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# Monitoring Event 13 – November 1998
# Site 9: Neptune Drive Disposal Site
# Naval Air Station, Brunswick, Maine

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

U.S. NAVAL AIR STATION
BRUNSWICK, MAINE

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
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Newburgh, New York 12550

March 1999
296.0047

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March 1999

## QUALITY REVIEW STATEMENT

Contract No. N62472-92-D-1296 EA Project No.: 29600.47.7593
Contract Task Order No. 0047
Activity: Naval Air Station, Brunswick, Maine

Description of Report/Deliverable:

Monitoring Event 13 – November 1998, Site 9: Neptune Drive Disposal Site, Naval Air Station, Brunswick, Maine

EA CTO Manager: Peter L. Nimmer, 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

James A. Shultz/mcp 3/16/99

James A. Shultz, C.P.G. (Date)
Senior Geologist

# CONTENTS

Page

LIST OF FIGURES
LIST OF TABLES

1. PROJECT ACTIVITIES AND MONITORING EVENT RESULTS ..... 1

1.1 Introduction ..... 1
1.2 Measurement of Water Level Elevations ..... 1

1.2.1 Gauging Activities ..... 1
1.2.2 Results ..... 2

1.3 Ground-Water Monitoring, Sampling, and Analysis ..... 2

1.3.1 Sampling Activities ..... 2
1.3.2 Results ..... 3

1.4 Surface Water and Leachate Station Seep Sampling and Analysis ..... 3

1.4.1 Sampling Activities ..... 3
1.4.2 Surface Water Results ..... 3
1.4.3 Leachate Station Seep Results ..... 3

1.5 Visual Inspection ..... 3
1.6 Quality Assurance/Quality Control ..... 4
1.7 Analytical Data Quality Review ..... 4

REFERENCES

APPENDIX A: FIELD MONITORING AND SAMPLING FORMS
APPENDIX B: DETAILS OF MONITORING WELL MW-NASB-227 INSTALLATION
APPENDIX C: ANALYTICAL DATA QUALITY REVIEW
APPENDIX D: ANALYTICAL REPORT DATA TABLES

# LIST OF FIGURES


| Number | Title |
|---|---|
| 1 | Site location map - Site 9 (Neptune Drive Disposal Site), Naval Air Station, Brunswick, Maine. |
| 2 | Site plan - Site 9 (Neptune Drive Disposal Site), Naval Air Station, Brunswick, Maine. |
| 3 | Interpreted potentiometric surface elevations, 2 September 1998 well gauging data, Site 9 (Neptune Drive Disposal Site), Naval Air Station, Brunswick, Maine. |
| 4 | Interpreted potentiometric surface elevations, 2 November 1998 well gauging data, Site 9 (Neptune Drive Disposal Site), Naval Air Station, Brunswick, Maine. |

# LIST OF TABLES


| Number | Title |
|---|---|
| 1 | Summary of long-term monitoring program at Site 9, Naval Air Station, Brunswick, Maine. |
| 2 | Monitoring well gauging summary, Site 9, Naval Air Station, Brunswick, Maine. |
| 3 | Monitoring well gauging summary, NEX Service Station, Naval Air Station, Brunswick, Maine. |
| 4 | Summary of water quality indicator parameters measured in ground-water samples collected on 5 and 18 November 1998 at Site 9, Naval Air Station, Brunswick, Maine. |
| 5 | Summary of water quality indicator parameters measured in surface water and leachate seep samples collected on 11 November 1998 at Site 9, Naval Air Station, Brunswick, Maine. |
| 6 | Summary of analytical results for ground-water samples collected on 5 and 18 November 1998 at Site 9, Naval Air Station, Brunswick, Maine. |
| 7 | Summary of analytical results for surface water samples collected on 11 November 1998 at Site 9, Naval Air Station, Brunswick, Maine. |
| 8 | Summary of analytical results for the leachate seep sample collected on 11 November 1998 at Site 9, Naval Air Station, Brunswick, Maine. |

# 1. PROJECT ACTIVITIES AND MONITORING EVENT RESULTS

## 1.1 INTRODUCTION

Under Contract No. N62472-92-D-1296, Contract Task Order No. 0047, Northern Division, Naval Facilities Engineering Command contracted with EA Engineering, Science, and Technology to perform long-term monitoring at the Neptune Drive Disposal Site (Site 9), Naval Air Station (NAS), Brunswick, Maine. NAS Brunswick is located south of the Androscoggin River between Brunswick and Bath, Maine (Figure 1). The layout of Site 9 is provided on Figure 2.

At Site 9, the Navy is providing monitoring and maintenance as part of the long-term remedial actions required by the Interim Ground-Water Record of Decision dated September 1994 (ABB-ES 1994). Currently, the Final Record of Decision for Site 9 is being revised.

As part of ongoing revisions to the Site 9 Long-Term Monitoring Plan, concentrations from previous monitoring events were reviewed. Based on discussions with the Maine Department of Environmental Protection, EPA, and other Restoration Advisory Board members, the sampling points at Site 9 were reduced for Monitoring Event 13. Six monitoring wells (MW-NASB-070, MW-NASB-073, MW-NASB-077, MW-NASB-078, MW-NASB-079, and MW-NASB-081) were removed from the sampling program, however, these wells remain as part of the well gauging program. One existing well was added to the sampling program (MW-NASB-022) and one new monitoring well (MW-NASB-227) was installed in November 1998 along the western boundary of Site 9. One monitoring well (MW-NASB-204) has been added to the gauging program. The construction of two surface water impoundments has completely flooded the southern unnamed stream and a portion of the northern unnamed stream; therefore, surface water sampling, with the exception of location SW-010, and sediment sampling was discontinued. Sampling at the aqueous leachate seep (LT-901) will continue.

This report provides results for the November 1998 monitoring event (Monitoring Event 13). Appendix A provides field monitoring and sampling forms; Appendix B provides details of monitoring well MW-NASB-227 installation; Appendix C provides an analytical data quality review; and Appendix D provides analytical report Form I data tables. A discussion of temporal trends and other observations based on data collected during tri-annual monitoring (March, July, and November 1998) will be presented in the Annual Report for 1998.

## 1.2 MEASUREMENT OF WATER LEVEL ELEVATIONS

### 1.2.1 Gauging Activities

Water level measurements for Monitoring Event 13 were collected on 2 November 1998 at the 15 monitoring wells and 2 stream gauge stations as indicated in Table 1. Although not required by the LTMP, bi-monthly water table elevation data were collected from Site 9 wells and stream

gauge stations on 2 September 1998. These additional bi-monthly water table elevation data were collected to identify seasonal fluctuations in water table elevations, and to identify significant variations in the direction of ground-water flow between seasons. The locations of site monitoring wells and gauging stations are provided on Figure 2. To collect data related to upgradient ground-water flow patterns, the 9 site monitoring wells at the Navy Exchange (NEX) Service Station were also gauged beginning in Monitoring Event 13. These wells will be gauged during future monitoring events. The gauging procedures are detailed in the final report for Monitoring Event 4 (EA 1996).

### 1.2.2 Results

Water level gauging data recorded on 2 September 1998 (bi-monthly data) and 2 November 1998 (Monitoring Event 13 data) are provided in Table 2. Water level gauging data recorded at the NEX Service Station on 2 November 1998 are provided in Table 3. The Field Record of Well Gauging forms completed during the well gauging events are provided in Appendix A. The 15 site monitoring wells at Site 9 were gauged during September and November 1998, and the 9 site wells at the NEX were gauged during November 1998.

Figures 3 and 4 provide the interpreted ground-water flow directions for Site 9 based on the 2 September and 2 November 1998 gauging data, respectively.

## 1.3 GROUND-WATER MONITORING, SAMPLING, AND ANALYSIS

### 1.3.1 Sampling Activities

The ground-water sampling program was performed on 5 and 18 November 1998 in accordance with the general methodologies established in the final report for Monitoring Event 4 (EA 1996). Previously installed dedicated Grundfos Redi-Flo2 stainless steel and Teflon® submersible pumping systems were utilized for sample collection. Table 1 provides a summary of the wells included in the LTMP.

Ground-water samples were collected from each of the 9 wells sampled during the November 1998 sampling event using the low flow sampling technique, which includes one newly installed monitoring well (MW-NASB-227). Appendix B contains details of monitoring well installation, including boring logs and well development results for MW-NASB-227.

Water quality indicator parameters, including pH, conductivity, temperature, dissolved oxygen, and turbidity, were measured during well purging. Although not required, oxidation-reduction potential (Eh) was recorded for informational purposes. Stabilization of water quality indicator parameters was achieved when measurements agreed to within approximately 10 percent on three successive readings, and turbidity was below 10 nephelometric turbidity units (NTU). Wells were purged at the lowest flow rate obtainable with the submersible pump (i.e., approximately 0.2 L/minute). All of the Site 9 monitoring wells reached equilibrium with respect to water

quality indicators prior to sampling. Water quality parameters are summarized on Tables 4 and 5 for ground-water and surface water samples, respectively. Field records of well gauging, purging, sampling, and surface water/leachate seep sampling, are provided in Appendix A.

Ground-water samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOC) by EPA Method 8260.

### 1.3.2 Results

Table 6 summarizes analytical results for ground-water samples. Appendix D contains the laboratory Form I summary tables for the analyses performed.

## 1.4 SURFACE WATER AND LEACHATE STATION SEEP SAMPLING AND ANALYSIS

### 1.4.1 Sampling Activities

The surface water and leachate station seep sampling program was performed on 11 November 1998. Both the surface water sample (SW-010) and the leachate station seep sample (LT-901) were collected and analyzed for TCL VOC by EPA Method 8260. Table 1 provides a summary of the surface water and leachate station seep sampling program.

### 1.4.2 Surface Water Results

No VOC were reported in the surface water sample (SW-010) collected at Site 9 (Table 7). Appendix D contains the Form I summary table for the analysis performed. The sample location is provided on Figure 2.

### 1.4.3 Leachate Station Seep Results

Table 8 provides a summary of the compounds detected in leachate station LT-901 seep sample collected at Site 9. Appendix D contains the Form I summary tables for the analyses performed on leachate samples. Figure 2 provides the sampling location.

## 1.5 VISUAL INSPECTION

Site inspection activities at Site 9 were completed on 24 November 1998 by an engineer in accordance with the previous inspections. There was no evidence of stressed vegetation. No physical evidence of tampering of site wells or stream gauge stations was evident. The site monitoring wells were observed to be capped, labeled, locked, and in good condition.

## 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 sampling program (ABB-ES 1994). The data obtained during the November 1998 sampling event were determined to be of sufficient quality to be used to evaluate the long-term effectiveness of the remedial action (i.e., monitored natural attenuation). Field monitoring and sampling forms are presented in Appendix A.

## 1.7 ANALYTICAL DATA QUALITY REVIEW

A review of laboratory data was performed on selected quality control parameters to evaluate precision, accuracy, completeness, and data quality objective requirements. A complete summary of the analytical data quality review is provided in Appendix C. Method detection limits for solid and aqueous media are included in Appendix C. The data represented in this report were found to meet specified acceptance criteria.

Notable findings of the analytical data quality review include:

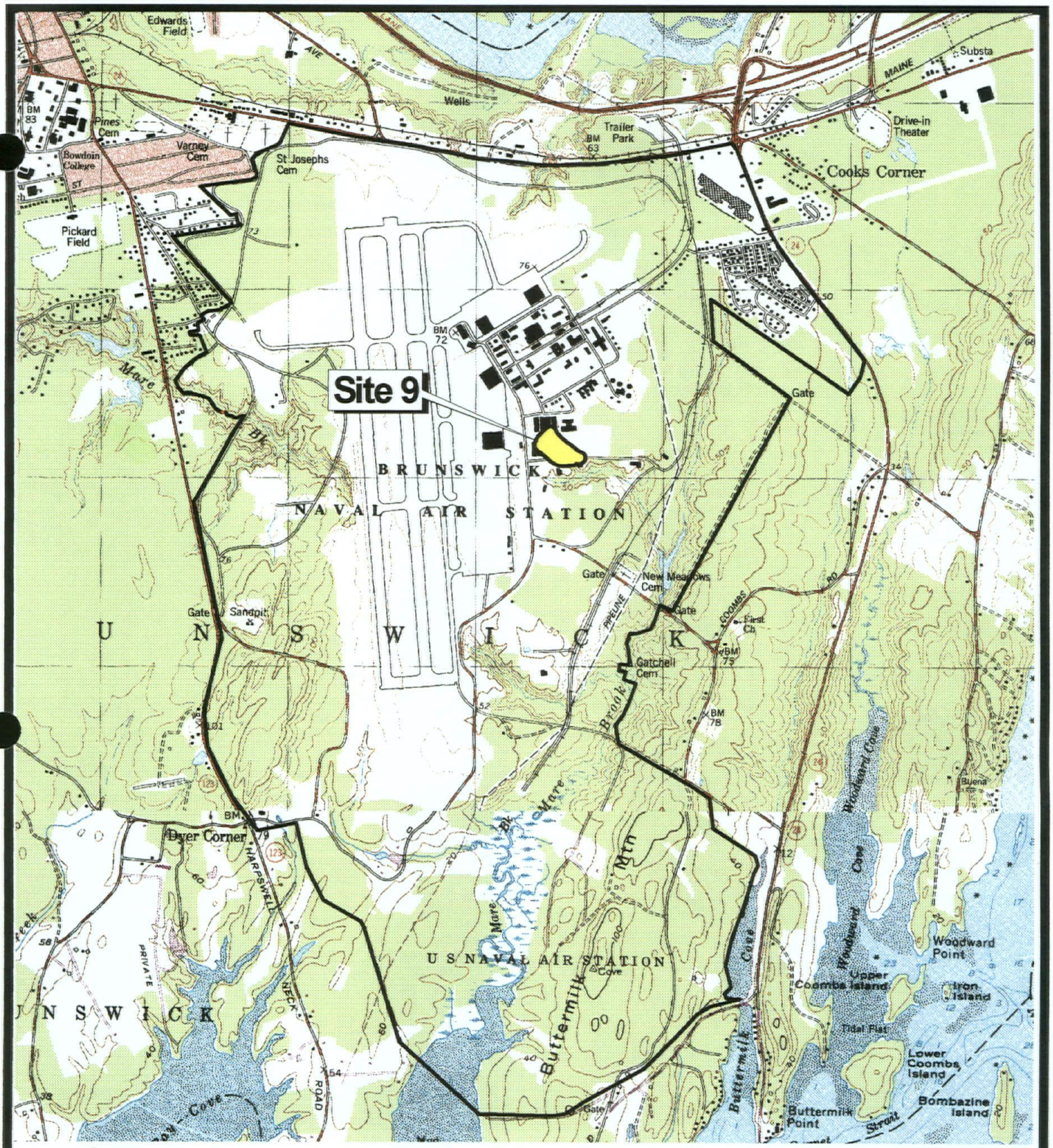
- The trichloroethene results in Samples MW-NASB-075, MW-NASB-069 DUP, MW-NASB-074, MW-NASB-069, MW-NASB-071, MW-NASB-072, MW-NASB-080, MW-NASB-022, MW-NASB-227, QT-002, and QT-005 should be considered false-positives due to method blank contamination. The data quality review confirmed that trichloroethene contamination reported in the method blanks was due to low level carryover from the analytical laboratory equipment from prior samples.

- The acetone result in Sample MW-NASB-075 should be considered false-positive due to trip blank and method blank contamination.

- Methylene chloride in Samples LT-901, QD-001, MW-NASB-069, MW-NASB-071, MW-NASB-072, MW-NASB-074, MW-NASB-076, MW-NASB-080, MW-NASB-212, MW-NASB-227, QT-002, and QT-005 should be considered false-positives due to trip blank and method blank contamination.

- Tetrachloroethane in Samples MW-NASB-074 and MW-NASB-227 should be considered false-positives due to trip blank and method blank contamination. The data quality review confirmed that tetrachloroethane contamination reported in the method blanks was due to low level carryover in the analytical laboratory equipment from prior samples.

- Total 1,2-dichloroethene and vinyl chloride in Samples MW-NASB-069 and MW-NASB-069 DUP should be considered an estimation of the true concentration based on precision criteria.

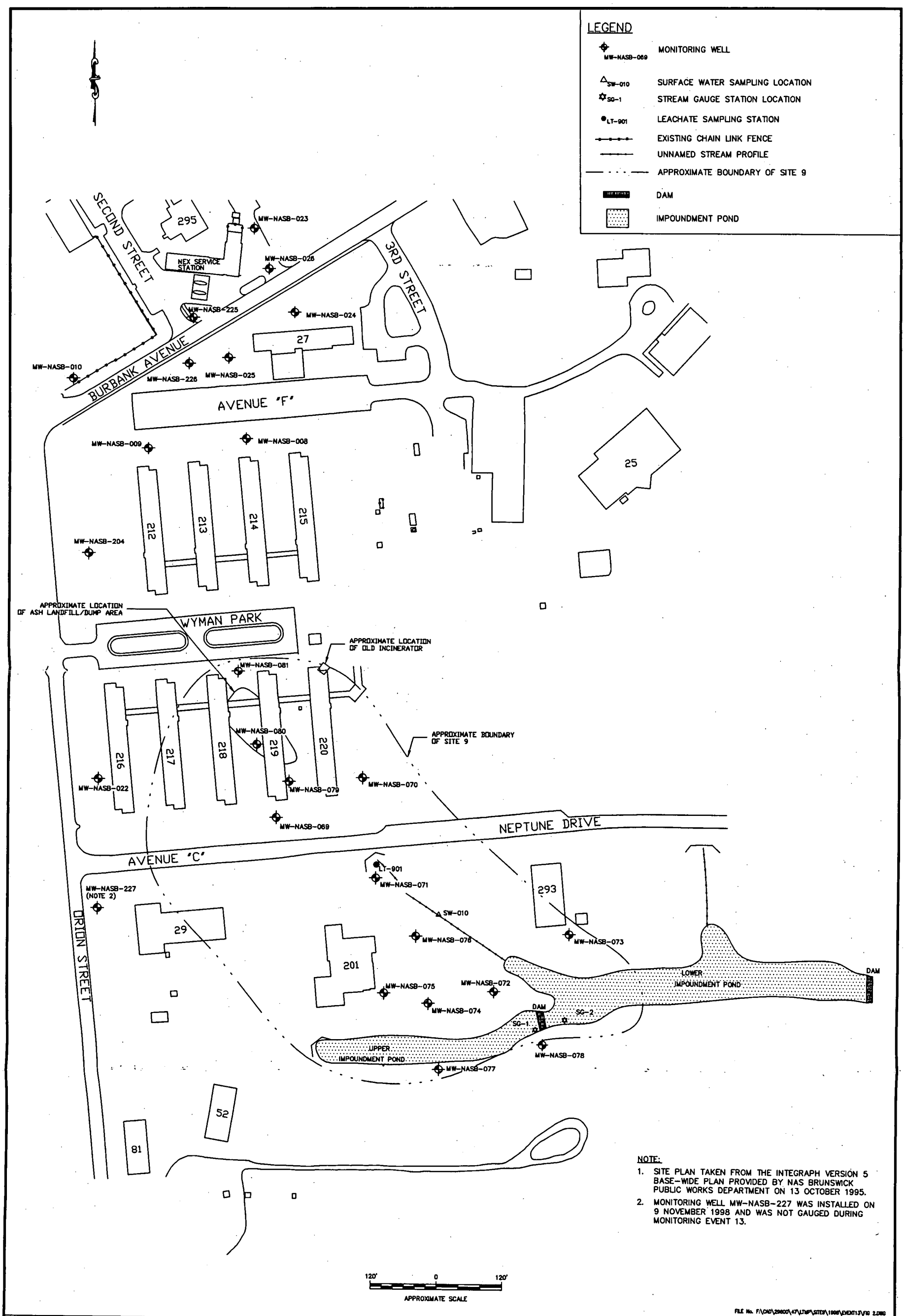



MAINE

2000 0 2000 4000 Feet

N W E S

| EA ENGINEERING, SCIENCE, AND TECHNOLOGY | NAVAL AIR STATION BRUNSWICK, MAINE | FIGURE 1 SITE LOCATION MAP, SITE 9 (NEPTUNE DRIVE DISPOSAL SITE) | | | | | |
|---|---|---|---|---|---|---|---|
| PROJECT MGR | DESIGNED BY | DRAWN BY | CHECKED BY | SCALE | DATE | PROJECT No | FILE No |
| PLN | BT | BT | PLN | AS SHOWN | 27 JAN 1999 | 29600.47 | I:\NASB_GIS \NAVY.APR |

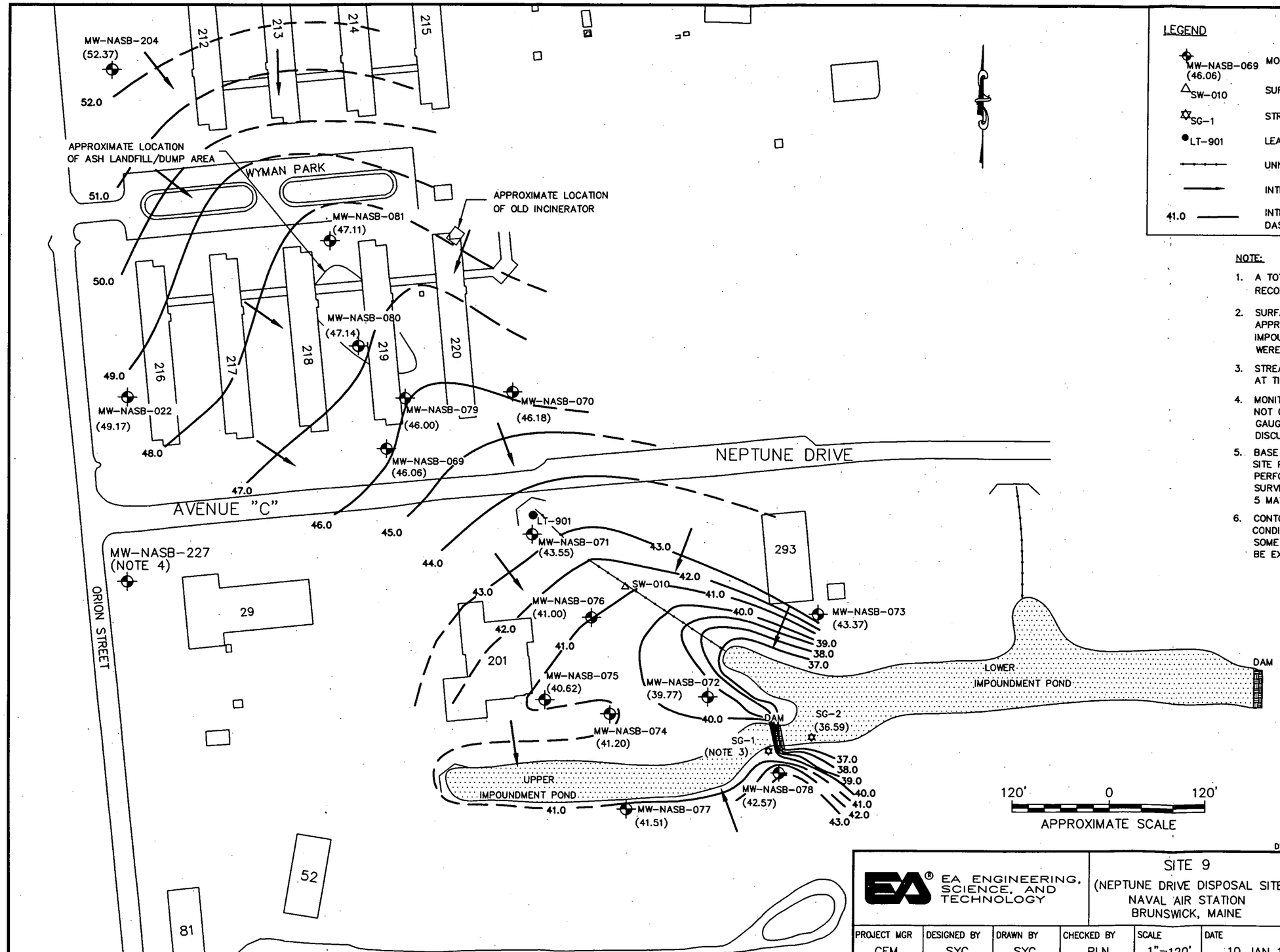



NOTE:

1. SITE PLAN TAKEN FROM THE INTEGRAPH VERSION 5 BASE-WIDE PLAN PROVIDED BY NAS BRUNSWICK PUBLIC WORKS DEPARTMENT ON 13 OCTOBER 1995.
2. MONITORING WELL MW-NASB-227 WAS INSTALLED ON 9 NOVEMBER 1998 AND WAS NOT GAUGED DURING MONITORING EVENT 13.

FILE No. F:\CAD\29600\47\LTMP\SITE9\1998\EVENT13\FIG 2.DWG

| EA ENGINEERING, SCIENCE, AND TECHNOLOGY | SITE 9 (NEPTUNE DRIVE DISPOSAL SITE) NAVAL AIR STATION BRUNSWICK, MAINE | FIGURE 2 SITE PLAN | | | | | |
|---|---|---|---|---|---|---|---|
| PROJECT MGR | DESIGNED BY | DRAWN BY | CHECKED BY | SCALE | DATE | PROJECT NO | FILE No. |
| CEM | SAP | SAP | PH | AS SHOWN | 16 MARCH 1999 | 29600.47 | S9NOV98 |




LEGEND

| | |
|---|---|
| MW-NASB-069 (46.06) | MONITORING WELL (WATER TABLE ELEVATION, FT MSL) |
| SW-010 | SURFACE WATER SAMPLING LOCATION |
| SG-1 | STREAM GAUGE STATION LOCATION |
| LT-901 | LEACHATE SAMPLING STATION |
| | UNNAMED STREAM PROFILE |
| | INTERPRETED DIRECTION OF GROUND-WATER FLOW |
| 41.0 | INTERPRETED POTENTIOMETRIC SURFACE DASHED WHERE INFERRED (CONTOUR INTERVAL = 1.0 FT) |

NOTE:

1. A TOTAL OF 0.02 INCHES OF PRECIPITATION WAS RECORDED 1 WEEK BEFORE AND DURING GAUGING EVENT.
2. SURFACE OF UPPER IMPOUNDMENT POND IS APPROXIMATELY 2-4 FT ABOVE LOWER IMPOUNDMENT POND. STREAM GAUGES SG-1 AND SG-2 WERE ADDED DURING SEPTEMBER 1998.
3. STREAM GAUGE STATION SG-1 WAS DRY AT TIME OF GAUGING.
4. MONITORING WELLS AT THE NEX SERVICE STATION WERE NOT GAUGED DURING SEPTEMBER 1998, BUT WERE GAUGED DURING NOVEMBER 1998 BASED ON REVISIONS DISCUSSIONS REGARDING LTMP.
5. BASE MAP DEVELOPED FROM ERM - NEW ENGLAND, INC. SITE PLAN DATED 24 JUNE 1992 AND SURVEYS PERFORMED BY CORNERSTONE PROFESSIONAL LAND SURVEYING, INC., 20 MAY 1994, 19 JULY 1995, AND 5 MAY 1997.
6. CONTOURS REPRESENT EVALUATION OF PROBABLE CONDITIONS BASED ON PRESENTLY AVAILABLE DATA. SOME VARIATION FROM THESE CONDITIONS MUST BE EXPECTED.

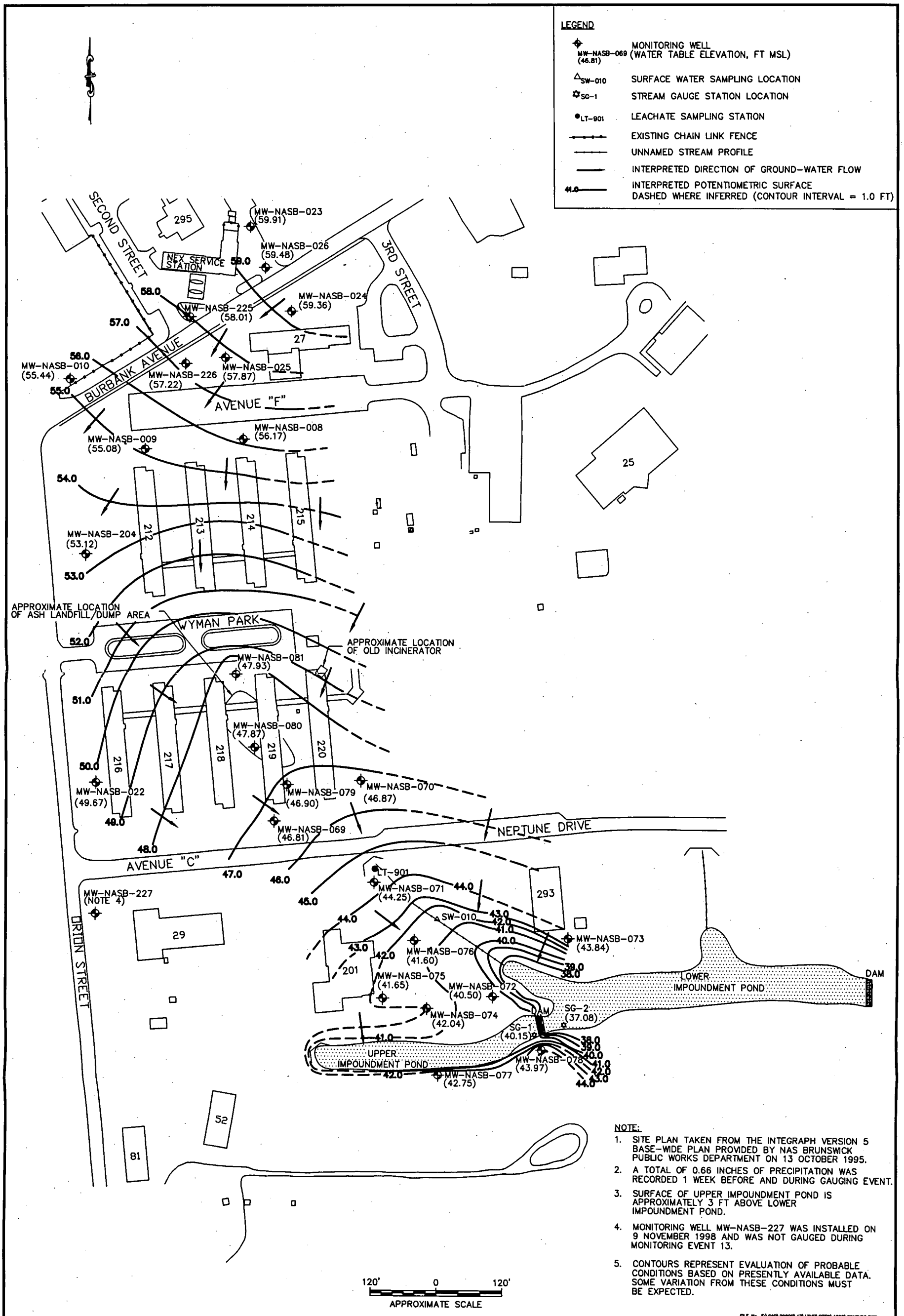
DWG. FILE No. F:\CAD\29600\47\ANNUAL\SITE9\1998\S9SEP98.DWG

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

SITE 9
(NEPTUNE DRIVE DISPOSAL SITE)
NAVAL AIR STATION
BRUNSWICK, MAINE

FIGURE 3
INTERPRETED POTENTIOMETRIC SURFACE ELEVATIONS, 2 SEPTEMBER 1998 WELL GAUGING DATA

| PROJECT MGR | DESIGNED BY | DRAWN BY | CHECKED BY | SCALE | DATE | PROJECT NO | FILE No. |
|---|---|---|---|---|---|---|---|
| CEM | SYC | SYC | PLN | 1"=120' | 10 JAN 1999 | 29600.47 | S9SEP98 |




NOTE:

1. SITE PLAN TAKEN FROM THE INTEGRAPH VERSION 5 BASE-WIDE PLAN PROVIDED BY NAS BRUNSWICK PUBLIC WORKS DEPARTMENT ON 13 OCTOBER 1995.
2. A TOTAL OF 0.66 INCHES OF PRECIPITATION WAS RECORDED 1 WEEK BEFORE AND DURING GAUGING EVENT.
3. SURFACE OF UPPER IMPOUNDMENT POND IS APPROXIMATELY 3 FT ABOVE LOWER IMPOUNDMENT POND.
4. MONITORING WELL MW-NASB-227 WAS INSTALLED ON 9 NOVEMBER 1998 AND WAS NOT GAUGED DURING MONITORING EVENT 13.
5. CONTOURS REPRESENT EVALUATION OF PROBABLE CONDITIONS BASED ON PRESENTLY AVAILABLE DATA. SOME VARIATION FROM THESE CONDITIONS MUST BE EXPECTED.

FILE No. F:\CAD\29600\47\LTMP\SITE9\1998\S9NOV98.DWG

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

SITE 9
(NEPTUNE DRIVE DISPOSAL SITE)
NAVAL AIR STATION
BRUNSWICK, MAINE

FIGURE 4
INTERPRETED POTENTIOMETRIC SURFACE ELEVATIONS, 2 NOVEMBER 1998 WELL GAUGING DATA

| PROJECT MGR | DESIGNED BY | DRAWN BY | CHECKED BY | SCALE | DATE | PROJECT NO | FILE No. |
|---|---|---|---|---|---|---|---|
| CEM | SAP | SAP | SYC | AS SHOWN | 16 MARCH 1999 | 29600.47 | S9NOV98 |

# TABLE 1 SUMMARY OF LONG-TERM MONITORING PROGRAM AT SITE 9, NAVAL AIR STATION, BRUNSWICK, MAINE

| Well Designation | Previous Well Designation | Monitoring Frequency | Sample Parameters | | Monitoring Event 13 | |
|---|---|---|---|---|---|---|
| | | | TCL VOC | Field Parameters[a] | Gauged | Sampled |
| **Monitoring Wells** | | | | | | |
| MW-NASB-069 | MW-901 | Tri-Annual | X | X | X | X |
| MW-NASB-070 | MW-902 | Tri-Annual | NR | NR | X[b] | NR |
| MW-NASB-071 | MW-903 | Tri-Annual | X | X | X | X |
| MW-NASB-072 | MW-904 | Tri-Annual | X | X | X | X |
| MW-NASB-073 | MW-905 | Tri-Annual | NR | NR | X[b] | NR |
| MW-NASB-074 | MW-906 | Tri-Annual | X | X | X | X |
| MW-NASB-075 | MW-907 | Tri-Annual | X | X | X | X |
| MW-NASB-076 | MW-908 | Tri-Annual | X | X | X | X |
| MW-NASB-077 | MW-909 | Tri-Annual | NR | NR | X[b] | NR |
| MW-NASB-078 | MW-910 | Tri-Annual | NR | NR | X[b] | NR |
| MW-NASB-079 | MW-914 | Tri-Annual | NR | NR | X[b] | NR |
| MW-NASB-080 | MW-915 | Tri-Annual | X | X | X | X |
| MW-NASB-081 | MW-916 | Tri-Annual | NR | NR | X[b] | NR |
| MW-NASB-022 | None | Tri-Annual | X | X | X | X |
| MW-NASB-204 | None | Tri-Annual | NR | NR | X[b] | NR |
| MW-NASB-227[c] | None | Tri-Annual | X | X | --- | X |

| Sample Type/Location | Monitoring Frequency | Sample Parameters | | Monitoring Event 13 | |
|---|---|---|---|---|---|
| | | TCL VOC | Field Parameters[a] | Gauged | Sampled |
| **Leachate Station** | | | | | |
| LT-901 (SEEP) | Tri-Annual | X | X | NR | X |
| **Surface Water** | | | | | |
| SW-010 | Tri-Annual | X | X | NR | X |
| **Stream Gauge Water** | | | | | |
| SG-1 | Tri-Annual | NR | NR | X[b] | NR |
| SG-2 | Tri-Annual | NR | NR | X[b] | NR |

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

(b) Indicates water level measurement only.

(c) Monitoring well MW-NASB-227 was installed on 9 November 1998 and was sampled as part of Monitoring Event 13.

NOTE: TCL = Target Compound List; VOC = Volatile organic compounds; NR = Procedure not required. Dashes (---) indicate data not collected.

# TABLE 2 MONITORING WELL GAUGING SUMMARY
# SITE 9, NAVAL AIR STATION, BRUNSWICK, MAINE

| Well Designation | Previous Well Designation | Well Riser Elevation (ft MSL) | Depth to Well Bottom (ft below top of PVC well riser) | Bi-Monthly Gauging Data (2 September 1998) | | Monitoring Event 13 Gauging Data (2 November 1998) | |
|---|---|---|---|---|---|---|---|
| | | | | Depth to Water (ft below top of PVC well riser) | Water Table Elevation (ft MSL) | Depth to Water (ft below top of PVC well riser) | Water Table Elevation (ft MSL) |
| MW-NASB-069 | MW-901 | 57.35 | 42.42 | 11.29 | 46.06 | 10.54 | 46.81 |
| MW-NASB-070 | MW-902 | 58.26 | 27.32 | 12.08 | 46.18 | 11.39 | 46.87 |
| MW-NASB-071 | MW-903 | 46.25 | 21.54 | 2.70 | 43.55 | 2.00 | 44.25 |
| MW-NASB-072 | MW-904 | 49.81 | 14.63 | 10.04 | 39.77 | 9.31 | 40.50 |
| MW-NASB-073 | MW-905 | 51.71 | 32.12 | 8.34 | 43.37 | 7.87 | 43.84 |
| MW-NASB-074 | MW-906 | 51.68 | 27.12 | 10.48 | 41.20 | 9.64 | 42.04 |
| MW-NASB-075 | MW-907 | 54.91 | 21.22 | 14.29 | 40.62 | 13.26 | 41.65 |
| MW-NASB-076 | MW-908 | 52.79 | 19.94 | 11.79 | 41.00 | 11.19 | 41.60 |
| MW-NASB-077 | MW-909 | 58.89 | 37.29 | 17.38 | 41.51 | 16.14 | 42.75 |
| MW-NASB-078 | MW-910 | 53.74 | 14.93 | 11.17 | 42.57 | 9.77 | 43.97 |
| MW-NASB-079 | MW-914 | 58.15 | 18.92 | 12.15 | 46.00 | 11.25 | 46.90 |
| MW-NASB-080 | MW-915 | 58.51 | 19.04 | 11.37 | 47.14 | 10.64 | 47.87 |
| MW-NASB-081 | MW-916 | 58.22 | 18.85 | 11.11 | 47.11 | 10.29 | 47.93 |
| MW-NASB-022 | None | 59.52 | 17.97 | 10.35 | 49.17 | 9.85 | 49.67 |
| MW-NASB-204 | None | 62.09 | 17.93 | 9.72 | 52.37 | 8.97 | 53.12 |
| MW-NASB-227[b] | None | No data | 37.0 | No data; well installed during November 1998 | | | |
| Stream Gauge Stations | | | | | | | |
| SG-1 | None | 37.37 | NA | Dry | Dry | 2.78[a] | 40.15 |
| SG-2 | None | 34.89 | NA | 1.70[a] | 36.59 | 2.19[a] | 37.08 |

(a) Measurement from surveyed point on staff gauge.
(b) Monitoring well MW-NASB-227 was installed following Monitoring Event 13 gauging.

NOTE: MSL = Mean sea level; PVC = Polyvinyl chloride; NA = Not applicable.

# TABLE 3 MONITORING WELL GAUGING SUMMARY
# NEX SERVICE STATION, NAVAL AIR STATION, BRUNSWICK, MAINE

| Well Designation | Well Riser Elevation (ft MSL) | Depth to Well Bottom (ft below top of PVC well riser) | Monitoring Event 13 Gauging Data (2 November 1998) | |
|---|---|---|---|---|
| | | | Depth to Water (ft below top of PVC well riser) | Water Table Elevation (ft MSL) |
| MW-NASB-008 | 59.22 | 13.15 | 3.05 | 56.17 |
| MW-NASB-009 | 59.00 | 11.50 | 3.92 | 55.08 |
| MW-NASB-010 | 62.03 | 12.40 | 6.59 | 55.44 |
| MW-NASB-023 | 67.29 | 21.90 | 7.38 | 59.91 |
| MW-NASB-024 | 65.31 | 13.15 | 5.95 | 59.36 |
| MW-NASB-025 | 64.34 | 14.70 | 6.47 | 57.87 |
| MW-NASB-026 | 66.61 | 12.55 | 7.13 | 59.48 |
| MW-NASB-225 | 64.61 | 14.31 | 6.60 | 58.01 |
| MW-NASB-226 | 62.22 | 12.68 | 5.00 | 57.22 |

NOTE: MSL = Mean sea level; PVC = Polyvinyl chloride.
Monitoring wells listed in this table are not part of Site 9.
Water elevations were collected at Navy Exchange Service Station wells to provide data on flow patterns upgradient of Site 9.

# TABLE 4 SUMMARY OF WATER QUALITY INDICATOR PARAMETERS MEASURED IN GROUND-WATER SAMPLES COLLECTED ON 5 AND 18 NOVEMBER 1998 AT SITE 9, NAVAL AIR STATION, BRUNSWICK, MAINE

| Well Designation | Previous Well Designation | pH | Temperature (°C) | Conductivity (μmhos/cm) | Dissolved Oxygen (mg/L) | Turbidity (NTU) | Eh (mV) |
|---|---|---|---|---|---|---|---|
| **Monitoring Wells** | | | | | | | |
| MW-NASB-069 | MW-901 | 6.65 | 15.80 | 421 | 0.30 | 6 | 96 |
| MW-NASB-071 | MW-903 | 6.83 | 14.08 | 252 | 0.17 | 0 | -7 |
| MW-NASB-072 | MW-904 | 6.84 | 14.91 | 136 | 0.95 | 4 | 61 |
| MW-NASB-074 | MW-906 | 6.86 | 13.99 | 249 | 0.15 | 7 | 27 |
| MW-NASB-075 | MW-907 | 6.73 | 18.19 | 252 | 0.46 | 1 | 93 |
| MW-NASB-076 | MW-908 | 6.85 | 20.43 | 273 | 1.38 | 0 | -56 |
| MW-NASB-080 | MW-915 | 7.19 | 17.94 | 352 | 0.62 | 0 | 20 |
| MW-NASB-022 | None | 6.55 | 16.55 | 115 | 8.27 | 0 | 199 |
| MW-NASB-227 | None | 6.20 | 14.47 | 232 | 0.68 | 0 | 208 |

NOTE: NTU = Nephelometric turbidity unit.

# TABLE 5 SUMMARY OF WATER QUALITY INDICATOR PARAMETERS MEASURED IN SURFACE WATER AND LEACHATE SEEP SAMPLES COLLECTED ON 11 NOVEMBER 1998 AT SITE 9, NAVAL AIR STATION, BRUNSWICK, MAINE

| Sample Station | pH | Temperature (°C) | Conductivity ($\mu$mhos/cm) | Dissolved Oxygen (mg/L) | Turbidity (NTU) | Eh (mV) |
|---|---|---|---|---|---|---|
| **Surface Water** | | | | | | |
| SW-010 | 6.13 | 11.76 | 137 | 8.25 | 0 | 224 |
| **Leachate Seep** | | | | | | |
| LT-901 | 6.25 | 11.68 | 221 | 2.91 | 0 | 195 |

NOTE: NTU = Nephelometric turbidity unit.

# TABLE 6 SUMMARY OF ANALYTICAL RESULTS FOR GROUND-WATER SAMPLES COLLECTED ON 5 AND 18 NOVEMBER 1998 AT SITE 9, NAVAL AIR STATION, BRUNSWICK, MAINE

| Compound/Analyte | MW-NASB-069<br>MW-901 | MW-NASB-069 Duplicate<br>MW-901 DUP | MW-NASB-071<br>MW-903 | MW-NASB-072<br>MW-904 | MW-NASB-074<br>MW-906 | MEG[a] | MCL[b] |
|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/L)** | | | | | | | |
| Total 1,2-Dichloroethene | 28 | 18 | (<1U) | (<1U) | 2 | 70 | 70 |
| Vinyl Chloride | **23** | **16** | (<2U) | **1J** | (<2U) | 0.15 | 2 |
| Trichloroethene | 1B | 1 | 1B | 0.9JB | 3 | 5 | 5 |
| Chloroform | (<1U) | (<1U) | (<1U) | (<1U) | 0.6J | --- | 100 |
| Methylene Chloride | 4B | (<1U) | 3B | 4B | 0.7JB | --- | 5 |
| Tetrachloroethane | (<1U) | (<1U) | (<1U) | (<1U) | 0.7J | 70 | --- |

(a) MEG (Maximum Exposure Guideline) obtained from State of Maine Department of Human Services Maximum Exposure Guidelines, memorandum dated 23 October 1992. Dashes (---) indicate no MEG applicable.
(b) MCL (Maximum Contaminant Level) obtained from 40 CFR Parts 141 and 142 (U.S. EPA 1998). Dashes (---) indicate no MCL applicable.

NOTE: U = Not detected. Sample quantitation limits are shown as (<____U).
J = Estimated concentration below detection limit.
B = Compound detected in associated method blank.
Only those analytes detected in at least one of the samples are shown on this table.
Concentrations in bold denote exceedance of MEG or MCL.

| Compound/Analyte | MW-NASB-075 MW-907 | MW-NASB-076 MW-908 | MW-NASB-080 MW-915 | MW-NASB-022 | MW-NASB-227 | QT-002 | QT- 005 | MEG[b] | MCL[c] |
|---|---|---|---|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/L)** | | | | | | | | | |
| Total 1,2-Dichloroethene | (<1U) | 0.9J | (<1U) | (<1U) | 3 | (<1U) | (<1U) | 70 | 70 |
| Vinyl Chloride | (<2U) | **10** | **4** | (<2U) | (<2U) | (<2U) | (<2U) | 0.15 | 2 |
| 1,1-Dichloroethane | (<1U) | 0.5J | 1 | (<1U) | (<1U) | (<1U) | (<1U) | 70 | --- |
| Ethylbenzene | (<1U) | (<1U) | (<1U) | (<1U) | (<1U) | 0.6J | (<1U) | 700 | 700 |
| Total xylenes | (<1U) | (<1U) | (<1U) | (<1U) | (<1U) | 1 | (<1U) | 600 | 10,000 |
| Trichloroethene | 1 | (<1U) | 1B | 2B | 5B | 2B | 2B | 5 | 5 |
| Acetone | 3J | (<5U) | (<5U) | (<5U) | (<5U) | 4J | (<5U) | --- | --- |
| Methylene Chloride | (<1U) | 4B | 3B | 0.7JB | 1B | 0.9JB | 0.6JB | --- | 5 |
| Tetrachloroethane | (<1U) | (<1U) | (<1U) | (<1U) | 1 | 1 | (<1U) | 70 | --- |
| Carbon Disulfide | (<1U) | (<1U) | (<1U) | (<1U) | (<1U) | 0.5J | (<1U) | --- | --- |
| 1,2-Dichlorobenzene | (<1U) | (<1U) | (<1U) | (<1U) | (<1U) | 2 | (<1U) | 600 | 600 |
| 1,3-Dichlorobenzene | (<1U) | (<1U) | (<1U) | (<1U) | (<1U) | 0.9J | (<1U) | 600 | 600 |
| 1,4-Dichlorobenzene | (<1U) | (<1U) | (<1U) | (<1U) | (<1U) | 1 | (<1U) | 27 | 75 |

NOTE: QT = Trip blank. QT-002 was analyzed with a separate sample delivery group shipped on the same day.

# TABLE 7 SUMMARY OF ANALYTICAL RESULTS FOR SURFACE WATER SAMPLE COLLECTED ON 11 NOVEMBER 1998 AT SITE 9, NAVAL AIR STATION, BRUNSWICK, MAINE

| Compound | SW-010 | QT-004 | QS-004 | QD-001 |
|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS BY EPA METHOD 8260 (μg/L)** | | | | |
| Methylene Chloride | (<1U) | (<1U) | (<1U) | 5B |
| Vinyl chloride | (<2U) | (<2U) | (<2U) | (<2U) |
| 1,1,1-Trichloroethane | (<1U) | (<1U) | 2 | (<1U) |
| Bromodichloromethane | (<1U) | (<1U) | 0.7J | (<1U) |
| Chloroform | (<1U) | (<1U) | 6 | 14 |

NOTE: SW = Surface water sample locations.
QT = Trip blank. QT-004 was analyzed under a separate sample delivery group shipped on the same day.
QS = Equipment rinsate blank.
QD = Source water blank. QD-001 was analyzed under a separate sample delivery group shipped on 5 November 1998.
U = Not detected. Sample quantitation limits are shown as (<____U).
B = Compound detected in associated method blank.
J = Estimated concentration below the detection limit.
Only those compounds detected in at least one of the samples are shown on this table.

# TABLE 8 SUMMARY OF ANALYTICAL RESULTS FOR THE LEACHATE SEEP SAMPLE COLLECTED ON 11 NOVEMBER 1998 AT SITE 9, NAVAL AIR STATION, BRUNSWICK, MAINE

| Analyte | LT-901 (μg/L) | LT-901 DUP (μg/L) | QT-004 (μg/L) | QS-004 (μg/L) | QD-001 (μg/L) |
|---|---|---|---|---|---|
| **VOLATILE ORGANIC COMPOUNDS BY EPA METHOD SW-8260** | | | | | |
| Methylene Chloride | 2B | (<1U) | (<1U) | (<1U) | 5B |
| Chloroform | (<1U) | (<1U) | (<1U) | 6 | 14 |
| Carbon Disulfide | 0.6J | (<1U) | (<1U) | (<1U) | (<1U) |
| Trichloroethene | 2B | (<1U) | (<1U) | (<1U) | (<1U) |
| Tetrachloroethene | 1 | (<1U) | (<1U) | (<1U) | (<1U) |
| Ethylbenzene | 0.7J | (<1U) | (<1U) | (<1U) | (<1U) |
| Total Xylenes | 2 | (<1U) | (<1U) | (<1U) | (<1U) |
| 1,2-Dichlorobenzene | 1 | (<1U) | (<1U) | (<1U) | (<1U) |
| 1,3-Dichlorobenzene | 2 | (<1U) | (<1U) | (<1U) | (<1U) |
| 1,4-Dichlorobenzene | 2 | (<1U) | (<1U) | (<1U) | (<1U) |
| Chlorobenzene | 0.8J | (<1U) | (<1U) | (<1U) | (<1U) |
| Styrene | 0.5J | (<1U) | (<1U) | (<1U) | (<1U) |
| Bromodichloromethane | (<1U) | (<1U) | (<1U) | 0.7J | (<1U) |
| Toluene | 0.8J | (<1U) | (<1U) | (<1U) | (<1U) |
| 1,1,1-Trichloroethane | (<1U) | (<1U) | (<1U) | 2 | (<1U) |

NOTE: LT = Leachate sample.
QT = Trip blank. QT-004 was 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 5 November 1998.
B = Compound detected in associated method blank.
U = Not detected. Sample quantitation limits are shown as (<___U).
J = Estimated concentration below the detection limit.
Only those analytes detected in at least one of the samples are shown on this table.

# REFERENCES

ABB Environmental Services, Inc. (ABB-ES). 1994. Interim Record of Decision for the Ground-Water Operable Unit at Site 9. September.

EA Engineering, Science, and Technology. 1996. Final Report, Quarterly Monitoring Event 4 - November 1995, Site 9: Neptune Drive Disposal Site, Naval Air Station, Brunswick, Maine. February.

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

U.S. Environmental Protection Agency (U.S. EPA). 1998. National Primary Drinking Water Standards. Office of Water, Washington, D.C. EPA 610-P-94-001. October.

# 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

# Appendix A.1

# Field Record of Well Gauging Forms

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

# FIELD RECORD OF WELL GAUGING

| | | |
|---|---|---|
| Project Name: Bimonthly Gauging Sept 98 Site 9 | Project No: 29600.47 | Date: 9/2/98 |
| Weather/Temperature: Sunny, 75° | | |
| EA Personnel: SD, BA | Equipment: Slope indicator, TVA-1000 | |

| Well No. | Labeled/ Capped | Well Locked | VOCs Concentration (ppm) Air Ambient | VOCs Concentration (ppm) Well Mouth | Casing/Seal Condition | Protective Casing Elevation (ft MSL) | PVC Casing Elevation (ft MSL) | Depth to Water (ft) | Measured Well Depth (ft) | Water Table Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-NASB 069 | Y Y | Y | 0 | 0 | Good | | 57.35 | 11.29 | 42.42 | 46.06 |
| 70 | Y Y | Y | 0 | 0 | Good | | 58.26 | 12.08 | 27.32 | 46.18 |
| 71 | Y Y | Y | 0 | 0 | Good | | 46.25 | 2.70 | 21.54 | 43.55 |
| 72 | Y Y | Y | 0 | 0 | Good | | 49.81 | 10.04 | 14.63 | 39.77 |
| 73 | Y Y | Y | 0 | 0 | Good | | 51.71 | 8.34 | 32.12 | 43.37 |
| 74 | Y Y | Y | 0 | 0 | Good | | 51.68 | 10.48 | 27.12 | 41.20 |
| 75 | Y Y | Y | 0 | 0 | Good | | 54.91 | 14.29 | 21.22 | 40.62 |
| 76 | Y Y | Y | 0 | 0 | Good | | 52.79 | 11.79 | 19.94 | 41.00 |
| 77 | Y Y | Y | 0 | 0 | Good | | 58.89 | 17.38 | 37.29 | 41.51 |
| 78 | Y Y | Y | 0 | 0 | Good | | 53.74 | 11.17 | 14.93 | 42.57 |
| 79 | Y Y | Y | 0 | 0 | Good | | 58.15 | 12.15 | 18.92 | 46.00 |
| 80 | Y Y | Y | 0 | 0 | Good | | 58.51 | 11.37 | 19.04 | 47.14 |
| 81 | Y Y | Y | 0 | 0 | Good | | 58.22 | 11.11 | 18.85 | 47.11 |
| SG-1 | | | | | | | ~~37.37~~ | DRY | — | — |
| SG-2 | | | | | | | 34.89 | *1.70 | — | 36.59 |
| MW-NASB-204 | Y Y | Y | 0 | 0 | Good | | 62.09 | 9.72 | | 52.37 |
| MW-NASB-22 | Y Y | Y | 0 | 0 | Good | | 59.52 | 10.35 | 17.97 | 49.17 |

NOTE: MSL = Mean sea level; PVC = Polyvinyl chloride; VOC = Volatile organic compounds.



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EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

# FIELD RECORD OF WELL GAUGING

| | |
|---|---|
| Project Name/Site Name: LTMP Event 13 Nov 1998 NE r Service Station | Project No. 29600.47.7503 |
| Weather/Temperature: Overcast, 45° | Date: 11/2/98 |
| EA Personnel: SC, RY | Equipment: Solinst interface meter, TVA-1000 |

| Well No. | Labeled/ Capped | Well Locked | VOCs Concentration (ppm) Air Ambient | VOCs Concentration (ppm) Well Mouth | Casing/Seal Condition | Protective Casing Elevation (ft MSL) | PVC Casing Elevation (ft MSL) | Depth to Water (ft) | Depth to LNAPL (ft MSL) | LNAPL Thickness (ft MSL) | Measured Well Depth (ft) | Water Table Elevation[a] (ft MSL) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW-1993/3 23 | Y | Y | 0 | 0 | Good | | 67.29 | 7.38 | ND | — | 21.90 | 59.91 |
| 24 | Y | Y | 0 | 0 | Good | | 65.31 | 5.95 | ND | — | 13.15 | 59.36 |
| 25 | Y | Y | 0 | 0 | Good | | 64.34 | 6.47 | ND | — | 14.70 | 57.87 |
| 26 | Y | Y | 0 | 12 | Good | | 66.61 | 7.13 | ND | — | 12.55 | 59.48 |
| 08 | Y | Y | 0 | 0 | Good | | 59.22 | 3.03 | ND | — | 13.15 | 56.07 |
| 09 | Y | Y | 0 | 0 | Good | | 59.00 | 3.92 | ND | — | 11.50 | 55.08 |
| 10 | Y | Y | 0 | 0 | Good | | 62.03 | 6.59 | ND | — | 12.40 | 55.44 |
| 225 | Y | Y | 0 | 40 | Good | | 64.61 | 6.60 | ND | — | 14.31 | 58.01 |
| 226 | Y | N | 0 | 15 | Good | | 62.22 | 5.00 | ND | — | 12.68 | 57.22 |

(a) Based on an assumed specific gravity of 0.___ for LNAPL.

NOTE: LNAPL = Light, non-aqueous phase liquid; MSL = Mean sea level; PVC = Polyvinyl chloride; VOC = Volatile organic compounds. ND = Not Detected

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

# FIELD RECORD OF WELL GAUGING

Project Name: LTMP Event 13 Nov 1998 Site 9

Project No: 29600.47.7503

Date: 11/2/98

Weather/Temperature: Overcast, 45°

EA Personnel: SC, RH

Equipment: ~~Solinst interface meter~~ slope indicator SC, TVA-1000

| Well No. | Labeled/ Capped | Well Locked | VOCs Concentration (ppm) Air Ambient | VOCs Concentration (ppm) Well Mouth | Casing/Seal Condition | Protective Casing Elevation (ft MSL) | PVC Casing Elevation (ft MSL) | Depth to Water (ft) | Measured Well Depth (ft) | Water Table Elevation (ft MSL) |
|---|---|---|---|---|---|---|---|---|---|---|
| MW-045B 069 | Y Y | Y | 0 | 0 | Good | | 57.35 | 10.54 | 42.42 | 46.81 |
| 070 | Y Y | Y | 0 | 0 | Good | | 58.26 | 11.39 | 27.32 | 46.87 |
| 071 | Y Y | Y | 0 | 0 | Good | | 46.25 | 2.00 | 21.54 | 44.25 |
| 072 | Y Y | Y | 0 | 0 | Good | | 49.81 | 9.31 | 14.63 | 40.50 |
| 073 | Y Y | Y | 0 | 0 | Good | | 51.71 | 7.87 | 32.12 | 43.84 |
| 074 | Y Y | Y | 0 | 0 | Good | | 51.68 | 9.64 | 27.12 | 42.04 |
| 075 | Y Y | Y | 0 | 0 | Good | | 54.91 | 13.26 | 21.22 | 41.65 |
| 076 | Y Y | Y | 0 | 0 | Good | | 52.79 | 11.19 | 19.94 | 41.60 |
| 077 | Y Y | Y | 0 | 0 | Good | | 58.89 | 16.14 | 37.29 | 42.75 |
| 078 | Y Y | Y | 0 | 0 | Good | | 53.74 | 9.77 | 14.93 | 43.97 |
| 079 | Y Y | Y | 0 | 0 | Good | | 58.15 | 11.25 | 18.92 | 46.90 |
| 080 | Y Y | Y | 0 | 0 | Good | | 58.51 | 10.64 | 19.04 | 47.87 |
| 081 | Y Y | Y | 0 | 0 | Good | | 58.22 | 10.29 | 18.85 | 47.93 |
| 022 | Y Y | Y | 0 | 0 | Good | | 59.52 | 9.85 | 17.97 | 49.67 |
| 204 | Y Y | Y | 0 | 0 | Good | | 62.09 | 8.97 | | 53.12 |
| SG-1 | | | | | | | 37.37 | 2.78 | — | 40.15 |
| SG-2 | | | | | | | 34.89 | 2.19 | — | 37.08 |

NOTE: MSL = Mean sea level; PVC = Polyvinyl chloride; VOC = Volatile organic compounds.



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# 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: NAS Brunswick Site 9
WELL I.D.: MW-069
WELL CONDITION: Good

PROJECT NUMBER: 29600.47.7503
WELL LOCK STATUS: Locked
WEATHER: Sunny/Windy ± 45

GAUGE DATE: 11/5/98
SOUNDING METHOD: Slope Indicator
STICK UP/DOWN (ft): 2.45

GAUGE TIME: 1011
MEASUREMENT REF: TOC
WELL DIAMETER (in.): 2"

PURGE DATE: 11/5/98
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: Ø End: Ø

PURGE TIME: 1015
FIELD PERSONNEL: KB/RH
WELL MOUTH VOCs (ppm): Start: Ø End: Ø

## WELL VOLUME

A. WELL DEPTH (ft): 42.42
B. DEPTH TO WATER (ft): 10.66
C. LIQUID DEPTH (ft) (A-B): 31.76

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 19.21
F. THREE WELL VOLUMES (L) (E*3): 57.63

| Parameter | Beginning | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Time (min) | 1018 | 1023 | 1028 | 1033 | 1038 | 1043 |
| Depth to Water (ft) | 10.66 | 10.66 | 10.76 | 10.76 | 10.71 | 10.71 |
| Purge Rate (L/min) | .2 | .2 | .2 | .2 | .2 | .2 |
| Volume Purged (L) | .6 | 1.6 | 2.6 | 3.6 | 4.6 | 5.6 |
| pH | 6.64 | 6.59 | 6.62 | 6.61 | 6.62 | 6.65 |
| Temperature (°C) | 14.12 | 15.25 | 15.63 | 15.72 | 15.74 | 15.67 |
| Conductivity (μmhos/cm) | 413 | 417 | 411 | 419 | 418 | 413 |
| Dissolved Oxygen (mg/L) | 1.02 | .34 | .31 | .33 | .31 | .30 |
| Turbidity (NTU) | 140 | 47 | 71 | 19 | 7 | 6 |
| Eh (mv) | 96 | 97 | 97 | 97 | 97 | 97 |

TOTAL QUANTITY OF WATER REMOVED (L): 10.0

SAMPLERS: KB/RH
SAMPLING TIME (START/END): 1055-1105
SAMPLING DATE: 11/5/98
DECONTAMINATION FLUIDS USED: DI
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-13-S9-MW002 + BN-13-S9-MW001
SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS: Sample water containerized + disposed @ treatment plant - Collect Dup
Dump Cup @ 1030 D

EA Engineering, Science, and Technology



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

| | |
|---|---|
| Site Name: NAS Brunswick Site 9 | Project No.: 29600.47.7503 Date: 11/5/98 |
| Well ID: mw-069 | Field Personnel: KS/RH |

| Parameter | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|
| Time (min.) | 1048 | 1051 | | | | |
| Depth to Water (ft) | 10.71 | 10.71 | | | | |
| Purge Rate (L/min) | .2 | .2 | | | | |
| Volume Purged (L) | 6.6 | 7.2 | | | | |
| pH | 6.64 | 6.65 | | | | |
| Temperature (°C) | 15.76 | 15.80 | | | | |
| Conductivity (μmhos/cm) | 418 | 421 | | | | |
| Dissolved Oxygen (mg/L) | .31 | .30 | | | | |
| Turbidity (NTU) | 6 | 6 | | | | |
| Eh (mv) | 96 | 96 | | | | |

| 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: NAS Brunswick Site 9
WELL I.D.: MW-071
WELL CONDITION: Good

PROJECT NUMBER: 29600.47.7503
WELL LOCK STATUS: Locked
WEATHER: Sunny/windy ± 45

GAUGE DATE: 11/5/98
SOUNDING METHOD: Slope Indicator
STICK UP/DOWN (ft): 2.80

GAUGE TIME: 1115
MEASUREMENT REF: TOC
WELL DIAMETER (in.): 2"

PURGE DATE: 11/5/98
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: Ø End: Ø

PURGE TIME: 1118
FIELD PERSONNEL: KS/RH
WELL MOUTH VOCs (ppm): Start: Ø End: Ø

## WELL VOLUME

A. WELL DEPTH (ft): 21.54
B. DEPTH TO WATER (ft): 2.25
C. LIQUID DEPTH (ft) (A-B): 19.29

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 11.67
F. THREE WELL VOLUMES (L) (E*3): 35.01

| Parameter | Beginning | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Time (min) | 1120 | 1125 | 1130 | 1135 | 1138 | 1141 |
| Depth to Water (ft) | 2.25 | 2.25 | 2.56 | 2.56 | 2.61 | 2.61 |
| Purge Rate (L/min) | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| Volume Purged (L) | 3.0 | 10.5 | 18.0 | 25.5 | 30.0 | 34.5 |
| pH | 6.82 | 6.82 | 6.83 | 6.82 | 6.83 | 6.83 |
| Temperature (°C) | 13.94 | 14.07 | 14.12 | 14.10 | 14.09 | 14.08 |
| Conductivity (μmhos/cm) | 250 | 252 | 254 | 252 | 254 | 252 |
| Dissolved Oxygen (mg/L) | 0.18 | 0.17 | 0.16 | 0.17 | 0.16 | 0.17 |
| Turbidity (NTU) | Ø | Ø | Ø | Ø | Ø | Ø |
| Eh (mv) | -6 | -7 | -7 | -7 | -7 | -7 |

TOTAL QUANTITY OF WATER REMOVED (L): 51

SAMPLERS: KS/RH
SAMPLING TIME (START/END): 1145 - 1152
SAMPLING DATE: 11/5/98
DECONTAMINATION FLUIDS USED: DI
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-13-59-MW003
SAMPLE PARAMETERS: VOC
COMMENTS AND OBSERVATIONS: Collect MS/MSD

EA Engineering, Science, and Technology

# FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: NAS Brunswick Site 9
WELL I.D.: MW-72
WELL CONDITION: Good

PROJECT NUMBER: 29600.47.7503
WELL LOCK STATUS: Locked
WEATHER: Sunny ±50

GAUGE DATE: 11/5/98
SOUNDING METHOD: Slope Indicator
STICK UP/DOWN (ft): 2.25

GAUGE TIME: 1322
MEASUREMENT REF: TOC
WELL DIAMETER (in.): 2"

PURGE DATE: 11/5/98
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: Ø End: Ø

PURGE TIME: 1325
FIELD PERSONNEL: CS/RH
WELL MOUTH VOCs (ppm): Start: Ø End:

## WELL VOLUME

A. WELL DEPTH (ft): 14.63
B. DEPTH TO WATER (ft): 9.50
C. LIQUID DEPTH (ft) (A-B): 5.13

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 3.10
F. THREE WELL VOLUMES (L) (E*3): 9.30

| Parameter | Beginning | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Time (min) | 1330 | 1335 | 1340 | 1345 | 1348 | 1351 |
| Depth to Water (ft) | 9.50 | 9.50 | 9.45 | 9.45 | 9.45 | 9.45 |
| Purge Rate (L/min) | .2 | .2 | .2 | .2 | .2 | .2 |
| Volume Purged (L) | 1.0 | 2.0 | 3.0 | 4.0 | 4.6 | 5.2 |
| pH | 6.84 | 6.83 | 6.84 | 6.84 | 6.83 | 6.84 |
| Temperature (°C) | 13.74 | 14.40 | 14.80 | 14.89 | 14.91 | 14.91 |
| Conductivity (μmhos/cm) | 136 | 139 | 137 | 136 | 137 | 136 |
| Dissolved Oxygen (mg/L) | 1.37 | 1.15 | .98 | .92 | .91 | .95 |
| Turbidity (NTU) | 28 | 16. | 10 | 5 | 5 | 4 |
| Eh (mv) | 56 | 57 | 58 | 59 | 60 | 61 |

TOTAL QUANTITY OF WATER REMOVED (L): 7.0

SAMPLERS: CS/RH
SAMPLING TIME (START/END): 1355 - 1400
SAMPLING DATE: 11/5/98
DECONTAMINATION FLUIDS USED: DI
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-13-59-MW005
SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS: Sample water containerized & disposed @ Treatment plant

EA Engineering, Science, and Technology

# FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: NAS Brunswick Site 9
WELL I.D.: mw-07H
WELL CONDITION: Good

PROJECT NUMBER: 29600.47.7503
WELL LOCK STATUS: Locked
WEATHER: Sunny/breeze ±40

GAUGE DATE: 11/5/98
SOUNDING METHOD: Slope Indicator
STICK UP/DOWN (ft): 1.90

GAUGE TIME: 1408
MEASUREMENT REF: TOC
WELL DIAMETER (in.): 2"

PURGE DATE: 11/5/98
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: Ø End: Ø

PURGE TIME: 1410
FIELD PERSONNEL: KS/RH
WELL MOUTH VOCs (ppm): Start: Ø End: Ø

## WELL VOLUME

A. WELL DEPTH (ft): 27.12
B. DEPTH TO WATER (ft): 10.13
C. LIQUID DEPTH (ft) (A-B): 16.99

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 10.28
F. THREE WELL VOLUMES (L) (E*3): 30.84

| Parameter | Beginning | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Time (min) | 1415 | 1420 | 1425 | 1430 | 1435 | 1440 |
| Depth to Water (ft) | 10.13 | 10.13 | 10.26 | 10.26 | 9.99 | 9.99 |
| Purge Rate (L/min) | .2 | .2 | .2 | .2 | .2 | .2 |
| Volume Purged (L) | 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 |
| pH | 6.89 | 6.90 | 6.84 | 6.89 | 6.85 | 6.87 |
| Temperature (°C) | 13.12 | 13.47 | 12.82 | 12.88 | 13.57 | 13.85 |
| Conductivity (μmhos/cm) | 164 | 202 | 242 | 243 | 245 | 248 |
| Dissolved Oxygen (mg/L) | .52 | .21 | 1.40 | .25 | .20 | .21 |
| Turbidity (NTU) | 358 | 345 | 205 | 117 | 76 | 54 |
| Eh (mv) | 31 | 15 | 32 | 27 | 31 | 29 |

TOTAL QUANTITY OF WATER REMOVED (L): 12.6

SAMPLERS: KS/RH
SAMPLING TIME (START/END): 1508 - 1513
SAMPLING DATE: 11/5/98
DECONTAMINATION FLUIDS USED: DI
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-13-S9-MW006
SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS: $H_2O$ Orange at begining of pumping
Correct Time is 1400's

EA Engineering, Science, and Technology



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

| | |
|---|---|
| Site Name: NAS Brunswick Site 9 | Project No.: 29600.17.7503 Date: 11/5/98 |
| Well ID: MW-07H | Field Personnel: KS/RH |

| Parameter | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|
| Time (min.) | 1445 | 1450 | 1455 | 1500 | 1505 | |
| Depth to Water (ft) | 9.99 | 9.96 | 9.96 | 9.96 | 9.96 | |
| Purge Rate (L/min) | .2 | .2 | .2 | .2 | .2 | |
| Volume Purged (L) | 7.0 | 8.0 | 9.0 | 10.0 | 11.0 | |
| pH | 6.87 | 6.86 | 6.87 | 6.86 | 6.86 | |
| Temperature (°C) | 13.77 | 13.92 | 13.99 | 14.00 | 13.99 | |
| Conductivity (μmhos/cm) | 249 | 248 | 248 | 249 | 249 | |
| Dissolved Oxygen (mg/L) | .16 | .16 | .17 | .16 | .15 | |
| Turbidity (NTU) | 17 | 8 | 7 | 7 | 7 | |
| Eh (mv) | 27 | 27 | 26 | 26 | 27 | |

| 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: NAS Brunswick Site 9
PROJECT NUMBER: 29600.47.7503
WELL I.D.: MW-07S
WELL LOCK STATUS: Locked
WELL CONDITION: Good
WEATHER: Sunny/windy ±40

GAUGE DATE: 11/5/98
GAUGE TIME: 1518
SOUNDING METHOD: Slope Indicator
MEASUREMENT REF: TOC
STICK UP/DOWN (ft): 2.00
WELL DIAMETER (in.): 2"

PURGE DATE: 11/5/98
PURGE TIME: 1520
PURGE METHOD: Low Flow
FIELD PERSONNEL: KS/RH
AMBIENT AIR VOCs (ppm) Start: Ø End: Ø
WELL MOUTH VOCs (ppm): Start: Ø End: Ø

## WELL VOLUME

A. WELL DEPTH (ft): 21.22
B. DEPTH TO WATER (ft): 13.90
C. LIQUID DEPTH (ft) (A-B): 7.32
D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 4.43
F. THREE WELL VOLUMES (L) (E*3): 13.29

| Parameter | Beginning | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Time (min) | 1523 | 1528 | 1533 | 1536 | 1539 | 1542 |
| Depth to Water (ft) | 13.90 | 13.90 | 13.90 | 13.55 | 13.55 | 13.55 |
| Purge Rate (L/min) | .2 | .2 | .2 | .2 | .2 | .2 |
| Volume Purged (L) | .6 | 1.6 | 2.6 | 3.2 | 3.8 | 4.4 |
| pH | 6.76 | 6.73 | 6.73 | 6.73 | 6.73 | 6.73 |
| Temperature (°C) | 14.85 | 17.59 | 18.01 | 18.01 | 18.18 | 18.19 |
| Conductivity (μmhos/cm) | 247 | 248 | 250 | 255 | 254 | 252 |
| Dissolved Oxygen (mg/L) | .52 | .48 | .44 | .46 | .48 | .46 |
| Turbidity (NTU) | 14.0 | 5 | 3 | 1 | 1 | 1 |
| Eh (mv) | 87 | 90 | 91 | 92 | 93 | 93 |

TOTAL QUANTITY OF WATER REMOVED (L): 6.0

SAMPLERS: KS/RH
SAMPLING TIME (START/END): 1545-1550
SAMPLING DATE: 11/5/98
DECONTAMINATION FLUIDS USED: DI
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-13-S9-MW007
SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

# FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: NAS Brunswick Site 9
WELL I.D.: MW-076
WELL CONDITION: Good

PROJECT NUMBER: 21600.47.7503
WELL LOCK STATUS: Locked
WEATHER: Sunny windy ≈ 50

GAUGE DATE: 11/5/98
SOUNDING METHOD: Slope Indicator
STICK UP/DOWN (ft): 2.00

GAUGE TIME: 1242
MEASUREMENT REF: TOC
WELL DIAMETER (in.): 2"

PURGE DATE: 11/5/98
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: Ø End: Ø

PURGE TIME: 1245
FIELD PERSONNEL: KS/RH
WELL MOUTH VOCs (ppm): Start: Ø End: Ø

## WELL VOLUME

A. WELL DEPTH (ft): 19.94
B. DEPTH TO WATER (ft): 11.25
C. LIQUID DEPTH (ft) (A-B): 8.69

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 5.26
F. THREE WELL VOLUMES (L) (E*3): 15.78

| Parameter | Beginning | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Time (min) | 1250 | 1255 | 1258 | 1301 | 1304 | 1307 |
| Depth to Water (ft) | 11.25 | 11.25 | 11.26 | 11.26 | 11.25 | 11.25 |
| Purge Rate (L/min) | .2 | .2 | .2 | .2 | .2 | .2 |
| Volume Purged (L) | 1.0 | 2.0 | 2.6 | 3.2 | 3.8 | 4.4 |
| pH | 6.10 | 6.67 | 6.79 | 6.83 | 6.85 | 6.85 |
| Temperature (°C) | 15.72 | 18.22 | 20.37 | 20.54 | 20.45 | 20.43 |
| Conductivity (μmhos/cm) | 247 | 262 | 269 | 273 | 272 | 273 |
| Dissolved Oxygen (mg/L) | 3.34 | 3.28 | 1.94 | 1.45 | 1.39 | 1.38 |
| Turbidity (NTU) | 1. | Ø | Ø | Ø | Ø | Ø |
| Eh (mv) | 12 | 4 | -34.8 | -55.8 | -56 | -56 |

TOTAL QUANTITY OF WATER REMOVED (L): 7.0

SAMPLERS: KS/RH
SAMPLING TIME (START/END): 1315-1320
SAMPLING DATE: 11/5/98
DECONTAMINATION FLUIDS USED: DI
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-13-S9-MW004
SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS:

EA Engineering, Science, and Technology

# FIELD RECORD OF WELL GAUGING, PURGING, AND SAMPLING

SITE NAME: NAS Brunswick Site 9
PROJECT NUMBER: 29600.47.7503
WELL I.D.: MW-080
WELL LOCK STATUS: Locked
WELL CONDITION: Good
WEATHER: Sunny ±45

GAUGE DATE: 11/5/98
GAUGE TIME: 0908
SOUNDING METHOD: Slope Indicator
MEASUREMENT REF: TOC
STICK UP/DOWN (ft): 2.05
WELL DIAMETER (in.): 2"

PURGE DATE: 11/5/98
PURGE TIME: 0915
PURGE METHOD: Low Flow
FIELD PERSONNEL: KS RH
AMBIENT AIR VOCs (ppm) Start: Ø End: Ø
WELL MOUTH VOCs (ppm): Start: Ø End: Ø

## WELL VOLUME

A. WELL DEPTH (ft): 19.04
B. DEPTH TO WATER (ft): 10.95
C. LIQUID DEPTH (ft) (A-B): 8.09
D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 4.89
F. THREE WELL VOLUMES (L) (E*3): 14.67

| Parameter | Beginning | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Time (min) | 0920 | 0925 | 0930 | 0935 | 0940 | 0945 |
| Depth to Water (ft) | 10.95 | 10.95 | 10.95 | 10.83 | 10.77 | 10.77 |
| Purge Rate (L/min) | .2 | .2 | .2 | .2 | .2 | .2 |
| Volume Purged (L) | 1.0 | 2.0 | 3.0 | 4.0 | 5.0 | 6.0 |
| pH | 2.94 | 6.51 | 6.98 | 7.11 | 7.17 | 7.17 |
| Temperature (°C) | 15.19 | 16.95 | 18.42 | 19.18 | 18.37 | 18.16 |
| Conductivity (μmhos/cm) | 308 | 329 | 343 | 346 | 346 | 343 |
| Dissolved Oxygen (mg/L) | .86 | 0.62 | 0.62 | 0.51 | 0.60 | 0.64 |
| Turbidity (NTU) | 10.7 | 6 | 2 | Ø | Ø | Ø |
| Eh (mv) | 116 | 79 | 60.3 | 39 | 23 | 21 |

TOTAL QUANTITY OF WATER REMOVED (L): 11.0

SAMPLERS: KS/RH
SAMPLING TIME (START/END): 0958 – 1010
SAMPLING DATE: 11/5/98
DECONTAMINATION FLUIDS USED: DI
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL, ~~HNO3~~ KS
SAMPLE BOTTLE IDs: BN-13-S9-MW001
SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS: Sample water containerized & disposed @ treatment plant

EA Engineering, Science, and Technology



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

| | | |
|---|---|---|
| Site Name: NAS Brunswick Site 9 | Project No.: 29600.47.7503 | Date: 11/5/98 |
| Well ID: MW-080 | Field Personnel: KS/RH | |

| Parameter | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|
| Time (min.) | 0950 | | | | | |
| Depth to Water (ft) | 10.77 | | | | | |
| Purge Rate (L/min) | .2 | | | | | |
| Volume Purged (L) | 7.0 | | | | | |
| pH | 7.19 | | | | | |
| Temperature (°C) | 17.94 | | | | | |
| Conductivity (μmhos/cm) | 352 | | | | | |
| Dissolved Oxygen (mg/L) | 0.62 | | | | | |
| Turbidity (NTU) | Ø | | | | | |
| Eh (mv) | 20 KS | | | | | |

| 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 9
WELL I.D.: MW-NASB022
WELL CONDITION: good

PROJECT NUMBER: 29600477503
WELL LOCK STATUS: locked
WEATHER: Sunny, 30°, breezy

GAUGE DATE: 11-18-98
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft):

GAUGE TIME: 850
MEASUREMENT REF: TOC
WELL DIAMETER (in.): 2

PURGE DATE: 11-18-98
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 905
FIELD PERSONNEL: SC, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

## WELL VOLUME

A. WELL DEPTH (ft): 17.97
B. DEPTH TO WATER (ft): 10.09
C. LIQUID DEPTH (ft) (A-B): 7.88

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 4.77
F. THREE WELL VOLUMES (L) (E*3): 14.31

| Parameter | Beginning | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Time (min) | 908 | 911 | 914 | 917 | 920 | 923 |
| Depth to Water (ft) | 10.16 | 10.18 | 10.21 | 10.21 | 10.21 | 10.21 |
| Purge Rate (L/min) | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Volume Purged (L) | 0.6 | 1.2 | 1.8 | 2.4 | 3.0 | 3.6 |
| pH | 6.40 | 6.40 | 6.27 | 6.45 | 6.51 | 6.53 |
| Temperature (°C) | 12.32 | 12.66 | 15.32 | 15.54 | 16.04 | 16.34 |
| Conductivity (μmhos/cm) | 108 | 92 | 94 | 100 | 105 | 110 |
| Dissolved Oxygen (mg/L) | 9.67 | 9.11 | 9.01 | 8.70 | 8.45 | 8.31 |
| Turbidity (NTU) | 16 | 52 | 30 | 17 | 5 | 1 |
| Eh (mv) | 189 | 191 | 195 | 196 | 197 | 198 |

TOTAL QUANTITY OF WATER REMOVED (L): 60

SAMPLERS: BA, SC
SAMPLING TIME (START/END): 930/935
SAMPLING DATE: 11/18/98
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN-13-EP-MW008
SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS: con tainerized water & ran through plant.

ph check OK

EA Engineering, Science, and Technology



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

| | | |
|---|---|---|
| Site Name: Site 9 | Project No.: 2960477 | Date: 11/18/98 |
| Well ID: MW-UASB-022 | Field Personnel: SC, BH | |

| Parameter | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|
| Time (min.) | 926 | | | | | |
| Depth to Water (ft) | 10.21 | | | | | |
| Purge Rate (L/min) | 0.2 | | | | | |
| Volume Purged (L) | 4.2 | | | | | |
| pH | 6.55 | | | | | |
| Temperature (°C) | 16.55 | | | | | |
| Conductivity (μmhos/cm) | 115 | | | | | |
| Dissolved Oxygen (mg/L) | 3.27 | | | | | |
| Turbidity (NTU) | 0 | | | | | |
| Eh (mv) | 199 | | | | | |

| 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 9
WELL I.D.: MW-NASB-227
WELL CONDITION: good

PROJECT NUMBER: 2916004 77503
WELL LOCK STATUS: locked
WEATHER: Sunny, 30°

GAUGE DATE: 11/18/98
SOUNDING METHOD: Slope indicator
STICK UP/DOWN (ft):

GAUGE TIME: 945
MEASUREMENT REF: TOC
WELL DIAMETER (in.): 2

PURGE DATE: 11/18/98
PURGE METHOD: Low Flow
AMBIENT AIR VOCs (ppm) Start: 0 End: 0

PURGE TIME: 946
FIELD PERSONNEL: SC, BA
WELL MOUTH VOCs (ppm): Start: 0 End: 0

## WELL VOLUME

A. WELL DEPTH (ft): 40.60
B. DEPTH TO WATER (ft): 9.83
C. LIQUID DEPTH (ft) (A-B): 30.77

D. WELL VOLUME/FT (L): 0.605
E. WELL VOLUME (L) (C*D): 18.62
F. THREE WELL VOLUMES (L) (E*3): 55.86

| Parameter | Beginning | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Time (min) | 949 | 952 | 955 | 958 | 1001 | 1004 |
| Depth to Water (ft) | 9.94 | 9.94 | 9.94 | 9.94 | 9.96 | 9.96 |
| Purge Rate (L/min) | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Volume Purged (L) | 0.9 | 1.8 | 2.7 | 3.6 | 4.5 | 6.3 |
| pH | 6.18 | 6.24 | 6.22 | 6.23 | 6.21 | 6.20 |
| Temperature (°C) | 13.27 | 13.44 | 13.94 | 14.31 | 14.45 | 14.47 |
| Conductivity (μmhos/cm) | 226 | 228 | 231 | 232 | 233 | 232 |
| Dissolved Oxygen (mg/L) | 1.90 | 1.29 | 1.18 | 0.72 | 0.70 | 0.63 |
| Turbidity (NTU) | 1 | 0 | 0 | 0 | 0 | 0 |
| Eh (mv) | 208 | 208 | 208 | 208 | 208 | 208 |

TOTAL QUANTITY OF WATER REMOVED (L): 96

SAMPLERS: BA, SC
SAMPLING TIME (START/END): 1010 / 1015
SAMPLING DATE: 11/18/98
DECONTAMINATION FLUIDS USED: none
SAMPLE TYPE: Grab
SAMPLE PRESERVATIVES: HCL
SAMPLE BOTTLE IDs: BN1359 MW009 ~~MW009MS/MSD~~
SAMPLE PARAMETERS: VOC

COMMENTS AND OBSERVATIONS:
ph check ok

# Appendix A.3

# Field Record of Surface Water and Sediment Sampling Forms

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

# FIELD RECORD OF SURFACE WATER AND SEDIMENT SAMPLING

| | | | |
|---|---|---|---|
| Project: NAS Brunswick | | | Site: Site 9 |
| Project Number: 29600.47.7503 | | | Date: 11/11/98 |
| Sample Location ID: SW-10 | | | Sample Team Members: KS / FY |
| Time: 1440 | Start: 1440 | End: 1451 | Signature of Sampler: Kim Shutty |

***SURFACE WATER INFORMATION***

Water Depth and Sample Location 1.5 (ft)

Depth of Sample from Top of Water .5 (ft)

Type of Surface Water:
(X) Stream ( ) River
( ) Pond/Lake ( ) Seep

Equipment Used for Collection:
( ) None, Grab into Bottle
( ) Bomb Sampler
( ) Pump _____
(X) Dedicated jar.

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
(X) Deionized Water
( ) Liquinox Solution
( ) Hexane
( ) $HNO_3$ Solution
( ) Potable Water
( ) None

Velocity Measurements Obtained? (X) No ( ) Yes, See Flow Measurement Data Record _____

Temperature 11.76 Degree C. Specific Conductivity 137 µmhos/cm pH 6.13 Units Dissolved Oxygen 8.25 ppm

Field QC Data: ( ) Field Duplicate Collected
Duplicate ID _____

Sample Location Sketch:
( ) Yes
(X) No

Method Used:
( ) Winkler
(X) Probe

Turb Ø NTUs
Eh 224

***SEDIMENT INFORMATION***

Type of Sample Collected:
( ) Discrete
( ) Composite

Sediment Type:
( ) Clay
( ) Sand
( ) Organic
( ) Gravel

Equipment Used for Collection:
( ) Gravity Corer
( ) Stainless Steel Split Spoon
( ) Dredge
( ) Hand Spoon/Trowel
( ) Aluminum Pans
( ) Stainless Steel Bucket
( ) _____

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
( ) Deionized Water
( ) Liquinox Solution
( ) Hexane
( ) $HNO_3$ Solution
( ) Potable Water
( ) None

Sample Observations:
( ) Odor _____
( ) Color _____
( ) _____

Field QC Data: ( ) Field Duplicate Collected
Duplicate ID _____

***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 |
|---|---|---|---|---|---|---|
| | ✓ | | HCL ✓ | .5 L | ✓ | BN-13-~~59~~ - SW001 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

***NOTES/SKETCH***

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

# FIELD RECORD OF SURFACE WATER AND SEDIMENT SAMPLING

| | | | |
|---|---|---|---|
| Project: NAS Brunswick | | | Site: Site 9 |
| Project Number: 29600.47.7503 | | | Date: 11/11/98 |
| Sample Location ID: LTSW1 | | | Sample Team Members: KB/FV |
| Time: 1500 | Start: 1500 | End: 1518 | Signature of Sampler: Kim Shutty |

***SURFACE WATER INFORMATION***

Water Depth and Sample Location 5 ~~(ft)~~ in

Depth of Sample from Top of Water 2 ~~(ft)~~ in

Type of Surface Water:
(x) Stream ( ) River
( ) Pond/Lake ( ) Seep

Equipment Used for Collection:
( ) None, Grab into Bottle
( ) Bomb Sampler
( ) Pump _____
(x) Ded1

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
( ) Deionized Water
( ) Liquinox Solution
( ) Hexane
( ) $HNO_3$ Solution
( ) Potable Water
( ) None

Velocity Measurements Obtained? ( ) No ( ) Yes, See Flow Measurement Data Record _____

Temperature 11.68 Degree C. Specific Conductivity 221 µmhos/cm pH 6.25 Units Dissolved Oxygen 2.91 ppm

Field QC Data: (x) Field Duplicate Collected
Duplicate ID BN1359LTX D1
MS/MSD

Sample Location Sketch:
( ) Yes
( ) No

Method Used:
( ) Winkler
( ) Probe

Turb 0 NTU
Eh 195

***SEDIMENT INFORMATION***

Type of Sample Collected:
( ) Discrete
( ) Composite

Sediment Type:
( ) Clay
( ) Sand
( ) Organic
( ) Gravel

Equipment Used for Collection:
( ) Gravity Corer
( ) Stainless Steel Split Spoon
( ) Dredge
( ) Hand Spoon/Trowel
( ) Aluminum Pans
( ) Stainless Steel Bucket
( ) _____

Decontamination Fluids Used:
( ) Isopropyl Alcohol
( ) ASTM Type II Water
( ) Deionized Water
( ) Liquinox Solution
( ) Hexane
( ) $HNO_3$ Solution
( ) Potable Water
( ) None

Sample Observations:
( ) Odor _____
( ) Color _____
( ) _____

Field QC Data: ( ) Field Duplicate Collected
Duplicate ID _____

***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 |
|---|---|---|---|---|---|---|
| | ✓ | | HCL ✓ | .5L | ~~.5L~~ ✓ | BN-13-59-LTSW1 |
| | | | | | | BN-13-59-LTXD1 |
| | | | | | | |
| | | | | | | |

***NOTES/SKETCH***

# Appendix B

# Details of Monitoring Well MW-NASB-227 Installation

**EA Engineering, Science, and Technology, Inc.**

## LOG OF SOIL BORING

Coordinates: 385918.5 562384.5
Surface Elevation: 55.7 Ft
Casing Below Surface:
Reference Elevation: 58.39
Reference Description: TOC

| Job. No. | Client | Location |
|---|---|---|
| 2960047 | NAS Brunswick - NAVY | Site 9 |

Drilling Method: 4" Drive and Wash 300lb hammer - casing
Sampling Method: 2" x 24" long split barrel sampler - 140lb hammer
Boring No. MW-NASB-227
Sheet 1 of 2

| Water Lev. | | | | |
|---|---|---|---|---|
| Time | | | | |
| Date | | | | |
| Reference | | | | |

| Drilling Start | Drilling Finish |
|---|---|
| 920 | 1415 |
| 11-9-98 | 11-9-98 |

Surface Conditions: grassy strip between Orion Road and Recreational Department Parking Lot

| Sample Type | Inches Drvn/In. Recvrd | Dpth. Csg. | Samp. # /samp. depth | PID (ppm) HNu | Blows per 6 in. | Depth in Feet | USCS Log | Description |
|---|---|---|---|---|---|---|---|---|
| SS | 24/14 | 0 | 1/2 | 0 | 3, 5, 8, 8 | 0, 1 | SP | 0-14 Light brown to tan, Fine SAND w/ trace asphalt Frags. dry |
| SS | 24/10 | 0 | 2/4 | 0 | 4, 6, 9, 8 | 2, 3 | SP | 0-5 as above; 5-10 tan Fine SAND, loose, dry |
| SS | 24/11 | 4 | 3/6 | 0 | 10, 11, 9, 14 | 4, 5 | SP | 0-11 tan Fine SAND, moist |
| SS | 24/11 | 4 | 4/8 | 0 | 13, 13, 14, 12 | 6, 7 | SP | 0-11 Tan Fine SAND, moist, thin layer (1/4-1/2 in) with some larger SAND small gravel at 4" |
| SS | 24/10 | 8 | 5/10 | 0 | 8, 10, 10, 10 | 8, 9 | SP | 0-3 Tan Fine SAND, moist; 3-5 rust colored, Fine medium SAND, mica flakes; 5-8 Olive brown layering, very Fine SAND and SILT; 8-10 Olive very Fine SAND, moist |
| SS | 24/11 | 8 | 6/12 | 0 | 7, 8, 9, 11 | 10, 11 | SP | 0-5 olive Brown Fine SAND trace medium SAND; 5-11 Tan brown olive banded Fine SAND, wet |
| SS | 24/13 | 12 | 7/14 | 0 | 9, 10, 9, 12 | 12, 13 | SM | 0-13 tan, rust brown, olive banded (1/4-1/2 in) of very Fine SAND, Some SILT, some medium SAND wet |
| SS | 24/10 | 14 | 8/16 | 0 | 4, 6, 6, 9 | 14, 15 | SM | 0-10 as above - thin layer of Fine to medium rust colored SAND in tip, wet, loose |
| SS | 24/12 | 16 | 9/18 | 0 | 8, 6, 8, 10 | 16, 17 | SM | 0-12 as above - top 2" olive SILT color from tan to olive, thin band SC (1/16 to 1/4" thick) very Fine SAND with Some SILT, wet |
| SS | 24/14 | 18 | 10/20 | 0 | 6, 7, 8, 8 | 18, 19 | SM | 0-7 as above - tan to olive SILT to very Fine SAND; 7-14 Brown Fine SAND, wet, loose |
| | | | | | | 20 | | SS = Split barrel sample. |

Logged by: Paul Higgins
Date: 9 November 1998
Drilling Contractor: Northeast Drilling
Driller: Tim Whitman

**WELL SPECIFICATIONS:**

Diam. of casing: 2
BOH: 42
Screen Interval: 37-27'
Riser Interval: 27-+3
Sandpack: 38-26
Bentonite: 42-38, 26-24
Grout: 24-0
Cover: 4" Steel Casing

**EA Engine ring, Sci nc , and Technology, Inc.**

**LOG OF SOIL BORING**

Coordinates: 385918.5 S 62384.5
Surface Elevation: 55.7 Ft MSL
Casing Below Surface:
Reference Elevation: 58.39 Ft MSL
Reference Description: TOC

| Job. No. | Client | Location |
|---|---|---|
| 2960047 | NAVY-NAS Brunswick | Site 9 |

Drilling Method: 4" Drive Wash 300lb hammer casing
Sampling Method: 2" x 24" long split barrel sampler 140lb hammer
Boring No. MW-NASB-2[illegible]
Sheet 2 of 2
Drilling Start 920 11-9-98 Finish 1415 11-9-98

| Water Lev. | | | | |
|---|---|---|---|---|
| Time | | | | |
| Date | | | | |
| Reference | | | | |

Surface Conditions: grassy strip between Orion Rd and Recreational Department Parking Lot

| Sample Type | Inches Drvn/In. Recvrd | Dpth. Csg. | Samp. # /samp. depth | PID (ppm) HNu | Blows per 6 in. | Depth in Feet | USCS Log | |
|---|---|---|---|---|---|---|---|---|
| SS | 24/12 | 20 | 11/22 | 0 | 6 6 7 13 | 20 21 | SP | 0-12 Tan to brown Fine SAND loose, wet. Several minor SILT/CLAY lenses 1/16-1/8" thick through sample interval |
| SS | 24/14 | 22 | 12/24 | 0 | 6 7 8 13 | 22 23 | SP SM | 0-10 olive brown Fine SAND, wet loose. 10-14 bands of rust to olive colored very Fine to SILT, wet |
| SS | 24/11 | 24 | 13/26 | 0 | 8 6 10 9 | 24 25 | SP | 0-11 as in interval 10-14 above w/ very Fine to Fine SAND. At 3in - one 1" rust band, very Fine SAND |
| SS | 24/13 | 26 | 14/28 | 0 | 6 7 10 12 | 26 27 | SP | 0-13 rusty tan to brown Fine SAND, loose, wet |
| SS | 24/10 | 28 | 15/30 | 0 | 9 11 14 14 | 28 29 | SP | 0-10 brown, Fine to very Fine SAND, loose, wet |
| SS | 24/14 | 30 | 16/32 | 1 | 4 6 9 10 | 30 31 | SP | 0-6 as above 6-14 brown to olive brown, very Fine to Fine SAND with distinctive bands of colors, loose, [illegible] |
| SS | 24/12 | 32 | 17/34 | | 4 4 6 10 | 32 33 | SP | 0-12 brown to olive brown, Fine SAND |
| SS | 24/16 | 34 | 18/36 | | 5 8 10 9 | 34 35 | SP | 0-8 as above 8-16 rust colored bands of very Fine to Fine SAND intermixed with olive brown very Fine to Fine SAND loose, wet |
| SS | 24/13 | 36 | 19/38 | | 4 6 4 4 | 36 37 | SP | 0-3" as in 8-16 interval above 3-12 olive brown Fine SAND loose, wet 12-13 gray very Fine SAND and SILT, wet |
| SS | 24/19 | 38 | 20/40 | | WOR WOR WOR WOR | 38 39 | CL | 0-19 gray CLAY/SILT |
| SS | 24/24 | 40 | 21/42 | | WOR ↓ | 40 | CL | as above Bottom of hole 42 Ft. |

SS = Split barrel sample.

Logged by: Paul Higgins
Date: 9 November 1998
Drilling Contractor: Northeast Drilling
Driller: Tim Whitman

**WELL SPECIFICATIONS:**

Diam. of casing: 2
BOH: 42
Screen Interval: 37-27
Riser Interval: 27-+3
Sandpack: 38-26
Bentonite: 42-38, 26-24
Grout: 24-0
Cover: 4" Steel Casing

EA Engineering, Science, and Technology

# FIELD RECORD OF WELL DEVELOPMENT

| | | |
|---|---|---|
| Project Name: Site 9 | Project No: 29600477503 | Date: 11/13/98 |
| EA Personnel: SYC | Development Method: surge, bail | |
| Weather/Temperature/Barometric Pressure: Sunny, 50 | | Time: 1215 |

| | |
|---|---|
| Well No.: MW-NASB227 | Well Condition: Good |
| Well Diameter: 2 | Measurement Reference: TOC |
| Well Volume Calculations | |
| A. Depth To Water (ft): 9.76 | D. Well Volume/ft: 0.167 |
| B. Total Well Depth (ft): 40.60 | E. Total Well Volume (gal)[C*D]: 5.15 |
| C. Water Column Height (ft): 30.84 | F. Five Well Volumes (gal): 26 |

| Parameter | Beginning | 1 Volume | 2 Volumes | 3 Volumes | 4 Volumes | 5 Volumes |
|---|---|---|---|---|---|---|
| Time (min) | 1230 | | | | | |
| Turbidity (nTu) | 216 | | | | | |
| Purge Rate (gpm) | | | | | | |
| Volume Purged (gal) | 5 | | | | | |
| pH | 6.02 | | | | | |
| Temperature (°C) | 11.95 | | | | | |
| Conductivity (μmhos/cm) | 109 | | | | | |
| eH (mV) | 176 | | | | | |

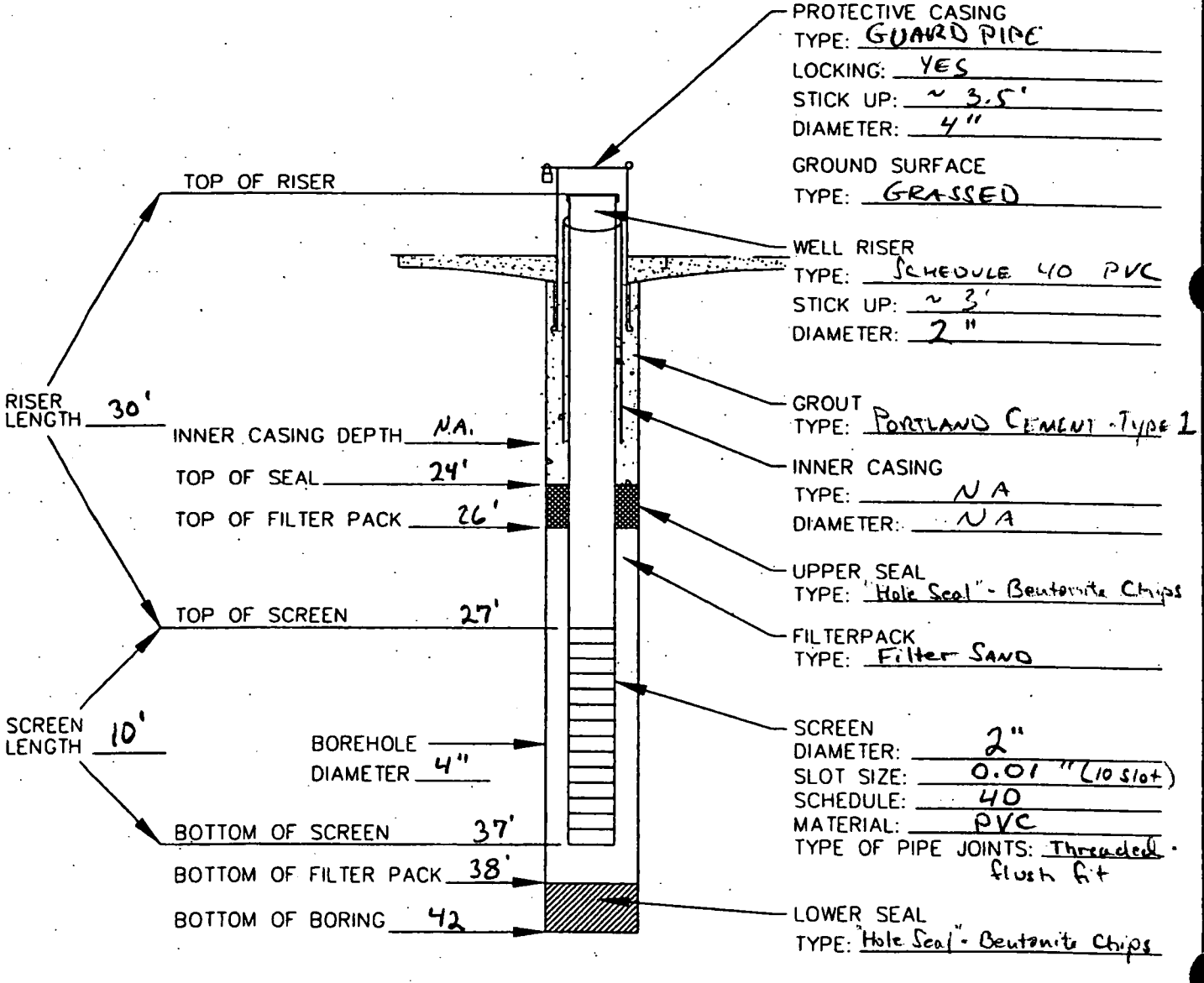
| Parameter | 6 Volumes | 7 Volumes | 8 Volumes | 9 Volumes | 10 Volumes | End |
|---|---|---|---|---|---|---|
| Time (min) | | | | | | 1430 |
| Turbidity (nTu) | | | | | | 8 |
| Purge Rate (gpm) | | | | | | |
| Volume Purged (gal) | | | | | | 60 |
| pH | | | | | | 6.61 |
| Temperature (°C) | | | | | | 13.41 |
| Conductivity (μmhos/cm) | | | | | | 115 |
| eV (mV) | | | | | | 219 |

COMMENTS AND OBSERVATIONS: problems w/ YSI 6000. got initial and ending water quality readings. Purged 60 gallons over 2 hrs.

# MONITORING WELL CONSTRUCTION

## MW - NASB - 227

| | |
|---|---|
| CLIENT/SITE NAME: NAS BRUNSWICK - DEPT OF NAVY SITE 9 - NEPTUNE DRIVE DISPOSAL SITE | |
| DATE INSTALLED: 9 November 1998 | PROJECT No. 29600.47. |
| ELEVATION OF GROUND SURFACE: ELEVATION TOP OF WELL RISER: | COORDINATES: N: E: |
| DEPTH TO WATER: (BELOW GROUND SURFACE) DATE/TIME: | EA INSPECTOR: Paul Higgins |
| DRILLING METHOD & DEPTH: 4" Casing, Drive & Wash to Bottom of Hole | |




MONITORING WELL CONSTRUCTION
(ALL DEPTH MEASURMENTS IN FT. BELOW GROUND SURFACE)

EA ENGINEERING, SCIENCE, AND TECHNOLOGY

DWG FILE No. F:\PROJECTS\29600.60\2290\CADD\89-MW-02.DWG

# Appendix C

# Analytical Data Quality Review

# APPENDIX C - CONTENTS

Page

C.1 INTRODUCTION ..... C-1

C.1.1 Field Sampling Program Quality Control ..... C-2
C.1.2 Laboratory Analytical Quality Control Program ..... C-3

C.2 SAMPLE HOLDING TIMES ..... C-3
C.3 PRECISION ..... C-3

C.3.1 Volatile Organic Compounds ..... C-3

C.4 ACCURACY ..... C-3

C.4.1 Volatile Organic Compounds ..... C-3

C.5 COMPLETENESS ..... C-4
C.6 FIELD QUALITY CONTROL BLANKS ..... C-4

C.6.1 Laboratory Method Blanks ..... C-5
C.6.2 Trip Blanks ..... C-5
C.6.3 Rinsate Blank ..... C-6

C.7 DUPLICATE FIELD SAMPLES ..... C-6
C.8 METHOD DETECTION LIMITS FOR AQUEOUS SAMPLES ..... C-8

# APPENDIX C
# ANALYTICAL DATA QUALITY REVIEW

## C.1 INTRODUCTION

This project utilized both field and analytical laboratory quality control measures to ensure that the data quality objectives presented in the project-specific Draft Quality Assurance Project Plan (QAPP) (EA 1998) were met.

The sampling program consisted of 10 aqueous samples for ground water, surface water, and leachate seep, of which 1 was a field duplicate collected from Site 9. The laboratory was provided with 2 aqueous sample delivery groups (SDG) which included 5 aqueous quality control samples (3 trip blanks, 1 rinsate blank, and 1 source water blank). Sample duplicates, 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 for precision and accuracy for each sample and analysis type, including field quality control blanks (i.e., trip blanks) 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 standards (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 LCS recoveries. MS/MSD and SMC recoveries measure the effect of the sample matrix on sample preparation and measurement methodology. During the MS/MSD process, 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 which 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.

Field completeness was quantified by comparing the number of samples specified in the Long-Term Monitoring Plan (LTMP) to the number of samples actually collected during Monitoring Event 13. Data completeness was quantified by reviewing the number of usable results to the number of results reported.

For clarity, the following definitions are given for use throughout Appendix C:

- **Instrument Detection Limit (IDL)**—Defined as the lowest concentration level that can be determined to be statistically different from instrument background noise (instrument blank).

- **Method Detection Limit**—This refers to the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero and is determined from analysis of a sample for a given matrix. The method detection limits for sediment and aqueous media are summarized in Tables C-1 and C-2, respectively.

- **Contract Required Detection Limit/Contract Required Quantitation Limit (CRDL/CRQL)**— This refers to the minimum level of detection acceptable under the contract Statement of Work in order to ensure regulatory compliance. This terminology is widely accepted in the industry as defined by the U.S. Environmental Protection Agency (EPA) contract laboratory protocols and is a standard list of inorganic analyte concentrations and organic compound concentrations on which laboratory flags and data validation qualifiers are based. These published concentrations are meant to be above the laboratory IDL in order to ensure a level of confidence. The published CRDLs/CRQLs are specific to the Contract Laboratory Program methodology but are often used throughout industry methods. The data user should be aware that stated CRDLs/CRQLs are generic for a method and are affected for each sample by sample size, concentration, percent solids, and dilution factors.

- **Practical Quantitation Limit**—Defined as the lowest level that can be reasonably achieved within specified units of precision and accuracy during routine laboratory operating conditions.

The following table summarizes the findings for the data quality review performed and discussed in detail in this appendix:

| Data Quality Review | | Holding Time | Field Blank Cont. | Precision | | Accuracy | | | Completeness | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Laboratory | Field | SMC | MS/MSD | LCS | Analytical | Field |
| Aqueous Matrix | VOC | ✓ | ✓B | ✓ | ✓J | ✓ | ✓ | ✓ | 100%✓ | 100%✓ |

NOTE:
✓ = The data are usable as reported based on the data quality review of this quality measurement.
✓B = The data have been affected by field blank/laboratory contamination; false-positives may exist.
✓J = The data are usable, however, some analyte concentrations should be considered estimates of the true concentrations.
VOC = Volatile organic compound.

In general, the data collected as part of Monitoring Event 13 were found to meet the standards established in the QAPP contained in the Draft LTMP (EA 1998) for data usability.

### C.1.1 Field Sampling Program Quality Control

Field sampling quality control was acceptable and conducted according to the Draft QAPP (EA 1998). Field duplicate samples were collected for each matrix (i.e., sediment and ground/surface 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 EPA SW-846 Method 8260B. To document the effectiveness of decontamination protocols, rinsate blank samples were taken by running de-ionized water through decontaminated sampling equipment and into the appropriate sample containers, and analyzing for the same parameters as the samples. In addition, a source water blank was analyzed to assess the chemical quality of the water used in the decontamination sequence. The source water blank was also associated with samples collected at Sites 1 and 3 and Eastern Plume under a separate SDG.

### C.1.2 Laboratory Analytical Quality Control Program

The precision and accuracy objectives and reporting requirements identified in the LTMP were met. Ground-water, surface water, and seep samples were collected for analysis of Target Compound List VOC by EPA Method 8260B.

## C.2 SAMPLE HOLDING TIMES

The holding times were met for all method and sample matrixes. Holding times (from date of sample collection to date of sample preparation/analysis) were compared against the maximum holding times identified in the quality control requirements of the referenced analytical methods.

## C.3 PRECISION

### C.3.1 Volatile Organic Compounds

The analytical precision was determined to be acceptable and the aqueous volatile organic data usable as reported based on the review of laboratory precision. Five VOC were used to quantify the MS/MSD RPD. The control limits identified in the QAPP were used to evaluate the data. The MS/MSD were performed on Samples MW-NASB-071 and LT-901. There were no surface water samples designated for MS/MSD analyses, therefore, surface water was not evaluated for analytical precision. The leachate seep and monitoring well sample MS/MSD RPD were within the established control limits, with the exception of toluene (21 percent) in Sample MW-NASB-071. The RPD for toluene in the sample mentioned above did not indicate significant imprecision, therefore, the data are usable as reported.

## C.4 ACCURACY

### C.4.1 Volatile Organic Compounds

The surface water, leachate seep, and monitoring well SMC recoveries were within established control limits, therefore, the analytical results are usable as reported. Three SMCs are normally used to measure the ability of the laboratory to purge the target analytes from the environmental samples, however, the laboratory reported an additional SMC. The SMC control limits for the

aqueous and sediment samples identified in the QAPP and reported by the laboratory were identical for the first three SMC. The fourth SMC, dibromofluoromethane, was not listed in the QAPP, therefore, laboratory limits were used to evaluate the data.

Based on the conformance of MS/MSD and accuracy of LCS recoveries, all analytical results are usable as reported. Five VOC were used to quantify MS/MSD recoveries against laboratory established control limits. The recovery limits reported by the laboratory were the same as those identified in the QAPP. The samples chosen for MS/MSD are identified in Section C.3.1. The leachate seep and monitoring well sample MS/MSD recoveries were within the established control limits, with the exception of 1,1-dichloroethene in 2 samples: LT-901 (57 percent) and MW-NASB-071 (146 percent). The MS for Sample LT-901 exhibited a low recovery for 1,1-dichloroethene and Sample MW-NASB-071 exhibited a high recovery for 1,1-dichloroethene. The associated MSD for both samples were compliant, therefore, the usability of the data is unaffected.

Five VOC were used to quantify the LCS recoveries against laboratory established control limits (Appendix D). No LCS recovery limits are stated in the QAPP. All aqueous LCS recoveries were within laboratory established control limits, confirming purging efficiency.

## C.5 COMPLETENESS

Usable analytical data were available for all analytes/compounds for all field samples, and total analytical completeness is 100 percent.

Eleven of the planned 11 aqueous field samples were collected, resulting in a field completeness level of 100 percent.

The field quality control blanks (e.g., trip blanks) were collected at the proper frequency. A total of 2 trip blanks were collected for Site 9. There was 1 rinsate blank collected (associated with the surface water/seep samples). In addition, a source water blank was submitted for Site 9 in compliance with the QAPP.

Analytical completeness was quantitated by reviewing the number of acceptable analytical results to the total number of analytical results.

## C.6 FIELD QUALITY CONTROL BLANKS

Monitoring well and trip blank samples contained analytical results that were false-positives based on both field and method blank contamination. Field quality control rinsate blanks were collected to evaluate the potential 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 3 trip blanks and 1 equipment rinsate blank and 1 source water blank. The rinsate blank (QS-004) was collected during the surface water sampling program. Rinsate blanks were not required for the ground-water samples since dedicated pumping systems were used to collect the samples. The source water blank (QD-001) associated with this event was collected under a separate SDG associated with Sites 1 and 3 and Eastern Plume.

### C.6.1 Laboratory Method Blanks

Method blanks were reviewed and VOC were determined to be present in the method blanks, including trichloroethene and methylene chloride.

The positive trichloroethene results for 8 samples should be considered false-positives due to method blank contamination (MW-NASB-069, MW-NASB-071, MW-NASB-072, MW-NASB-080, MW-NASB-022, MW-NASB-227, QT-002, and QT-005). The laboratory confirmed that the contamination seen in the method blanks was due to low level carryover and should be considered false-positives.

The positive methylene chloride results for 12 samples (LT-901, QD-001, MW-NASB-069, MW-NASB-071, MW-NASB-072, MW-NASB-074, MW-NASB-076, MW-NASB-080, MW-NASB-212, MW-NASB-227, QT-002, and QT-005) should be considered false-positives due to method blank contamination. The laboratory confirmed that the contamination seen in the method blanks was due to low level carryover and should be considered false-positives.

### C.6.2 Trip Blanks

Trip blanks associated with Site 9 were analyzed for VOC. The results of the 3 trip blanks are shown in the following table:

| Compound | Units | QT-002 | QT-004 | QT-005 |
|---|---|---|---|---|
| Ethylbenzene | µg/L | 0.6J | (<1U) | (<1U) |
| Total Xylenes | µg/L | 1 | (<1U) | (<1U) |
| Trichloroethene | µg/L | 2B | (<1U) | 2B |
| Acetone | µg/L | 4J | (<5U) | (<1U) |
| Methylene chloride | µg/L | 0.9JB | (<1U) | 0.6JB |
| Tetrachloroethane | µg/L | 1 | (<1U) | (<1U) |
| Carbon disulfide | µg/L | 0.5J | (<1U) | (<1U) |
| 1,2-Dichlorobenzene | µg/L | 2 | (<1U) | (<1U) |
| 1,3-Dichlorobenzene | µg/L | 0.9J | (<1U) | (<1U) |
| 1,4-Dichlorobenzene | µg/L | 1 | (<1U) | (<1U) |

NOTE: J = Estimated concentration below the detection limit.
U = Not detected. Sample quantitation limits are shown as (<__U).
B = Compound detected in associated method blank.

The usability of ethylbenzene, total xylenes, carbon disulfide,1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene data in the aqueous samples was unaffected as ethylbenzene, total xylenes, carbon disulfide 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene were not detected in any of the samples.

The positive trichloroethene results in MW-NASB-075, MW-NASB-069 DUP, and MW-NASB-074 should be considered false-positive due to trip blank contamination.

The positive acetone result in Sample MW-NASB-075 should be considered false-positive due to trip blank contamination.

The positive tetrachloroethane results in 2 samples (MW-NASB-074 and MW-NASB-227) should be considered false-positives due to trip blank contamination. All non-detected tetrachloroethane data are unaffected.

### C.6.3 Rinsate Blank

The analytical results for the rinsate blank associated with the surface water (including samples collected at LT-901) collected at Site 9, and the associated source water blank, are shown in the following table:

| Compound | Units | QS-004 | QD-001 |
|---|---|---|---|
| Methylene Chloride | µg/L | (<1U) | 5B |
| 1,1,1-Trichloroethane | µg/L | 2 | (<1U) |
| Bromodichloromethane | µg/L | 0.7J | (<1U) |
| Chloroform | µg/L | 6 | 14 |

NOTE: U = Not detected. Sample quantitation limits are shown as (<__U).
B = Compound detected in associated method blank.
J = Estimated concentration below the detection limit.

The analytical results of the equipment rinsate blank and source water blank indicate that there was minor VOC contamination present. Chloroform results in both QS-004 and QD-001 should be considered as false-positive. Chloroform was not detected in any of the associated samples, therefore, the data should be considered usable for the aqueous samples. See trip blank section for discussion about methylene chloride contamination. Bromodichloromethane and 1,1,1-trichloroethane were not detected in any of the environmental samples and, therefore, the usability of bromodichloromethane and 1,1,1-trichloroethane data was unaffected.

## C.7 DUPLICATE FIELD SAMPLES

All precision requirements were met for the organic results for the duplicate samples (MW-NASB-069, MW-NASB-069 DUP, LT-901, and LT-901 DUP) with the exception of total 1,2-dichloroethene and vinyl chloride in Samples MW-NASB-069 and MW-NASB-069 DUP. The results for these two compounds should be considered estimations of the concentration in the above mentioned 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 duplicates taken during the sampling event. The overall precision of organic compounds was evaluated as the RPD (non-detects were defined as one-half

the reporting limit) and were considered acceptable at an RPD of less than 30 percent for water samples and 50 percent for soil samples. The reporting limits used to evaluate the data are based on those presented in the QAPP.

Duplicate field samples were collected during the monitoring well ground-water sampling program and leachate seep sampling program. The sample locations of the field duplicated samples were not identified to the laboratory. The precision measurements for all analytes reported above the CRQL/CRDL are defined in the tables below.

The following tables show the duplicate ground-water samples and their results that are associated with SDG S9MW001:

| Compound | Units | MW-NASB-069 | MW-NASB-069 DUP | RPD% |
|---|---|---|---|---|
| Total 1,2-Dichloroethene | µg/L | 28 | 18 | **43** |
| Vinyl Chloride | µg/L | 23 | 16 | **36** |
| Trichloroethene | µg/L | 1B | 1 | 0 |
| Methylene chloride | µg/L | 4B | (<1U) | **156** |

NOTE: B = Compound detected in associated method blank.
U = Not detected. Sample quantitation limits are shown as (<___U).
Results in bold indicate an exceedance of the precision requirements.

All precision requirements were met for organic results for the duplicate analyses of Sample MW-NASB-069 with the exception of total 1,2-dichloroethene, vinyl chloride, and methylene chloride. The analytical results for total 1,2-dichloroethene and vinyl chloride should be considered an estimation of the true concentration based on the exceedance of the precision criteria for field duplicates. The results for trichloroethene and methylene chloride should be considered false-positive due to method blank contamination (as noted in Section C.6) and, therefore, the precision criteria would not apply. All other analytical data are usable as reported based on the review of the field duplicate precision.

The following table shows the leachate seep sample duplicate results associated with SDG S9LTSW1:

| Compound | Units | LT-901 | LT-901 DUP | RPD% |
|---|---|---|---|---|
| Methylene Chloride | µg/L | 2B | (<1U) | **120** |
| Carbon Disulfide | µg/L | 0.6J | (<1U) | 18 |
| Trichloroethane | µg/L | 2B | (<1U) | **120** |
| Tetrachloroethene | µg/L | 1 | (<1U) | **67** |
| Ethylbenzene | µg/L | 0.7J | (<1U) | **33** |
| Total Xylenes | µg/L | 2 | (<1U) | **120** |
| 1,2-Dichlorobenzene | µg/L | 1 | (<1U) | **67** |
| 1,3-Dichlorobenzene | µg/L | 2 | (<1U) | **120** |
| 1,4-Dichlorobenzene | µg/L | 2 | (<1U) | **120** |
| Chlorobenzene | µg/L | 0.8J | (<1U) | **46** |
| Styrene | µg/L | 0.5J | (<1U) | 0 |
| Toluene | µg/L | 0.8J | (<1U) | **46** |

NOTE: B = Compound detected in associated method blank.
U = Not detected. Sample quantitation limits are shown as (<__U).
J = Estimated concentration below detection limit.
Results in bold indicate an exceedance of the precision requirements.

All precision requirements were met for organic results for the duplicate analyses with the exception of methylene chloride, trichloroethane, tetrachloroethene, ethylbenzene, total xylenes, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, chlorobenzene, and toluene. The analytical results for tetrachloroethene, ethylbenzene, total xylenes, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, chlorobenzene, and toluene should not be considered to be significant as the concentrations are at or near the IDL where analytical error is expected. The results for methylene chloride and trichloroethane should be considered false-positives due to method blank contamination (as noted in Section C.6) and, therefore, the precision criteria would not apply.

## C.8 METHOD DETECTION LIMITS FOR AQUEOUS SAMPLES

Appendix C.1 provides the method detection limits for aqueous samples. The method detection limit represents the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero and is determined from analysis of a sample for a given matrix.

# Appendix C.1

# Method Detection Limits For Aqueous Samples

Date: [redacted]98 9:08:03 AM
Matrix: WATER
Compound List: 8260B 5ML PURGE
5970-I

# Katahdin Analytical Services
## MDL Study

| Dates of Analysis | Spike | Data Files |
|---|---|---|
| JAN 14,1998 | 1 UG/L | I0639- I0646 |
| JAN 21,1998 | 2 UG/L | I0708- I0714 |
| FEB 04,1998 | 5 UG/L | I0814- I0820 |

Analyst: JCG
Reviewed and Approved by: JA Date: 020598
File:

| Compound | Spike | I0639 | I0640 | I0641 | I0642 | I0643 | I0644 | I0646 | AVG | STD DEV | MDL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-TETRACHLOROETHANE | 1.00 | 1.15 | 0.89 | 1.14 | 1.10 | 1.18 | 0.99 | 1.13 | 1.08 | 0.10 | 0.33 |
| 1,1,1-TRICHLOROETHANE | 1.00 | 1.07 | 1.08 | 1.15 | 1.12 | 1.19 | 1.00 | 0.65 | 1.04 | 0.18 | 0.57 |
| 1,1,2,2-TETRACHLOROETHANE | 2.00 | 2.67 | 2.48 | 2.24 | 2.46 | 2.28 | 2.36 | 2.62 | 2.44 | 0.16 | 0.51 |
| 1,1,2-TRICHLOROETHANE | 1.00 | 1.14 | 1.22 | 1.18 | 1.06 | 1.08 | 0.96 | 1.18 | 1.12 | 0.09 | 0.28 |
| 1,1-DICHLOROETHANE | 1.00 | 1.14 | 1.23 | 1.30 | 1.28 | 1.30 | 1.42 | 0.54 | 1.17 | 0.29 | 0.92 |
| 1,1-DICHLOROETHENE | 1.00 | 0.82 | 0.57 | 0.98 | 0.92 | 1.00 | 1.00 | 1.10 | 0.91 | 0.17 | 0.55 |
| 1,1-DICHLOROPROPENE | 1.00 | 1.25 | 0.51 | 1.09 | 1.17 | 1.38 | 0.98 | 1.00 | 1.05 | 0.28 | 0.87 |
| 1,2,3-TRICHLOROBENZENE | 1.00 | 1.16 | 0.97 | 1.30 | 1.48 | 1.70 | 0.90 | 1.54 | 1.29 | 0.30 | 0.94 |
| 1,2,3-TRICHLOROPROPANE | 2.00 | 2.63 | 2.43 | 2.22 | 1.96 | 2.38 | 2.29 | 2.26 | 2.31 | 0.21 | 0.65 |
| 1,2,4-TRICHLOROBENZENE | 1.00 | 1.12 | 1.07 | 1.15 | 1.23 | 1.63 | 0.87 | 1.58 | 1.24 | 0.28 | 0.87 |
| 1,2,4-TRIMETHYLBENZENE | 1.00 | 1.06 | 1.02 | 1.24 | 1.05 | 1.38 | 0.98 | 1.15 | 1.13 | 0.14 | 0.45 |
| 1,2-DIBROMO-3-CHLOROPROPANE | 2.00 | 1.94 | 2.37 | 2.60 | 2.31 | 2.60 | 2.07 | 2.41 | 2.33 | 0.25 | 0.78 |
| 1,2-DIBROMOETHANE | 1.00 | 1.07 | 1.05 | 1.17 | 1.13 | 0.85 | 1.21 | 0.80 | 1.04 | 0.16 | 0.49 |
| 1,2-DICHLOROBENZENE | 1.00 | 1.14 | 1.08 | 1.30 | 1.03 | 1.44 | 1.17 | 1.35 | 1.22 | 0.15 | 0.47 |
| 1,2-DICHLOROETHANE | 1.00 | 1.30 | 0.79 | 1.10 | 1.18 | 1.22 | 1.44 | 1.21 | 1.18 | 0.20 | 0.63 |
| 1,2-DICHLOROETHENE (CIS) | 1.00 | 1.08 | 0.73 | 1.01 | 1.10 | 0.98 | 0.89 | 0.57 | 0.91 | 0.20 | 0.61 |
| 1,2-DICHLOROETHENE (TRANS) | 1.00 | 1.19 | 0.75 | 1.00 | 1.22 | 1.36 | 1.18 | 1.13 | 1.12 | 0.19 | 0.61 |
| 1,2-DICHLOROPROPANE | 1.00 | 1.58 | 1.49 | 1.31 | 1.49 | 1.48 | 1.37 | 1.21 | 1.42 | 0.13 | 0.40 |
| 1,3,5-TRICHLOROBENZENE | 2.00 | 1.98 | 2.08 | 2.16 | 2.15 | 1.98 | 1.92 | 1.85 | 2.02 | 0.12 | 0.37 |
| 1,3,5-TRIMETHYLBENZENE | 1.00 | 1.14 | 0.99 | 1.14 | 1.05 | 1.37 | 0.98 | 1.12 | 1.11 | 0.13 | 0.41 |
| 1,3-DICHLOROBENZENE | 1.00 | 1.24 | 1.05 | 1.24 | 1.08 | 1.39 | 1.07 | 1.45 | 1.22 | 0.16 | 0.50 |
| 1,3-DICHLOROPROPANE | 1.00 | 1.14 | 1.13 | 1.19 | 0.98 | 1.10 | 1.06 | 1.22 | 1.12 | 0.08 | 0.25 |
| 1,4-DICHLOROBENZENE | 1.00 | 1.31 | 1.33 | 1.38 | 1.24 | 1.64 | 1.33 | 1.68 | 1.42 | 0.17 | 0.54 |
| 2,2-DICHLOROPROPANE | 2.00 | 1.50 | 1.69 | 1.48 | 1.37 | 1.44 | 1.36 | 1.52 | 1.48 | 0.11 | 0.35 |
| 2-BUTANONE | 5.00 | 7.40 | 7.34 | 5.58 | 5.58 | 6.92 | 5.70 | 6.43 | 6.42 | 0.82 | 2.56 |
| 2-CHLOROETHYLVINYLETHER | 1.00 | 1.10 | 0.73 | 0.65 | 0.79 | 0.96 | 0.93 | 0.66 | 0.83 | 0.17 | 0.53 |
| 2-CHLOROTOLUENE | 1.00 | 1.36 | 0.77 | 1.28 | 1.02 | 1.49 | 1.14 | 1.18 | 1.18 | 0.24 | 0.74 |
| 2-HEXANONE | 2.00 | 3.30 | 3.00 | 3.62 | 3.09 | 2.64 | 2.84 | 3.30 | 3.11 | 0.33 | 1.03 |
| 4-CHLOROTOLUENE | 1.00 | 1.11 | 1.03 | 1.27 | 1.35 | 1.38 | 1.33 | 1.23 | 1.24 | 0.13 | 0.41 |
| 4-METHYL-2-PENTANONE | 1.00 | 2.18 | 1.68 | 1.73 | 1.63 | 1.88 | 1.31 | 1.38 | 1.68 | 0.29 | 0.93 |
| ACETONE | 5.00 | 9.37 | 6.91 | 6.67 | 6.37 | 7.83 | 6.22 | 6.02 | 7.06 | 1.18 | 3.71 |
| ACROLEIN | 5.00 | 7.51 | 8.21 | 7.74 | 7.79 | 10.37 | 10.99 | 9.54 | 8.88 | 1.41 | 4.43 |
| ACRYLONITRILE | 5.00 | 6.34 | 5.91 | 6.21 | 5.79 | 6.86 | 6.00 | 5.78 | 6.13 | 0.38 | 1.21 |
| BENZENE | 1.00 | 1.17 | 1.07 | 1.21 | 1.06 | 1.20 | 1.10 | 1.04 | 1.12 | 0.07 | 0.22 |

Date: 1/15/98 9:08:03 AM

Matrix: WATER

Compound List: 8260B 5ML PURGE

5970-I

# Katahdin Analytical Services
## MDL Study

| Dates of Analysis | Spike | Data Files |
|---|---|---|
| JAN 14,1998 | 1 UG/L | I0639- I0646 |
| JAN 21,1998 | 2 UG/L | I0708- I0714 |
| FEB 04,1998 | 5 UG/L | I0814- I0820 |

Analyst: JCG

Reviewed and Approved by: JA Date: 020598

File:

| Compound | Spike | I0639 | I0640 | I0641 | I0642 | I0643 | I0644 | I0646 | AVG | STD DEV | MDL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BROMOBENZENE | 1.00 | 0.97 | 0.93 | 1.21 | 0.97 | 1.34 | 1.23 | 1.07 | 1.10 | 0.16 | 0.50 |
| BROMOCHLOROMETHANE | 1.00 | 1.04 | 0.54 | 0.74 | 0.87 | 1.03 | 0.60 | 1.09 | 0.84 | 0.22 | 0.70 |
| BROMODICHLOROMETHANE | 1.00 | 1.20 | 0.52 | 1.11 | 1.10 | 1.15 | 1.16 | 1.27 | 1.07 | 0.25 | 0.79 |
| BROMOFORM | 1.00 | 1.03 | 1.02 | 1.07 | 0.91 | 1.02 | 1.21 | 1.18 | 1.06 | 0.10 | 0.32 |
| BROMOMETHANE | 1.00 | 1.20 | 0.86 | 1.06 | 0.93 | 1.05 | 1.21 | 1.02 | 1.05 | 0.13 | 0.40 |
| CARBON DISULFIDE | 1.00 | 1.20 | 1.17 | 1.01 | 1.22 | 1.34 | 1.22 | 1.04 | 1.17 | 0.11 | 0.36 |
| CARBON TETRACHLORIDE | 1.00 | 1.16 | 0.99 | 1.18 | 1.04 | 1.24 | 1.22 | 1.15 | 1.14 | 0.09 | 0.29 |
| CHLOROBENZENE | 1.00 | 1.01 | 1.05 | 1.10 | 1.04 | 1.20 | 1.07 | 1.15 | 1.09 | 0.07 | 0.21 |
| CHLOROETHANE | 1.00 | 1.46 | 1.13 | 0.87 | 0.65 | 0.89 | 0.94 | 1.21 | 1.02 | 0.27 | 0.84 |
| CHLOROFORM | 1.00 | 1.20 | 0.63 | 1.15 | 1.04 | 1.11 | 0.57 | 0.78 | 0.93 | 0.26 | 0.82 |
| CHLOROMETHANE | 2.00 | 2.67 | 1.97 | 2.55 | 2.41 | 2.05 | 2.35 | 1.58 | 2.23 | 0.38 | 1.19 |
| CIS-1,3-DICHLOROPROPENE | 1.00 | 1.22 | 1.01 | 1.30 | 1.02 | 1.00 | 1.08 | 1.08 | 1.10 | 0.12 | 0.36 |
| DIBROMOCHLOROMETHANE | 1.00 | 1.01 | 1.05 | 1.04 | 0.97 | 1.02 | 1.01 | 1.05 | 1.02 | 0.03 | 0.09 |
| DIBROMOMETHANE | 1.00 | 1.12 | 1.04 | 1.15 | 1.11 | 1.24 | 1.23 | 1.20 | 1.16 | 0.07 | 0.23 |
| DICHLORODIFLUOROMETHANE | 2.00 | 1.71 | 1.82 | 1.91 | 1.64 | 1.37 | 1.47 | 1.94 | 1.69 | 0.22 | 0.68 |
| ETHYL METHACRYLATE | 1.00 | 1.38 | 1.37 | 1.22 | 1.32 | 1.19 | 1.14 | 1.23 | 1.26 | 0.09 | 0.29 |
| ETHYLBENZENE | 1.00 | 1.20 | 1.12 | 1.12 | 1.22 | 1.36 | 1.15 | 1.24 | 1.20 | 0.08 | 0.27 |
| FREON-113 | 2.00 | 1.62 | 1.63 | 1.57 | 1.56 | 1.37 | 1.32 | 1.54 | 1.52 | 0.12 | 0.38 |
| HEXACHLOROBUTADIENE | 1.00 | 1.11 | 1.01 | 1.36 | 1.30 | 1.78 | 1.11 | 1.65 | 1.33 | 0.29 | 0.91 |
| ISOPROPYLBENZENE | 1.00 | 1.06 | 1.00 | 1.14 | 1.02 | 1.27 | 0.97 | 1.04 | 1.07 | 0.10 | 0.32 |
| M+P-XYLENE | 2.00 | 2.24 | 2.21 | 2.36 | 1.94 | 2.94 | 2.30 | 2.27 | 2.32 | 0.30 | 0.95 |
| METHYLENE CHLORIDE | 2.00 | 3.47 | 4.40 | 4.38 | 4.27 | 4.21 | 3.88 | 4.53 | 4.16 | 0.37 | 1.16 |
| MTBE | 1.00 | 1.30 | 1.06 | 1.26 | 1.27 | 1.14 | 1.23 | 1.22 | 1.21 | 0.08 | 0.26 |
| N-BUTYLBENZENE | 1.00 | 1.07 | 0.95 | 1.23 | 1.13 | 1.55 | 0.93 | 1.23 | 1.16 | 0.21 | 0.66 |
| N-PROPYLBENZENE | 1.00 | 1.05 | 1.02 | 0.97 | 1.14 | 1.35 | 0.98 | 1.15 | 1.09 | 0.13 | 0.42 |
| NAPHTHALENE | 2.00 | 1.63 | 1.75 | 1.77 | 1.76 | 1.67 | 1.57 | 1.75 | 1.70 | 0.08 | 0.24 |
| O-XYLENE | 1.00 | 1.08 | 0.92 | 1.12 | 0.88 | 1.27 | 1.05 | 1.12 | 1.06 | 0.13 | 0.41 |
| P-ISOPROPYLTOLUENE | 1.00 | 1.05 | 0.82 | 1.11 | 1.02 | 1.34 | 0.51 | 1.13 | 1.00 | 0.26 | 0.83 |
| SEC-BUTYLBENZENE | 1.00 | 0.99 | 1.07 | 1.16 | 1.02 | 1.40 | 0.96 | 1.25 | 1.12 | 0.16 | 0.50 |
| STYRENE | 1.00 | 1.12 | 0.86 | 1.04 | 0.95 | 1.35 | 1.03 | 1.13 | 1.07 | 0.16 | 0.49 |
| TERT-BUTYLBENZENE | 1.00 | 0.95 | 0.94 | 1.09 | 1.01 | 1.23 | 0.96 | 0.98 | 1.02 | 0.10 | 0.33 |
| TETRACHLOROETHENE | 1.00 | 1.05 | 0.79 | 1.12 | 1.12 | 1.50 | 1.05 | 1.15 | 1.11 | 0.21 | 0.66 |
| TETRAHYDROFURAN | 5.00 | 7.94 | 5.51 | 7.32 | 7.56 | 7.89 | 7.52 | 7.24 | 7.28 | 0.82 | 2.59 |
| TOLUEN[illegible] | 1.00 | 1.22 | 1.09 | 1.12 | [illegible].09 | 0.98 | 1.13 | 1.06 | 1.10 | 0.07 | 0.23 |

Date: [redacted]98 9:08:03 AM
Matrix: WATER
Compound List: 8260B 5ML PURGE
5970-I

# Katahdin Analytical Services
## MDL Study

| Dates of Analysis | Spike | Data Files |
|---|---|---|
| JAN 14,1998 | 1 UG/L | I0639- I0646 |
| JAN 21,1998 | 2 UG/L | I0708- I0714 |
| FEB 04,1998 | 5 UG/L | I0814- I0820 |

Analyst: JCG
Reviewed and Approved by: JB Date: 020598
File:

| Compound | Spike | I0639 | I0640 | I0641 | I0642 | I0643 | I0644 | I0646 | AVG | STD DEV | MDL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TRANS-1,3-DICHLOROPROPENE | 1.00 | 1.31 | 1.05 | 1.07 | 1.06 | 0.99 | 1.08 | 0.96 | 1.07 | 0.11 | 0.36 |
| TRICHLOROETHENE | 1.00 | 1.24 | 0.93 | 1.07 | 1.14 | 1.26 | 1.24 | 1.11 | 1.14 | 0.12 | 0.37 |
| TRICHLOROFLUOROMETHANE | 1.00 | 1.22 | 0.56 | 1.26 | 1.31 | 1.30 | 1.35 | 1.36 | 1.19 | 0.28 | 0.89 |
| VINYL ACETATE | 5.00 | 5.02 | 5.09 | 5.30 | 5.25 | 4.36 | 4.08 | 4.31 | 4.77 | 0.51 | 1.59 |
| VINYL CHLORIDE | 1.00 | 1.20 | 1.02 | 1.18 | 1.03 | 1.61 | 1.26 | 0.80 | 1.16 | 0.25 | 0.79 |

## Katahdin Analytical Services, Inc.
## Metals Section
### Instrument Detection Limits - 4th Quarter 1998

| ELEMENT | IDL (ug/L) | INSTRUMENT | METHOD |
|---|---|---|---|
| Aluminum | 23.02 | TJA Trace | ICP |
| Antimony | 2.05 | TJA Trace | ICP |
| Arsenic | 1.81 | TJA Trace | ICP |
| Barium | 0.14 | TJA Trace | ICP |
| Beryllium | 0.18 | TJA Trace | ICP |
| Boron | 1.00 | TJA Trace | ICP |
| Cadmium | 0.19 | TJA Trace | ICP |
| Calcium | 7.86 | TJA Trace | ICP |
| Chromium | 0.46 | TJA Trace | ICP |
| Cobalt | 0.44 | TJA Trace | ICP |
| Copper | 0.64 | TJA Trace | ICP |
| Iron | 10.46 | TJA Trace | ICP |
| Lead | 0.91 | TJA Trace | ICP |
| Magnesium | 5.39 | TJA Trace | ICP |
| Manganese | 0.13 | TJA Trace | ICP |
| Mercury | 0.030 | Leeman | CVAA |
| Molybdenum | 0.98 | TJA Trace | ICP |
| Nickel | 0.76 | TJA Trace | ICP |
| Potassium | 326.14 | TJA 61 | ICP |
| Selenium | 1.92 | TJA Trace | ICP |
| Silicon | 27.51 | TJA 61 | ICP |
| Silver | 0.99 | TJA Trace | ICP |
| Sodium | 17.14 | TJA 61 | ICP |
| Strontium | 0.03 | TJA Trace | ICP |
| Thallium | 4.50 | TJA Trace | ICP |
| Tin | 2.07 | TJA Trace | ICP |
| Titanium | 0.24 | TJA Trace | ICP |
| Vanadium | 0.63 | TJA Trace | ICP |
| Zinc | 0.32 | TJA Trace | ICP |

# Method Detection Limit Study

| | | | |
|---|---|---|---|
| Method: | 6010B | Matrix: | AQUEOUS |
| Sample Prep. Method: | 3010A | Sample Weight or Volume: | N.A. |
| Analyst: | EAM | Spike Conc. and Amount: | VARIOUS |
| Date: | 1/15/98 | | |
| Instrument I.D.: | TJA Trace ICP | | |

| Contaminant | Test Conc. (ug/L) | MDL Replicates (ug/L) | | | | | | | Mean Conc. (ug/L) | Standard Deviation (ug/L) | Calculated MDL (ug/L) | Reporting Limit (ug/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | |
| Aluminum | 60 | 90.29 | 84.55 | 56.07 | 88.57 | 80.24 | 85.14 | 84.08 | 81.28 | 11.58 | 36.39 | 100 |
| Antimony | 6 | 6.46 | 6.65 | 6.41 | 6.04 | 5.54 | 6.62 | 6.81 | 6.36 | 0.44 | 1.37 | 8 |
| Arsenic | 6 | 5.33 | 5.3 | 6.56 | 5.67 | 6.38 | 5.89 | 6.8 | 5.99 | 0.60 | 1.88 | 8 |
| Barium | 0.4 | 2.23 | 2.16 | 2.32 | 1.34 | 1.93 | 2.72 | 2.57 | 2.18 | 0.45 | 1.43 | 5 |
| Beryllium | 0.5 | 0.48 | 0.41 | 0.54 | 0.49 | 0.59 | 0.56 | 0.5 | 0.51 | 0.06 | 0.19 | 5 |
| Boron | 3 | 9.39 | 9.69 | 7.44 | 7.53 | 6.11 | 14.91 | 7.17 | 8.89 | 2.94 | 9.23 | 100 |
| Cadmium | 0.6 | 0.76 | 0.71 | 0.79 | 0.78 | 0.65 | 0.74 | 0.78 | 0.74 | 0.05 | 0.16 | 10 |
| Calcium | 20 | 35.41 | 28.94 | 34.7 | 38.67 | 36.15 | 34.29 | 44.9 | 36.15 | 4.85 | 15.24 | 50 |
| Chromium | 1.5 | 1.9 | 1.69 | 1.71 | 2.01 | 1.82 | 1.64 | 1.88 | 1.81 | 0.13 | 0.42 | 15 |
| Cobalt | 1.5 | 1.25 | 1.43 | 1.19 | 1.71 | 1.35 | 1.28 | 1.73 | 1.42 | 0.22 | 0.69 | 30 |
| Copper | 1.5 | 1.84 | 1.59 | 1.7 | 2.01 | 2.55 | 1.66 | 2.21 | 1.94 | 0.35 | 1.09 | 25 |
| Iron | 30 | 48.03 | 40.7 | 41.65 | 47.84 | 46.17 | 40.23 | 38.74 | 43.34 | 3.89 | 12.23 | 25 |
| Lead | 3 | 4.02 | 3.87 | 3.91 | 3.67 | 3.84 | 4.17 | 4.84 | 4.05 | 0.38 | 1.20 | 5 |
| Magnesium | 15 | 24.48 | 18.42 | 19.13 | 20.22 | 20.4 | 17.41 | 21.1 | 20.17 | 2.28 | 7.17 | 50 |
| Manganese | 0.4 | 0.63 | 0.55 | 0.55 | 0.69 | 0.71 | 0.59 | 0.71 | 0.63 | 0.07 | 0.22 | 5 |
| Molybdenum | 3 | 3.38 | 3.28 | 2.13 | 3.14 | 3.07 | 3.16 | 3.18 | 3.05 | 0.42 | 1.31 | 100 |
| Nickel | 2 | 2.63 | 2.22 | 2.51 | 2.66 | 2.79 | 2.01 | 2.6 | 2.49 | 0.28 | 0.86 | 40 |

# Method Detection Limit Study

| | | | |
|---|---|---|---|
| Method: | 6010B | Matrix: | AQUEOUS |
| Sample Prep. Method: | 3010A | Sample Weight or Volume: | N.A. |
| Analyst: | EAM | Spike Conc. and Amount: | VARIOUS |
| Date: | 1/15/98 | | |
| Instrument I.D.: | TJA Trace ICP | | |

| Contaminant | Test Conc. (ug/L) | MDL Replicates (ug/L) | | | | | | | Mean Conc. (ug/L) | Standard Deviation (ug/L) | Calculated MDL (ug/L) | Reporting Limit (ug/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | |
| Selenium | 6 | 7.34 | 6.36 | 6.26 | 6.6 | 6.68 | 7.28 | 6.71 | 6.75 | 0.42 | 1.31 | 10 |
| Silver | 3 | 1.98 | 2.55 | 2.57 | 2.66 | 2.79 | 2.56 | 2.67 | 2.54 | 0.26 | 0.82 | 15 |
| Strontium | 0.1 | 0.12 | 0.11 | 0.12 | 0.14 | 0.12 | 0.12 | 0.15 | 0.13 | 0.01 | 0.04 | 100 |
| Thallium | 10 | 8.63 | 10.17 | 11.38 | 10.23 | 10.66 | 11.18 | 10.63 | 10.41 | 0.90 | 2.84 | 15 |
| Tin | 6 | 5.35 | 5.79 | 5.26 | 5.9 | 6.24 | 7.11 | 5.98 | 5.95 | 0.62 | 1.94 | 100 |
| Titanium | 0.8 | 1.13 | 1.01 | 1.17 | 0.97 | 0.99 | 1.03 | 1.11 | 1.06 | 0.08 | 0.24 | 15 |
| Vanadium | 2 | 2.34 | 2.04 | 2.32 | 2.15 | 2.13 | 2.3 | 2.41 | 2.24 | 0.13 | 0.42 | 25 |
| Zinc | 1 | 3.84 | 3.31 | 4.23 | 4.84 | 5.34 | 5.6 | 5.97 | 4.73 | 0.98 | 3.07 | 25 |

# Method Detection Limit Study

| | | | |
|---|---|---|---|
| Method: | 6010B | Matrix: | AQUEOUS |
| Sample Prep. Method: | 3010A | Sample Weight or Volume: | N.A. |
| Analyst: | EAM | Spike Conc. and Amount: | VARIOUS |
| Date: | 1/16/98 | | |
| Instrument I.D.: | TJA 61 ICP | | |

| Contaminant | Test Conc. (ug/L) | MDL Replicates (ug/L) | | | | | | | Mean Conc. (ug/L) | Standard Deviation (ug/L) | Calculated MDL (ug/L) | Reporting Limit (ug/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | |
| Aluminum | 40 | 55.78 | 49.58 | 58.84 | 52.62 | 54.76 | 55.49 | 49.4 | 53.78 | 3.46 | 10.86 | 100 |
| Barium | 1.5 | 4.97 | 4.99 | 3.87 | 3.12 | 4.03 | 3.09 | 5.47 | 4.22 | 0.95 | 2.97 | 5 |
| Beryllium | 0.6 | 0.74 | 0.86 | 0.81 | 0.79 | 0.86 | 0.81 | 0.76 | 0.80 | 0.05 | 0.14 | 5 |
| Calcium | 50 | 58.08 | 50.09 | 58.84 | 56.81 | 50.67 | 48.74 | 54.28 | 53.93 | 4.12 | 12.96 | 50 |
| Chromium | 8 | 8.99 | 7.98 | 9.2 | 9.09 | 10.24 | 8.47 | 8.06 | 8.86 | 0.78 | 2.45 | 15 |
| Cobalt | 8 | 9.14 | 8.43 | 8.95 | 9.7 | 9.46 | 8.7 | 7.51 | 8.84 | 0.73 | 2.29 | 30 |
| Copper | 5 | 5.07 | 4.24 | 6.58 | 4.09 | 5.28 | 4.62 | 2.78 | 4.67 | 1.17 | 3.69 | 25 |
| Iron | 10 | 21.12 | 23.02 | 26.44 | 21.53 | 22.73 | 21.89 | 29.27 | 23.71 | 3.02 | 9.48 | 25 |
| Magnesium | 40 | 50.07 | 46.87 | 46.98 | 49.06 | 43.1 | 43.61 | 41.81 | 45.93 | 3.14 | 9.88 | 50 |
| Manganese | 3 | 3.58 | 3.43 | 3.91 | 3.62 | 3.41 | 3.41 | 3.18 | 3.51 | 0.23 | 0.72 | 5 |
| Nickel | 25 | 33.14 | 30.62 | 29.15 | 31.43 | 29.07 | 28.14 | 30.32 | 30.27 | 1.68 | 5.28 | 40 |
| Potassium | 1200 | 1127.3 | 1075.5 | 1215.7 | 1251.8 | 1239.7 | 1100.2 | 820.61 | 1118.69 | 148.83 | 467.78 | 1000 |
| Silicon | 50 | 133.3 | 88.99 | 128.9 | 89.57 | 80.76 | 76.44 | 100.2 | 99.74 | 22.73 | 71.43 | 200 |
| Silver | 10 | 10.66 | 9 | 10.6 | 9.75 | 10.32 | 9.64 | 8.78 | 9.82 | 0.75 | 2.35 | 15 |
| Sodium | 50 | 121.23 | 114.83 | 134.48 | 109.3 | 104.43 | 123.21 | 113.59 | 117.30 | 9.96 | 31.30 | 100 |
| Vanadium | 8 | 8.55 | 9.81 | 8.51 | 9.87 | 10.38 | 8.55 | 9.01 | 9.24 | 0.77 | 2.42 | 25 |
| Zinc | 4 | 7.01 | 6.21 | 8.98 | 6.82 | 6.36 | 7.95 | 9.4 | 7.53 | 1.27 | 3.99 | 25 |

# KATAHDIN ANALYTICAL SERVICES, INC. - METALS ANALYSIS SECTION

## Method Detection Limit Study

Analysis Method: 7470A
Prep. Method: 7470A
Analyst: GFB
Date: 09/19/98
Instrument I.D.: Leeman PS200

Matrix: Aqueous
Sample Weight or Volume: N.A.
Spike Conc. and Amount: 0.080 ug/L

| ANALYTE | TEST CONC. (ug/L) | MDL REPLICATES (ug/L) | | | | | | | MEAN CONC. (ug/L) | STANDARD DEVIATION (ug/L) | CALC. MDL (ug/L) | REPORTING LIMIT (ug/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | |
| Mercury | 0.080 | 0.054 | 0.062 | 0.066 | 0.059 | 0.061 | 0.071 | 0.062 | 0.0621 | 0.0053 | 0.0168 | 0.20 |

# Attachment D

## Analytical Report Data Tables

D.1 Ground-Water Samples Site 9
D.2 Surface Water Samples Site 9
D.3 Sediment Samples Site 9
D.4 MS/MSD Recovery Reports

# Appendix D.1

## Ground-Water Samples
## Site 9

## APPENDIX D.1

## SAMPLE KEY - SITE 9
## NAVAL AIR STATION, BRUNSWICK, MAINE

| Sample Designation | Sample Station |
|---|---|
| **Monitoring Wells** | |
| S9-MW002 | MW-NASB-069 |
| S9-MWXD1 | MW-NASB-069 (DUP) |
| S9-MW003 | MW-NASB-071 |
| S9-MW005 | MW-NASB-072 |
| S9-MW006 | MW-NASB-074 |
| S9-MW007 | MW-NASB-075 |
| S9-MW004 | MW-NASB-076 |
| S9-MW001 | MW-NASB-080 |
| S9-MW008 | MW-NASB-022 |
| S9-MW009 | MW-NASB-227 |
| **Trip Blank** | |
| EP-QT002 | QT-002 |
| S9-QT005 | QT-005 |

W03510

# Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Company Name: EA Engineering

Project Manager or Contact: Pete Nimmer
Phone: 914-565-8100

Project No. 2960047

Project Name: LTMP Event 13

Dept.: 2151 Task: 7503

Sample Storage Location:

ATO Number:

Page 1 of 1

Report #:

Report Deliverables: 1 2 3 4 D E

EDD: Yes/No

DUE TO CLIENT:

Parameter/Method Numbers for Analysis: VOC 8260

| Date | Time | Water | Soil | Sample Identification 19 Characters | No. of Containers | VOC 8260 | EA Labs Accession Number | Remarks |
|---|---|---|---|---|---|---|---|---|
| 11/5/98 | 0958 | X | | BN1359MW001 | 3 | X | | LPM: Michael Walsh |
| 11/5/98 | 1055 | X | | BN1359MW002 | 3 | X | | |
| 11/5/98 | 1145 | X | | BN1359MW003 MS/MSD | 4 | X | | |
| 11/5/98 | 1315 | X | | BN1359MW004 | 3 | X | | |
| 11/5/98 | 1355 | X | | BN1359MW005 | 3 | X | | |
| 11/5/98 | 1508 | X | | BN1359MW006 | 3 | X | | |
| 11/5/98 | 1545 | X | | BN1359MW007 | 3 | X | | temp blank w/ cooler |
| | | X | | ~~BN1359MW008~~ ICS | | not sampled | | |
| | | X | | ~~BN1359MW009~~ ICS | | not sampled | | |
| 11/5/98 | — | X | | BN1359MW101 | 3 | X | | |
| | | X | | ~~BN1359MW102~~ ICS | | not sampled | | |
| | | X | | ~~BN1359SS004~~ ICS | | not sampled for this COC | | |
| | | | | | | | | Form I's + COC to Sue Chase Brunswick |
| | | | | | | | | Data Package to Newburgh |

| Samples by: (Signature) | Date/Time | Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| Tom Shutts | 11/5/98 1700 | | | | |

| Relinquished by: (Signature) | Date/Time | Received by Laboratory: (Signature) | Date/Time | Airbill Number: | Sample Shipped by: (Circle) |
|---|---|---|---|---|---|
| Brian J. Anderson | 11/6/98 1600 | [illegible] | 11/7 1030 | 807455473467 | Fed Ex. Puro. UPS Hand Carried Other: |

Cooler Temp. ____ C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☐ Yes ☐ No

NOTE: Pleas indicat method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

000009

WO 3658

# Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Company Name: EA Engineering

Project Manager or Contact: Peter Kimmer
Phone: 914-565-8100

Project Number: 2960047

Project Name: Event 13

Dept.: 2151 Task: 7503

Sample Storage Location:

ATO Number:

Page 1 of 1

Report #:

Report Deliverables: 1 2 3 4 D E

EDD: Yes/No

DUE TO CLIENT: _____

Parameters/Method Numbers for Analysis: VOC 8260

| Date | Time | Water | Soil | Sample Identification 19 Characters | No. of Containers | EA Labs Accession Number | Remarks |
|---|---|---|---|---|---|---|---|
| 11/18/98 | 930 | X | | BN1359MW008 | X | | LPM: Michael Walsh |
| 11/18/98 | 1010 | X | | BN1359MW009 | X | | Andrea Colby |
| 11/18/98 | 930 | X | | BN1359QT005 | X | | |
| | | | | | | | Temp blank w/cooler |
| | | | | | | | End SSDG # |
| | | | | | | | BN1359MW001 |
| | | | | | | | Summary package |
| | | | | | | | Form I's + CCC |
| | | | | | | | to Brunswick |
| | | | | | | | Full package |
| | | | | | | | to Newburgh |

| Samples by: (Signature) | Date/Time | Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| Suzanne Chan | 11/18/98 1010 | Suzanne Chan | 11/18/98 1130 | Shirley Scott | |

| Relinquished by: (Signature) | Date/Time | Received by Laboratory: (Signature) | Date/Time | Airbill Number: |
|---|---|---|---|---|
| | | | | |

Sample Shipped by: (Circle) Fed Ex. Puro. UPS Hand Carried Other:

Cooler Temp.____C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☐ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

W0S501

| Company Name: | Project Manager or Contact: |
|---|---|
| EA Engineering | Pete Nimmer |
| Project No. 2960047 | Phone: 914-565-8100 |
| Dept.: 2151 Task: 7503 | Project Name: Event 13 LTMP |
| Sample Storage Location: | ATO Number: |
| Page 1 of 1 | Report #: |

Parameter/Method Numbers for Analysis

# Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Report Deliverables: 1 2 3 4 D E

EDD: Yes/No

DUE TO CLIENT: _____

| Date | Time | Water | Soil | Sample Identification 19 Characters | No. of Containers | VOC 8260 | EA Labs Accession Number | Remarks |
|---|---|---|---|---|---|---|---|---|
| 11/5/98 | 908 | X | | BN13EPQS003 | 3 | X | | LPM: Michael Walsh |
| 11/5/98 | 1000 | X | | BN13EPSW001 MS/MSD | 4 | X | | Andrea Colby |
| 11/5/98 | 1025 | X | | BN13EPSW002 | 3 | X | | |
| 11/5/98 | 1040 | X | | BN13EPSW003 | 3 | X | | |
| 11/5/98 | 1100 | X | | BN13EPSW004 | 3 | X | | |
| 11/5/98 | 1115 | X | | BN13EPSW005 | ~~3~~ 2 | ~~3~~ X | | 2 VOC's |
| 11/5/98 | — | X | | BN13EPSWXA1 | 3 | X | | temp blank w/ |
| ~~11/5/98~~ | | ~~X~~ | | ~~QT002~~ | ~~3~~ | ~~X~~ | | ~~KS~~ cooler |
| 11/5/98 | 0900 | X | | BN+13+EP+QT002 | 3 | X | | |
| | | | | | | | | Form I's + COC to |
| | | | | | | | | Sue Chase Brunswick |
| | | | | | | | | Data Package to |
| | | | | | | | | Newburgh |

| Samples by: (Signature) | Date/Time | Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| Brian D. Anderson | 11/5/98 1200 | Kim Shutter | 11/6/98 1200 | | |
| **Relinquished by: (Signature)** | **Date/Time** | **Received by Laboratory: (Signature)** | **Date/Time** | **Airbill Number:** | **Sample Shipped by: (Circle)** |
| | | [illegible] | 11/7/103d | 807455473467 | Fed Ex. Puro. UPS Hand Carried Other: |

Cooler Temp.____C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☐ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3510-2
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** BNAS
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/13/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9MW002 | AQ | 11/5/98 | 11/7/98 | 11/13/98 | KMC | 5030 | KMC |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | 23 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | B4 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | 28 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | B1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:** B

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3510-2
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** BNAS
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/13/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9MW002 | AQ | 11/5/98 | 11/7/98 | 11/13/98 | KMC | 5030 | KMC |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 103 | % | 1.0 | | |
| TOLUENE-D8 | 92 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 74 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 102 | % | 1.0 | | |

**Report Notes:** B

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3510-8
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** BNAS
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/14/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9MWXD1 | AQ | 11/5/98 | 11/7/98 | 11/14/98 | KRT | 5030 | KRT |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | 16 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | 18 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | 1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:**

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3510-8
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** BNAS
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/14/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9MWXD1 | AQ | 11/5/98 | 11/7/98 | 11/14/98 | KRT | 5030 | KRT |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 96 | % | 1.0 | | |
| TOLUENE-D8 | 88 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 73 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 99 | % | 1.0 | | |

**Report Notes:**

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3510-3
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** BNAS
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/13/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9MW003 | AQ | 11/5/98 | 11/7/98 | 11/13/98 | KMC | 5030 | KMC |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | B3 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | B1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:** B

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3510-3
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** BNAS
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/13/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9MW003 | AQ | 11/5/98 | 11/7/98 | 11/13/98 | KMC | 5030 | KMC |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 103 | % | 1.0 | | |
| TOLUENE-D8 | 92 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 73 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 108 | % | 1.0 | | |

**Report Notes:** B

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3510-5
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** BNAS
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/13/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9MW005 | AQ | 11/5/98 | 11/7/98 | 11/13/98 | KMC | 5030 | KMC |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | J1 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | B4 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | JB0.9 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:** B, J

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3510-5
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** BNAS
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/13/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9MW005 | AQ | 11/5/98 | 11/7/98 | 11/13/98 | KMC | 5030 | KMC |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 105 | % | 1.0 | | |
| TOLUENE-D8 | 93 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 70 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 108 | % | 1.0 | | |

**Report Notes:** B, J



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# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3510-6
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** BNAS
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/14/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S0MW006 | AQ | 11/5/98 | 11/7/98 | 11/14/98 | KRT | 5030 | KRT |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | JB0.7 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | 2 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | J0.6 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | 3 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | J0.7 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:** B, J

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3510-6
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** BNAS
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/14/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9MW006 | AQ | 11/5/98 | 11/7/98 | 11/14/98 | KRT | 5030 | KRT |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 93 | % | 1.0 | | |
| TOLUENE-D8 | 89 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 76 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 93 | % | 1.0 | | |

**Report Notes:** B, J

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3510-7
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** BNAS
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/14/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9MW007 | AQ | 11/5/98 | 11/7/98 | 11/14/98 | KRT | 5030 | KRT |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | J3 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | 1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:** J

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3510-7
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** BNAS
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/14/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9MW007 | AQ | 11/5/98 | 11/7/98 | 11/14/98 | KRT | 5030 | KRT |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 96 | % | 1.0 | | |
| TOLUENE-D8 | 90 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 74 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 98 | % | 1.0 | | |

**eport Notes:** J

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3510-4
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** BNAS
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/13/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9MW004 | AQ | 11/5/98 | 11/7/98 | 11/13/98 | KMC | 5030 | KMC |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | 10 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | B4 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | J0.5 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | J0.9 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:** B, J

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3510-4
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** BNAS
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/13/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9MW004 | AQ | 11/5/98 | 11/7/98 | 11/13/98 | KMC | 5030 | KMC |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 107 | % | 1.0 | | |
| TOLUENE-D8 | 93 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 71 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 112 | % | 1.0 | | |

**Report Notes:** B, J

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3510-1
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** BNAS
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/13/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9MW001 | AQ | 11/5/98 | 11/7/98 | 11/13/98 | KMC | 5030 | KMC |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | 4 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | B3 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | 1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | B1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:** B

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3510-1
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** BNAS
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/13/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9MW001 | AQ | 11/5/98 | 11/7/98 | 11/13/98 | KMC | 5030 | KMC |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 95 | % | 1.0 | | |
| TOLUENE-D8 | 86 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 73 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 96 | % | 1.0 | | |

**eport Notes:** B

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3658-1
**Report Date:** 12/16/98
**PO No. :** 2960047.7503
**Project:** EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/20/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9MW008 | AQ | 11/18/98 | 11/18/98 | 11/20/98 | KRT | 5030 | KRT |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | JB0.7 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | B2 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:** B, J

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3658-1
**Report Date:** 12/17/98
**PO No. :** 2960047.7503
**Project:** EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/20/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9MW008 | AQ | 11/18/98 | 11/18/98 | 11/20/98 | KRT | 5030 | KRT |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 100 | % | 1.0 | | |
| TOLUENE-D8 | 100 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 91 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 101 | % | 1.0 | | |

**Report Notes:** B, J

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3658-2
**Report Date:** 12/17/98
**PO No. :** 2960047.7503
**Project:** EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/20/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13SPMW009 | AQ | 11/18/98 | 11/18/98 | 11/20/98 | KRT | 5030 | KRT |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | B1 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | 3 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | B5 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | 1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:** B

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3658-2
**Report Date:** 12/17/98
**PO No. :** 2960047.7503
**Project:** EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/20/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13SPMW009 | AQ | 11/18/98 | 11/18/98 | 11/20/98 | KRT | 5030 | KRT |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 100 | % | 1.0 | | |
| TOLUENE-D8 | 100 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 90 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 100 | % | 1.0 | | |

**Report Notes:** B

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3509-8
**Report Date:** 12/7/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/13/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN-13-EP-QT002 | AQ | 11/5/98 | 11/7/98 | 11/13/98 | DJP | 5030 | DJP |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | JB0.9 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | J4 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | J0.5 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | B2 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | 1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | J0.6 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | 1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:** B, J

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3509-8
**Report Date:** 12/7/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/13/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN-13-EP-QT002 | AQ | 11/5/98 | 11/7/98 | 11/13/98 | DJP | 5030 | DJP |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | 2 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | J0.9 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | 1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 95 | % | 1.0 | | |
| TOLUENE-D8 | 93 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 88 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 88 | % | 1.0 | | |

**port Notes:** B, J

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3658-3
**Report Date:** 12/17/98
**PO No. :** 2960047.7503
**Project:** EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/20/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9QT005 | AQ | 11/18/98 | 11/18/98 | 11/20/98 | KRT | 5030 | KRT |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | JB0.6 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | B2 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:** B, J

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3658-3
**Report Date:** 12/17/98
**PO No. :** 2960047.7503
**Project:** EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/20/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S9QT005 | AQ | 11/18/98 | 11/18/98 | 11/20/98 | KRT | 5030 | KRT |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 101 | % | 1.0 | | |
| TOLUENE-D8 | 99 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 93 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 101 | % | 1.0 | | |

**port Notes:** B, J

# Appendix D.2

## Surface Water Samples
## Site 9

## APPENDIX D.2

## SAMPLE KEY - SITE 9
## NAVAL AIR STATION, BRUNSWICK, MAINE

| Sample Designation | Sample Station |
|---|---|
| **Surface Water Samples** | |
| S9-SW001 | SW-010 |
| **Trip Blank** | |
| EP-QT004 | QT-004 |
| **Equipment Rinsate Blank** | |
| S9-QS004 | QS-004 |
| **Source Water Blank** | |
| S1-QD001 | QD-001 |

W03584

| Company Name: | Project Manager or Contact: |
|---|---|
| EA Engineering | Pete Nimmer |
| Project No. 29600.47 | Phone: 914-565-8100 |
| Dept.: 2151 Task: 7503 | Project Name: LTMP Event 13 |
| Sample Storage Location: | ATO Number: |
| Page 1 of 1 | Report #: |

## Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Report Deliverables: 1 2 3 4 D E

EDD: Yes/No

DUE TO CLIENT: _____

Parameters/Method Numbers for Analysis: VOC by 8260

| Date | Time | Water | Soil | Sample Identification 19 Characters | No. of Containers | VOC by 8260 | EA Labs Accession Number | Remarks |
|---|---|---|---|---|---|---|---|---|
| 11/11/98 | 1500 | X | | BN1359LTSW1-MS/MSD | 4 | X | | LPM: Michael Walsh |
| 11/11/98 | — | X | | BN1359LTXD1 | 3 | X | | |
| 11/11/98 | 1535 | X | | BN1359QSD04 | 3 | X | | |
| 11/11/98 | 1440 | X | | BN1359SW001 | 3 | X | | |
| | | | | | | | | Temp Blank w/ cooler |
| | | | | | | | | Summary Package Form I's + COC to Sue Chase |
| | | | | | | | | Data Package to Newburgh |
| | | | | | | | | This begins and ends SDG BN1359LTSW1 |

| Samples by: (Signature) | Date/Time | Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| Kim Shutley | 11/11/98 1700 | | | | |

| Relinquished by: (Signature) | Date/Time | Received by Laboratory: (Signature) | Date/Time | Airbill Number: | Sample Shipped by: (Circle) |
|---|---|---|---|---|---|
| Stephanie Pinos | 11/12/98 1415 | | 11/13/98 1000 | 8074554730 66 | Fed Ex. Puro. UPS Hand Carried Other: |

Cooler Temp.____C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☐ Yes ☐ No

NOTE: Pleas indicat method number for analyses requested. This will help clarify any questions with laborat ry techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manag r *Shaded Areas for Lab Use Only*

000005

W03591

| Company Name: EA Engineering | Project Manager or Contact: Pete Nimmer |
|---|---|
| Project No. 29600.47 | Phone: 914-565-8100 |
| Dept.: 2151 Task: 7503 | Project Name: LTMP Event |
| Sample Storage Location: | ATO Number: |
| Page 1 of 1 | Report #: |

**Chain of Custody Record**

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Report Deliverables: 1 2 3 4 D E
EDD: Yes/No
DUE TO CLIENT: _____

Parameters/Method Numbers for Analysis: No. of Containers; VOC by 8260

| Date | Time | Water | Soil | Sample Identification 19 Characters | No. of Containers | VOC by 8260 | EA Labs Accession Number | Remarks |
|---|---|---|---|---|---|---|---|---|
| 11-11-98 | 0915 | X | | BN13EPMW0116 | 3 | X | | LPM: Michael Walsh |
| 11-11-98 | 1010 | X | | BN13EPMW0117-MS/MSD | 4 | X | | |
| 11-11-98 | 1130 | X | | BN13EPMW0118 | 3 | X | | |
| 11-11-98 | — | X | | BN13EPMWDX3 | 3 | X | | Temp Blank w/ Cooler |
| 11-11-98 | 1220 | X | | BN13EPMW0119 | 3 | X | | |
| 11-11-98 | 1330 | X | | BN13EPMW0310 | 3 | X | | |
| 11-11-98 | 1340 | X | | BN13EPMW0211 | 3 | X | | |
| 11-12-98 | 1056 | X | | BN13EPMW0212 | 3 | X | | |
| 11-12-98 | 1010 | X | | BN13EPMW0213 | 3 | X | | |
| 11-12-98 | 1210 | X | | BN13EPMW0R4 | 3 | X | | Summary Package Forms |
| 11-12-98 | — | X | | BN13EPMWDX4 | 3 | X | | + COC to Sue Chase |
| 11-12-98 | 1115 | X | | BN13EPMW0R5 | 3 | X | | |
| 11-12-98 | 1357 | X | | BN13EPMW0216 | 3 | X | | Data Package to |
| 11-12-98 | 1355 | X | | BN13EPMW0217 | 3 | X | | Newburgh |
| 11-12-98 | 1230 | X | | BN13EPMW0218 | 3 | X | | |
| 11-12-98 | 0800 | X | | BN13EPGT094 | 3 | X | | This begins and |
| | | | | | | | | ends SDG BN-13-EP-MW0116. |

| Samples by: (Signature) | Date/Time | Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| Kim Shutter | 11/12/98 1700 | | | | |

| Relinquished by: (Signature) | Date/Time | Received by Laboratory: (Signature) | Date/Time | Airbill Number: | Sampl Shipped by: (Circle) |
|---|---|---|---|---|---|
| [illegible] | 11/12/98 1415 | | 11/13/98 1000 | 807455473066 | Fed Ex. Puro. UPS Hand Carried Other: |

Cooler Temp. ____ C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☐ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

W03508

| Company Name: | Project Manager or Contact: |
|---|---|
| EA Engineering | Pete Nummer |
| Project No. 29600047 | Phone: 914-565-8100 |
| Dept.: 2151 Task: 7503 | Project Name: Event 13 LTMP |
| Sample Storage Location: | ATO Number: |
| Page 1 of 1 | Report #: |

Parameter Method Numbers for Analysis

# Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Report Deliverables: 1 2 3 4 D E

EDD: Yes/No

DUE TO CLIENT: _____

| | Date | Time | Water | Soil | Sample Identification 19 Characters | No. of Containers | TAL Elements | VOC 8260 | | EA Labs Accession Number | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| X | 11/5/98 | 1140 | X | | BN13S1SW001 MS/MSD | 4 | | X | | | LPM: Michael Walsh |
| X | 11/5/98 | 1200 | X | | BN13S1SW002 | 4 | X | X | | | Andrea Colby |
| X | 11/5/98 | 1215 | X | | BN13S1SW003 | 4 | X | X | | | |
| X | 11/5/98 | 1245 | X | | BN13S1SW004 | 4 | X | X | | | |
| X | ~~11/5/98~~ | ~~1300~~ | ~~X~~ | | ~~BN13S1SW005~~ | ~~1~~ | ~~X~~ | ~~X~~ | ~~only TAL Elements~~ | | ~~canceled 11/6/98 sch~~ |
| X | ~~11/5/98~~ | ~~1310~~ | ~~X~~ | | ~~BN13S1SW006~~ | ~~1~~ | ~~X~~ | ~~X~~ | ~~only TAL Elements~~ | | ~~Not Collected~~ |
| X | 11/5/98 | — | X | | BN13S1SWXD1 | 4 | X | X | | | |
| X | 11/5/98 | 1140 | X | | BN13S1SW001 MS | 2 | X | X | | | Temp blanket |
| X | 11/5/98 | 1315 | X | | BN13S1LTSW1 | 4 | X | X | | | cooler |
| X | 11/5/98 | 1345 | X | | BN13S1LTSW2 | 4 | X | X | | | |
| X | 11/5/98 | 1400 | X | | BN13S1LTSW3 | 4 | X | X | | | |
| | | | | | ~~BN13S1LTSW4~~ not collected | | | | | | |
| X | 11/5/98 | — | X | | BN13S1LTXD1 | 4 | X | X | | | Send Form I + COC |
| X | 11/5/98 | 830 | X | | BN13S1QD001 | 4 | X | X | | | to Sue Chase Brunswick |
| X | 11/5/98 | 845 | X | | BN13S1QS001 | 4 | X | X | | | Data Packages to |
| X | 11/5/98 | 900 | X | | BN13S1QS002 | 4 | X | X | | | Newburgh |

| Samples by: (Signature) | Date/Time | Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| Brian D. Andersen | 11/5/98 1400 | Lm Shutty | 11/6/98 1700 | 807455473467 Pat | |
| Relinquished by: (Signature) | Date/Time | Received by Laboratory: (Signature) | Date/Time | Airbill Number: | |
| | | [illegible] | 11/7/1030 | 807455473467 | |

Sample Shipped by: (Circle) Fed Ex. Puro. UPS Hand Carried Other:

Cooler Temp. ____ C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☐ Yes ☐ No

NOTE: Please indicat method number for analyses requested. This will help clarify any questions with laboratory t chniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3589-4
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/20/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN1359SW001 | AQ | 11/11/98 | 11/12/98 | 11/20/98 | DJP | 5030 | DJP |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:**

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3589-4
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/20/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN1359SW001 | AQ | 11/11/98 | 11/12/98 | 11/20/98 | DJP | 5030 | DJP |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 114 | % | 1.0 | | |
| TOLUENE-D8 | 117 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 110 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 110 | % | 1.0 | | |

**Report Notes:**

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3591-16
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/21/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13EPQT004 | AQ | 11/12/98 | 11/12/98 | 11/21/98 | DJP | 5030 | DJP |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:**

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3591-16
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/21/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13EPQT004 | AQ | 11/12/98 | 11/12/98 | 11/21/98 | DJP | 5030 | DJP |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 118 | % | 1.0 | | |
| TOLUENE-D8 | 118 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 110 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 115 | % | 1.0 | | |

port Notes:

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3589-3
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/20/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN1359QS004 | AQ | 11/11/98 | 11/12/98 | 11/20/98 | DJP | 5030 | DJP |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | 6 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | 2 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | J0.7 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:** J

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3589-3
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/20/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN1359QS004 | AQ | 11/11/98 | 11/12/98 | 11/20/98 | DJP | 5030 | DJP |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 116 | % | 1.0 | | |
| TOLUENE-D8 | 117 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 111 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 111 | % | 1.0 | | |

**Report Notes:** J

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3508-10
**Report Date:** 12/7/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/13/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S1QD001 | AQ | 11/5/98 | 11/7/98 | 11/13/98 | JSS | 5030 | JSS |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | B5 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | 14 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:** B

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3508-10
**Report Date:** 12/7/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/13/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S1QD001 | AQ | 11/5/98 | 11/7/98 | 11/13/98 | JSS | 5030 | JSS |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 117 | % | 1.0 | | |
| TOLUENE-D8 | 107 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 104 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 113 | % | 1.0 | | |

**Report Notes:** B

# Appendix D.3

## Sediment Samples
## Site 9

## APPENDIX D.3

## SAMPLE KEY - SITE 9
## NAVAL AIR STATION, BRUNSWICK, MAINE

| Sample Designation | Sample Station |
|---|---|
| **LT-901 (Seep) Samples** | |
| S9-LTSW1 | LT-901 |
| S9-LTXD1 | LT-901 (DUP) |
| **Trip Blank** | |
| EP-QT004 | QT-004 |
| **Equipment Rinsate Blanks** | |
| S9-QS004 | QS-004 |
| **Source Water Blank** | |
| S1-QD001 | QD-001 |

W03589

# Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Company Name: EA Engineering

Project Manager or Contact: Pete Nimmer

Phone: 914-565-8100

Project No. 29600.47

Project Name: LTMP Event 13

Dept.: 2151 Task: 7503

Sample Storage Location:

ATO Number:

Page 1 of 1

Report #:

Report Deliverables: 1 2 3 4 D E

EDD: Yes/No

DUE TO CLIENT: _____

Parameters/Method Numbers for Analysis: VOC by 8260

| Date | Time | Water | Soil | Sample Identification 19 Characters | No. of Containers | VOC by 8260 | EA Labs Accession Number | Remarks |
|---|---|---|---|---|---|---|---|---|
| 11/1/98 | 1500 | X | | BN1359LTSW1-MS/MSD | 4 | X | | LPM: Michael Walsh |
| 11/1/98 | — | X | | BN1359LTXD1 | 3 | X | | |
| 11/1/98 | 1535 | X | | BN1359QSD04 | 3 | X | | |
| 11/1/98 | 1440 | X | | BN1359SW001 | 3 | X | | |
| | | | | | | | | Temp Blank w/ cooler |
| | | | | | | | | Summary Package Form I's + COC to Sue Chase |
| | | | | | | | | Data Package to Newburgh |
| | | | | | | | | This begins and ends SDG BN1359LTSW1 |

| Samples by: (Signature) | Date/Time | Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| Kim Shutley | 11/1/98 1700 | | | | |

| Relinquished by: (Signature) | Date/Time | Received by Laboratory: (Signature) | Date/Time | Airbill Number: | Sample Shipped by: (Circle) |
|---|---|---|---|---|---|
| Stephanie Jones | 11/2/98 1415 | | 11/3/98 1000 | 807455473066 | Fed Ex. Puro. UPS |

Cooler Temp.____C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☐ Yes ☐ No

Hand Carried

Other:

NOTE: Pleas indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE — EA Laboratories YELLOW — EA Laboratories PINK — Project Manager Shaded Areas for Lab Use Only

000005

W03591

| Company Nam : | Project Manager or Contact: Pete Nimmer |
|---|---|
| EA Engineering | Phone: 914-565-8100 |
| Project No. 29600.47 | Project Name: |
| Dept.: 2151 Task: 7503 | LTMP Event |
| Sample Storage Location: | ATO Number: |
| Page \| of \| | Report #: |

Parameters/M thod Numbers for Analysis

# Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Report Deliverables: 1 2 3 4 D E

EDD: Yes/No

DUE TO CLIENT: _____

| Date | Time | Water | Soil | Sample Identification 19 Characters | No. of Containers | VOC by 8260 | EA Labs Accession Number | Remarks |
|---|---|---|---|---|---|---|---|---|
| 11-11-98 | 0915 | X | | BN13EPMW0116 | 3 | X | | LPM: Michael Walsh |
| 11-11-98 | 1010 | X | | BN13EPMW0117-MS/MSD | 4 | X | | |
| 11-11-98 | 1130 | X | | BN13EPMW0118 | 3 | X | | |
| 11-11-98 | — | X | | BN13EPMWDX3 | 3 | X | | Temp Blank w/ Cooler |
| 11-11-98 | 1220 | X | | BN13EPMW0119 | 3 | X | | |
| 11-11-98 | 1336 | X | | BN13EPMW0310 | 3 | X | | |
| 11-11-98 | 1340 | X | | BN13EPMW0211 | 3 | X | | |
| 11-12-98 | 1056 | X | | BN13EPMW0212 | 3 | X | | |
| 11-12-98 | 1010 | X | | BN13EPMW0213 | 3 | X | | |
| 11-12-98 | 1210 | X | | BN13EPMW0R4 | 3 | X | | Summary Package Forms |
| 11-12-98 | — | X | | BN13EPMWDX4 | 3 | X | | + COC to Sue Chase |
| 11-12-98 | 1115 | X | | BN13EPMW0R5 | 3 | X | | |
| 11-12-98 | 1357 | X | | BN13EPMW0216 | 3 | X | | Data Package to |
| 11-12-98 | 1355 | X | | BN13EPMW0217 | 3 | X | | Newburgh |
| 11-12-98 | 1230 | X | | BN13EPMW0218 | 3 | X | | |
| 11-12-98 | 0800 | X | | BN13EPGT004 | 3 | X | | This begins and |
| | | | | | | | | ends SDG BN-13EPMW0116. |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| Samples by: (Signature) | Date/Time | Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| Kim Shutter | 11/12/98 1700 | | | | |
| **Relinquished by: (Signature)** | **Date/Time** | **Received by Laboratory: (Signature)** | **Date/Time** | **Airbill Number:** | **Sampl Shipped by: (Circle)** |
| [illegible] | 11/12/98 1415 | [illegible] | 11/13/98 1020 | 807455473066 | Fed Ex. Puro. UPS Hand Carried Other: |

Cooler Temp. ____C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☐ Yes ☐ No

NOTE: Please [illegible]te m thod number for analyses requested. This will help clarify any questions w[illegible]oratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager Shaded Areas for Lab Use Only

W03508

# Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Company Name: EA Engineering

Project Manager or Contact: Pete Nimmer
Phone: 914-565-8100

Project No. 29600047

Project Name: Eventis LTMP

Dept.: 2151 Task: 7503

Sample Storage Location:

ATO Number:

Page 1 of 1

Report #:

Report Deliverables: 1 2 3 4 D E

EDD: Yes/No

DUE TO CLIENT:

| | Date | Time | Water | Soil | Sample Identification 19 Characters | No. of Containers | TAL Elements | VOC 8260 | EA Labs Accession Number | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| X | 11/5/98 | 1140 | Y | | BN13S1SW001 MS/MSD | 4 | | X | | LPM: Michael Walsh |
| X | 11/5/98 | 1200 | X | | BN13S1SW002 | 4 | X | X | | Andrea Colby |
| X | 11/5/98 | 1215 | Y | | BN13S1SW003 | 4 | X | X | | |
| X | 11/5/98 | 1245 | Y | | BN13S1SW004 | 4 | X | X | | |
| X | ~~11/5/98~~ | ~~1300~~ | X | | ~~BN13S1SW005~~ | ~~1~~ | X | ~~X~~ | | ~~only TAL Elements~~ — canceled 11/6/98 |
| X | ~~11/5/98~~ | ~~1310~~ | X | | ~~BN13S1SW006~~ | ~~1~~ | X | ~~X~~ | | ~~only TAL Elements~~ — KS Not Collected |
| X | 11/5/98 | — | X | | BN13S1SWXD1 | 4 | X | X | | |
| X | 11/5/98 | 1140 | Y | | BN13S1SW001 MS | 2 | X | X | | Temp blanket |
| X | 11/5/98 | 1315 | Y | | BN13S1LTSW1 | 4 | X | X | | cooler |
| X | 11/5/98 | 1345 | Y | | BN13S1LTSW2 | 4 | X | X | | |
| X | 11/5/98 | 1400 | X | | BN13S1LTSW3 | 4 | X | X | | |
| | | | | | ~~BN13S1LTSW4~~ | not collected | | | | |
| X | 11/5/98 | — | X | | BN13S1LTXD1 | 4 | X | X | | Signed form I + COC |
| X | 11/5/98 | 830 | X | | BN13S1QD001 | 4 | X | X | | to Sue Chase Brunswick. |
| X | 11/5/98 | 845 | X | | BN13S1QS001 | 4 | X | X | | Data Package to |
| X | 11/5/98 | 900 | Y | | BN13S1QS002 | 4 | X | X | | Newburgh |

| Samples by: (Signature) | Date/Time | Relinquished by: (Signature) | Date/Time | Received by: (Signature) | Date/Time |
|---|---|---|---|---|---|
| Brian D. Anderson | 11/5/98 1400 | [illegible] | 11/6/98 1700 | 807455473467 Pat | |
| Relinquished by: (Signature) | Date/Time | Received by Laboratory: (Signature) | Date/Time | Airbill Number: | Sample Shipped by: (Circle) |
| | | [illegible] | 11/7/030 | 807455473467 | Fed Ex. Puro. UPS Hand Carried Other: |

Cooler Temp. ____ C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☐ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3589-1
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/19/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN1359LTSW1 | AQ | 11/11/98 | 11/12/98 | 11/19/98 | KMC | 5030 | KMC |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | B2 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | J0.6 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | B2 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | 1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | J0.8 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | J0.8 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | J0.7 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | J0.5 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | 2 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:** B, J

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3589-1
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/19/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN1359LTSW1 | AQ | 11/11/98 | 11/12/98 | 11/19/98 | KMC | 5030 | KMC |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | 1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | 2 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | 2 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 102 | % | 1.0 | | |
| TOLUENE-D8 | 101 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 93 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 103 | % | 1.0 | | |

**Report Notes:** B, J

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3589-2
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/20/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN1359LTXD1 | AQ | 11/11/98 | 11/12/98 | 11/20/98 | DJP | 5030 | DJP |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:**

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3589-2
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/20/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN1359LTXD1 | AQ | 11/11/98 | 11/12/98 | 11/20/98 | DJP | 5030 | DJP |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 116 | % | 1.0 | | |
| TOLUENE-D8 | 118 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 110 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 109 | % | 1.0 | | |

**eport Notes:**

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3591-16
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/21/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13EPQT004 | AQ | 11/12/98 | 11/12/98 | 11/21/98 | DJP | 5030 | DJP |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:**

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

Client: SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

Proj. ID:

Lab Number: WO3591-16
Report Date: 12/11/98
PO No. : 29600.47.7503
Project: LTMP EVENT 13
% Solids: N/A
Method: EPA 8260
Date Analyzed: 11/21/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13EPQT004 | AQ | 11/12/98 | 11/12/98 | 11/21/98 | DJP | 5030 | DJP |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 118 | % | 1.0 | | |
| TOLUENE-D8 | 118 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 110 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 115 | % | 1.0 | | |

Report Notes:

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3589-3
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/20/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN1359QS004 | AQ | 11/11/98 | 11/12/98 | 11/20/98 | DJP | 5030 | DJP |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | 6 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | 2 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | J0.7 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:** J



0000006

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3589-3
**Report Date:** 12/11/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/20/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN1359QS004 | AQ | 11/11/98 | 11/12/98 | 11/20/98 | DJP | 5030 | DJP |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 116 | % | 1.0 | | |
| TOLUENE-D8 | 117 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 111 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 111 | % | 1.0 | | |

**Report Notes:** J

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3508-10
**Report Date:** 12/7/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/13/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S1QD001 | AQ | 11/5/98 | 11/7/98 | 11/13/98 | JSS | 5030 | JSS |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| CHLOROMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| BROMOMETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| VINYL CHLORIDE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| CHLOROETHANE | <2.0 | ug/L | 1.0 | 2.0 | 2.0 |
| METHYLENE CHLORIDE | B5 | ug/L | 1.0 | 1.0 | 1.0 |
| ACETONE | <5 | ug/L | 1.0 | 5 | 5 |
| CARBON DISULFIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL 1,2-DICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROFORM | 14 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 2-BUTANONE | <5 | ug/L | 1.0 | 5 | 5 |
| 1,1,1-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CARBON TETRACHLORIDE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMODICHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,2-DICHLOROPROPANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CIS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRICHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOCHLOROMETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2-TRICHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TRANS-1,3-DICHLOROPROPENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| BROMOFORM | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 4-METHYL-2-PENTANONE | <3 | ug/L | 1.0 | 3 | 3 |
| 2-HEXANONE | <4 | ug/L | 1.0 | 4 | 4 |
| TETRACHLOROETHENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,1,2,2-TETRACHLOROETHANE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOLUENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| CHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| ETHYLBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| STYRENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| TOTAL XYLENES | <1 | ug/L | 1.0 | 1.0 | 1.0 |

**Report Notes:** B

# KATAHDIN ANALYTICAL SERVICES
## REPORT OF ANALYTICAL RESULTS

**Client:** SHERRI PULLAR
EA Engineering
3 Washington Center

Newburgh, NY 12550

**Proj. ID:**

**Lab Number:** WO3508-10
**Report Date:** 12/7/98
**PO No. :** 29600.47.7503
**Project:** LTMP EVENT 13
**% Solids:** N/A
**Method:** EPA 8260
**Date Analyzed:** 11/13/98

| Sample Description | Matrix | Sampled Date | Rec'd Date | Ext. Date | Ext'd By | Ext. Method | Analyst |
|---|---|---|---|---|---|---|---|
| BN13S1QD001 | AQ | 11/5/98 | 11/7/98 | 11/13/98 | JSS | 5030 | JSS |

| Compound | Result | Units | DF | Sample PQL | Method PQL |
|---|---|---|---|---|---|
| 1,2-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,3-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| 1,4-DICHLOROBENZENE | <1 | ug/L | 1.0 | 1.0 | 1.0 |
| DIBROMOFLUOROMETHANE | 117 | % | 1.0 | | |
| TOLUENE-D8 | 107 | % | 1.0 | | |
| P-BROMOFLUOROBENZENE | 104 | % | 1.0 | | |
| 1,2-DICHLOROETHANE-D4 | 113 | % | 1.0 | | |

**Report Notes:** B

# Appendix D.4

# MS/MSD Recovery Reports

# Katahdin Analytical Services

## MS/MSD Report

| Sample | File Name | Date Acquired | Time inj | Analyst | Matrix | Method |
|---|---|---|---|---|---|---|
| WO3510-3 | Z8102 | 11/13/98 | 12:15:00 PM | KMC | AQ | 8260 |
| WO3510-3MS | Z8111 | 11/13/98 | 5:57:00 PM | KMC | AQ | 8260 |
| WO3510-3MSD | Z8112 | 11/13/98 | 6:34:00 PM | KMC | AQ | 8260 |

| Compound Name | Native (ug/L) | MS Spk Amount (ug/L) | MSD Spk Amount (ug/L) | MS Result (ug/L) | MSD Result (ug/L) | MS REC (%) | MSD REC (%) | Recovery Limits (%) | RPD (%) | RPD Limit (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,4-DICHLOROBENZENE | 0 | 50 | 50 | 58.9 | 51.6 | 118 | 103 | 60-140 | 13 | 20 |
| 1,1,1-TRICHLOROETHANE | 0 | 50 | 50 | 70.0 | 61.3 | 140 | 123 | 60-140 | 13 | 20 |
| BROMOFORM | 0 | 50 | 50 | 63.1 | 55.4 | 126 | 111 | 60-140 | 13 | 20 |
| BROMODICHLOROMETHANE | 0 | 50 | 50 | 70.7 | 59.9 | *141 | 120 | 60-140 | 17 | 20 |
| BENZENE | 0 | 50 | 50 | 70.2 | 63.5 | 140 | 127 | 60-140 | 10 | 20 |
| ACETONE | 0 | 50 | 50 | 48.3 | 42.1 | 97 | 84 | 60-140 | 14 | 20 |
| 4-METHYL-2-PENTANONE | 0 | 50 | 50 | 58.7 | 53.2 | 117 | 106 | 60-140 | 9.8 | 20 |
| 2-HEXANONE | 0 | 50 | 50 | 51.5 | 47.5 | 103 | 95 | 60-140 | 8.0 | 20 |
| CARBON DISULFIDE | 0 | 50 | 50 | 74.3 | 62.2 | *148 | 124 | 60-140 | 18 | 20 |
| 2-BUTANONE | 0 | 50 | 50 | 56.4 | 48.9 | 113 | 98 | 60-140 | 14 | 20 |
| CARBON TETRACHLORIDE | 0 | 50 | 50 | 68.8 | 57.0 | 138 | 114 | 60-140 | 19 | 20 |
| 1,3-DICHLOROBENZENE | 0 | 50 | 50 | 60.6 | 52.8 | 121 | 106 | 60-140 | 14 | 20 |
| 1,2-DICHLOROPROPANE | 0 | 50 | 50 | 63.6 | 57.8 | 127 | 116 | 60-140 | 9.5 | 20 |
| 1,2-DICHLOROETHANE | 0 | 50 | 50 | 71.4 | 61.8 | *143 | 124 | 60-140 | 14 | 20 |
| 1,2-DICHLOROBENZENE | 0 | 50 | 50 | 63.2 | 55.4 | 126 | 111 | 60-140 | 13 | 20 |
| 1,1-DICHLOROETHENE | 0 | 50 | 50 | 73.0 | 61.2 | *146 | 122 | 60-140 | 18 | 20 |
| 1,[illegible]HLOROETHANE | 0 | 50 | 50 | 68.5 | 61.1 | 137 | 122 | 60-140 | 11 | 20 |
| 1,1,2-TRICHLOROETHANE | 0 | 50 | 50 | 69.9 | 58.8 | 140 | 118 | 60-140 | 17 | 20 |
| 1,1,2,2-TETRACHLOROETHANE | 0 | 50 | 50 | 55.7 | 52.6 | 111 | 105 | 60-140 | 5.8 | 20 |
| 2-CHLOROETHYLVINYLETHER | 0 | 50 | 50 | 0 | 0 | *0 | *0 | 60-140 | | 20 |
| STYRENE | 0 | 50 | 50 | 71.7 | 58.7 | *143 | 117 | 60-140 | 20 | 20 |
| VINYL ACETATE | 0 | 50 | 50 | 46.6 | 43.8 | 93 | 88 | 60-140 | 6.2 | 20 |
| TRICHLOROFLUOROMETHANE | 0 | 50 | 50 | 84.1 | 66.3 | *168 | 132 | 60-140 | *24 | 20 |
| TRICHLOROETHENE | 1.16 | 50 | 50 | 65.7 | 54.8 | 129 | 107 | 60-140 | 18 | 20 |
| TRANS-1,3-DICHLOROPROPENE | 0 | 50 | 50 | 70.6 | 61.6 | *141 | 123 | 60-140 | 14 | 20 |
| TOTAL XYLENES | 0 | 150 | 150 | 214 | 177 | *143 | 118 | 60-140 | 19 | 20 |
| TOTAL 1,2-DICHLOROETHENE | 0 | 100 | 100 | 136 | 120 | 136 | 120 | 60-140 | 13 | 20 |
| TOLUENE | 0 | 50 | 50 | 74.4 | 60.3 | *149 | 120 | 60-140 | *21 | 20 |
| BROMOMETHANE | 0 | 50 | 50 | 74.6 | 62.5 | *149 | 125 | 60-140 | 18 | 20 |
| TETRACHLOROETHENE | 0 | 50 | 50 | 61.6 | 50.6 | 123 | 101 | 60-140 | 20 | 20 |
| VINYL CHLORIDE | 0 | 50 | 50 | 82.2 | 67.8 | *164 | 136 | 60-140 | 19 | 20 |
| METHYLENE CHLORIDE | 3.12 | 50 | 50 | 67.5 | 59.5 | 129 | 113 | 60-140 | 13 | 20 |
| ETHYLBENZENE | 0 | 50 | 50 | 70.1 | 57.7 | 140 | 115 | 60-140 | 19 | 20 |
| DIBROMOCHLOROMETHANE | 0 | 50 | 50 | 66.8 | 57.6 | 134 | 115 | 60-140 | 15 | 20 |
| CIS-1,3-DICHLOROPROPENE | 0 | 50 | 50 | 60.2 | 54.1 | 120 | 108 | 60-140 | 11 | 20 |
| CHLOROMETHANE | 0 | 50 | 50 | 77.6 | 66.4 | *155 | 133 | 60-140 | 16 | 20 |
| CHLOROFORM | 0 | 50 | 50 | 66.9 | 57.6 | 134 | 115 | 60-140 | 15 | 20 |
| CHLOROETHANE | 0 | 50 | 50 | 75.4 | 65.5 | *151 | 131 | 60-140 | 14 | 20 |
| CHLOROBENZENE | 0 | 50 | 50 | 61.9 | 52.8 | 124 | 106 | 60-140 | 16 | 20 |
| TETRAHYDROFURAN | 0 | 50 | 50 | 52.6 | 49.2 | 105 | 98 | 60-140 | 6.6 | 20 |

RPD = (ms rec - msd rec) / (ms rec + msd rec)/2] * 100

* Out of Limits



PART A 1000216

# Katahdin Analytical Services

## MS/MSD Report

| Sample | File Name | Date Acquired | Time inj | Analyst | Matrix | Method |
|---|---|---|---|---|---|---|
| WO3589-1 | Z8199 | 11/19/98 | 4:56:00 PM | KMC | AQ | 8260 |
| WO3589-1MS | S2087 | 11/21/98 | 1:04:00 PM | JSS | AQ | 8260 |
| WO3589-1MSD | S2088 | 11/21/98 | 1:41:00 PM | JSS | AQ | 8260 |

| Compound Name | Native (ug/L) | MS Spk Amount (ug/L) | MSD Spk Amount (ug/L) | MS Result (ug/L) | MSD Result (ug/L) | MS REC (%) | MSD REC (%) | Recovery Limits (%) | RPD (%) | RPD Limit (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,4-DICHLOROBENZENE | 1.79 | 50 | 50 | 45.8 | 42.5 | 88 | 81 | 60-140 | 7.9 | 20 |
| 1,1,1-TRICHLOROETHANE | 0 | 50 | 50 | 32.7 | 31.7 | 65 | 63 | 60-140 | 3.2 | 20 |
| BROMOFORM | 0 | 50 | 50 | 48.4 | 43.7 | 97 | 87 | 60-140 | 10 | 20 |
| BROMODICHLOROMETHANE | 0 | 50 | 50 | 46.8 | 44.2 | 94 | 88 | 60-140 | 5.6 | 20 |
| BENZENE | 0 | 50 | 50 | 42.1 | 40.8 | 84 | 82 | 60-140 | 3.0 | 20 |
| ACETONE | 0 | 50 | 50 | 31.9 | 31.9 | 64 | 64 | 60-140 | 0.09 | 20 |
| 4-METHYL-2-PENTANONE | 0 | 50 | 50 | 46.6 | 45.4 | 93 | 91 | 60-140 | 2.7 | 20 |
| 2-HEXANONE | 0 | 50 | 50 | 43.7 | 40.2 | 87 | 80 | 60-140 | 8.5 | 20 |
| CARBON DISULFIDE | 0.590 | 50 | 50 | 31.5 | 31.8 | 62 | 62 | 60-140 | 1.1 | 20 |
| 2-BUTANONE | 0 | 50 | 50 | 42.3 | 37.6 | 84 | 75 | 60-140 | 12 | 20 |
| CARBON TETRACHLORIDE | 0 | 50 | 50 | 26.7 | 27.3 | *53 | *55 | 60-140 | 2.3 | 20 |
| 1,3-DICHLOROBENZENE | 1.53 | 50 | 50 | 45.5 | 42.9 | 88 | 83 | 60-140 | 6.0 | 20 |
| 1,2-DICHLOROPROPANE | 0 | 50 | 50 | 42.8 | 41.4 | 86 | 83 | 60-140 | 3.2 | 20 |
| 1,2-DICHLOROETHANE | 0 | 50 | 50 | 47.4 | 44.2 | 95 | 88 | 60-140 | 6.9 | 20 |
| 1,2-DICHLOROBENZENE | 1.22 | 50 | 50 | 48.8 | 45.0 | 95 | 88 | 60-140 | 8.3 | 20 |
| 1,1-DICHLOROETHENE | 0 | 50 | 50 | 28.7 | 30.1 | *57 | 60 | 60-140 | 4.6 | 20 |
| 1,1-DICHLOROETHANE | 0 | 50 | 50 | 42.4 | 40.7 | 85 | 81 | 60-140 | 4.1 | 20 |
| 1,1,2-TRICHLOROETHANE | 0 | 50 | 50 | 46.8 | 44.3 | 94 | 89 | 60-140 | 5.5 | 20 |
| 1,1,2,2-TETRACHLOROETHANE | 0 | 50 | 50 | 51.7 | 48.1 | 103 | 96 | 60-140 | 7.2 | 20 |
| 2-CHLOROETHYLVINYLETHER | 0 | 50 | 50 | 0 | 0 | *0 | *0 | 60-140 | | 20 |
| STYRENE | 0.510 | 50 | 50 | 45.9 | 42.0 | 91 | 83 | 60-140 | 9.0 | 20 |
| VINYL ACETATE | 0 | 50 | 50 | 25.6 | 23.3 | *51 | *47 | 60-140 | 9.0 | 20 |
| TRICHLOROFLUOROMETHANE | 0 | 50 | 50 | 22.6 | 24.3 | *45 | *49 | 60-140 | 7.2 | 20 |
| TRICHLOROETHENE | 1.87 | 50 | 50 | 37.1 | 36.1 | 70 | 68 | 60-140 | 2.9 | 20 |
| TRANS-1,3-DICHLOROPROPENE | 0 | 50 | 50 | 45.1 | 43.2 | 90 | 86 | 60-140 | 4.3 | 20 |
| TOTAL XYLENES | 2.08 | 150 | 150 | 130 | 123 | 85 | 81 | 60-140 | 5.6 | 20 |
| TOTAL 1,2-DICHLOROETHENE | 0 | 100 | 100 | 85.2 | 81.2 | 85 | 81 | 60-140 | 4.8 | 20 |
| TOLUENE | 0.750 | 50 | 50 | 41.4 | 40.1 | 81 | 79 | 60-140 | 3.2 | 20 |
| BROMOMETHANE | 0 | 50 | 50 | 42.6 | 39.5 | 85 | 79 | 60-140 | 7.6 | 20 |
| TETRACHLOROETHENE | 1.17 | 50 | 50 | 31.7 | 30.7 | 61 | *59 | 60-140 | 3.4 | 20 |
| VINYL CHLORIDE | 0 | 50 | 50 | 33.5 | 34.2 | 67 | 68 | 60-140 | 2.1 | 20 |
| METHYLENE CHLORIDE | 1.89 | 50 | 50 | 47.0 | 44.1 | 90 | 84 | 60-140 | 6.8 | 20 |
| ETHYLBENZENE | 0.710 | 50 | 50 | 42.0 | 40.2 | 83 | 79 | 60-140 | 4.6 | 20 |
| DIBROMOCHLOROMETHANE | 0 | 50 | 50 | 49.8 | 46.1 | 100 | 92 | 60-140 | 7.8 | 20 |
| CIS-1,3-DICHLOROPROPENE | 0 | 50 | 50 | 43.4 | 41.3 | 87 | 82 | 60-140 | 5.1 | 20 |
| CHLOROMETHANE | 0 | 50 | 50 | 41.8 | 42.3 | 84 | 84 | 60-140 | 1.0 | 20 |
| CHLOROFORM | 0 | 50 | 50 | 42.5 | 40.2 | 85 | 80 | 60-140 | 5.7 | 20 |
| CHLOROETHANE | 0 | 50 | 50 | 40.7 | 39.3 | 81 | 79 | 60-140 | 3.5 | 20 |
| CHLOROBENZENE | 0.750 | 50 | 50 | 46.7 | 43.3 | 92 | 85 | 60-140 | 7.8 | 20 |
| TETRAHYDROFURAN | 0 | 50 | 50 | 48.6 | 46.0 | 97 | 92 | 60-140 | 5.5 | 20 |

RPD = (ms rec - msd rec) / (ms rec + msd rec)/2] * 100

* Out of Limits



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