WATER REMOVED (L): ~~32.8L~~ 24.0L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1531 / 1532
SAMPLING DATE: 6/25/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl
SAMPLE BOTTLE IDs: BU-06-EP-MW038
SAMPLE PARAMETERS: VOAs

COMMENTS AND OBSERVATIONS: Had problems get to the lowest possible setting. Can't measure water depth during purging.

* Contaminated water 23.8

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: P-111
WELL CONDITION: good

PROJECT NUMBER: 29600.47/1201
WELL LOCK STATUS: no lock
WEATHER: Sunny, pleasant 70°F

GAUGE DATE: 4/25/96
SOUNDING METHOD: slope indicator
STICK UP/DOWN (ft): 3.55

GAUGE TIME: 1235
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 4/25/96
PURGE METHOD: low flow peristaltic
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1236
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 9.99
B. DEPTH TO WATER (ft): 4.45
C. LIQUID DEPTH (ft) (A-B): 5.54

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 3.35
F. THREE WELL VOLUMES (L) (E*3): 10.05

Parameter	Beginning	1	2	3	4	5
Time (min)	1239	1243	1247	1251	1255	1259
Depth to Water (ft) *						
Purge Rate (L/min)	1.2L	1.2L	1.2L	1.2L	1.2L	1.2L
Volume Purged (L)	3.6L	8.4L	13.2L	18.0L	22.8L	27.6L
pH	6.70	6.32	6.24	6.25	6.29	6.32
Temperature (°C)	10.3	9.9	9.6	9.6	9.5	9.6
Conductivity (µmhos/cm)	0.116	0.112	0.112	0.112	0.112	0.112
Dissolved Oxygen (mg/L)	0.55	0.55	1.23	3.58	2.05	4.16
Turbidity (NTU)	888	HI**	HI	1063	HI	350
Eh (mv)	20	16	15	20	18	20

TOTAL QUANTITY OF WATER REMOVED (L): 50.4L

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1317/1318
SAMPLING DATE: 4/25/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl
SAMPLE BOTTLE IDs: BU-06-EP-MW035
SAMPLE PARAMETERS: VOAs

COMMENTS AND OBSERVATIONS: Had peristaltic pump at lowest setting possible. Tubing had air in it, couldn't correct it.
* unable to gauge while purging.
** HI indicates that the value is off the high scale of the YSI 58/12.

1/4

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name:	Eastern Plume	Project No.: 296FC471/206	Date: 6/25/94
Well ID:	P-111	Field Personnel:	KR, BA

Parameter	6	7	8	9	10	11
Time (min.)	1303	1307	1310	1313		
Depth to Water (ft)						
Purge Rate (L/min)	1.2L	1.2L	1.2L	1.2L		
Volume Purged (L)	32.4L	37.2L	40.8L	44.4L		
pH	6.38	6.37	6.41	6.43		
Temperature (°C)	9.6	9.6	9.6	9.6		
Conductivity (μmhos/cm)	0.112	0.112	0.112	0.112		
Dissolved Oxygen (mg/L)	4.36	4.47	4.55	4.57		
Turbidity (NTU)	166	169	179	189		
Eh (mv)	23	22	21	19		

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS: _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: P-112
WELL CONDITION: good

PROJECT NUMBER: 20600.07/1.20
WELL LOCK STATUS: locked
WEATHER: partly cloudy 70°F

GAUGE DATE: 6/24/96
SOUNDING METHOD: slope indicator
STICK UP/DOWN (ft): 2.35'

GAUGE TIME:
MEASUREMENT REF: top of pipe
WELL DIAMETER (in.): 2"

PURGE DATE: 6/24/96
PURGE METHOD: low flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 1605
FIELD PERSONNEL: KR, SA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): 16.41
B. DEPTH TO WATER (ft):
C. LIQUID DEPTH (ft) (A-B):

D. WELL VOLUME/FT (L): 0.165
E. WELL VOLUME (L) (C*D):
F. THREE WELL VOLUMES (L) (E*3):

Parameter	Beginning	1	2	3	4	5
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH		DRY				
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

TOTAL QUANTITY OF WATER REMOVED (L): Coulant sample, P112 Dry

SAMPLERS:
SAMPLING DATE:
SAMPLE TYPE:
SAMPLE BOTTLE IDs:
SAMPLE PARAMETERS:

SAMPLING TIME (START/END):
DECONTAMINATION FLUIDS USED:
SAMPLE PRESERVATIVES:

COMMENTS AND OBSERVATIONS:
* Tried to purge for 15 minutes, well dry.

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: P-132
WELL CONDITION: Good

PROJECT NUMBER: 29600477
WELL LOCK STATUS: Locked
WEATHER: overcast 70

GAUGE DATE: 6-24-96
SOUNDING METHOD: Sheprivalator
STICK UP/DOWN (ft): 2.51

GAUGE TIME: 1557
MEASUREMENT REF: ~~fe Top~~ top of pipe
WELL DIAMETER (in.): 2

PURGE DATE: 6-24-96
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: 1600
FIELD PERSONNEL: TRC, SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): 32.46
B. DEPTH TO WATER (ft): 17.81
C. LIQUID DEPTH (ft) (A-B): 14.65

D. WELL VOLUME/FT (L): 0.65
E. WELL VOLUME (L) (C*D): 8.86
F. THREE WELL VOLUMES (L) (E*3): 26.59

Parameter	Beginning	1	2	3	4	5
Time (min)	1600	1605	1610	1615	1620	1625
Depth to Water (ft)	17.81	18.12	18.00	17.85	17.85	17.85
Purge Rate (L/min)	—	0.1	0.1	0.1	0.1	0.1
Volume Purged (L)	—	0.5 ~~0.5~~	1.0	1.5	2.0	2.5
pH	9.49	8.78	8.63	8.31	8.08	7.83
Temperature (°C)	7.0	9.9	10.3	10.4	12.2	13.7
Conductivity (µmhos/cm)	0.020	0.024	0.022	0.024	0.022	0.022
Dissolved Oxygen (mg/L)	10.77	9.36	8.99	9.30	9.26	8.91
Turbidity (NTU)	378	115	108	85	65	62
Eh (mv)	-74	-5	19	68	91	105

TOTAL QUANTITY OF WATER REMOVED (L): 5.5

SAMPLERS: TRC SYC
SAMPLING DATE: 6-24-96
SAMPLE TYPE: Grab
SAMPLE BOTTLE IDs: BN-06-EP-MW-028
SAMPLE PARAMETERS: VOC

SAMPLING TIME (START/END): 1655
DECONTAMINATION FLUIDS USED: none
SAMPLE PRESERVATIVES: HCL

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING (OVERFLOW PAGE)

Site Name: Eastern Plume	Project No.: 2960047	Date: 6-24-96
Well ID: P-132	Field Personnel: TRC SYC	

Parameter	6	7	8	9	10	11
Time (min.)	1630	1635	1640	1645	1650	
Depth to Water (ft)	17.85	17.85	17.85	17.85	17.85	
Purge Rate (L/min)	0.1	0.1	0.1	0.1	0.1	
Volume Purged (L)	3.0	3.5	4.0	4.5	5.0	
pH	7.53	7.26	7.10	6.95	6.87	
Temperature (°C)	14.1	14.3	14.5	14.6	14.7	
Conductivity (μmhos/cm)	0.022	0.022	0.022	0.022	0.022	
Dissolved Oxygen (mg/L)	8.73	8.75	8.75	8.54	8.50	
Turbidity (NTU)	51	50	46	46	46	
Eh (mv)	117	128	134	141	145	

Parameter	12	13	14	15	16	17
Time (min)						
Depth to Water (ft)						
Purge Rate (L/min)						
Volume Purged (L)						
pH						
Temperature (°C)						
Conductivity (μmhos/cm)						
Dissolved Oxygen (mg/L)						
Turbidity (NTU)						
Eh (mv)						

COMMENTS AND OBSERVATIONS _____

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
PROJECT NUMBER: 2960047
WELL I.D.: EW-2
WELL LOCK STATUS: not locked
WELL CONDITION: Good
WEATHER: Overcast

GAUGE DATE: NA
GAUGE TIME: NA
SOUNDING METHOD: NA
MEASUREMENT REF: NA
STICK UP/DOWN (ft): NA
WELL DIAMETER (in.): NA

PURGE DATE: NA
PURGE TIME: NA
PURGE METHOD: NA
FIELD PERSONNEL: TRC, SYC
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): NA
B. DEPTH TO WATER (ft): NA
C. LIQUID DEPTH (ft) (A-B): NA
D. WELL VOLUME/FT (L): NA
E. WELL VOLUME (L) (C*D): NA
F. THREE WELL VOLUMES (L) (E*3): NA

Parameter	Beginning	1	2	3	4	5
Time (min)	1259					
Depth to Water (ft)	NA					
Purge Rate (L/min)	NA					
Volume Purged (L)	NA					
pH	6.94					
Temperature (°C)	10.1					
Conductivity (μmhos/cm)	0.118					
Dissolved Oxygen (mg/L)	10.02					
Turbidity (NTU)	0					
Eh (mv)	58					

TOTAL QUANTITY OF WATER REMOVED (L): NA

SAMPLERS: TRC, SYC
SAMPLING TIME (START/END): 1300
SAMPLING DATE: 6-27-96
DECONTAMINATION FLUIDS USED: NA
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-06-EP-R1003
SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
PROJECT NUMBER: 2960049
WELL I.D.: EW-3
WELL LOCK STATUS: locked
WELL CONDITION: Good
WEATHER: overcast

GAUGE DATE: NA
GAUGE TIME: NA
SOUNDING METHOD: NA
MEASUREMENT REF: NA
STICK UP/DOWN (ft): NA
WELL DIAMETER (in.): NA

PURGE DATE: NA
PURGE TIME: NA
PURGE METHOD: NA
FIELD PERSONNEL: TRC, SYC
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): NA
B. DEPTH TO WATER (ft): NA
C. LIQUID DEPTH (ft) (A-B): NA
D. WELL VOLUME/FT (L): NA
E. WELL VOLUME (L) (C*D): NA
F. THREE WELL VOLUMES (L) (E*3): NA

Parameter	Beginning	1	2	3	4	5
Time (min)	1249					
Depth to Water (ft)	NA					
Purge Rate (L/min)	NA					
Volume Purged (L)	NA					
pH	7.33					
Temperature (°C)	8.7					
Conductivity (μmhos/cm)	0.110					
Dissolved Oxygen (mg/L)	9.46					
Turbidity (NTU)	0					
Eh (mv)	39					

TOTAL QUANTITY OF WATER REMOVED (L): NA

SAMPLERS: TRC, SYC
SAMPLING TIME (START/END): 1250
SAMPLING DATE: 6-27-96
DECONTAMINATION FLUIDS USED: NA
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-06-EP-RI002
SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Eastern Plume
WELL I.D.: EW-5
WELL CONDITION: Good

PROJECT NUMBER: 2960047
WELL LOCK STATUS: locked
WEATHER: Overcast

GAUGE DATE: NA
SOUNDING METHOD: NA
STICK UP/DOWN (ft): NA

GAUGE TIME: NA
MEASUREMENT REF: NA
WELL DIAMETER (in.): NA

PURGE DATE: NA
PURGE METHOD: NA
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: NA
FIELD PERSONNEL: TRC, SYC
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): NA
B. DEPTH TO WATER (ft): NA
C. LIQUID DEPTH (ft) (A-B): NA

D. WELL VOLUME/FT (L): NA
E. WELL VOLUME (L) (C*D): NA
F. THREE WELL VOLUMES (L) (E*3): NA

Parameter	Beginning	1	2	3	4	5
Time (min)	1242					
Depth to Water (ft)	NA					
Purge Rate (L/min)	NA					
Volume Purged (L)	NA					
pH	7.10					
Temperature (°C)	9.1					
Conductivity (µmhos/cm)	0.118					
Dissolved Oxygen (mg/L)	8.47					
Turbidity (NTU)	0					
Eh (mv)	30					

TOTAL QUANTITY OF WATER REMOVED (L): NA

SAMPLERS: TRC, SYC
SAMPLING TIME (START/END): 1245
SAMPLING DATE: 6/27/96
DECONTAMINATION FLUIDS USED: NA
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-06-EP-R1001
SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Sites 1+3
WELL I.D.: EW-46
WELL CONDITION: Good

PROJECT NUMBER: 2960047
WELL LOCK STATUS: locked
WEATHER: overcast

GAUGE DATE: NA
SOUNDING METHOD: NA
STICK UP/DOWN (ft): NA

GAUGE TIME: NA
MEASUREMENT REF: NA
WELL DIAMETER (in.): NA

PURGE DATE: NA
PURGE METHOD: NA
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: NA
FIELD PERSONNEL: NA
WELL MOUTH VOCs (ppm): Start: 950 End:

WELL VOLUME

A. WELL DEPTH (ft): NA
B. DEPTH TO WATER (ft): NA
C. LIQUID DEPTH (ft) (A-B): NA

D. WELL VOLUME/FT (L): NA
E. WELL VOLUME (L) (C*D): NA
F. THREE WELL VOLUMES (L) (E*3): NA

Parameter	Beginning	1	2	3	4	5
Time (min)	1339					
Depth to Water (ft)	NA					
Purge Rate (L/min)	NA					
Volume Purged (L)	NA					
pH	6.24					
Temperature (°C)	12.6					
Conductivity (μmhos/cm)	0.946					
Dissolved Oxygen (mg/L)	5.74					
Turbidity (NTU)	47					
Eh (mv)	-6					

TOTAL QUANTITY OF WATER REMOVED (L): NA

SAMPLERS: TRC, SYC
SAMPLING TIME (START/END): 1340
SAMPLING DATE: 6-27-96
DECONTAMINATION FLUIDS USED: NA
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCl, HNO_3, NaOH
SAMPLE BOTTLE IDs: BN-01-R002
SAMPLE PARAMETERS: VOC, metals, cyanide

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Sites 1+3
WELL I.D.: EW-67
WELL CONDITION: Good

PROJECT NUMBER: 2960047
WELL LOCK STATUS: locked
WEATHER: overcast

GAUGE DATE: NA
SOUNDING METHOD: NA
STICK UP/DOWN (ft): NA

GAUGE TIME: NA
MEASUREMENT REF: NA
WELL DIAMETER (in.): NA

PURGE DATE: NA
PURGE METHOD: NA
AMBIENT AIR VOCs (ppm) Start: 0.0 End: 0.0

PURGE TIME: NA
FIELD PERSONNEL: NA
WELL MOUTH VOCs (ppm): Start: 0.0 End: 0.0

WELL VOLUME

A. WELL DEPTH (ft): NA
B. DEPTH TO WATER (ft): NA
C. LIQUID DEPTH (ft) (A-B): NA

D. WELL VOLUME/FT (L): NA
E. WELL VOLUME (L) (C*D): NA
F. THREE WELL VOLUMES (L) (E*3): NA

Parameter	Beginning	1	2	3	4	5
Time (min)	1304					
Depth to Water (ft)	NA					
Purge Rate (L/min)	NA					
Volume Purged (L)	NA					
pH	6.50					
Temperature (°C)	14.2					
Conductivity (μmhos/cm)	0.362					
Dissolved Oxygen (mg/L)	4.86					
Turbidity (NTU)	0					
Eh (mv)	-49					

TOTAL QUANTITY OF WATER REMOVED (L): NA

SAMPLERS: TRC, SYC
SAMPLING TIME (START/END): 1305
SAMPLING DATE: 6-27-96
DECONTAMINATION FLUIDS USED: NA
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL, NaOH, HNO_3
SAMPLE BOTTLE IDs: BN-06-S1-R1001
SAMPLE PARAMETERS: VOC, metals, cyanide

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Treatment Plant
WELL I.D.: Sit land 3 Influent
WELL CONDITION: NA

PROJECT NUMBER: 29600.47/7.2 C6
WELL LOCK STATUS: NA
WEATHER: NA

GAUGE DATE: NA
SOUNDING METHOD: NA
STICK UP/DOWN (ft): NA

GAUGE TIME: NA
MEASUREMENT REF: NA
WELL DIAMETER (in.): NA

PURGE DATE: NA
PURGE METHOD: NA
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: NA
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): NA
B. DEPTH TO WATER (ft): NA
C. LIQUID DEPTH (ft) (A-B): NA

D. WELL VOLUME/FT (L): NA
E. WELL VOLUME (L) (C*D): NA
F. THREE WELL VOLUMES (L) (E*3): NA

Parameter	Beginning	1	2	3	4	5
Time (min)	1248					
Depth to Water (ft)	NA					
Purge Rate (L/min)	NA					
Volume Purged (L)	NA					
pH	5.79					
Temperature (°C)	13.2					
Conductivity (μmhos/cm)	0.734					
Dissolved Oxygen (mg/L)	1.25					
Turbidity (NTU)	-2					
Eh (mv)	-27					

TOTAL QUANTITY OF WATER REMOVED (L): NA

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1255

SAMPLING DATE: 6/27/96
DECONTAMINATION FLUIDS USED: none

SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl, NaOH, HNO_3

SAMPLE BOTTLE IDs: BN-06-31-RI 003

SAMPLE PARAMETERS: VOAS, Cyanide, Total Elements

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Treatment Plant
PROJECT NUMBER: 29GCC.47/72CC
WELL I.D.: Eastern Plume Influent
WELL LOCK STATUS: NA
WELL CONDITION: NA
WEATHER: NA

GAUGE DATE: NA
GAUGE TIME: NA
SOUNDING METHOD: NA
MEASUREMENT REF: NA
STICK UP/DOWN (ft): NA
WELL DIAMETER (in.): NA

PURGE DATE: NA
PURGE TIME: NA
PURGE METHOD: NA
FIELD PERSONNEL: ~~NA~~ KR, BA
AMBIENT AIR VOCs (ppm) Start: 0 End: 0
WELL MOUTH VOCs (ppm): Start: [illegible] End: [illegible]

WELL VOLUME

A. WELL DEPTH (ft): NA
B. DEPTH TO WATER (ft): NA
C. LIQUID DEPTH (ft) (A-B): NA
D. WELL VOLUME/FT (L): NA
E. WELL VOLUME (L) (C*D): NA
F. THREE WELL VOLUMES (L) (E*3): NA

Parameter	Beginning	1	2	3	4	5
Time (min)	1304					
Depth to Water (ft)	NA					
Purge Rate (L/min)	NA					
Volume Purged (L)	NA					
pH	6.66					
Temperature (°C)	9.7					
Conductivity (μmhos/cm)	0.132					
Dissolved Oxygen (mg/L)	5.09					
Turbidity (NTU)	-2					
Eh (mv)	-29					

TOTAL QUANTITY OF WATER REMOVED (L): NA

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1307
SAMPLING DATE: 4/27/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl, NaOH, HNO3
SAMPLE BOTTLE IDs: BN-06-RI004
SAMPLE PARAMETERS: VOAs, Cyanide, Total Elements

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: Treatment Plant
WELL I.D.: Treated Effluent
WELL CONDITION: NA

PROJECT NUMBER: 29UCC.UN/72CC
WELL LOCK STATUS: NA
WEATHER: NA

GAUGE DATE: NA
SOUNDING METHOD: NA
STICK UP/DOWN (ft): NA

GAUGE TIME: NA
MEASUREMENT REF: NA
WELL DIAMETER (in.): NA

PURGE DATE: NA
PURGE METHOD: NA
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: NA
FIELD PERSONNEL: KR, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

WELL VOLUME

A. WELL DEPTH (ft): NA
B. DEPTH TO WATER (ft): NA
C. LIQUID DEPTH (ft) (A-B): NA

D. WELL VOLUME/FT (L): NA
E. WELL VOLUME (L) (C*D): NA
F. THREE WELL VOLUMES (L) (E*3): NA

Parameter	Beginning	1	2	3	4	5
Time (min)	1313					
Depth to Water (ft)	NA					
Purge Rate (L/min)	NA					
Volume Purged (L)	NA					
pH	6.33					
Temperature (°C)	12.8					
Conductivity (μmhos/cm)	0.168					
Dissolved Oxygen (mg/L)	10.95					
Turbidity (NTU)	-3					
Eh (mv)	207					

TOTAL QUANTITY OF WATER REMOVED (L): NA

SAMPLERS: KR, BA
SAMPLING TIME (START/END): 1300
SAMPLING DATE: 6/27/96
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: 1:1 HCl, NaOH, HNO3
SAMPLE BOTTLE IDs: BN-06-EP-TE001
SAMPLE PARAMETERS: VOAs

COMMENTS AND OBSERVATIONS: MS/MSD done here! BN-06-EP-
Duplicate done here, TEXD1

Appendix A.3

Field Record of Surface Water and Sediment Sampling Forms

EA Engineering, Science, and Technology

FIELD RECORD OF SURFACE WATER AND SEDIMENT SAMPLING

Site Name: Site 1 and 3			Project Number: 29600.47/1206
Sample Location ID: ~~BN-06~~ SW/Sed 1			Date: 6/22/96
Sampling Time: 1318 1320 1323 Sed	Start:	End:	Sample Team Members: KR, TC, BA

SURFACE WATER INFORMATION

1315

Type of Surface Water:
- (X) Stream
- ( ) River
- ( ) Pond/Lake
- ( ) Seep

Water Depth and Sample Location 6" (ft)

Depth of Sample from Top of Water 2" (ft)

Equipment Used for Collection:
- ( ) None, Grab into Bottle
- ( ) Bomb Sampler
- ( ) Pump
- (X) Dedicated jar

Decontamination Fluids Used:
- ( ) Isopropyl Alcohol
- ( ) ASTM Type II Water
- ( ) Deionized Water
- ( ) Hexane
- ( ) HNO_3 Solution
- ( ) Potable Water
- (X) None

Water Quality Parameters
- ( ) Temperature 11.5 °C
- ( ) Conductivity 0.220 µmhs/cm
- ( ) ph 6.62 units
- ( ) Dissolved oxygen 9.03 mg/L
- ( ) Turibidity 52 NTU
- ( ) Eh -52 mv

Velocity Measurements Obtained? (X) No ( ) Yes, See Flow Measurement Data Record

Field QC Data: ( ) Field Duplicate Collected (X) Duplicate ID
( ) MS/MSD (X) None

Sample Location Sketch:
- ( ) Yes
- (X) No

Method Used:
- ( ) Winkler
- (X) Probe

SEDIMENT INFORMATION

Type of Sample Collected:
- (X) Discrete
- ( ) Composite

Sediment Type:
- ( ) Clay
- (X) Sand
- ( ) Organic
- ( ) Gravel

Equipment Used for Collection:
- (X) Gravity Corer
- ( ) Stainless Steel Split Spoon
- ( ) Dredge
- ( ) Hand Spoon/Trowel
- ( ) Aluminum Pans
- ( ) Stainless Steel Bucket
- (X) Stainless Steel Auger
- ( )

Decontamination Fluids Used:
- ( ) Isopropyl Alcohol
- ( ) ASTM Type II Water
- (X) Deionized Water
- ( ) Liquinox Solution
- ( ) Hexane
- ( ) HNO_3 Solution
- ( ) Potable Water
- ( ) None

Sample Observations:
- (X) Odor None
- (X) Color Orangish-rust
- ( )

Field QC Data: ( ) Field Duplicate Collected (X) None
Duplicate ID
( ) MS/MSD

SAMPLES COLLECTED

Check if Required at this Location	Matrix: Surface Water	Matrix: Sediment	Check if Preserved with Acid/Base	Volume Required	Check if Sample Collected	Sample Bottle IDs
✓	✓		✓	2L 80mL	✓	BN-06-S1-SW007
✓		✓		8 oz	✓	BN-06-S1-SD007

NOTES/SKETCH

Iron, in water (orange)

EA Engineering, Science, and Technology

FIELD RECORD OF SURFACE WATER AND SEDIMENT SAMPLING

Site Name: Site 1 and 3			Project Number: 29600.47/7206
Sample Location ID: SW 1 and 2			Date: 6/22/96
Sampling Time: 1302 H2O 1308 Sed	Start:	End:	Sample Team Members: KR, TC, BA

SURFACE WATER INFORMATION

1300

Type of Surface Water:
(X) Stream ( ) River
( ) Pond/Lake ( ) Seep

Water Depth and Sample Location 4" (ft)

Depth of Sample from Top of Water 2" (ft)

Equipment Used for Collection:
( ) None, Grab into Bottle
( ) Bomb Sampler
( ) Pump
(X) dedicated jar

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
( ) Deionized Water
( ) Hexane
( ) HNO_3 Solution
( ) Potable Water
(X) None

Water Quality Parameters
(X) Temperature 10.6 °C
(X) Conductivity 0.186 µmhs/cm
(X) ph 6.69 units
(X) Dissolved oxygen 11.36 mg/L
(X) Turibidity 3 NTU
(X) Eh -26 mv

Velocity Measurements Obtained? (X) No ( ) Yes, See Flow Measurement Data Record

Field QC Data: ( ) Field Duplicate Collected
Duplicate ID
( ) MS/MSD
none

Sample Location Sketch:
( ) Yes
(X) No

Method Used:
(X) Winkler
( ) Probe

SEDIMENT INFORMATION

Type of Sample Collected:
(X) Discrete
( ) Composite

Sediment Type:
( ) Clay
(X) Sand
(X) Organic
( ) Gravel

Equipment Used for Collection:
(X) Gravity Corer 1.5"
( ) Stainless Steel Split Spoon
( ) Dredge
( ) Hand Spoon/Trowel
( ) Aluminum Pans
( ) Stainless Steel Bucket
(X) Stainless Steel Auger
( )

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
(X) Deionized Water
( ) Liquinox Solution
( ) Hexane
( ) HNO_3 Solution
( ) Potable Water
( ) None

Sample Observations:
(X) Odor Slight organic
(X) Color greyish-orange
( )

Field QC Data: ( ) Field Duplicate Collected
Duplicate ID
none
( ) MS/MSD

SAMPLES COLLECTED

Check if Required at this Location	Matrix: Surface Water	Matrix: Sediment	Check if Preserved with Acid/Base	Volume Required	Check if Sample Collected	Sample Bottle IDs
✓	✓		✓	2L 80mL	✓	BN-06-S1-SW006
✓		✓		8 oz	✓	BN-06-S1-SD006

NOTES/SKETCH

EA Engineering, Science, and Technology

FIELD RECORD OF SURFACE WATER AND SEDIMENT SAMPLING

Site Name: SW/Sed 3, Site 1and3			Project Number: 29600.47/7206
Sample Location ID: BN-06-S1-SW,SD005			Date: June 22, 1996
Sampling Time: 1210 H2O 1214 Sed	Start: 12	End: 1207	Sample Team Members: KR, TC, BA

SURFACE WATER INFORMATION

Type of Surface Water:
- (X) Stream
- ( ) Pond/Lake
- ( ) River
- ( ) Seep

Water Depth and Sample Location 4' (ft)

Depth of Sample from Top of Water 2' (ft)

Equipment Used for Collection:
- ( ) None, Grab into Bottle
- ( ) Bomb Sampler
- (X) Pump Quicksand

Decontamination Fluids Used:
- ( ) Isopropyl Alcohol
- ( ) ASTM Type II Water
- ( ) Deionized Water
- ( ) Hexane
- ( ) HNO_3 Solution
- ( ) Potable Water
- (X) None

Water Quality Parameters
- (X) Temperature 10.8 °C
- (X) Conductivity 0.181 µmhs/cm
- (X) ph 6.72 units
- (X) Dissolved oxygen 8.58 mg/L
- (X) Turibidity 8 NTU
- (X) Eh 1 mv

Velocity Measurements Obtained? (X) No ( ) Yes, See Flow Measurement Data Record _____

Field QC Data: ( ) Field Duplicate Collected (X) Duplicate ID _____ none
( ) MS/MSD

Sample Location Sketch:
- ( ) Yes
- (X) No

Method Used:
- ( ) Winkler
- (X) Probe

SEDIMENT INFORMATION

Type of Sample Collected:
- (X) Discrete
- ( ) Composite

Sediment Type:
- ( ) Clay
- (X) Sand
- ( ) Organic
- ( ) Gravel

Equipment Used for Collection:
- (X) Gravity Corer
- ( ) Stainless Steel Split Spoon
- ( ) Dredge
- ( ) Hand Spoon/Trowel
- ( ) Aluminum Pans
- ( ) Stainless Steel Bucket
- (X) Stainless Steel Auger
- ( ) _____

Decontamination Fluids Used:
- ( ) Isopropyl Alcohol
- ( ) ASTM Type II Water
- (X) Deionized Water
- ( ) Liquinox Solution
- ( ) Hexane
- ( ) HNO_3 Solution
- ( ) Potable Water
- ( ) None

Sample Observations:
- (X) Odor none
- (X) Color grey, light brown
- ( ) _____

Field QC Data: ( ) Field Duplicate Collected none
Duplicate ID _____ ( ) MS/MSD

SAMPLES COLLECTED

Check if Required at this Location	Matrix: Surface Water	Matrix: Sediment	Check if Preserved with Acid/Base	Volume Required	Check if Sample Collected	Sample Bottle IDs
✓	✓		✓	2L 80mL	✓	BN-06-S1-SW005
✓		✓		8 oz	✓	BN-06-S1-SD005

NOTES/SKETCH

Iron in Quicksand water - orange

EA Engineering, Science, and Technology

FIELD RECORD OF SURFACE WATER AND SEDIMENT SAMPLING

Site Name: Site 1 and 3 SDH			Project Number: 2960.47/7206
Sample Location ID: SW/SD 4			Date: 6/22/96
Sampling Time: 1133 H_2O 1137 SED	Start:	End:	Sample Team Members: KR, TC, BA

SURFACE WATER INFORMATION

Type of Surface Water:
(X) Stream ( ) River
( ) Pond/Lake ( ) Seep

Water Depth and Sample Location 3" (ft)

Depth of Sample from Top of Water 1" (ft)

Equipment Used for Collection:
( ) None, Grab into Bottle
( ) Bomb Sampler
( ) Pump
(X) Dedicated Tail

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
( ) Deionized Water
( ) Hexane
( ) HNO_3 Solution
( ) Potable Water
(X) None

Water Quality Parameters 1129
( ) Temperature 11.5 °C
( ) Conductivity .110 µmhs/cm
( ) ph 6.60 units
( ) Dissolved oxygen 10.25 mg/L
( ) Turibidity 0 NTU
( ) Eh 63 mv

Velocity Measurements Obtained? (X) No ( ) Yes, See Flow Measurement Data Record _____

Field QC Data: (X) Field Duplicate Collected
Duplicate ID BN-06-S1-SW004
(X) MS/MSD

Sample Location Sketch:
( ) Yes
(X) No

Method Used:
(X) Winkler
( ) Probe

SEDIMENT INFORMATION

Type of Sample Collected:
(X) Discrete
( ) Composite

Sediment Type:
( ) Clay
(X) Sand
( ) Organic
( ) Gravel

Equipment Used for Collection:
(X) ~~Gravity Corer~~ AT
( ) Stainless Steel Split Spoon
( ) Dredge
( ) Hand Spoon/Trowel
( ) Aluminum Pans
( ) Stainless Steel Bucket
(X) Stainless Steel Auger
( ) _____

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
(X) Deionized Water
( ) Liquinox Solution
( ) Hexane
( ) HNO_3 Solution
( ) Potable Water
( ) None

Sample Observations:
(X) Odor slight organic
(X) Color light brown
( ) _____

Field QC Data: (X) Field Duplicate Collected
Duplicate ID BN-06-S1-SDXD1
(X) MS/MSD

SAMPLES COLLECTED

Check if Required at this Location	Matrix: Surface Water	Matrix: Sediment	Check if Preserved with Acid/Base	Volume Required	Check if Sample Collected	Sample Bottle IDs
✓	✓		✓	2L 80mL	✓	BN-06-S1-SW004 MS/MSD
✓		✓		8oz	✓	BN-06-S1-SD004 MS/MSD

NOTES/SKETCH

EA Engineering, Science, and Technology

FIELD RECORD OF SURFACE WATER AND SEDIMENT SAMPLING

Site Name: SW/SD 5, Site 1 on Cl 3			Project Number: 29600.49/7206
Sample Location ID: BN-06-S1-SW/SD003			Date: 23 June 1996
Sampling Time: 1117 H_2O 1121 Sed	Start:	End:	Sample Team Members: KR, BA, TC

KR

SURFACE WATER INFORMATION

1115

Type of Surface Water:
- (X) Stream
- ( ) River
- ( ) Pond/Lake
- ( ) Seep

Water Depth and Sample Location 8" (ft)

Depth of Sample from Top of Water 2" (ft)

Equipment Used for Collection:
- ( ) None, Grab into Bottle
- ( ) Bomb Sampler
- ( ) Pump
- (X) dedicated jar

Decontamination Fluids Used:
- ( ) Isopropyl Alcohol
- ( ) ASTM Type II Water
- ( ) Deionized Water
- ( ) Hexane
- ( ) HNO_3 Solution
- ( ) Potable Water
- (X) None

Water Quality Parameters
- (X) Temperature 11.5 °C
- (X) Conductivity 114 µmhs/cm
- (X) ph 6.47 units
- (X) Dissolved oxygen 10.10 mg/L
- (X) Turibidity 0 NTU
- (X) Eh 108 mv

Velocity Measurements Obtained? ( ) No ( ) Yes, See Flow Measurement Data Record

Field QC Data: ( ) Field Duplicate Collected
Duplicate ID
( ) MS/MSD
none

Sample Location Sketch:
- ( ) Yes
- (X) No

Method Used:
- ( ) Winkler
- (X) Probe

SEDIMENT INFORMATION

Type of Sample Collected:
- (X) Discrete
- ( ) Composite

Sediment Type:
- ( ) Clay
- (X) Sand
- (X) Organic
- ( ) Gravel

Equipment Used for Collection:
- ~~(X) Gravity Corer~~
- ( ) Stainless Steel Split Spoon
- ( ) Dredge
- ( ) Hand Spoon/Trowel
- ( ) Aluminum Pans
- ( ) Stainless Steel Bucket
- (X) Stainless Steel Auger
- ( )

Decontamination Fluids Used:
- ( ) Isopropyl Alcohol
- ( ) ASTM Type II Water
- (X) Deionized Water
- ( ) Liquinox Solution
- ( ) Hexane
- ( ) HNO_3 Solution
- ( ) Potable Water
- (X) None

Sample Observations:
- (X) Odor organic
- (X) Color light brown
- ( )

Field QC Data: ( ) Field Duplicate Collected none
Duplicate ID
( ) MS/MSD

SAMPLES COLLECTED

Check if Required at this Location	Matrix: Surface Water	Matrix: Sediment	Check if Preserved with Acid/Base	Volume Required	Check if Sample Collected	Sample Bottle IDs
✓	✓		✓	2L 80mL	✓	BN-06-S1-SW003
✓		✓		8 oz	✓	BN-06-S1-SD003

NOTES/SKETCH

oily sheen on sediment

EA Engineering, Science, and Technology

FIELD RECORD OF SURFACE WATER AND SEDIMENT SAMPLING

Site Name: Site land 3			Project Number: 29600.47/720
Sample Location ID: SW/Sed 6			Date: 6/22/96
Sampling Time: 1104 H2O 1107 Sed	Start: KR	End:	Sample Team Members: KR, BA, TC

SURFACE WATER INFORMATION

1100

Type of Surface Water:
- (X) Stream
- ( ) River
- ( ) Pond/Lake
- ( ) Seep

Water Depth and Sample Location 10" ~~(ft)~~ KR

Depth of Sample from Top of Water 3' ~~(ft)~~ KR

Equipment Used for Collection:
- ( ) None, Grab into Bottle
- ( ) Bomb Sampler
- ( ) Pump _____
- (X) dedicated jar

Decontamination Fluids Used:
- ( ) Isopropyl Alcohol
- ( ) ASTM Type II Water
- ( ) Deionized Water
- ( ) Hexane
- ( ) HNO_3 Solution
- ( ) Potable Water
- (X) None

Water Quality Parameters
- (X) Temperature 11.5 °C
- (X) Conductivity 0.114 µmhs/cm
- (X) ph 6.26 units
- (X) Dissolved oxygen 10.26 mg/L
- (X) Turibidity 2 NTU
- (X) Eh 109 mv

Velocity Measurements Obtained? (X) No ( ) Yes, See Flow Measurement Data Record _____

Field QC Data: ( ) Field Duplicate Collected Duplicate ID _____ ( ) MS/MSD None

Sample Location Sketch: ( ) Yes (X) No

Method Used: ( ) Winkler (X) Probe

SEDIMENT INFORMATION

Type of Sample Collected:
- (X) Discrete
- ( ) Composite

Sediment Type:
- ( ) Clay
- (X) Sand
- (X) Organic
- ( ) Gravel

Equipment Used for Collection:
- ~~(X) Gravity Corer~~ BA
- ( ) Stainless Steel Split Spoon
- ( ) Dredge
- ( ) Hand Spoon/Trowel
- ( ) Aluminum Pans
- ( ) Stainless Steel Bucket
- (X) Stainless Steel Auger
- ( ) _____

Decontamination Fluids Used:
- ( ) Isopropyl Alcohol
- ( ) ASTM Type II Water
- (X) Deionized Water
- ( ) Liquinox Solution
- ( ) Hexane
- ( ) HNO_3 Solution
- ( ) Potable Water
- ( ) None

Sample Observations:
- (X) Odor none
- (X) Color dark brown
- ( ) _____

Field QC Data: ( ) Field Duplicate Collected Duplicate ID _____ ( ) MS/MSD None

SAMPLES COLLECTED

Check if Required at this Location	Matrix: Surface Water	Matrix: Sediment	Check if Preserved with Acid/Base	Volume Required	Check if Sample Collected	Sample Bottle IDs
✓	✓		✓	2L 80mL	✓	BN-06-S1-SD002
✓		✓		80 mL	✓	BN-06-S1-SD002

NOTES/SKETCH

Slightly green on sediment

EA Engineering, Science, and Technology

FIELD RECORD OF SURFACE WATER AND SEDIMENT SAMPLING

Site Name: Site 1 and 3	Project Number: 29400.47/72CL
Sample Location ID: SW/Sed 7	Date: 6/22/96
Sampling Time: 1050 H_2O 1053 Sed Start: ~~KR~~ End:	Sample Team Members: TC, BA, KR

SURFACE WATER INFORMATION

1045

Type of Surface Water:
(X) Stream
( ) River
( ) Pond/Lake
( ) Seep

Water Depth and Sample Location 8" ~~(ft)~~

Depth of Sample from Top of Water 2" ~~(ft)~~

Equipment Used for Collection:
( ) None, Grab into Bottle
( ) Bomb Sampler
( ) Pump
(X) Decycated jar

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
( ) Deionized Water
( ) Hexane
( ) HNO_3 Solution
( ) Potable Water
(X) None

Water Quality Parameters
(X) Temperature 11.5 °C
(X) Conductivity 0.118 µmhs/cm
(X) ph 6.35 units
(X) Dissolved oxygen 9.27 mg/L
(X) Turibidity 0 NTU
(X) Eh 127 mv

Velocity Measurements Obtained? (X) No ( ) Yes, See Flow Measurement Data Record

Field QC Data: ( ) Field Duplicate Collected (X)
Duplicate ID
( ) MS/MSD (X) None

Sample Location Sketch:
( ) Yes
(X) No

Method Used:
( ) Winkler
(X) Probe

SEDIMENT INFORMATION

Type of Sample Collected:
(X) Discrete
( ) Composite

Sediment Type:
( ) Clay
(X) Sand
( ) Organic
( ) Gravel

Equipment Used for Collection:
~~(X) Gravity Corer~~
( ) Stainless Steel Split Spoon
( ) Dredge
( ) Hand Spoon/Trowel
( ) Aluminum Pans
( ) Stainless Steel Bucket
(X) Stainless Steel Auger
( )

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
(X) Deionized Water
( ) Liquinox Solution
( ) Hexane
( ) HNO_3 Solution
( ) Potable Water
( ) None

Sample Observations:
(X) Odor None
(X) Color dark brown
( )

Field QC Data: ( ) Field Duplicate Collected (X)
Duplicate ID none
( ) MS/MSD

SAMPLES COLLECTED

Check if Required at this Location	Matrix: Surface Water	Matrix: Sediment	Check if Preserved with Acid/Base	Volume Required	Check if Sample Collected	Sample Bottle IDs
✓	✓		✓	2L 80mL	✓	BN-06-S1-SW001
✓		✓		80mL	✓	BN-06-S1-SD001

NOTES/SKETCH

Appendix A.4

Field Record of Seep Sampling Forms

EA Engineering, Science, and Technology

FIELD RECORD OF SURFACE WATER AND SEDIMENT SAMPLING

Site Name: Site 1 and 3			Project Number: 29600.47 /1726
Sample Location ID: Seep #1			Date: 6/22/96
Sampling Time: 1349 H20 1352 sed	Start:	End:	Sample Team Members: KR, BA, TC

SURFACE WATER INFORMATION

1348

Type of Surface Water:
( ) Stream ( ) River
( ) Pond/Lake (X) Seep

Water Depth and Sample Location 4" (ft)

Depth of Sample from Top of Water 2" (ft)

Equipment Used for Collection:
( ) None, Grab into Bottle
( ) Bomb Sampler
( ) Pump _____
(X) decanted jar

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
( ) Deionized Water
( ) Hexane
( ) HNO_3 Solution
( ) Potable Water
(X) None

Water Quality Parameters
(X) Temperature 10.4 °C
(X) Conductivity 0.296 µmhs/cm
(X) ph 6.75 units
(X) Dissolved oxygen 3.15 mg/L
(X) Turibidity 417 NTU
(X) Eh 58 mv

Velocity Measurements Obtained? (X) No ( ) Yes, See Flow Measurement Data Record _____

Field QC Data: ( ) Field Duplicate Collected
Duplicate ID _____
( ) MS/MSD
none

Sample Location Sketch:
( ) Yes
(X) No

Method Used:
( ) Winkler
(X) Probe

SEDIMENT INFORMATION

Type of Sample Collected:
(X) Discrete
( ) Composite

Sediment Type:
( ) Clay
( ) Sand
(X) Organic
( ) Gravel

Equipment Used for Collection:
~~(X) Gravity Corer~~
( ) Stainless Steel Split Spoon
( ) Dredge
( ) Hand Spoon/Trowel
( ) Aluminum Pans
( ) Stainless Steel Bucket
(X) Stainless Steel Auger
( ) _____

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
(X) Deionized Water
( ) Liquinox Solution
( ) Hexane
( ) HNO_3 Solution
( ) Potable Water
( ) None

Sample Observations:
(X) Odor None
(X) Color dark, brown reddish
( ) _____

Field QC Data: ( ) Field Duplicate Collected
Duplicate ID _____ none
( ) MS/MSD

SAMPLES COLLECTED

Check if Required at this Location	Matrix: Surface Water	Matrix: Sediment	Check if Preserved with Acid/Base	Volume Required	Check if Sample Collected	Sample Bottle IDs
✓	✓		✓	2L 80mL	✓	BN-06-S1-LTSW1
✓		✓		8 oz		BN-06-S1-LTSD1

NOTES/SKETCH

EA Engineering, Science, and Technology

FIELD RECORD OF SURFACE WATER AND SEDIMENT SAMPLING

Site Name: Site 1 and 3	Project Number: 29600.47/7206
Sample Location ID: Seep #2	Date: 6/22/96
Sampling Time: 1415 Sed. Start: ~~End:~~	Sample Team Members: KR, TC, BA

SURFACE WATER INFORMATION

Type of Surface Water:
( ) Stream ( ) River
( ) Pond/Lake (X) Seep

Water Depth and Sample Location ___ (ft)

Depth of Sample from Top of Water ___ (ft)

Equipment Used for Collection:
( ) None. Grab into Bottle
( ) Bomb Sampler
( ) Pump ___
(X) decanted jar

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
( ) Deionized Water
( ) Hexane
( ) HNO_3 Solution
( ) Potable Water
(X) None

Water Quality Parameters
( ) Temperature ___ °C
( ) Conductivity ___ µmhs/cm
( ) ph ___ units
( ) Dissolved oxygen ___ mg/L
( ) Turibidity ___ NTU
( ) Eh ___ mv

Couldn't sample, no water

Velocity Measurements Obtained? (X) No ( ) Yes, See Flow Measurement Data Record ___

Field QC Data: ( ) Field Duplicate Collected
Duplicate ID ___
( ) MS/MSD None

Sample Location Sketch:
( ) Yes
(X) No

Method Used:
( ) Winkler
(X) Probe

SEDIMENT INFORMATION

Type of Sample Collected:
(X) Discrete
( ) Composite

Sediment Type:
(X) Clay
( ) Sand
( ) Organic
( ) Gravel

Equipment Used for Collection:
1c ~~(X) Gravity Corer~~
( ) Stainless Steel Split Spoon
( ) Dredge
( ) Hand Spoon/Trowel
( ) Aluminum Pans
( ) Stainless Steel Bucket
(X) Stainless Steel Auger
( ) ___

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
( ) Deionized Water
( ) Liquinox Solution
( ) Hexane
( ) HNO_3 Solution
( ) Potable Water
(X) None

Sample Observations:
(X) Odor none
(X) Color reddish, black
( ) ___

Field QC Data: ( ) Field Duplicate Collected
Duplicate ID ___
None
( ) MS/MSD

SAMPLES COLLECTED

Check if Required at this Location	Matrix: Surface Water	Matrix: Sediment	Check if Preserved with Acid/Base	Volume Required	Check if Sample Collected	Sample Bottle IDs
✓		✓		8 oz	✓	BN-06-S1-LTSD2

NOTES/SKETCH

EA Engineering, Science, and Technology

FIELD RECORD OF SURFACE WATER AND SEDIMENT SAMPLING

Site Name: Site 1 and 3			Project Number: 29600.47/720G
Sample Location ID: Seep #3			Date: 6/22/96
Sampling Time: 1420 H2O 1430 Sed	Start:	End:	Sample Team Members: KR, TC, BA

SURFACE WATER INFORMATION

Type of Surface Water:
( ) Stream ( ) River
( ) Pond/Lake (X) Seep

Water Depth and Sample Location 4" (ft)

Depth of Sample from Top of Water 2" (ft)

Equipment Used for Collection:
( ) None, Grab into Bottle
( ) Bomb Sampler
( ) Pump _____
(X) dedicated jar

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
( ) Deionized Water
( ) Hexane
( ) HNO_3 Solution
( ) Potable Water
(X) None

1418

Water Quality Parameters
(X) Temperature 10.9 °C
(X) Conductivity .308 µmhs/cm
(X) ph 6.63 units
(X) Dissolved oxygen 1.66 mg/L
(X) Turibidity 253 NTU
(X) Eh 20 mv

Velocity Measurements Obtained? (X) No ( ) Yes, See Flow Measurement Data Record _____

Field QC Data: (X) Field Duplicate Collected
Duplicate ID BN-06-SI-LTXD2
( ) MS/MSD

Sample Location Sketch:
( ) Yes
(X) No

Method Used:
( ) Winkler
(X) Probe

SEDIMENT INFORMATION

Type of Sample Collected:
(X) Discrete
( ) Composite

Sediment Type:
(X) Clay
( ) Sand
( ) Organic
( ) Gravel

Equipment Used for Collection:
( ) Gravity Corer
( ) Stainless Steel Split Spoon
( ) Dredge
( ) Hand Spoon/Trowel
( ) Aluminum Pans
( ) Stainless Steel Bucket
(X) Stainless Steel Auger
( ) _____

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
(X) Deionized Water
( ) Liquinox Solution
( ) Hexane
( ) HNO_3 Solution
( ) Potable Water
( ) None

Sample Observations:
(X) Odor none
(X) Color orangish-reddish
( ) _____

Field QC Data: (X) Field Duplicate Collected
Duplicate ID BN-06-SI-LTXD1
( ) MS/MSD

SAMPLES COLLECTED

Check if Required at this Location	Matrix: Surface Water	Matrix: Sediment	Check if Preserved with Acid/Base	Volume Required	Check if Sample Collected	Sample Bottle IDs
✓	✓		✓	2L 40mL	✓	BN-06-SI-LTSW2
✓		✓		8oz	✓	BN-06-SI-LTSD3

NOTES/SKETCH

EA Engineering, Science, and Technology

FIELD RECORD OF SURFACE WATER AND SEDIMENT SAMPLING

Site Name: Site 1 and 3			Project Number: 29600.47/1206
Sample Location ID: Seep #4			Date: 6/22/96
Sampling Time: 1435 Std	~~Start:~~	~~End:~~ K	Sample Team Members: KR, BA, TC

SURFACE WATER INFORMATION Water not sampled, no water in seep

Type of Surface Water:
( ) Stream ( ) River
( ) Pond/Lake (X) Seep

Water Depth and Sample Location _____ (ft)

Depth of Sample from Top of Water _____ (ft)

Equipment Used for Collection:
( ) None, Grab into Bottle
( ) Bomb Sampler
( ) Pump _____

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
( ) Deionized Water
( ) Hexane
( ) HNO_3 Solution
( ) Potable Water
( ) None

Water Quality Parameters
( ) Temperature _____ °C
( ) Conductivity _____ µmhs/cm
( ) ph _____ units
( ) Dissolved oxygen _____ mg/L
( ) Turibidity _____ NTU
( ) Eh _____ mv

Velocity Measurements Obtained? ( ) No ( ) Yes, See Flow Measurement Data Record _____

Field QC Data: ( ) Field Duplicate Collected
Duplicate ID _____
( ) MS/MSD

Sample Location Sketch:
( ) Yes
( ) No

Method Used:
( ) Winkler
( ) Probe

SEDIMENT INFORMATION

Type of Sample Collected:
(X) Discrete
( ) Composite

Sediment Type:
(X) Clay
( ) Sand
( ) Organic
( ) Gravel

Equipment Used for Collection:
( ) Gravity Corer
( ) Stainless Steel Split Spoon
( ) Dredge
( ) Hand Spoon/Trowel
( ) Aluminum Pans
( ) Stainless Steel Bucket
(X) Stainless Steel Auger
( ) _____

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
(X) Deionized Water
( ) Liquinox Solution
( ) Hexane
( ) HNO_3 Solution
( ) Potable Water
( ) None

Sample Observations:
(X) Odor none
(X) Color orange
( ) _____

Field QC Data: ( ) Field Duplicate Collected none
Duplicate ID _____
( ) MS/MSD

SAMPLES COLLECTED

Check if Required at this Location	Matrix: Surface Water	Matrix: Sediment	Check if Preserved with Acid/Base	Volume Required	Check if Sample Collected	Sample Bottle IDs
✓		✓		8 oz	✓	BW-06-S1-LTSD4

NOTES/SKETCH

EA Engineering, Science, and Technology

FIELD RECORD OF SURFACE WATER AND SEDIMENT SAMPLING

Site Name: Site 1 and 3	Project Number: 29600.47/7206
Sample Location ID: Seep #5	Date: 6/22/96
Sampling Time: 1450 H2O 1454 SED Start: End:	Sample Team Members: KR, TC, BA

1448

SURFACE WATER INFORMATION

Type of Surface Water:
( ) Stream ( ) River
( ) Pond/Lake (X) Seep

Water Depth and Sample Location 3" (ft)

Depth of Sample from Top of Water 1" (ft)

Equipment Used for Collection:
( ) None, Grab into Bottle
( ) Bomb Sampler
( ) Pump
(X) dedicated jar

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
( ) Deionized Water
( ) Hexane
( ) HNO_3 Solution
( ) Potable Water
(X) None

Water Quality Parameters
(X) Temperature 12.6 °C
(X) Conductivity 0.162 µmhs/cm
(X) ph 6.79 units
(X) Dissolved oxygen 8.77 mg/L
(X) Turibidity 700 NTU
(X) Eh -7 mv

Velocity Measurements Obtained? (X) No ( ) Yes, See Flow Measurement Data Record

Field QC Data: ( ) Field Duplicate Collected (X)
Duplicate ID
( ) MS/MSD (X) None

Sample Location Sketch:
( ) Yes
(X) No

Method Used:
( ) Winkler
(X) Probe

SEDIMENT INFORMATION

Type of Sample Collected:
(X) Discrete
( ) Composite

Sediment Type:
(X) Clay
( ) Sand
( ) Organic
( ) Gravel

Equipment Used for Collection:
( ) Gravity Corer
( ) Stainless Steel Split Spoon
( ) Dredge
( ) Hand Spoon/Trowel
( ) Aluminum Pans
( ) Stainless Steel Bucket
(X) Stainless Steel Auger
( )

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
(X) Deionized Water
( ) Liquinox Solution
( ) Hexane
( ) HNO_3 Solution
( ) Potable Water
( ) None

Sample Observations:
(X) Odor Organic
(X) Color reddish-orange
( )

Field QC Data: ( ) Field Duplicate Collected (X) None
Duplicate ID
( ) MS/MSD

SAMPLES COLLECTED

Check if Required at this Location	Matrix: Surface Water	Matrix: Sediment	Check if Preserved with Acid/Base	Volume Required	Check if Sample Collected	Sample Bottle IDs
✓	✓		✓	2 80mL	✓	BN-06-S1-LTSW3
✓		✓		8 oz	✓	BN-06-S1-LTSD5

NOTES/SKETCH

Oily sheen on sediment

Appendix A.5

Field Record of Landfill Gas Monitoring

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

FIELD RECORD OF LANDFILL GAS MONITORING

Project Name: NAS Brunswick	Project No: 29600.47.7200	Date: 6/26/96 - 1400	
Weather/Temperature/Barometric Pressure: Sunny, Windy, 65°F, 29.90 in Hg			
EA Personnel: CJV, JAA MC	Equipment: Landtec GA-90 / Magnahelic 0-.25" Vacuum Gauge		
Equipment Calibration Information: Landtec GA-90 HAZCO Factory Calibrated			

% CO_2	ID No.	Labeled/ Capped	Probe/Vent Locked	Casing/Seal Condition	Depth to Bottom (ft)	Pressure (in. H_2O)	Percent Methane	Percent Oxygen	Comments
0	GP-4	Capped Not Labeled	yes	Good	N/A	0	0.1	20.6	cracked concrete
0	GP-5	Capped Not Labeled	yes	Good		0	0	20.5	
0	GP-6	~~yes~~	yes	Good	N	0	0.1	20.6	Cracked concrete seal
4.6	GV-1*	NO/NA	NA	Not Completed		0	.3	14.5	6" PVC Capped Riser / Impact Barrier Plastic
0	GV-2	NO/NA		Not Completed		0	.2	20.3	Plastic Impact Casing
0	GV-3	NO/NA		Good		0	0.1	20.4	
0	GV-4	NO/NA		Good		0	0.2	20.1	
0	GV-5	NO/NA		Good		0	0.1	20.6	
0	GV-6	NO/NA		Good		0	0.2	20.6	
0	GV-7	NO/NA		Good		0	0.3	20.7	
0	GV-8	NO/NA		Good		0	0.2	20.8	
0	GV-9	NO/NA		Good		0	0.2	20.8	
0	GV-10	NO/NA		Good		0	0.1	20.7	
0	GV-11	NO/NA		Good		0	0.2	20.8	
0.1	GV-12	NO/NA		Good		0	0.2	20.3	
0.0	GV-13	NO/NA		Good		0	0.2	20.8	6" PVC Capped Riser
	GV-14*	NO/NA		Not Completed		0	0.2	12.5	CO_2 = 6.0

No P.

• Make Cover Plug

• Label Probes/Vents

f:\wp\29600\47

Completed Impact Casing ~~Concrete~~ Filled w/ Sand

*Not Completed Impact Barrier (Sand Filled Plastic Drum)

Appendix B

Analytical Data Quality Review

APPENDIX B - CONTENTS

Page

B.1 INTRODUCTION B-1

B.1.1 Field Sampling Program Quality Control B-2
B.1.2 Laboratory Analytical Quality Control Program B-2

B.2 SAMPLE HOLDING TIMES B-2
B.3 PRECISION B-2

B.3.1 Volatile Organic Compounds B-2
B.3.2 Target Analyte List Metals (Including Cyanide) B-3

B.4 ACCURACY B-3

B.4.1 Volatile Organic Compounds B-3
B.4.2 Target Analyte List Metals (Including Cyanide) B-4

B.5 COMPLETENESS B-5
B.6 FIELD QUALITY CONTROL BLANKS B-5
B.7 DUPLICATE FIELD SAMPLES B-8

APPENDIX B

ANALYTICAL DATA QUALITY REVIEW

B.1 INTRODUCTION

This investigation utilized both field quality control measures and analytical laboratory quality control measures to ensure that the data quality objectives presented in the project-specific Quality Assurance Project Plan (QAPP) contained in the Long-Term Monitoring Plan (ABB-ES 1994) were met.

The sampling program consisted of 69 aqueous samples (ground water, surface water, and leachate station seep) and 12 sediment samples collected from Sites 1 and 3 and the Eastern Plume sites. For the combined analyses for this site, 6 aqueous and 1 sediment sample delivery groups (SDG) were provided to the laboratory. Sample duplicates, source water, equipment rinsate blanks, and trip blanks were collected at the frequency required by the QAPP.

Analytical quality control was reviewed for compliance against data quality objectives established for precision and accuracy for each sample and analysis type, including field quality control blanks (i.e., trip blank) and field sample duplication. Analytical precision was based upon the mean relative percent difference (RPD) of the matrix spike/matrix spike duplicates (MS/MSD) for organic analysis and the RPD of the laboratory duplicates for inorganic analysis. Accuracy was based upon the reported spike recoveries for the laboratory control samples (LCS), MS/MSD and system monitoring compound (SMC) recoveries (for organic analysis), and LCS and MS recoveries (for inorganic analysis).

The ability of the laboratory to extract compounds is confirmed by the recoveries of the LCS. MS/MSD and SMC recoveries measure the effect of the sample matrix on sample preparation and measurement methodology. Known quantities of target compounds are spiked into the sample matrix for the MS/MSD and recoveries are used to measure potential bias due to matrix effects. SMC, which are structurally similar to the targeted analytes, are used to evaluate the recovery of the target compounds. These are then used as indicators for all of the analytes. The accuracy of the LCS spike recoveries is used in conjunction with the MS/MSD when evaluating organic analyses.

Data completeness was quantified by reviewing the number of usable results to the number of samples scheduled for collection.

The following sections summarize the results of this program.

B.1.1 Field Sampling Program Quality Control

A field quality control duplicate sample was collected for each matrix (i.e., sediment and water) and analyzed for the same parameters as the environmental samples to determine field sampling precision. The potential for cross-contamination of volatile organics during sample storage and shipment was monitored by trip blanks which were shipped with each sample cooler containing aqueous samples. The trip blanks were analyzed for volatile organic compounds (VOC) by U.S. Environmental Protection Agency (EPA) SW-846, Method 8260. To document the effectiveness of decontamination protocols, rinsate blank samples were taken by running de-ionized water through non-dedicated sampling equipment into the appropriate sample containers and analyzing for the same parameters as the environmental samples. In addition, a source water blank was analyzed to assess the chemical quality of the water used in the decontamination process.

B.1.2 Laboratory Analytical Quality Control Program

Aqueous samples collected from the monitoring sites were analyzed for Target Compound List (TCL) VOC by EPA SW-846, Method 8260; and Target Analyte List (TAL) metals, cyanide, and mercury by EPA SW-846, Methods 6010, 9010, and 7470, respectively. The quality control measures specified in the SW-846 methodology (MS/MSD, SMC, LCS, and laboratory duplicates), as well as those in the QAPP, were used by the laboratory to establish proper analytical quality control.

The range of results for the data quality objective parameters is discussed for each sample matrix in the sections below.

B.2 SAMPLE HOLDING TIMES

Holding times (defined as from date of sample collection to date of sample preparation/analyses) were compared against the maximum holding times identified in the quality control requirements of the referenced analytical methods. The holding times were met for all methods and sample matrixes.

B.3 PRECISION

B.3.1 Volatile Organic Compounds

Five VOC were used to quantify the MS/MSD RPD. The control limits identified in the QAPP were the same as those reported by the laboratory.

The aqueous sample MS/MSD RPD were within the established control limits for all compounds in all samples, with the following exceptions: 1,1-dichloroethene (17 percent), benzene (17 percent), and toluene (16 percent), which exceeded the control limit in the Treatment EFFLUENT sample, 1,1-dichloroethene (20 percent), trichloroethene (21 percent), benzene

(19 percent), toluene (20 percent), and chlorobenzene (22 percent), which exceeded the control limits in Eastern Plume Sample MW-307; and benzene (12 percent) and toluene (16 percent), which exceeded the control limits in Eastern Plume Sample MW-225B. The MS and MSD recoveries for these compounds were within established accuracy limits, therefore, analytical precision was determined to be acceptable and the usability of the data is not affected.

The sediment sample MS/MSD RPD were within the established control limits, with the exception of benzene (23 percent), which exceeded the control limits in Sites 1 and 3 Sample SED-04. The MS and MSD recoveries for this compound were within the established accuracy limits, therefore, analytical precision was determined to be acceptable and the usability of the data unaffected.

B.3.2 Target Analyte List Metals (Including Cyanide)

All 24 TAL analytes were used to quantify the laboratory duplicate RPD. There were no control limits identified in the QAPP for duplicate RPD for TAL metals, therefore, the laboratory control limits were used. The sediment sample duplicate RPD were within the laboratory control limits, therefore, the analytical precision was determined to be acceptable and the usability of the data unaffected. The aqueous samples duplicate measurements were within the laboratory control limits with the exception of copper and zinc (both of which exceeded the control limits of ± the Contract Required Detection Limit) in the Sites 1 and 3 INFLUENT sample for the Ground-Water Extraction Treatment System. The analytical precision for all other analytes was determined to be acceptable and the usability of the data unaffected. All positive results for copper and zinc in the Ground-Water Extraction Treatment System samples (EW-7, EW-6, Sites 1 and 3 INFLUENT, Eastern Plume INFLUENT, EW-5, EW-3, EW-2, and the Treatment EFFLUENT) should be considered as estimated concentrations

B.4 ACCURACY

B.4.1 Volatile Organic Compounds

Three SMC were used to measure the ability of the laboratory to purge the target analytes from the environmental samples. The control limits for the aqueous samples identified in the QAPP and reported by the laboratory were identical for all SMC. The control limits for sediment samples identified in the QAPP and reported by the laboratory were different for all three SMC. The QAPP limits for dibromofluoromethane were 70-121 percent, while the laboratory used 80-120 percent. The QAPP limits for bromofluorobenzene were 59-113 percent, while the laboratory used 74-121 percent. The QAPP limits for toluene-d8 were 84-138 percent, while the laboratory used 81-117 percent. The quality control results were reviewed against both sets of control limits.

The aqueous sample SMC recoveries were within the laboratory established control limits and the control limits identified in the QAPP and the results are usable as reported.

The sediment sample SMC recoveries were within the laboratory established control limits and the control limits identified in the QAPP, with the exception of dibromofluoromethane (39 percent) in Sample SEEP Sediment-01, toluene-d8 (78 and 80 percent) in Samples SEEP Sediment -02 and SEEP Sediment-04, and bromofluorobenzene (73, 66, and 66 percent) in Samples S1 SED-03RE, SEEP Sediment-01, and SEEP Sediment-01RE. All of these recoveries were below the laboratory's lower control limit; however, only the recovery for dibromofluoromethane in Sample SEEP Sediment-01, and the recoveries for toluene-d8 in Samples SEEP Sediment-02 and SEEP Sediment-04, were below the limits identified in the QAPP. The results for all of the VOC in Samples SEEP Sediment-01, SEEP Sediment-02 and SEEP Sediment-04 should be considered to be biased low (estimated) due to the low SMC recoveries.

Five VOC were used to quantify the MS/MSD recoveries against laboratory established control limits. The recovery limits identified in the QAPP were the same as those reported by the laboratory. MS/MSD were analyzed at the correct frequency for each matrix.

The aqueous sample MS/MSD and sediment sample MS/MSD recoveries were within the established control limits, therefore, the results are usable as reported.

Five VOC were used to quantify LCS recoveries against laboratory established control limits. No LCS recovery limits are stated in the QAPP. The aqueous and sediment LCS recoveries were within laboratory established control limits, confirming the laboratory's purging efficiency.

B.4.2 Target Analyte List Metals (Including Cyanide)

All 24 TAL analytes were used to quantify MS recoveries for aqueous and sediment samples. All of the MS recoveries were analyzed at the correct frequency.

The aqueous sample MS recoveries were within the control limits identified in the QAPP and reported by the laboratory (75-125 percent), with the exception of mercury (69.7 percent) in Sample S1 SW-04, which was reported below the lower control limit. Mercury results should be considered biased low in the following samples: SEEP-01, SEEP -03, SEEP-05, SEEP-03 DUP, SW-07, SW-06, SW-05, SW-04, SW-03, SW-02, SW-01, and SW-04 DUP. Cyanide (0.0 percent) in the MS for the Ground-Water Treatment System EFFLUENT was also reported below the lower control limit. Cyanide results reported as not detected should be considered unusable and positive results should be considered to be extremely bias low in Samples EW-7, EW-6, INFLUENT (Sites 1 and 3), INFLUENT (Eastern Plume), the duplicate of INFLUENT (Eastern Plume), and the EFFLUENT.

The laboratory performed an MS on 2 samples associated with the sediment samples. Both MS apply equally to the 7 sediment samples. The sediment sample MS recoveries for Sample SED-07 were within the established control limits with the following exceptions: calcium (68.9 percent) and magnesium (55.0 percent), both of which were below the lower control limits. The sediment sample MS recoveries for Sample SED-04 were within the established control

limits, with the exception of antimony (73.1 percent) and beryllium (431.5 percent). Calcium and magnesium are not required by the QAPP to meet the 75-125 percent criteria; therefore, the results for calcium and magnesium are usable as reported. Antimony results should be considered biased low in all 7 sediment samples. Beryllium results should be considered biased high in all 7 sediment samples.

All 24 TAL analytes were used to quantify the LCS recoveries against laboratory established control limits. No LCS recovery limits were stated in the QAPP. The aqueous and sediment LCS recoveries were within laboratory established control limits, confirming the laboratory's ability to perform sample digestion/distillation.

B.5 COMPLETENESS

Field sampling completeness was quantified by reviewing the number of samples analyzed to the number of samples scheduled for collection. At Sites 1 and 3, 16 of 18 ground-water samples were collected for an analytical completeness of 89 percent, 7 of 7 surface water and 7 of 7 sediment samples were collected for an analytical completeness of 100 percent, 3 of 5 leachate station seep samples were collected for an analytical completeness of 60 percent, and 5 of 5 leachate station sediment samples were collected for an analytical completeness of 100 percent. Two of 2 extraction well samples were collected for an analytical completeness of 100 percent.

At Eastern Plume, 38 of 39 well and piezometer samples were collected for an analytical completeness of 97 percent, and 3 of 5 extraction well samples were collected for an analytical completeness of 60 percent.

All of the field quality control blanks (e.g., trip blanks) were collected at the proper frequency. A total of 6 trip blanks were collected for Sites 1 and 3 and Eastern Plume. There were 2 rinsate blanks collected for sampling conducted at Sites 1 and 3. One rinsate blank was associated with the sediment samples and 1 was associated with the surface water samples. One source water blank was taken at the site and was analyzed as required for this project.

B.6 FIELD QUALITY CONTROL BLANKS

Field quality control blanks (rinsate blanks) are evaluated for contamination that may have been introduced during the field sampling activities. Trip blanks are indicators for cross-contamination of VOC during sample shipment. In both cases where contamination exists, environmental samples should be reviewed for possible false-positives. The field quality control blanks collected for this site included 6 trip blanks and 2 rinsate blanks.

All 6 trip blanks associated with Sites 1 and 3 and Eastern Plume were analyzed for VOC and contained various contaminants, including methylene chloride and acetone. Methylene chloride and acetone are considered common laboratory contaminants. Methylene chloride was present in the associated method blanks and, therefore, could have been introduced by the laboratory. Acetone, though also a common laboratory contaminant, did not appear in the laboratory method

blanks and, therefore, acetone presence should be considered as a result of cross-contamination among samples. The data user should consider acetone and methylene chloride results reported above the method detection limit to have the potential to be bias high and those concentrations reported near the method detection limit have the potential to be false-positives. The results of the 6 trip blanks are shown in the following table:

Analyte	Units	QT-001	QT-002	QT-003	QT-004	QT-005	QT-006
Acetone	μg/L	5	4J	(<5U)	(<5U)	(<5U)	4J
Methylene chloride	μg/L	(<1U)	2B	(<1U)	(<1U)	(<1U)	(<1U)
Total xylenes	μg/L	1	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
1,2-Dichlorobenzene	μg/L	1	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
1,3-Dichlorobenzene	μg/L	1	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)
1,4-Dichlorobenzene	μg/L	2	(<1U)	(<1U)	(<1U)	(<1U)	(<1U)

NOTE: B = Compound detected in associated method blank.
J = Estimated concentration below detection limit.
U = Not detected. Sample quantitation limits are shown as (<____U).

The presence of total xylenes, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene in the trip blanks indicated that there was a potential for cross-contamination between samples during sample shipment. Concentrations of these compounds reported above the method detection limits in the environmental samples have the potential to be bias high and concentrations reported near the method detection limit in the environmental samples have the potential to be false-positives.

The equipment rinsate blanks associated with sediment and surface water samples collected at Sites 1 and 3 were analyzed for VOC and TAL analytes. The results of the 2 rinsate blanks (QS-001 and QS-002) and the associated source water blank (QD-001) are shown in the following table:

Analyte	Units	QS-001	QS-002	QD-001
Acetone	µg/L	16	16	22
2-Butanone	µg/L	3J	3J	(<5U)
Aluminum	µg/L	18.0B*	12.7B*	24.2B*
Barium	µg/L	(<1.3U)	(<1.3U)	0.61B*
Calcium	µg/L	121	76.0B*	45.2B*
Chromium	µg/L	1.3B*	(<0.70U)	1.1B*
Cobalt	µg/L	1.6B*	(<0.07U)	(<0.70U)
Copper	µg/L	2.4B*	0.72B*	(<0.70U)
Iron	µg/L	37.1	70.8	(<25.0U)
Magnesium	µg/L	24.6B*	8.8B*	(<7.0U)
Mercury	µg/L	0.17B*	0.16B*	(<0.10U)
Nickel	µg/L	(<1.0U)	1.9B*	(<1.0U)
Silver	µg/L	1.7B*	(<1.0U)	(<1.0)
Sodium	µg/L	135	63.0B*	64.5B*
Vanadium	µg/L	1.5B*	(<0.60U)	(<0.60U)
Zinc	µg/L	8.2B*	5.5B*	4.4B*

NOTE: B* = Analyte concentration is between the Instrument Detection Limit and the Contract Required Detection Limit.
J = Estimated concentration below detection limit.
U = Not detected. Sample quantitation limits are shown as (<____U).

The analytical results of the equipment rinsate blanks indicate the presence of VOC contamination. Acetone was identified in both rinsate blanks, indicating a probability of acetone contamination and the potential to report false-positive acetone results in both surface water and sediment samples. It should be noted that the acetone contamination in both rinsate blanks was not significantly different from the concentration of acetone reported in the source water blank. This indicates that the source of contamination is not necessarily related to the decontamination process and may be laboratory or source water related. 2-Butanone was detected in both the rinsate samples (associated with the surface water and sediment sampling events), however, 2-butanone was not detected in the associated samples; therefore, the data remains unaffected and are usable as reported.

TAL analyte concentrations in the 2 rinsate blanks were not significantly greater than the source water blank concentrations, with the exception of calcium, iron, magnesium, sodium, and zinc; however, the concentrations reported for these analytes are not significantly high and do not indicate that there was a decontamination problem related to the surface water or sediment sampling events.

B.7 DUPLICATE FIELD SAMPLES

Field duplicate samples are used to evaluate the overall precision for both the field and laboratory, and the homogeneity of the sample matrix. Typically, these results have more variability than laboratory precision measurements with the extremes being noted in soil matrices. Based on EPA Region I criteria for evaluating field duplicates, the following guidelines were used to review the field duplicate taken during the sampling event. The overall precision of organic compounds was evaluated as the RPD (non-detects were defined as one-half the Contract Required Quantitation Limit) and were considered acceptable at an RPD of less than 30 percent for water samples and 50 percent for soil samples. Overall precision for inorganic analytes was evaluated by reviewing the difference of the field duplicate for analytes with concentrations less than 5 times the Contract Required Detection Limit, and by the RPD (less than 30 percent for water samples and 50 percent for soil samples) for the analytes greater than 5 times the Contract Required Detection Limit. Non-detects were defined as one-half the Contract Required Detection Limit for difference measurements. The acceptable RPD for inorganic analyses is less than 30 percent for water samples and less than 50 percent for soil samples. The Contract Required Quantitation Limits and Contract Required Detection Limits used to evaluate the data are based on those presented in the QAPP.

Field duplicate samples were not identified to the laboratory. A total of 11 samples were duplicated for Sites 1 and 3 and Eastern Plume (collected during the ground-water, surface water, sediment, and seep sampling programs). Each SDG had the appropriate number of duplicate samples collected. Sample duplication was evaluated using the criteria above.

The RPD results from the 6 duplicate ground-water samples, 1 duplicate sediment sample, 1 duplicate surface water sample, 1 duplicate seep station sample, 1 duplicate seep station sediment sample, and the duplicate effluent sample are shown in the tables below.

The following table shows the field duplicate results from the sediment samples associated with SDG S1SD001:

Analyte	Units	SED-04	SED-04 DUP	RPD %	Difference
Acetone	µg/Kg	(<20U)	7B	94.7	NA
Methylene chloride	µg/Kg	11	(<1.2U)	182.6	NA
2-Butanone	µg/Kg	(<20U)	6JB	82.3	NA
1,4-Dichlorobenzene	µg/Kg	(<3.9U)	1.3B	88.8	NA
4-Methyl-2-pentanone	µg/Kg	(<12U)	2J	175.0	NA
1,1,1-Trichloroethane	µg/Kg	(<3.9U)	2	120.0	NA
Trichloroethane	µg/Kg	(<3.9U)	2	120.0	NA
Aluminum	mg/Kg	2,960	2,700	9.2	NA
Arsenic	mg/Kg	2.5	2.5	NA	0
Barium	mg/Kg	19.9	17.8	NA	2.1
Beryllium	mg/Kg	0.19B*	0.17B*	NA	0.02
Cadmium	mg/Kg	0.12B*	0.12B*	NA	0
Calcium	mg/Kg	442	416	NA	26
Chromium	mg/Kg	5.7	4.6	NA	1.1
Cobalt	mg/Kg	2.9B*	3.2	NA	0.3
Copper	mg/Kg	3.4	3.3	NA	0.1
Iron	mg/Kg	7,750	7,060	9.3	NA
Lead	mg/Kg	4.0	4.3	NA	0.3
Magnesium	mg/Kg	1,180	1,030	13.6	NA
Manganese	mg/Kg	189	241	24.2	NA
Nickel	mg/Kg	6.3	6.3	NA	0
Potassium	mg/Kg	404	410	NA	6.0
Silver	mg/Kg	(<0.10U)	0.15B*	NA	7.35
Sodium	mg/Kg	45.1	40.6	NA	4.5
Vanadium	mg/Kg	7.8	7.5	NA	0.3
Zinc	mg/Kg	19.4	18.8	NA	0.6

NOTE: B = Compound detected in associated method blank.
B* = Analyte concentration is between the Instrument Detection Limit and the Contract Required Detection Limit.
J = Estimated concentration below detection limit.
U = Not detected. Sample quantitation limits are shown as (<____U).
NA = Not applicable; analyte concentration was less than 5 times the Contract Required Detection Limit.

All precision requirements were met for the duplicate analysis, with the exception of acetone, methylene chloride, 2-Butanone, 1,4-dichlorobenzene, 4-methyl-2-pentanone, 1,1,1-trichloroethane, and trichloroethane. However, in all of the above cases (with the exception of methylene chloride), the results were reported at or below the Contract Required Quantitation Limit where analytical error is anticipated. Therefore, these discrepancies are not considered significant and the results are usable as reported. The presence of low levels of methylene chloride, as indicated earlier, appears to be related to laboratory contamination; therefore, methylene chloride results in the sediment samples reported above the detection limit should be considered to be estimated with a potential for high bias and a possible explanation of the above exceeding RPD.

The following table shows the duplicate results from the surface water samples associated with SDG S1QS001:

Analyte	Unit	SW- 4	SW- 4 DUP	RPD %	Difference
Aluminum	µg/L	152	162	NA	10
Barium	µg/L	20.5	20.0	NA	0.5
Calcium	µg/L	8,000	7,990	0.12	NA
Chromium	µg/L	1.0B*	0.85B*	NA	0.15
Copper	µg/L	2.2B*	2.2B*	NA	0
Iron	µg/L	820	799	2.6	NA
Lead	µg/L	2.3B*	1.9B*	NA	0.4
Magnesium	µg/L	1,840	1,840	0	NA
Manganese	µg/L	249	248	0.4	NA
Mercury	µg/L	0.14B*	0.14B*	NA	0
Nickel	µg/L	1.5B*	1.1B*	NA	0.4
Potassium	µg/L	1,450	1,550	NA	100
Sodium	µg/L	12,100	12,100	0	NA
Vanadium	µg/L	1.2B*	0.84B*	NA	0.36
Zinc	µg/L	14.8B*	11.5B*	NA	3.3
Cyanide	µg/L	(<1.3U)	1.5B	NA	0.2

NOTE: B = Compound detected in associated method blank.
B* = Analyte concentration is between the Instrument Detection Limit and the Contract Required Detection Limit.
U = Not detected. Sample quantitation limits are shown as (<____U).
NA = Not applicable; analyte concentration was less than 5 times the Contract Required Detection Limit.

All precision requirements were met for the duplicate analyses, therefore, the results are usable as reported.

The following two tables show the duplicate sample results associated with the monitoring well samples at Sites 1 and 3.

The first set of duplicate sample results associated with SDG S1QD001 is shown below:

Analyte	Units	MW-204	MW-204 DUP	RPD %	Difference
Aluminum	µg/L	19.2B*	21.9B*	NA	2.7
Barium	µg/L	1.1B*	1.2B*	NA	0.1
Calcium	µg/L	3,880	4,040	4.0	NA
Chromium	µg/L	1.3B*	2.1B*	NA	0.8
Iron	µg/L	44.0B*	(<25.0U)	NA	19
Magnesium	µg/L	1,160	1,190	2.6	NA
Potassium	µg/L	(<635U)	703B*	NA	68.0
Sodium	µg/L	4,990	5,080	1.8	NA
Vanadium	µg/L	0.87B*	0.60*	NA	0.27
Zinc	µg/L	2.6B*	4.9B*	NA	2.3

NOTE: B = Compound detected in associated method blank.
B* = Analyte concentration is between the Instrument Detection Limit and the Contract Required Detection Limit.
U = Not detected. Sample quantitation limits are shown as (<____U).
NA = Not applicable; analyte concentration was less than 5 times the Contract Required Detection Limit.

All precision requirements were met for the duplicate analyses, therefore, the results are usable as reported.

The second set of duplicate sample results associated with SDG S1QD001 is shown below:

Analyte	Units	MW-217A	MW-217A DUP	RPD%	Difference
Aluminum	μg/L	218	122	NA	96
Barium	μg/L	17.1	15.9	NA	1.2
Calcium	μg/L	29,500	29,600	0.34	NA
Chromium	μg/L	4.0B*	3.2B*	NA	0.8
Copper	μg/L	0.83B*	(<0.70U)	NA	0.13
Iron	μg/L	393	239	NA	154
Magnesium	μg/L	11,000	10,900	0.91	NA
Manganese	μg/L	27.6	25.8	6.7	1.8
Nickel	μg/L	3.9B*	3.3B*	NA	0.6
Potassium	μg/L	2,300	2,380	NA	-80
Sodium	μg/L	41,000	39,300	4.23	NA
Vanadium	μg/L	0.90B*	(<0.60U)	NA	0.3
Zinc	μg/L	5.6B*	3.7B*	NA	1.9

NOTE: B = Compound detected in associated method blank.
B* = Analyte concentration is between the Instrument Detection Limit and the Contract Required Detection Limit.
U = Not detected. Sample quantitation limits are shown as (<____U).
NA = Not applicable; analyte concentration was less than 5 times the Contract Required Detection Limit.

All precision requirements were met for the duplicate analyses, therefore, the results are usable as reported for the monitoring well samples.

The following table shows the organic and inorganic duplicate sample results associated with the aqueous seep samples in SDG S1QS001:

Analyte	Units	SEEP-3	SEEP-3 DUP	RPD %	Difference
1,1-Dichloroethane	μg/L	7	8	13.3	NA
Acetone	μg/L	3J	(<5U)	50.0	NA
1,4-Dichlorobenzene	μg/L	1	1	0	NA
Total xylenes	μg/L	(<1U)	1	66.6	NA
Vinyl chlorides	μg/L	5	5	0	NA
Total 1,2-Dichloroethene	μg/L	4	4	0	NA
Aluminum	μg/L	1,190	2,390	67.0	NA
Arsenic	μg/L	6.6B*	13.4	NA	6.8
Barium	μg/L	82.5	110	28.6	NA
Cadmium	μg/L	0.40B*	0.52B*	NA	0.12
Calcium	μg/L	35,800	36,700	2.5	NA
Chromium	μg/L	2.7B*	5.1B*	NA	2.4
Cobalt	μg/L	3.6B*	5.7B*	NA	2.1
Copper	μg/L	2.7B*	3.2B*	NA	0.5
Iron	μg/L	68,500	106,000	42.9	NA
Lead	μg/L	3.4B*	12.2	NA	8.8
Magnesium	μg/L	10,700	11,400	6.3	NA
Manganese	μg/L	2,840	3,450	19.4	NA
Mercury	μg/L	0.15B*	0.21	NA	0.06
Nickel	μg/L	4.0B*	6.1B*	NA	2.1
Potassium	μg/L	2,980	2,850	NA	130
Sodium	μg/L	37,700	37,300	1.2	NA
Vanadium	μg/L	2.9B*	6.6B*	NA	3.7
Zinc	μg/L	11.6B*	19.3B*	NA	7.7
Cyanide	μg/L	(<1.3U)	3.0B*	NA	1.7

NOTE: B = Compound detected in associated method blank.
B* = Analyte concentration is between the Instrument Detection Limit and the Contract Required Detection Limit.
J = Estimated concentration below detection limit.
U = Not detected. Sample quantitation limits are shown as (<____U).
NA = Not applicable; analyte concentration was less than 5 times the Contract Required Detection Limit.

The duplicate precision requirements were met for the organic analyses, with the exception of acetone and total xylenes. The large discrepancies between the two analyses for these two compounds are due to the fact that the results in one sample were reported at or near the Contract Required Quantitation Limit where analytical measurement error is anticipated, and were not detected in the other sample. Therefore, these discrepancies are not considered significant and the data usability is unaffected. The inorganic precision requirements were met with the exception of aluminum, iron, and lead. The data user should consider the positive results for

aluminum, iron, and lead in the seep samples as estimations of the true concentrations. This may be indicative of the sampling procedure when sampling a low flow source such as a seep and, therefore, all SEEP samples may be affected.

The following table shows the results of the leachate station sediment sample duplicate associated with sample delivery group S1SD001:

Analyte	Units	LT-3	LT-3 DUP	RPD %	Difference
Acetone	µg/Kg	320	590B	59.3	NA
Methylene chloride	µg/Kg	38	6	145.5	NA
2-Butanone	µg/Kg	58	140B	82.8	NA
Total 1,2-Dichloroethene	µg/Kg	(<3.5U)	11	127.6	NA
1,2-Dichlorobenzene	µg/Kg	8	(<3.9U)	128.2	NA
1,3-Dichlorobenzene	µg/Kg	4	(<3.9U)	278.5	NA
1,4-Dichlorobenzene	µg/Kg	19	17B	11.1	NA
1,1-Dichloroethane	µg/Kg	5	17	109.1	NA
Toluene	µg/Kg	9	(<3.9U)	134.9	NA
Aluminum	mg/Kg	6,090	3,180	62.8	NA
Arsenic	mg/Kg	26.2	28.2	NA	2.0
Barium	mg/Kg	227	272	18.0	NA
Beryllium	mg/Kg	0.49B*	0.33B*	NA	0.16
Cadmium	mg/Kg	0.59B*	(<0.11U)	NA	4.41
Calcium	mg/Kg	3,770	3,830	1.6	NA
Chromium	mg/Kg	22.0	16.7	NA	5.3
Cobalt	mg/Kg	12.1	12.0	NA	0.1
Copper	mg/Kg	10.1	8.7B*	NA	1.4
Iron	mg/Kg	167,000	263,000	44.7	NA
Lead	mg/Kg	8.7	5.4	NA	3.3
Magnesium	mg/Kg	2,800	1,490	61.1	NA
Manganese	mg/Kg	4,010	3,930	2.0	NA
Mercury	mg/Kg	(<0.60U)	0.29	NA	0.19
Nickel	mg/Kg	14.6	9.9B*	NA	4.7
Potassium	mg/Kg	1,860	1,170	NA	690
Silver	mg/Kg	0.39B*	0.54B*	NA	0.15
Sodium	mg/Kg	200	211	NA	-11
Thallium	mg/Kg	1.5B*	3.5B*	NA	-2
Vanadium	mg/Kg	19.4	11.7	NA	7.7
Zinc	mg/Kg	22.8	8.3B*	NA	14.5

NOTE: B = Compound detected in associated method blank.
B* = Analyte concentration is between the Instrument Detection Limit and the Contract Required Detection Limit.
J = Estimated concentration below detection limit.
U = Not detected. Sample quantitation limits are shown as (<____U).
NA = Not applicable; analyte concentration was less than 5 times the Contract Required Detection Limit.

All of the precision requirements were met for the organic analyses, with the exception of acetone, methylene chloride, 2-butanone, total 1,2-dichloroethene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,1-dichloroethane, and toluene. The data user should consider the positive results for these compounds as estimations of the actual concentrations in SEEP station sediment sample LT-3. All of the analytical precision requirements were met for the inorganic analyses with the exception of aluminum and magnesium. The data user should consider the positive results for these analytes as estimations of the actual concentrations in SEEP station sediment sample LT-3. The remainder of the results are usable as reported.

The following five tables show the duplicate sample results associated with the Eastern Plume monitoring well samples.

The following table shows the first set of duplicate sample results from the samples associated with SDG EPMW001:

Analyte	Units	MW-212	MW-212 DUP	RPD%
Total 1,2-Dichloroethene	μg/L	2	3	40
Trichloroethene	μg/L	21	21	0
Tetrachloroethene	μg/L	2	3	40

The analytical precision requirements were met for trichloroethene; the results are usable as reported. The analytical precision requirements were not met for tetrachloroethene and total 1,2-dichloroethene. The discrepancies for total 1,2-dichloroethene and tetrachloroethene are due to the fact that both the sample and the duplicate results were reported near the Contract Required Quantitation Limit, where analytical measurement error is anticipated. Therefore, these discrepancies are not considered significant; the results are usable as reported.

The following table shows the second set of duplicate sample results from the samples associated with SDG EPMW001:

Analyte	Units	MW-208	MW-208 DUP	RPD %
1,1,1-Trichloroethane	μg/L	8	8	0
Total 1,2-Dichloroethene	μg/L	5	5	0
Trichloroethene	μg/L	12	13	8.0
Tetrachloroethene	μg/L	4	4	0
1,1-Dichloroethene	μg/L	1	0.9J	10.5
NOTE: J = Estimated concentration below detection limit.				

The analytical precision requirements were met for all compounds; the results are usable as reported.

The following table shows the first set of duplicate sample results from the samples associated with SDG EPMW017:

Analyte	Units	MW-205	MW-205 DUP	RPD %
1,1,1-Trichloroethene	μg/L	250	240	4.1
Total 1,2-Dichloroethene	μg/L	40	41	2.5
Methylene chloride	μg/L	(<1U)	2	66.6
Trichloroethene	μg/L	180	190	5.4
Tetrachloroethene	μg/L	26	27	3.8
1,1-Dichloroethene	μg/L	16	16	0

NOTE: U = Not detected. Sample quantitation limits are shown as (<____U).

The analytical precision requirements were met for all compounds with the exception of methylene chloride. However, the results for this compound in both the sample and duplicate were reported near or below the Contract Required Quantitation Limit where analytical measurement error is anticipated. Therefore, this discrepancy is not considered significant, and the results are usable as reported.

The following table shows the second set of duplicate sample results from the samples associated with SDG EPMW017:

Analyte	Units	MW-319	MW-319 DUP	RPD %
1,1,1-Trichloroethene	μg/L	7	7	0
Total 1,2-Dichloroethene	μg/L	7	6	15.4
Trichloroethene	μg/L	32	30	6.5
Tetrachloroethene	μg/L	56	52	7.4
1,1-Dichloroethene	μg/L	(<1U)	0.5J	0

NOTE: J = Estimated concentration below detection limit.
U = Not detected. Sample quantitation limits are shown as (<____U).

The analytical precision requirements were met for all compounds; the results are usable as reported.

Sample MW-313 and duplicate MW-313 DUP, associated with SDG EPMW033, reported no compounds above the detection limit; therefore, analytical precision was met for all compounds; the results are usable as reported.

The following table shows the duplicate sample results associated with the Eastern Plume extraction wells and treatment plant samples. The results from the duplicated effluent samples associated with SDG S1RI003 are shown in the table below:

Analyte	Units	EFFLUENT	EFFLUENT DUP	RPD %	Difference
Acetone	µg/L	5	4J	22.2	NA
Chlorobenzene	µg/L	3	(<1U)	100	NA
1,1-Dichloroethene	µg/L	3	2	40	NA
1,2-Dichloroethane	µg/L	2	(<1U)	120	NA
Total 1,2 -Dichloroethane	µg/L	3	(<1U)	100	NA
Tetrachloroethene	µg/L	2	(<1U)	120	NA
1,1,1-Trichloroethane	µg/L	110	120	8.7	NA
Trichloroethene	µg/L	2	(<1U)	120	NA
Methylene chloride	µg/L	3B	2B	40	NA
Ethylbenzene	µg/L	3	(<1U)	100	NA
Toluene	µg/L	2	(<1U)	120	NA
Total xylenes	µg/L	8	(<1U)	165.6	NA
Styrene	µg/L	2	(<1U)	120	NA
1,2-Dichloropropane	µg/L	2	(<1U)	120	NA
Dibromochloromethane	µg/L	3	(<1U)	100	NA
Bromoform	µg/L	3	(<1U)	100	NA
1,1,2,2-Tetrachloroethane	µg/L	3	(<1U)	100	NA
1,2-Dichlorobenzene	µg/L	6	(<1U)	169.2	NA
1,3-Dichlorobenzene	µg/L	5	(<1U)	133.3	NA
1,4-Dichlorobenzene	µg/L	5	(<1U)	133.3	NA
Aluminum	µg/L	32.2B*	62.0B*	NA	29.8
Barium	µg/L	3.3B*	3.0B*	NA	0.3
Calcium	µg/L	9,360	9,500	1.5	NA
Copper	µg/L	(<0.70U)	21.2B*	NA	20.5
Iron	µg/L	(<25.0U)	34.1B*	NA	9.1
Lead	µg/L	(<1.0U)	1.4B*	NA	0.4
Magnesium	µg/L	4,780	5,130	7.1	NA
Manganese	µg/L	155	172	10.4	NA
Nickel	µg/L	(<1.0U)	2.3B*	NA	1.3
Potassium	µg/L	3,060	3,780	NA	720
Sodium	µg/L	50,500	58,000	13.8	NA
Zinc	µg/L	21.6B*	54.8	NA	33.2

NOTE: J = Estimated concentration below detection limit.
B = Compound detected in associated method blank.
B* = Analyte concentration is between the Instrument Detection Limit and the Contract Required Detection Limit.
U = Not detected. Sample quantitation limits are shown as (<____U).
NA = Not applicable; analyte concentration was less than 5 times the Contract Required Detection Limit.

All precision requirements were met for all the inorganic analyses, and acetone and 1,1,1-trichloroethane. The precision requirements for the remainder of the organic compounds were not met; however, all of the compounds were reported at or below the Contract Required Quantitation Limit in the sample (EFFLUENT) or were reported as not detected in the sample duplicate where analytical measurement error is anticipated. Therefore, these discrepancies are not considered significant, and the results are usable as reported. The slight discrepancy between the sample and its duplicate may be indicative of the sampling procedure when collecting sequential samples from a sample tap subject to turbulent flow rather than poor laboratory precision.

Appendix C

Summary Tables for Analyses of Tentatively Identified Compounds

TABLE C-1 SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS REPORTED IN GROUND-WATER SAMPLES COLLECTED ON 18-20 AND 26 JUNE 1996 AT SITES 1 AND 3, NAVAL AIR STATION, BRUNSWICK, MAINE

Compound	Retention Time (min) min (min)	MW-202A	MW-203	MW-204	MW-210B	MW-215R	MW-216A	MW-217A	MW-217B	MW-218	MW-219	MW-220	MW-232A	MW-234R	MW-2101
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/L)															
Alkane	14.50	12J													
Alkane	14.88	23J													
Alkane	15.93	25J													
Alkane	16.91	8J													
Alkane	17.25	11J													
Cyclohexane, 1, 1, 3-trimethyl	17.97	9JN													
Alkane	18.31	23J													
Alkane	18.64	20J													
Alkane	19.64	35J													
Alkane	19.73			6J											
Alkane	20.77	12J													
Cyclohexane, (1-methylethyl)	21.58	9JN													
Alkane	23.02	38J													
C9H12 Isomer	24.67								7J						
C10H14 Isomer	25.49				6J										
Alkane	26.13	31J													
Alkane	29.05	35J													
Alkane	32.40	20J													

NOTE: J = Estimated concentration below detection limit.
JN = Presumptive identification; estimated values.
Only those analytes detected in at least one of the samples are shown on this table. Samples not analyzed for Target Analyte List elements.

TABLE C-2 SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS REPORTED IN GROUND-WATER SAMPLES COLLECTED ON 27 JUNE 1996 FROM EXTRACTION WELLS AND THE TREATMENT PLANT AT EASTERN PLUME, NAVAL AIR STATION, BRUNSWICK, MAINE

Compound/Analyte	Retention Time (min)	EW-06	EW-07
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/L)			
Ether	5.28		
C9H12 Isomer	24.66	7J	11JN

Compound/Analyte	Retention Time (min)	Sites 1 and 3 Raw Influent	EP Raw Influent	EP Combined Effluent	EP Combined Effluent DUP
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/L)					
Ether	5.27	7JN			
C9H12 Isomer	24.67	5J			

NOTE: EW = Extraction well.
QT = Trip blank samples associated with QT-006 were analyzed under a separate sample delivery group number shipped the same day.
J = Estimated concentration below detection limit.
JN = Presumptive identification; estimated values.
Only those analytes detected in at least one of the samples are shown on this table. Samples not analyzed for Target Analyte List elements.

TABLE C-3 SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS REPORTED IN SEDIMENT SAMPLES COLLECTED ON 22 JUNE 1996 AT SITES 1 AND 3, NAVAL AIR STATION, BRUNSWICK, MAINE

Analyte	Retention Time (min)	SED-1	SED-2	SED-3[a]	SED-4	SED-4 DUP	SED-5	SED-6	SED-7	QT-003	QS-002	QD-001
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/kg)												
Acetonitrile	6.26											6JN
C2H3N Isomer	7.09										31J	
C9H12 Isomer	24.70							16J				

(a) Sample reanalyzed due to low surrogate recoveries.

NOTE: SED = Sediment sample.
QT = Trip blank. Samples associated with QT-003 were analyzed under a separate sample delivery group shipped on the same day.
QS = Equipment rinsate blank. Samples associated with QS-002 were analyzed under a separate sample delivery group shipped on the same day.
QD = Source water blank. Samples associated with QD-001 were analyzed under a separate sample delivery group shipped on 18 June 1996.
J = Estimated concentration below detection limit.
JN = Presumptive identification; estimated values.
Only those analytes detected in at least one of the samples are shown on this table.

TABLE C-4 SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS REPORTED IN LEACHATE SEEP SAMPLE COLLECTED ON 22 JUNE 1996 AT SITES 1 AND 3, NAVAL AIR STATION, BRUNSWICK, MAINE

Analyte	Retention Time (min)	SEEP-1	SEEP-3	SEEP-3 DUP	SEEP-5	QT-001	QS-001	QD-001
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/kg)								
Acetonitrile	6.26							6JN
C2H3N Isomer	7.08						24J	

(a) Sample reanalyzed due to low surrogate recoveries.

NOTE:
- QT = Trip blank. Samples associated with QT-003 were analyzed under a separate sample delivery group shipped on the same day.
- QS = Equipment rinsate blank. Samples associated with QS-002 were analyzed under a separate sample delivery group shipped on the same day.
- QD = Source water blank. Samples associated with QD-001 were analyzed under a separate sample delivery group shipped on 18 June 1996.
- J = Estimated concentration below detection limit.
- JN = Presumptive identification; estimated values.

Only those analytes detected in at least one of the samples are shown on this table.

TABLE C-5 SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS REPORTED IN SURFACE WATER SAMPLES COLLECTED ON 22 JUNE 1996 AT SITES 1 AND 3, NAVAL AIR STATION, BRUNSWICK, MAINE

Analyte	Retention Time (min)	SW-1	SW-2	SW-3	SW-4	SW-4 DUP	SW-5	SW-6	SW-7	QT-003	QS-001	QD-001
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/kg)												
Acetonitrile	6.26										24J	
C2H3N	7.08											6JN

NOTE:
- QT = Trip blank. Samples associated with QT-003 were analyzed under a separate sample delivery group shipped on the same day.
- QS = Equipment rinsate blank. Samples associated with QS-002 were analyzed under a separate sample delivery group shipped on the same day.
- QD = Source water blank. Samples associated with QD-001 were analyzed under a separate sample delivery group shipped on 18 June 1996.
- SW = Surface water sample.
- J = Estimated concentration below detection limit.
- JN = Presumptive identification; estimated values.

TABLE C-6 SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS REPORTED IN GROUND-WATER SAMPLES COLLECTED ON 20, 21, 24, AND 25 JUNE 1996 AT EASTERN PLUME, NAVAL AIR STATION, BRUNSWICK, MAINE

Compound	Retention Time (min)	MW-105B	MW-206A
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/L)			
Unknown	7.30	14J	
Silanol, trimethyl-	7.32		6JN
Cyclotetrasiloxane, octamethyl-	21.71	14JN	

NOTE: J = Estimated concentration below detection limit.
JN = Presumptive identification; estimated values.
Only those analytes detected in at least one of the samples are shown on this table. Samples not analyzed for Target Analyte List elements.

TABLE C-7 SUMMARY OF TENTATIVELY IDENTIFIED COMPOUNDS REPORTED IN SEEP SEDIMENT SAMPLES COLLECTED ON 22 JUNE 1996 AT SITES 1 AND 3, NAVAL AIR STATION, BRUNSWICK, MAINE

Analyte	Retention Time (min)	LT-1[a]	LT-2[a]	LT-3[a]	LT-3 DUP	LT-4[a]	LT-5	QT-003	QS-002	QD-001
VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/kg)										
Acetonitrile	6.25									6JN
C2H3N Isomer	7.09								31J	

(a) Reanalysis conducted due to low surrogate recovery.

NOTE: QT = Trip blank.
QS = Equipment rinsate blank. Samples associated with QS-002 were analyzed under a separate delivery group shipped on the same day.
QD = Source water blank. Samples associated with QD-001 were analyzed under a separate delivery group shipped on 18 June 1996.
LT = Leachate sediment samples.
J = Estimated concentration below detection limit.
JN = Presumptive identification; estimated values.
Only those analytes detected in at least one of the samples are shown on this table. Samples not analyzed for Target Analyte List elements.