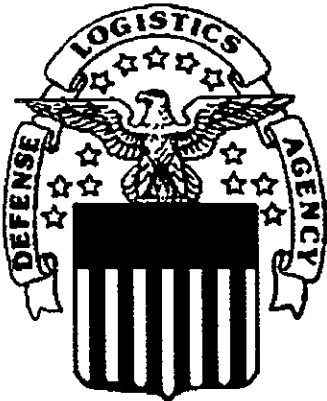




# THE MEMPHIS DEPOT TENNESSEE

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## ADMINISTRATIVE RECORD COVER SHEET

AR File Number 478

# INTERIM REMEDIAL ACTION GROUNDWATER EXTRACTION SYSTEM



## Project Documentation For Memphis Depot Caretaker

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*U.S. Army Corps of Engineers  
Mobile District  
Tennessee Area Office  
Arnold AFB, Tennessee  
OHM Remediation Services Corp.*

*VOLUME I May 1999*

**REMEDIAL ACTION REPORT  
GROUNDWATER INTERIM REMEDIAL ACTION**

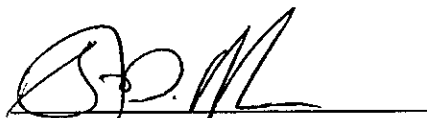
**DUNN FIELD  
MEMPHIS DEPOT, TENNESSEE**

*Submitted to:*

**U.S. Army Corps of Engineers**  
Mobile District, Tennessee Area Office  
Contract No. DACA45-96-D-0014  
Delivery Order No. 0007

*Submitted by:*

**OHM Remediation Services Corp.**  
11560 Great Oaks Way, Suite 500  
Alpharetta, GA 30022

A handwritten signature in black ink, appearing to read 'S.D. Offner', is written over a horizontal line.

Stephen D. Offner, P.G.  
Project Manager

Project No. 920022  
July 28, 1999

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## **1.0 INTRODUCTION**

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This Remedial Action Report presents the results of OHM Remediation Services Corp.'s (OHM) implementation of the Groundwater Interim Remedial Action (IRA) at the Dunn Field Area of the Memphis Depot, Memphis, Tennessee (Depot). This work was performed under Federal Contract Number DACA45-96-D-0014, Delivery Order 0007 for the U.S. Army Corps of Engineers (USACE), Mobile District.

The design for this remedial action was presented in the Technical Specifications and Appendices, and Final Design, dated August 1997, prepared by CH2M HILL for the USACE. These specifications contained the design and protocol for executing the project.

The pre-construction work plans that were developed and implemented for this delivery order, and that are to be considered as critical components to this Remedial Action (RA), include the following:

- Site-Specific Health and Safety Plan (SHSP), dated October 14, 1997
- Sampling and Analysis Plan (SAP), dated November 15, 1997
- Environmental Protection Plan (EPP), dated November 15, 1997
- Contractor Quality Control Plan (CQP), dated December 15, 1997

### **1.1 REPORT ORGANIZATION**

This Remedial Action Report describes and documents how OHM implemented the major tasks encompassing the construction of the groundwater extraction system at Dunn Field in conformance with the delivery order requirements. Section 1.0 of this report includes the introduction, the remedial objective, and the site description and background. Section 2.0 presents a chronology of events that occurred during the project. Section 3.0 documents the construction of the groundwater extraction system. Section 4.0 describes the implementation of the first six (6) months of system operation.

### **1.2 REMEDIAL ACTION OBJECTIVE**

The USACE contracted OHM to install seven groundwater extraction wells, one pre-cast concrete building, underground conveyance system, flow measurement and control systems, and associated civil, electrical, and instrumentation/controls work. The Technical

Specifications prepared by CH2M HILL (including Addendum No. 1, dated August 29, 1997) defined the Groundwater IRA's equipment, process controls, operational requirements, recovery wells sizes and depths, pumping rates and drawings for construction.

### 1.3 SITE DESCRIPTION AND BACKGROUND

The Depot covers 642 acres of land in Shelby County, Memphis, Tennessee. The facility is approximately four miles southeast of the central business district and one mile northwest of Memphis International Airport. The Depot began operations in 1942 with the mission to inventory and supply materials for the United States Army. In 1964, its mission was expanded to serve as one of the principle distribution centers of a complete range of commodities. Past activities at the Depot include a wide range of storage, distribution, and maintenance practices. The Depot has been closed (since 1997) and is maintained by the Memphis Depot Caretaker Division, under the control of the Defense Depot Susquehanna, Pennsylvania/Defense Logistics Agency (DLA). The Depot is currently undergoing Base Realignment and Closure (BRAC) activities.

Dunn Field, also called OU-1, consists of 68 acres of land area that is located north of the main installation, across Dunn Road. The northwestern quadrant of Dunn Field was used as a landfill area. The southwestern and southeastern quadrants were used as a storage area for mineral stockpiles. The northeastern portion was used as a pistol range, and later as a pesticide storage area. Until 1970, Army supplies, including hazardous and non-hazardous materials were burned or buried primarily in the northwest portion of Dunn Field. These materials potentially included oil and grease, paint, paint thinner, methyl bromide, pesticides, herbicides, and food supplies. Disposal operations at Dunn Field have caused a plume of contaminated groundwater in the Fluvial Aquifer along the western and northern portion of Dunn Field. Groundwater monitoring well installation and sampling has identified a number of volatile organic compounds (VOCs) in the plume, including, but not limited to, tetrachloroethene, trichloroethene, dichloroethene, carbon tetrachloride, chloroform and 1,1,2,2 -trichloroethane.

The Depot facility, including Dunn Field, is classified as a National Priority List (NPL) site under the Comprehensive Environmental Response, Compensation, and Liability Act of 1990 (CERCLA) Section 120 (Federal Facilities). In August 1995, CH2M HILL submitted a Record of Decision (ROD) for the Groundwater IRA at Dunn Field to the regulatory agencies for approval. The ROD provides the basis of design for the components associated with the IRA at Dunn Field.

## **2.0 CHRONOLOGY OF EVENTS**

On August 11, 1997, OHM was requested by the USACE to prepare a proposal for the construction of the interim groundwater extraction system at Dunn Field. The final proposal was submitted on September 23, 1997, and notice to proceed was issued by the USACE on October 31, 1997. Pre-construction work plans were completed in November and December 1997. OHM mobilized to the site on January 5, 1998 and began recovery well installation on January 15, 1998, and underground pipe installation on February 18, 1998. The construction of the groundwater extraction system was completed in October 1998.

The following chronology provides a summary of major events and/or activities associated with award of Delivery Order No. 007, through the completion of the groundwater extraction system construction, and the first six (6) months of the operation and maintenance (O&M) of the system.

### **DESCRIPTION OF ACTIVITY OR EVENT**

### **DATE**

#### ***Contractual***

|                                                                             |              |
|-----------------------------------------------------------------------------|--------------|
| Date of Request for Proposal (RFP) from USACE for the Construction of the   |              |
| Groundwater Extraction System .....                                         | 11-Aug-97    |
| OHM Submits Initial Proposal.....                                           | 6-Sep-97     |
| Proposal Negotiations with USACE.....                                       | 10&23-Sep-97 |
| OHM Submits Revised Final Proposal .....                                    | 23-Sep-97    |
| Pre-construction Conference.....                                            | 15-Oct-97    |
| Notice to Proceed from USACE.....                                           | 31-Oct-97    |
| OHM Submits Proposal for Redeveloping Recovery Well RW-5A.....              | 20-May-98    |
| Date of RFP from USACE for Construction of the Sewer Connection.....        | 11-Aug-98    |
| OHM Submits Final Proposal for Sewer Connection.....                        | 14-Sep-98    |
| OHM Submits Final Proposal for Operation and Maintenance of the Groundwater |              |
| Extraction System .....                                                     | 4-Nov-98     |

#### ***Work Plans, Key Submittals and Permits***

|                                                                 |           |
|-----------------------------------------------------------------|-----------|
| Final Technical Specifications and Appendices, and Final Design |           |
| for the Groundwater Interim Remedial Action (CH2M HILL) .....   | Aug-97    |
| Submittal of Site Specific Health and Safety Plan .....         | 14-Oct-97 |
| Submittal of Sampling and Analysis Plan .....                   | 15-Nov-97 |
| Submittal of Environmental Protection Plan .....                | 15-Nov-97 |
| Submittal of Contractor Quality Control Plan .....              | 15-Dec-97 |
| Submittal of Work Zone Drawings.....                            | 15-Dec-97 |
| Submittal of Baseline Site Survey of Dunn Field .....           | 31-Dec-97 |

| <b><u>DESCRIPTION OF ACTIVITY OR EVENT</u></b>                                                                                       | <b><u>DATE</u></b>     |
|--------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Submittal of Technical Memorandum No. 1 – Results of Geophysical Investigation .....                                                 | 6-Jan-98               |
| Obtained Permit for Installation of Recovery Wells.....                                                                              | 12-Jan-98              |
| Submittal of Technical Memorandum No. 2 – Results of Expanded<br>Geophysical Investigation.....                                      | 4-Feb-98               |
| Submittal of Technical Memorandum No. 3 – Analytical Results of the Soil Borings<br>for Disposal Characterization .....              | 9-Feb-98               |
| TDEC Approval for Disposal of Soil and Soil Cuttings Generated<br>from Well Installation and Trenching.....                          | 10-Feb-98              |
| City of Memphis Approval for Discharge of 85,000-Gallons of Water<br>From Recovery Well Development and Capacity Tests.....          | 2-Mar-98               |
| TDEC Approval for Disposal of Soil with Glass Vials .....                                                                            | 12-Mar-98              |
| Submittal of Technical Memorandum No. 4 – Analytical Results of Glass Vials<br>for Disposal Characterization .....                   | 17-Apr-98              |
| Submittal of Operation and Maintenance Plan (CH2M HILL) .....                                                                        | May-98                 |
| Industrial Wastewater Discharge Agreement between City of Memphis Division<br>of Public Works and Memphis Depot Caretaker .....      | 1-May-98               |
| City of Memphis Approval for Discharge of 15,000-Gallons of<br>Decontamination Wastewater .....                                      | 4-May-98               |
| City of Memphis Approval of the Modification to the Discharge<br>Monitoring of the Groundwater Generated During System Start-up..... | 24-Jun-98              |
| Final Sewer Connection Design & Traffic Plan from the City of Memphis .....                                                          | 17-Aug-98              |
| Revision to Industrial Wastewater Discharge Agreement.....                                                                           | 2-Dec-98               |
| Revision to Industrial Wastewater Discharge Agreement.....                                                                           | 8-Dec-98               |
| Revision to Industrial Wastewater Discharge Agreement.....                                                                           | 28-Jan-99              |
| Submittal of As-Built Drawings of the Groundwater Extraction System.....                                                             | 12-Apr-99              |
| <br><b><i>Construction of Groundwater Extraction System</i></b>                                                                      |                        |
| Baseline Site Survey of Dunn Field.....                                                                                              | 12-Nov-97 to 26-Nov-97 |
| Initial EM-31 and EM-61 Geophysical Survey .....                                                                                     | 18-Dec-97 to 19-Dec-97 |
| OHM Site Mobilization .....                                                                                                          | 5-Jan-98               |
| Construction of Temporary Facilities .....                                                                                           | 6-Jan-98 to 12-Jan-98  |
| Collection of 26 Soil Samples along the 2550 Foot Pipeline Trench<br>for Disposal Characterization Analyses.....                     | 13-Jan-98 to 14-Jan-98 |
| Installation of Erosion Control Measures .....                                                                                       | 29-Jun-98 to 6-Jul-98  |
| Installation of Seven Recovery Wells.....                                                                                            | 21-Jan-98 to 12-Feb-98 |
| Expanded EM-31 and EM-61 Geophysical Survey .....                                                                                    | 20-Jan-98 to 21-Jan-98 |

**DESCRIPTION OF ACTIVITY OR EVENT****DATE**

|                                                                                                                               |                                   |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Collection of a Sample of Crushed Glass Vials from the<br>NW Corner of Dunn Field for Disposal Characterization Analyses..... | 16-Feb-98                         |
| Development of Recovery Wells .....                                                                                           | 16-Feb-98 to 20-Feb-98            |
| Collection of Post-Development Groundwater Samples<br>from the Recovery Wells .....                                           | 18-Feb-98 to 20-Feb-98            |
| Trenching/Installation/Backfilling of Underground<br>Pipeline System.....                                                     | 18-Feb-98 to 2-Apr-98             |
| Off-Site T&D of Soil, Soil Cuttings and PPE .....                                                                             | 20-Feb-98 to 28-Apr-98            |
| Performance of Capacity Tests on Recovery Wells.....                                                                          | 25-Feb-98 to 13-Mar-98            |
| Collection of Post-Capacity Test Groundwater Samples<br>From the Recovery Wells .....                                         | 2-Mar-98 to 17-Mar-98             |
| Discharge of Development/Capacity Test Water to POTW .....                                                                    | 6-Mar-98 to 28-Mar-98             |
| Re-Installation and Development of Recovery Well RW-5 (RW-5A) .....                                                           | 16-Mar-98 to 23-Mar-98            |
| Abandonment of Recovery Well RW-5 .....                                                                                       | 19-Mar-98                         |
| Construction of Concrete Pads at Recovery Wells, Control Building<br>and Meter/By-Pass Station.....                           | 7-Apr-98 to 18-May-98             |
| Installation of Aboveground Piping, Electrical, Instrumentation & Controls<br>and Heat Tracing.....                           | 14-Apr-98 to 20-Jul-98            |
| Pressure Testing of HDPE and CPVC Piping.....                                                                                 | 17-Apr-98, 8-May-98 to 9-May-98   |
| Installation of Control Building .....                                                                                        | 13-May-98 to 14-May-98            |
| Installation of Main Power Service.....                                                                                       | 2-Jun-98 to 12-Jun-98             |
| Re-Development of Recovery Well RW-5A .....                                                                                   | 3-Jun-98 to 5-Jun-98              |
| Final Site Restoration.....                                                                                                   | 16-Jun-98 to 8-Jul-98 & 14-Oct-98 |
| Pressure Testing of HDPE and CPVC Piping.....                                                                                 | 13-Aug-98                         |
| Construction of Sewer Connection .....                                                                                        | 10-Sep-98 to 29-Sep-98            |
| System Functional Testing and Flushing .....                                                                                  | 28-Sep-98 to 6-Oct-98             |
| System Performance Testing .....                                                                                              | 7-Oct-98 to 15-Oct-98             |
| Full System Test for the City of Memphis.....                                                                                 | 14-Oct-98                         |
| Facility Operation .....                                                                                                      | 15-Oct-98 to 30-Oct-98            |
| Collection of System Startup Testing Week 1 Effluent Sample .....                                                             | 19-Oct-98                         |
| Collection of System Startup Testing Week 2 Effluent Sample .....                                                             | 26-Oct-98                         |
| Shutdown System Following Confirmation of Facility Operation .....                                                            | 30-Oct-98                         |
| <br><b><i>System Operation and Maintenance (through 31-May-99)</i></b>                                                        |                                   |
| Baseline Groundwater Level Gauging.....                                                                                       | 3-Nov-98 to 4-Nov-98              |
| Begin Full-time Operation of the Groundwater Extraction System .....                                                          | 4-Nov-98                          |
| Daily Water Level Measurements from Monitoring Wells .....                                                                    | 5-Nov-98 to 18-Nov-98             |

| <b><u>DESCRIPTION OF ACTIVITY OR EVENT</u></b>                        | <b><u>DATE</u></b>     |
|-----------------------------------------------------------------------|------------------------|
| Weekly Collection of System Effluent Samples (Week 1 to Week 4) ..... | 9-Nov-98 to 30-Nov-98  |
| Installation of Secondary In-Line Check Valves .....                  | 19-Nov-98              |
| Bi-Weekly Water Level Measurements from Monitoring Wells.....         | 20-Nov-98 to 18-Dec-98 |
| Nov-98 System Operations Report .....                                 | 9-Dec-98               |
| Pump and Motor Removal and Re-Installation                            |                        |
| at Recovery Well RW-9 .....                                           | 16-Dec-98 to 22-Dec-98 |
| Collection of System Effluent Sample – Week 7 .....                   | 18-Dec-98              |
| Bi-Monthly Water Level Measurements from Monitoring Wells .....       | 31-Dec-98 to 23-May-98 |
| Dec-98 System Operations Report.....                                  | 8-Jan-99               |
| Collection of System Effluent Sample – Week 13 .....                  | 26-Jan-99              |
| Collection of First Year's First Quarter Groundwater Samples from     |                        |
| Monitoring Wells and Recovery Wells.....                              | 1-Feb-99 to 5-Feb-99   |
| Jan-99 System Operations Report.....                                  | 9-Feb-99               |
| Collection of System Effluent Sample – Week 17 .....                  | 22-Feb-99              |
| Collection of Effluent Samples for Mercury .....                      | 22-Feb-99 to 25-Feb-99 |
| Feb-99 System Operations Report .....                                 | 10-Mar-99              |
| Collection of System Effluent Sample – Week 21 .....                  | 26-Mar-99              |
| Mar-99 System Operations Report .....                                 | 9-Apr-99               |
| Collection of System Effluent Sample – Week 26 .....                  | 27-Apr-99              |
| Apr-99 System Operations Report.....                                  | 10-May-99              |
| Collection of System Effluent Sample – Week 30 .....                  | 24-May-99              |
| Collection of First Year's Second Quarter Groundwater Samples from    |                        |
| Monitoring Wells and Recovery Wells.....                              | 24-May-99 to 25-May-99 |
| May-99 System Operations Report.....                                  | 11-Jun-99              |

### **3.0 GROUNDWATER EXTRACTION SYSTEM CONSTRUCTION**

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OHM mobilized the project in January 1998. Prior to mobilization, a site survey and a geophysical survey were conducted. An expanded geophysical survey was conducted in January 1998. Recovery well installation began in January 1998, and the installation of the pipeline began in February 1998. Major construction activities ended in July 1998. Construction of the sanitary sewer connection was conducted in September 1998, and system functional and operational testing was conducted in October 1998. The construction was complete on October 30, 1998, and the system was operational and ready for startup at that time.

#### **3.1 GEOPHYSICAL SURVEYS**

The initial geophysical investigation (EM-31 and EM-61 surveys) was conducted on December 18 and 19, 1997, on a 1450 feet long by 50 feet wide corridor located along the northwest portion of Dunn Field where OHM would be conducting intrusive activities associated with the installation of the interim groundwater remediation system. This corridor corresponds to the western and northern boundaries of Area B identified on Map M-3 in the Archives Search Report, dated January 1995.

The area of the expanded geophysical investigation was the remainder of the site where OHM would be conducting intrusive activities. This area measured approximately 1170 feet long by 50 feet wide along the north, northeast, west, and southwest portions of the site. This corridor corresponds to the northern boundary of Area C and the northwestern boundary of Area A, identified on Map M-3 of the Archives Search Report. The purpose of the initial and expanded investigations was to identify unexplained subsurface geophysical anomalies that could potentially represent covered pits/trenches and/or burial sites within the referenced area of planned intrusive activities.

The results of the geophysical surveys were presented in the OHM Technical Memorandum dated January 6, 1998, and February 4, 1998, respectively. Copies of these technical memorandums are included in *Appendix A*.

#### **3.2 SOIL BORINGS FOR DISPOSAL CHARACTERIZATION**

On January 13 and 14, 1998, 26 soil samples (designated SB-001 to SB-026) were collected from each 100 foot segment of the proposed 2550 foot pipeline trench for analytical disposal

characterization. The purpose of the soil sampling and analyses was to determine if the soil to be excavated from the pipeline trench was hazardous or non-hazardous waste, as defined by 40 CFR 261. The results of the soil-sampling program from the proposed pipeline trench were presented in the OHM Technical Memorandum, dated February 9, 1998. A copy of this technical memorandum is included in *Appendix B*.

According to the results, TCLP PCE was detected at a concentration of 0.83 mg/L in sample SB-015. This concentration exceeds the regulatory level of 0.7 mg/L. It was recommended that, in accordance with Appendix A of the Technical Specifications, the excavated soil associated with boring SB-015 (an approximate length of 200 feet, depth of 4 feet and width of 2 feet) should be excavated and stockpiled near the trench. This soil should be re-sampled for TCLP PCE to determine if it must be handled as a hazardous waste; however, based on the analytical data, the excavated soil from the remaining portion of the pipeline trench could be disposed at a RCRA subtitle D landfill as non-hazardous waste.

In addition to the laboratory analytical results of the soil samples, buried manmade materials were encountered during the soil sampling. In three soil boring locations (SB-013, -014 and -015) relatively small metal canister with glass vials were uncovered. The metal canisters were approximately 1.5-inches in diameter and approximately three inches long. Where intact, the canisters contained four small glass vials with cork stoppers. A white liquid or white crystalline material was observed in some of the vials. The metals canisters were observed to be in fair to poor condition; many were completely rusted through. Soil boring locations SB-013, -014 and -015 were located within an area of unexplained geophysical subsurface anomalies (see OHM Technical Memorandum, dated January 6, 1998). A CEHNC CWM/UXO representative (Mr. Hank Hubbard) determined that the encountered metals canisters and glass vials were not suspect CWM or UXO. It was recommended that the contents of the metal canisters and glass vials be analyzed to determine the proper transportation and disposal of these materials

### 3.3 GLASS VIAL SAMPLING AND ANALYSIS

On February 16, 1998, a sample of crushed glass vials was collected from the northwest portion of Dunn Field for analytical characterization. Numerous glass vials (and contents) were collected from the northwest portion of Dunn Field, and were crushed into soil collected from the area where the metal canisters and glass vials were found buried. The sample was analyzed for CWM degradation compounds, explosives, TCL organics, TAL inorganics,



chlorinated pesticides and herbicides, PCBs, total cyanide, full TCLP organic and inorganic list, reactivity, corrosivity, and ignitability.

Based on the analytical data, the excavated soil with crushed metal canisters/glass vials could be disposed at a RCRA subtitle D landfill as non-hazardous waste. No chemical warfare agent compounds, explosive residuals, pesticides, herbicides, or PCBs were detected in the sample. Trace total metals and organics were detected; however, the concentrations of the detected compounds were below USEPA Region 3 residential risk based concentrations.

The results of the glass vial sampling and analyses were presented in the OHM Technical Memorandum, dated April 17, 1998. A copy of this technical memorandum is included in *Appendix C*.

### 3.4 RECOVERY WELL INSTALLATION

Prior to the installation of the seven recovery wells on Dunn Field, a Recovery Well Construction Permit (#98-009, dated January 12, 1998) was obtained from the Memphis and Shelby County Health Department. A copy of this permit is included in *Appendix D*.

Installation of the wells began on January 21, 1998, and continued through February 12, 1998. The wells were installed by Boart Longyear Company, Environmental Drilling Division from Little Falls, Minnesota. The wells were installed via the use of rotasonic drilling techniques. A 12-inch diameter drill-bit and casing were advanced to the termination depth at each location, and a 6-inch diameter stainless steel well screen and casing were installed. Continuous soil samples were collected and logged in the field by an OHM State of Tennessee Professional Geologist. The field soil boring logs for each of the seven wells are provided in *Appendix D*. Well locations and construction details are provided as Figures 2 and 3 in the As-built Record Drawings submitted by OHM for this project. A copy of the as-built drawings is included in *Appendix J* of this report.

The soil cuttings generated from each of the recovery wells were transferred to 55-gallon drums, which were staged on Dunn Field for subsequent off-site disposal. Each set of drummed cuttings from each well was sampled for disposal characterization. The laboratory analytical results of the soil cutting samples are included in *Appendix E*.

Following installation, each recovery well was developed and a capacity pumping test was performed in accordance with the Technical Specifications and Appendices, and Final Design, dated August 1997. Water generated from the development and capacity tests was staged in 20,000-gallon frac tanks. Following development and capacity tests, groundwater samples were collected for laboratory analyses from the wells. In addition, water staged in the frac tanks were also sampled and analyzed. The laboratory analytical results of the groundwater samples are included in *Appendix F*.

During development of recovery well RW-05, the pH of the groundwater was 11.5 to 11.8 standard units and flow was significantly restricted (<2 gpm). This condition is indicative of cement grout contamination in the screened portion of the well. The color of the groundwater following development was a white - light greenish, grey color, which is not indicative of the tan to orange sands found at the depth of the screened interval of well RW-05. Recovery wells RW-03, -04, -06, -07, -08 and -09 were developed and each of these six wells had a relatively good yield (10-12 gpm, which was the limit of the development pump) and each well developed until clear. The pH of the groundwater from these wells was 6.3 to 6.5. RW-05 was deemed unacceptable by OHM and the USACE.

Between March 16 and March 23, 1998, a new recovery well RW-5 was installed 15 feet north of the original RW-5. The original RW-5 was abandoned in-place under Permit #98-039 (see *Appendix D*). The construction details of RW-5A are reflected in the As-built Record Drawings and the boring log is included in *Appendix D*. Upon development, no evidence of grout contamination was observed; however, yield from the well was <1 gpm. OHM redeveloped recovery well RW-5A on June 3, 4 and 5, 1998. At the end of the first day there was no improvement in well yield (<1 gpm). At the end of the second day, the flow rate was approximately 1.5 gpm. At the end of the third day, a flow rate of approximately 5 to 5.5 gpm was achieved with a relatively low turbidity (<10 NTUs).

### 3.5 CONVEYANCE SYSTEM CONSTRUCTION

The construction and assembly of the pipeline, master control building, down-hole pumps and motors, wellheads, electrical components, and the instrumentation and controls system was performed in accordance with the Technical Specifications and Appendices, and Final Design, dated August 1997. As-built Record Drawings of the groundwater extraction system are included in *Appendix J* of this report.

The pipeline trench was excavated with a track-hoe. Once the soils had been excavated and removed (for off-site disposal) from the pipeline trench, and the piping installed, OHM began backfill activities. All backfilling and site restoration activities were conducted in accordance with the Technical Specifications. One sample of the backfill material was collected prior to the acceptance of the material on-site. The backfill sample was submitted to the laboratory for the following analyses: TCL pesticides/PCBs/volatiles/semi-volatiles, TAL metals and cyanide. The laboratory report is included in *Appendix H*.

Pressure testing of the system was conducted on April 15 and 17, 1998, May 7 and 8, 1998, and on August 13, 1998. The tests were found to be within acceptable criteria. The testing protocol and results are documented in *Appendix I*.

The construction of the underground pipeline connection to the City of Memphis sanitary sewer system was conducted from September 10 to September 29, 1998. Roto Rooter of Memphis, Tennessee conducted the installation of the sewer tie-in, under subcontract with OHM. The construction of the sewer connection was performed in accordance with the design from the City of Memphis, Division of Public Works, dated August 12, 1998. The work was conducted at the intersection of Person Avenue and Hayes Street, outside of the northeast corner of Dunn Field. On October 14, 1998, an inspection by representatives of the City of Memphis, Division of Public Works was conducted to determine that the flow into the manhole at Person Avenue and Hayes Street from the groundwater extraction system was acceptable. The groundwater extraction system was operated at a total effluent flow of 300 gpm, and the flow into the manhole was found to be acceptable by the City.

Photo documentation of the construction of the groundwater extraction system is included in *Appendix K* of this report. The photographs document site activities from December 1997 through September 1998.

### **3.6 WASTE TRANSPORTATION AND DISPOSAL**

Groundwater and wastewater generated during the construction phase of the project was temporarily stored in 20,000-gallon frac tanks stage on Dunn Field. OHM received approval from the City of Memphis for a one time 85,000-gallon discharge and a one time 15,000-gallon discharge to the sanitary sewer at the manhole at Kyle Street along the west property line of Dunn Field. Copies of the City of Memphis approval letters and the analytical summary of the discharge water are included in *Appendix L*.

Soils generated during the pipeline trenching activities were directly loaded for off-site transportation and disposal. The State of Tennessee Department of Environment and Conservation (TDEC), Division of Solid Waste Management granted approval for the disposal of the soil generated from the trenching and well installation, at the BFI South Shelby RCRA subtitle D landfill. The soil excavated from the pipeline trench at the location of SB-15 was stockpiled and re-analyzed. The results indicated that the TCLP PCE concentrations were non-hazardous (see *Appendix G* for the analytical results); therefore, the soil was loaded out with the other soils from the trenching operation. In addition, TDEC approved the disposal of the soil containing the referenced glass vials, at the BFI South Shelby RCRA subtitle D landfill. A total of approximately 2035 tons of soil and debris was transported off-site to the BFI South Shelby RCRA subtitle D landfill between February 20, 1998, and April 28, 1998. Copies of the TDEC approval letters, the OHM T&D log, and the non-hazardous special waste manifests are included in *Appendix L*.

## ***4.0 SYSTEM OPERATION AND MAINTENANCE (1<sup>ST</sup> SIX MONTHS)***

---

In November 1998, the first year of system operation and maintenance (O&M) was implemented in accordance with the Operation and Maintenance Plan, dated May 1998, prepared by CH2MHILL for the USACE, and the City of Memphis Industrial Wastewater Discharge Agreement. The first six months of O&M (November 1998 through May 1999) are documented in this report.

A copy of the May 1, 1998, Industrial Wastewater Discharge Agreement between the City of Memphis and Memphis Depot Caretaker, and subsequent revisions, is included in *Appendix M* of this report. The Monthly System Operations Reports (from November 1998 to May 1999) are included in *Appendix N*. The Monthly Operations Reports contain system effluent analytical results, O&M summaries for each month, and total effluent discharge to the POTW. A comprehensive Annual Operations Report will be submitted following the first year of O&M (December 1999), documenting: (1) the operation, monitoring, and maintenance activities conducted during the first year; (2) the volume of groundwater extracted for each recovery well and for the system; (3) the trends in groundwater and effluent quality, and system performance; and (4) recommendations for continued system operation

### **4.1 WATER LEVELS**

In accordance with the O&M Plan, baseline water level measurements were collected prior to system startup. After startup, water level measurements were conducted daily for the first two weeks of system operation from a select number of monitoring wells located both on and off Dunn Field. Bi-weekly measurements were conducted for the next month of operation. The gauging frequency then went to bi-monthly for the remainder of the first year. The first six months of measurement data was submitted in electronic format to the USACE, DLA, TDEC and USEPA under separate cover.

### **4.2 PUMPING RATES**

Pumping rates were recorded daily for the first two weeks of system operation from each recovery well and from the total system. Bi-weekly measurements were conducted for the next month of operation. Data logging and the telemetry system became operational on January 16, 1999. Pumping rates were recorded hourly from January 16, 1999 to April 1, 1999, when the data logger malfunctioned due to a power and/or overheating surge. The data

logger was repaired and back on-line on May 6, 1999, where it recorded hourly through May 31, 1999. Pumping rates were recorded bi-weekly in the field from April 1, 1999 to May 6, 1999. The first six months of pumping rate data was submitted in electronic format to the USACE, DLA, TDEC and USEPA under separate cover. Total system pumping rates are summarized in the Monthly Operations Reports included in *Appendix N*.

#### 4.3 SYSTEM EFFLUENT

Effluent samples were collected on a weekly basis during the first six weeks of system operation. This included two weeks of operational testing in October 1998, and the first four weeks of system operation. Effluent samples have been collected on a monthly basis from December 1998 through May 1999. The samples are analyzed in accordance with Section F.1 of the Industrial Wastewater Discharge Agreement, which includes flow rate (instantaneous and totalized), pH, VOCs (SW846 8260B), SVOCs (SW846 8270C), and TAL metals (EPA 200 series). In addition, effluent samples were collected on four consecutive days in February 1999, and were analyzed for mercury at the request of the City of Memphis. The results of the effluent samples collected from October 1998 to May 1999 are presented in the Monthly Operations Reports included in *Appendix N*.

#### 4.4 SYSTEM PERFORMANCE

The data collected during the first six months of operation shows an overall lowering of the groundwater elevation at Dunn Field. This lowering of the groundwater elevation has resulted in the pumping rates having to be decreased in order to maintain a constant water level above the intake of the pumps. The total system pumping rate during the first week of operation was >200 gpm. The pumping rate dropped to 110 gpm in the beginning of February 1999 and to <90 gpm by mid-May 1999. The following table details this decrease in pumping rates from November 1998 to May 1999 (values are in gpm):

| Well           | 6-Nov-98 | 1-Feb-99 | 16-May-99 |
|----------------|----------|----------|-----------|
| RW-3           | 23       | 11       | 7         |
| RW-4           | 19       | 9        | 5         |
| RW-5           | 6        | 5        | 5         |
| RW-6           | 28       | 15       | 11        |
| RW-7           | 22       | 11       | 7         |
| RW-8           | 48       | 27       | 25        |
| RW-9           | 56       | 32       | 29        |
| Total Effluent | 202      | 110      | 89        |

As a result, system instrumentation and controls, groundwater recovery pumps/motors, and flow meters have been operating at the low-end (or below) of the manufacturers' recommended operating range. Existing system components are being evaluated and to determine if modifications and/or replacement is necessary for the efficient long-term operation. The components being evaluated include pumps and motors, flow meters and valves, transducers, and associated aboveground piping.

# TAB

Appendix A-1





OHM Remediation  
Services Corp.  
A Subsidiary of OHM Corporation

## TECHNICAL MEMORANDUM

5445 Triangle Parkway, Suite 400, Norcross, Georgia

OHM Project No 20022

**To:** John W. Rollyson, P.E., Area Engineer  
USACE/Tennessee Area Office

**From:** Stephen Offner, P.G., OHM/Norcross *STB*

**PC:** Dorothy Richards, USACE/Huntsville  
Dana Conkin, USACE/Tennessee Area Office  
Angelo Liberatore, OHM/Norcross

Glenn L. Kaden, DDMT  
John Lore, OHM/Norcross

**Re:** Results of the Geophysical Investigation  
Dunn Field, Defense Depot, Memphis, Tennessee  
Contract No. DACA45-96-D-0014  
Delivery Order No. 0007

**Date:** January 6, 1998

On December 18 and 19, 1997, OHM's subcontractor, NAEVA Geophysics, Inc. of Charlottesville, Virginia, conducted an EM-31 and EM-61 geophysical investigation at Dunn Field, DDMT. This investigation was conducted in accordance with the scope of work outlined in the OHM letter to the USACE, dated December 10, 1997.

The area of investigation is a corridor approximately 1450 feet long by 50 feet wide along the northwest portion of the site, where OHM will be performing intrusive activities associated with the installation of the interim groundwater remediation system. This corridor corresponds to the western and northern boundaries of Area II identified in the Archives Search Report (ASR), dated January 1995. A copy of the Figure 11 from the ASR which details the Dunn Field disposal and storage sites is included as *Attachment A*. The purpose of the investigation was to identify unexplained subsurface geophysical anomalies that could potentially represent covered pits/trenches and/or burial sites within the referenced area.

Two separate grid areas (identified as Area 1 and Area 2) were established to investigate the referenced area. Area 1 is located along the northwestern boundary of the northwest portion of Dunn Field. Area 2 is located along the western boundary of the northwestern portion of the site. The report of the investigation findings, as prepared by NAEVA, is included as *Attachment B*. The report includes the technical approach, methodologies used, QA/QC procedures, survey results and conclusions, and supporting graphics.

According to the findings, there were multiple unexplained anomalies in Area 1 that appear to fall in close proximity to the proposed pipeline trench. These anomalies appear in a contiguous area from the proposed location of soil boring SB-013 (NAEVA station 100N) to the approximate midway location between proposed boring SB-015 and SB-016 (NAEVA station 350N). This area is approximately 250 feet in length (see Attachment B).

In Area 2, there are unexplained anomalies located on or near the proposed pipeline trench, that appear to resemble a former trench feature that has been filled with moderate amounts of buried metal. This area of concern in Area 2 begins near the midway point between proposed boring locations SB-005 and SB-006 (NAEVA station 260N) and continuous through the location of proposed boring SB-008 (NAEVA station 500N). This area of concern appears to correspond with the location of burial site no. 12 (see Attachment A) identified in the ASR as being the disposal site of sulphuric/hydrochloric acid in 1967. In addition, there are isolated, smaller anomalies located near the proposed pipeline trench from NAEVA station 510N through 620N (see Attachment B).

In conclusion, there are unexplained subsurface anomalies located in the area of the proposed pipeline trench and groundwater recovery wells. Based on this information, an addendum to the Site Specific Health and Safety Plan is forthcoming from OHM addressing intrusive work in the identified areas of the subsurface anomalies.

# ATTACHMENT A

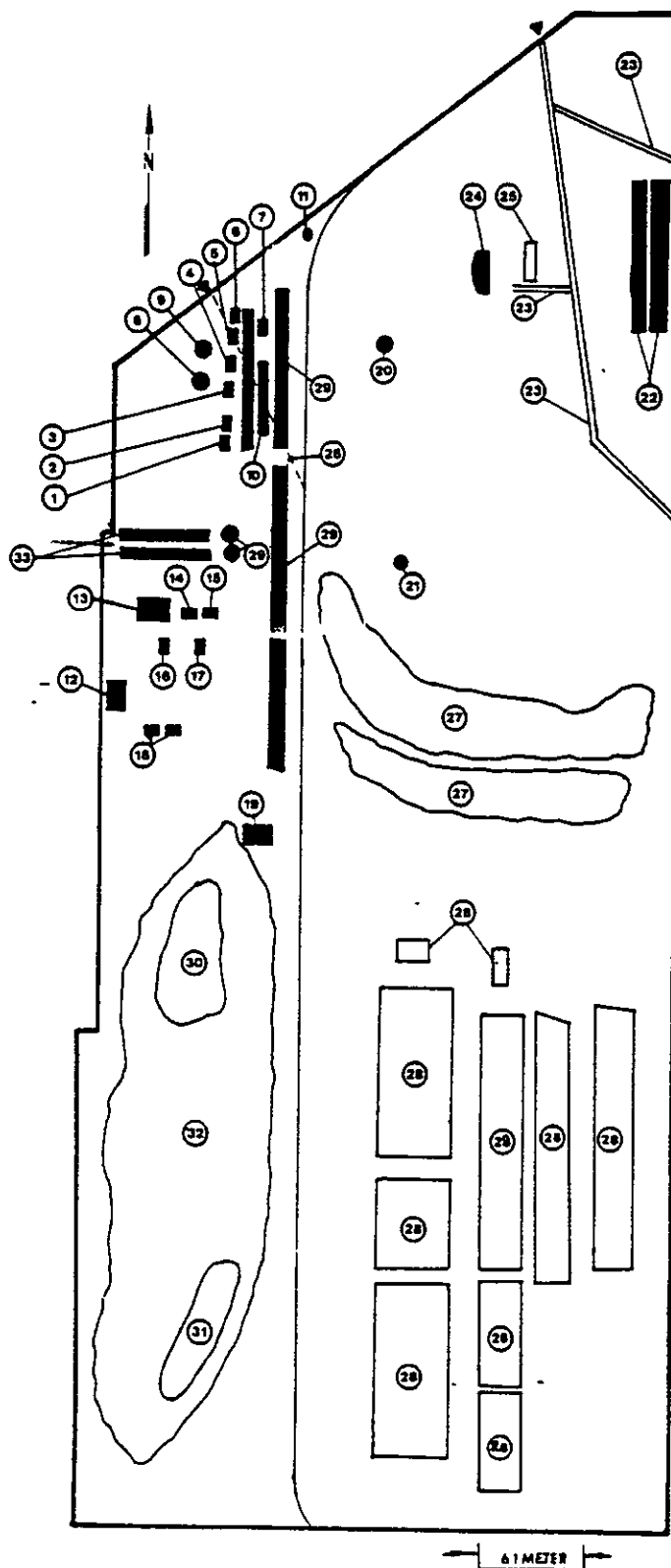


Fig. 11 Dunn Field Disposal and Storage Sites  
(See Table 7 for Descriptions of Sites)

THAMA-G.1/VTB2-7.1  
5/5/82

Table 7. Description of Dunn Field Disposal and Storage Sites  
(Locations of Sites are Shown on Fig. 11)

| Location            |                                                                                                         |
|---------------------|---------------------------------------------------------------------------------------------------------|
| <u>Burial Sites</u> |                                                                                                         |
| 1                   | Training sets, nine each, mustard and Lewisite, 1955                                                    |
| 2                   | 7 pounds (lbs) ammonium hydroxide, 1 gal glacial acetic acid, 1955                                      |
| 3                   | 3,000 quarts (qt) chemicals, 5 cubic feet (ft <sup>3</sup> ) ortho-tolidine dihydrochloride, 1955       |
| 4                   | Thirteen 55-gal drums oil, grease, and paint, date unknown                                              |
| 5                   | Thirty-two 55-gal drums oil, grease, and thinner, 1955                                                  |
| 6                   | 3 ft <sup>3</sup> methyl bromide, 1955                                                                  |
| 7                   | 40,037 units ointment (eye), 1955                                                                       |
| 8                   | 1,700 bottles fuming nitric acid, 1954                                                                  |
| 9                   | 3,768 1-gal cans methyl bromide, 1954                                                                   |
| 10                  | Ashes and metal refuse from burning pit, 1955                                                           |
| 11                  | 1,433 1-ounce (oz) bottles trichloroacetic acid, 1965                                                   |
| 12                  | Sulphuric/hydrochloric acids, 1967                                                                      |
| 13                  | 32 cubic yards mixed chemicals and acid, 900 lbs detergent, 7,000 lbs aluminum sulphate, 200 lbs sodium |
| 14                  | Sodium, 1968                                                                                            |
| 15                  | Sodium phosphate, 1968                                                                                  |
| 16                  | Acid, 1969                                                                                              |
| 17                  | Herbicide, cleaning compound, medical supplies, 1969                                                    |
| 18                  | Acid, date unknown                                                                                      |
| 19                  | Hardware (nuts and bolts)                                                                               |
| 22                  | XXCC3 impregnite                                                                                        |
| 29                  | Food supplies                                                                                           |
| 30                  | Burial site prior to bauxite storage; foods, construction debris burned; 1948                           |
| 33                  | 14 burial pits containing sodium phosphate, sodium, acid, medical supplies, chlorinated lime; 1970      |
| <u>Burn Sites</u>   |                                                                                                         |
| 21                  | Sanitary waste, smoke pots, CN canisters                                                                |
| 31                  | Old burn area, 1946                                                                                     |

THAMA-G.1/VTB2-7.2  
5/5/82

Table 7. Description of Dunn Field Disposal and Storage Sites  
(Locations of Sites are Shown on Fig. 11)  
(Continued, Page 2 of 2)

---

Location

---

Storage Sites

|    |                   |
|----|-------------------|
| 25 | Pesticide storage |
| 27 | Bauxite           |
| 28 | Fluorspar         |
| 32 | Bauxite, 1942-72  |

Other Sites

|    |                    |
|----|--------------------|
| 20 | Asphalt dump       |
| 23 | Open drain ditches |
| 24 | Pistol range       |
| 26 | Buried drainpipe   |

---

# **ATTACHMENT B**



## Subsurface Geophysical Surveys

GPR  
MAGNETICS  
ELECTROMAGNETICS  
SEISMICS  
RESISTIVITY  
UTILITY LOCATION  
BOREHOLE LOGGING  
BOREHOLE CAMERA  
STAFF SUPPORT

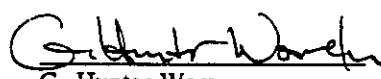
## Results of Geophysical Investigation

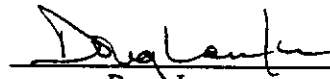
**Memphis Defense Depot  
Memphis, Tennessee**

Prepared for: **OHM Remediation Services Corp.  
Norcross, Georgia**

Dates of Investigation: December 18-19, 1997

Prepared by:

  
G. Hunter Ware  
Senior Geophysicist

  
Doug Lam  
Geologist

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Survey Grid

Methods

Geophysical Data Processing

Quality Assurance/Quality Control

Survey Results

Conclusions

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| Figure 2 | Area 1 EM-31 Quadrature Data Contour Map |
| Figure 3 | Area 1 EM-31 In-phase Data Contour Map   |
| Figure 4 | Area 1 EM-61 Bottom Coil Contour Map     |
| Figure 5 | Area 2 Grid/Culture Map                  |
| Figure 6 | Area 2 EM-31 Quadrature Data Contour Map |
| Figure 7 | Area 2 EM-31 In-phase Data Contour Map   |
| Figure 8 | Area 2 EM-61 Bottom Coil Contour Map     |

Appendix A Area 1 Repeated Lines

Appendix B Area 2 Repeated Lines

### NEW YORK

P.O. Box 576  
Tappan  
New York 10983  
(914) 268-1800  
(914) 268-1802 Fax

### VIRGINIA

P.O. Box 7325  
Charlottesville  
Virginia 22906  
(804) 978-3187  
(804) 973-9791 Fax



## MEMPHIS DEFENSE DEPOT MEMPHIS, TENNESSEE

### Introduction

OHM Remediation Services Corp. contracted NAEVA Geophysics to conduct a geophysical investigation at the Memphis Defense Depot in Memphis, Tennessee. The area of investigation was a corridor approximately 1400 feet by 50 feet in the Northwest corner of the Depot, where a proposed pipeline is to be buried. The objectives of the investigation were to identify geophysical anomalies that could represent covered pits, trenches, or burial sites.

The area of investigation is bordered on the north and west sides by a chain-link fence and to the northeast by a single track railroad spur. Power poles with overhead electric ran parallel to the fencelines and two larger high tension towers crossed the southernmost portion of the western area. Numerous steel monitor wells were located within the survey area.

Field work was conducted on December 18<sup>th</sup> and 19<sup>th</sup>, 1997. Site orientation and discussions with Steve Offner concerning survey boundaries, line spacing and cultural features took place the morning of the 18<sup>th</sup>. That morning and afternoon, lines were established and marked across the area, and a grid/culture map was prepared. Geophysical surveying with the EM-31 was conducted during 18<sup>th</sup> and 19<sup>th</sup>, while surveying with the EM-61 was conducted on the 19<sup>th</sup>.

### Survey Grid

Two separate grids (Area 1 and Area 2) were established to investigate the proposed trench line (Figures 1 and 5). Area 1 is the northern-most grid with survey lines oriented in a northeast direction corresponding to the bearing of the proposed trench line in this area. Coordinates 100E + 100N were established to correspond with the wooden stake labeled "PIN" marking the principle turning point of the proposed trench. Line 100E was run coincident with the center line of the trench. Control stations were marked with pin flags at 100 foot intervals and with paint at 50 foot intervals along lines spaced 10 feet apart.

Area 2 was the southern-most grid, with survey lines oriented in an approximate north direction. Lines were established at 10 foot spacings, with control stations marked at 50 foot

south of the high voltage power line) to 1000N (10 feet north of the "PIN" at principle bend in the proposed trenchline). Line 100E of Area 2 follows wooden stakes spaced 100 feet apart along the proposed trench to approximately 625N, where the proposed trench takes a small deviation to the west.

## Methods

Non-intrusive surveys of the AOC were conducted utilizing a Geonics EM-31 and EM-61. The Geonics EM-31 is an electromagnetic frequency domain instrument primarily used to measure ground conductivity. Anomalous changes in conductivity could represent areas containing buried waste. The Geonics EM-61 is an electromagnetic instrument designed to detect shallow ferrous and non-ferrous metallic objects with good spacial resolution. EM-61 anomalies could represent metal objects incorporated within buried waste materials.

The EM-31 measures the quadrature (conductivity) and in-phase components of the induced electromagnetic field, which are recorded simultaneously. The quadrature is a measure of electrical conductivity, expressed in units of milliSiemens/meter. Electrical conductivity in this case is a function of permeability, conductivity of included soil moisture, degree of saturation and compaction, and subsurface material type. While absolute values of terrain conductivity are not usually diagnostic, their spatial variations are important in identifying areas containing foreign material or disturbed material. The in-phase component is primarily used to detect buried metal, using relative units of parts per thousand (ppt). A negative response is most commonly expected over areas containing shallow buried metal debris although a positive response can be exhibited. The EM-31 was operated in vertical dipole mode, with readings collected at 5-foot intervals along lines spaced 5 feet apart. Fiducial markers were tied to the data at control stations to accurately locate the data along lines.

The EM-61 system is a time domain metal detector with very high sensitivity and resolution much greater than the EM-31. The system consists of two air-cored coils, each 1 meter in diameter. Secondary voltages induced in both coils are measured in millivolts. The coils are arranged so that the larger coil (EM source and receiver) lies 40 cm below the second receiver coil. Because the upper coil is less sensitive than the lower coil, only the lower coil data was used for this investigation. The system was operated in the wheel mode, where

distance along profiles is recorded by an internal odometer markers were also entered into the data at control stations to further ensure accuracy. Data was collected every 0.67 feet along lines spaced 5 feet apart.

### **Geophysical Data Processing**

Data collected with the EM-31/61 were transferred from the palmtop computer and polycorder to a laptop PC for processing with Geonics Dat 31/61 software. Data were reviewed initially as profiles, where distances were adjusted to fiducial marks, and then prepared for contouring using Golden's Surfer program. Contour maps were created using a variety of contour intervals to determine the most effective presentation. For the EM-31, a contour interval of 5 milliSiemens/meter (mS/m) was selected for the quadrature data, providing good definition of detected features. An interval of 2 parts per thousand (ppt) was selected to present in-phase data. A contour interval of 5 millivolts (mV) was selected for the EM-61 data to show all significant features while staying above the noise level.

### **Quality Assurance/Quality Control**

Calibration checks of the geophysical instruments were performed each morning before initiation of surveying in an area free of cultural interference. For the EM-31, calibration was done in accordance with the manufacturers recommendations. Repeats of line 110E in Area 1 and line 100E in Area 2 were run and plotted in profile and are provided in Appendices A and B.

Initial calibration of the EM-61 on the morning of the 18<sup>th</sup> revealed a problem with background levels of the bottom coil. Additionally, a test run over a 12 lb. iron sphere failed to show the expected response. The survey was suspended until another instrument could be delivered to the site the following day. The replacement EM-61 was checked for calibration on the morning of the 19<sup>th</sup> and showed proper background zeroing and response over the test object. Repeats of a portion of line 100E in Area 1 and line 105E in Area 2 were measured and are provided in Appendix A and B.

## Survey Results

### Area 1

The EM-31 conductivity and in-phase data (Figures 2 and 3) defined several anomalies that cannot be explained by cultural features. One such anomaly, most outstanding in the conductivity data, is centered at 110E + 285N and fall close to the proposed trench line. The remainder of the unexplained anomalies are small and are located off the proposed trench line. No larger features that could represent trenches or pits are evident in the data.

The EM-31 data clearly shows evidence of several cultural features such as the fenceline along the north side of the area, a railroad spur, monitor wells, and a concrete pipeline crossing at approximately 230N. Refer to Figure 1 for identification of all known cultural features.

The EM-61 data (Figure 4) shows significantly large areas of buried metal. There are two areas within the south half of the survey block of elevated response in the EM-61 data that are poorly resolved or not evident in the EM-31 data. The first area is located on lines 110E to 140E between stations 120N and 220N. The second area is located on lines 100E to 140E between stations 270N and 350N. Because there is poor correlation in these areas between the EM-61 and the EM-31, it is reasoned that these areas may be characterized by small shallow buried metallic objects. The majority of the buried metal appears to be to the southeast, or off of the proposed pipeline.

The northeastern half of the survey area appears to be much cleaner with only a few small scattered anomalies. Two of the larger anomalies that are proximal to the trench line are centered at 105E + 380N and at 95E + 590N. All of the cultural features mentioned in the EM-31 data are also clearly evident in the EM-61 data.

### Area 2

The EM-31 conductivity and in-phase data (Figures 6 and 7) identified two outstanding anomalies that cannot be explained. The first anomaly is evident on lines 120E to 140E from stations 260N to 310N. The second and largest anomaly was resolved on lines 80E to 110E from stations 280N to 500N. This feature looks suspiciously like a trench filled with moderate amounts of buried metal.

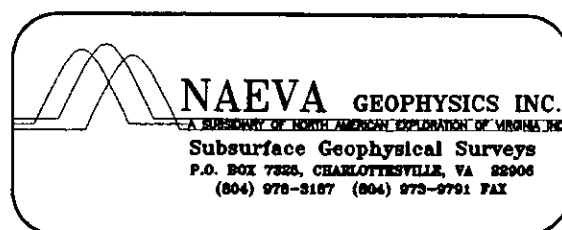
EM-31 conductivity data (Figure 6) shows several cultural features such as the fenceline and the powerline towers. On line 140E from stations 340N to 450N several small alternating highs and lows in the data are due to periodic high frequency noise. The source of this noise is unknown but may be related to high voltage powerlines in the vicinity.

The EM-61 data (Figure 8), as with the EM-31 data, clearly defined the trench-like feature discussed above. The other outstanding anomaly mentioned in the EM-31 data was not defined with the EM-61 as it falls just outside the limits of the data. There are several discrete anomalies, defined with the EM-61 data, that are evidence of buried metallic objects, and that were not defined in the EM-31 data. Again, several cultural features are apparent in the contoured data, particularly the monitor wells.

### Conclusion

There are multiple targets in Area 1 that fall along the proposed pipeline path. Although no large trench-like feature was defined, smaller anomalies may need to be considered as potential areas of concern.

In Area 2, a large trench-like anomaly is defined in both the EM-61 and EM-31 data and can be considered likely to contain buried metallic objects. As in Area 1, there are multiple targets that fall along the proposed pipeline path that may potentially interfere with excavations. It should be noted that the proposed scope of work was to define relatively large areas of buried metal objects not small discrete objects and that the line spacing used for this survey (5 feet) is inadequate to resolve all small discrete objects, which are clearly present.



Scale: 1 in = 50ft

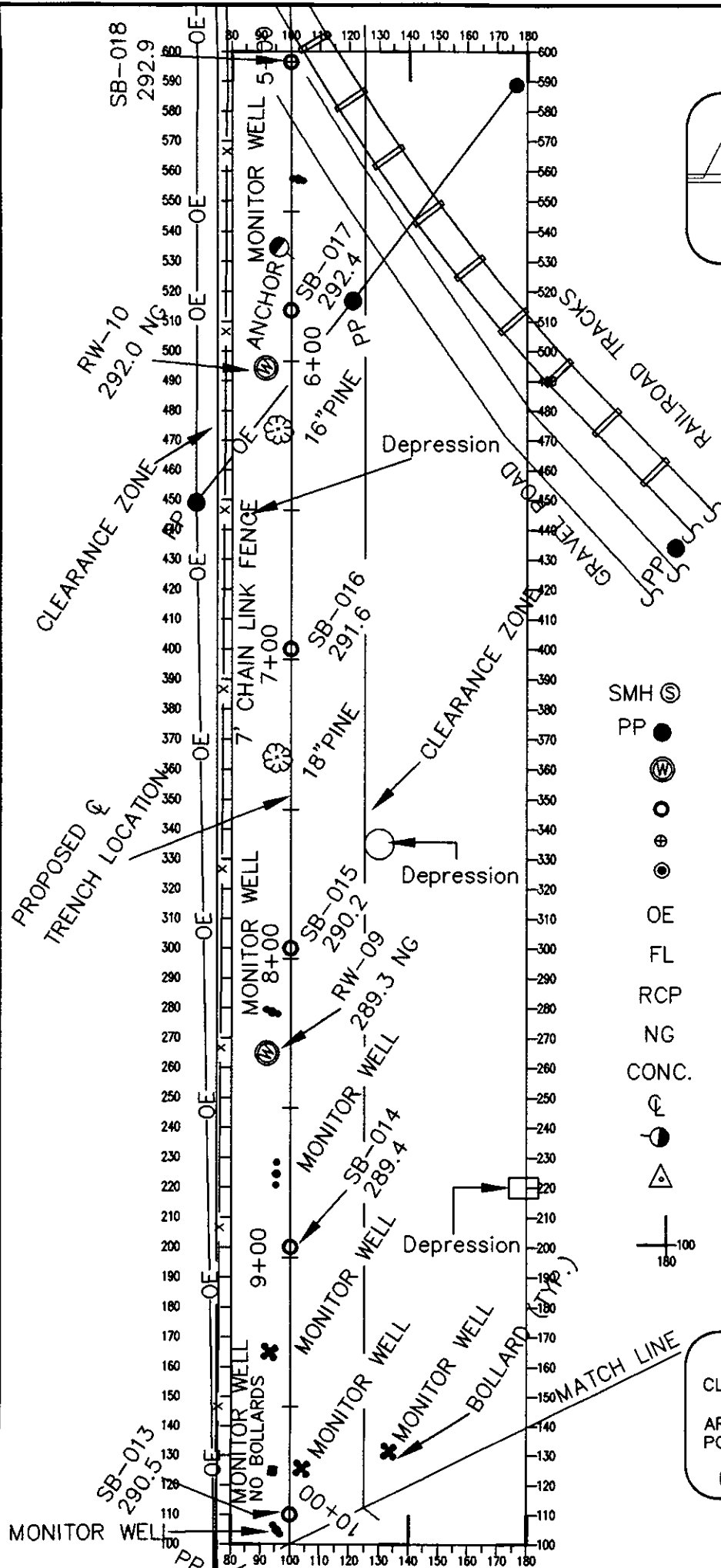
### LEGEND

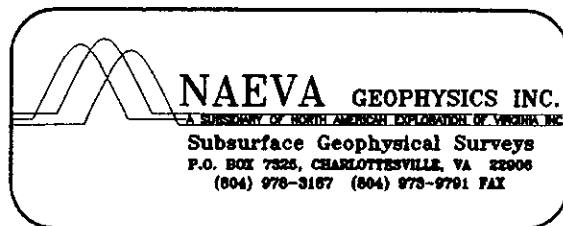
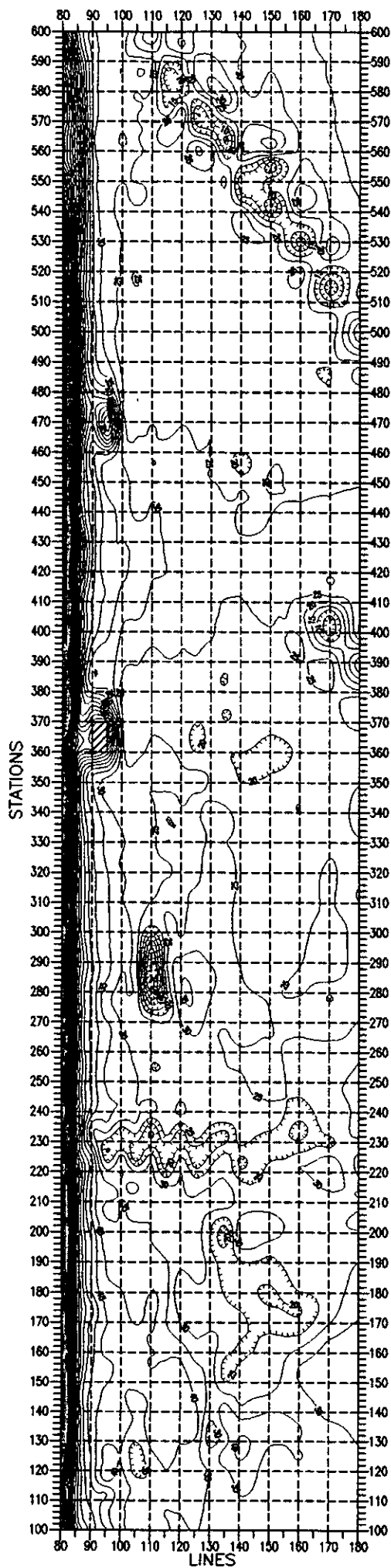
|       |                                         |
|-------|-----------------------------------------|
| SMH ⊙ | SANITARY SEWER MANHOLE                  |
| PP ●  | POWER POLE                              |
| ⊙     | REMEDIAION WELL                         |
| ⊙     | SOIL BORING                             |
| ⊕     | BOLLARD                                 |
| ⊙     | EXISTING WELL                           |
| OE    | OVERHEAD ELECTRIC                       |
| FL    | FLOWLINE INVERT @ END OF PIPE           |
| RCP   | REINFORCED CONCRETE PIPE                |
| NG    | NATURAL GROUND                          |
| CONC. | CONCRETE                                |
| ⊙     | CENTERLINE                              |
| ⊙     | ANCHOR                                  |
| △     | CONTROL MONUMENT                        |
| +     | REGISTRATION MARKS FOR FIGURES 2, 3 & 4 |

### FIGURE 1

CLIENT: OHM REMEDIATION SERVICES CORP.  
 AREA 1  
 AREA OF GEOPHYSICAL INVESTIGATION ON A  
 PORTION OF THE MEMPHIS DEFENSE DEPOT  
 MEMPHIS, TENNESSEE  
 DATE OF SURVEY: DEC. 18 & 19, 1997

Note: Figure 1 produced from  
 OHM basemap.



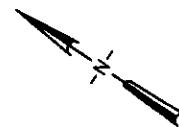


CONTOUR INTERVAL: 5 mS/m

| Range    | Color   |
|----------|---------|
| < 0      | Cyan    |
| 0 - 20   | Blue    |
| 25 - 70  | Green   |
| 75 - 120 | Red     |
| > 120    | Magenta |

#### Legend

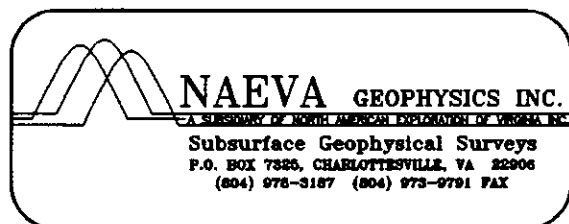
 Not Surveyed



  
Scale: 1in = 50ft

#### FIGURE 2

CLIENT: OHM REMEDIATION SERVICES CORP.  
AREA 1  
EM-31 TERRAIN CONDUCTIVITY CONTOURS  
MEMPHIS DEFENSE DEPOT  
MEMPHIS, TENNESSEE  
DATE OF SURVEY: DEC. 18 & 19, 1997

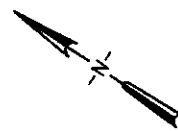


CONTOUR INTERVAL: 2 ppt

| <u>Range</u> | <u>Color</u> |
|--------------|--------------|
| < 0          | Blue         |
| 0 - 4        | Green        |
| > 4          | Red          |

Legend

 Not Surveyed



Scale: 1in = 50ft

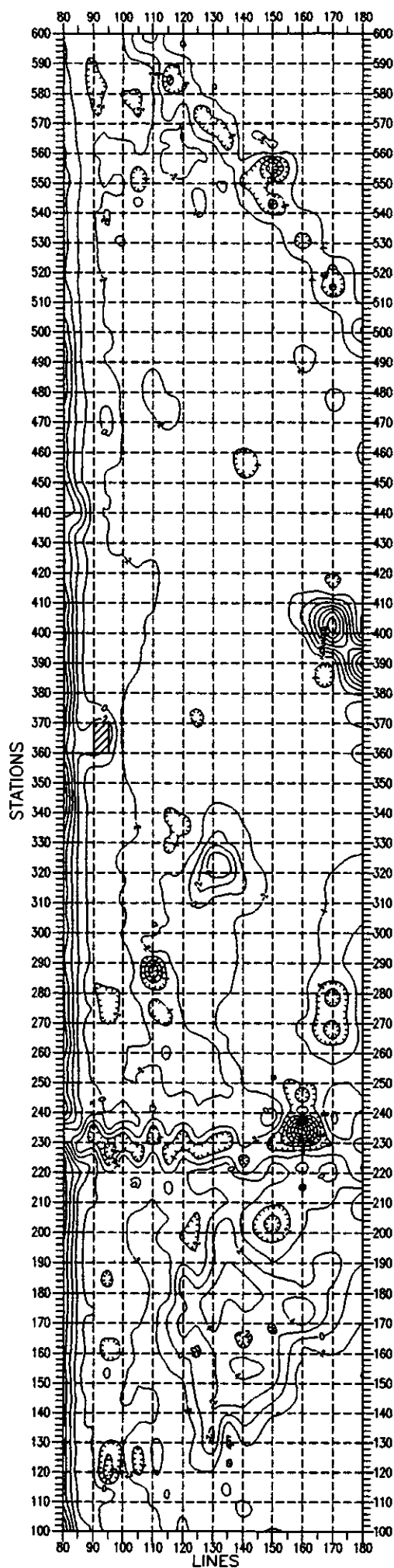
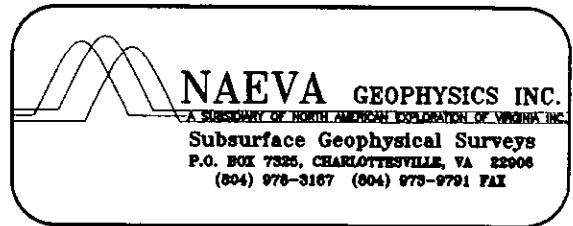


**FIGURE 3**

CLIENT: OHM REMEDIATION SERVICES CORP.  
 AREA 1  
 EM-31 INPHASE CONTOURS  
 MEMPHIS DEFENSE DEPOT  
 MEMPHIS, TENNESSEE  
 DATE OF SURVEY: DEC. 18 & 19, 1997

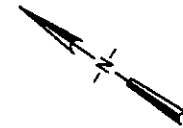




| Range (mS/m) | Contour Interval (mS/m) | Color   |
|--------------|-------------------------|---------|
| 0 - 45       | 5                       | Blue    |
| 50 - 95      | 5                       | Green   |
| 100 - 145    | 5                       | Red     |
| > 145        | 100                     | Magenta |

### Legend

 Not Surveyed



  
 Scale: 1in = 50ft

### FIGURE 4

CLIENT: OHM REMEDIATION SERVICES CORP.

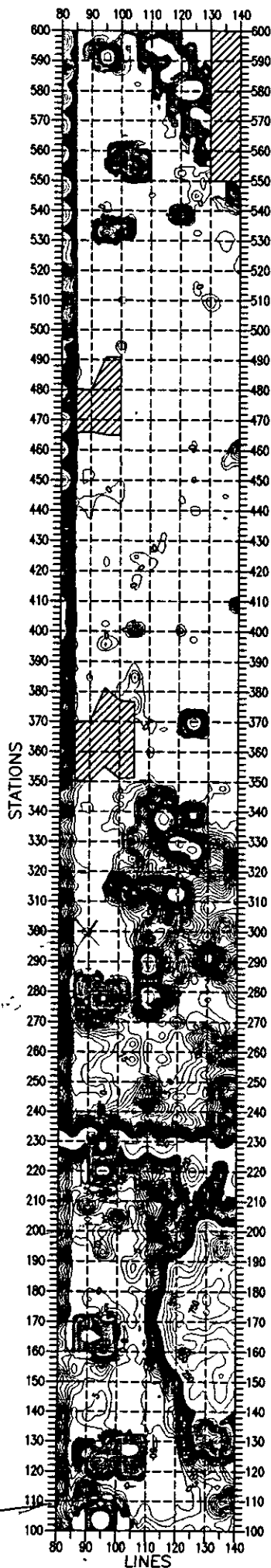
AREA 1

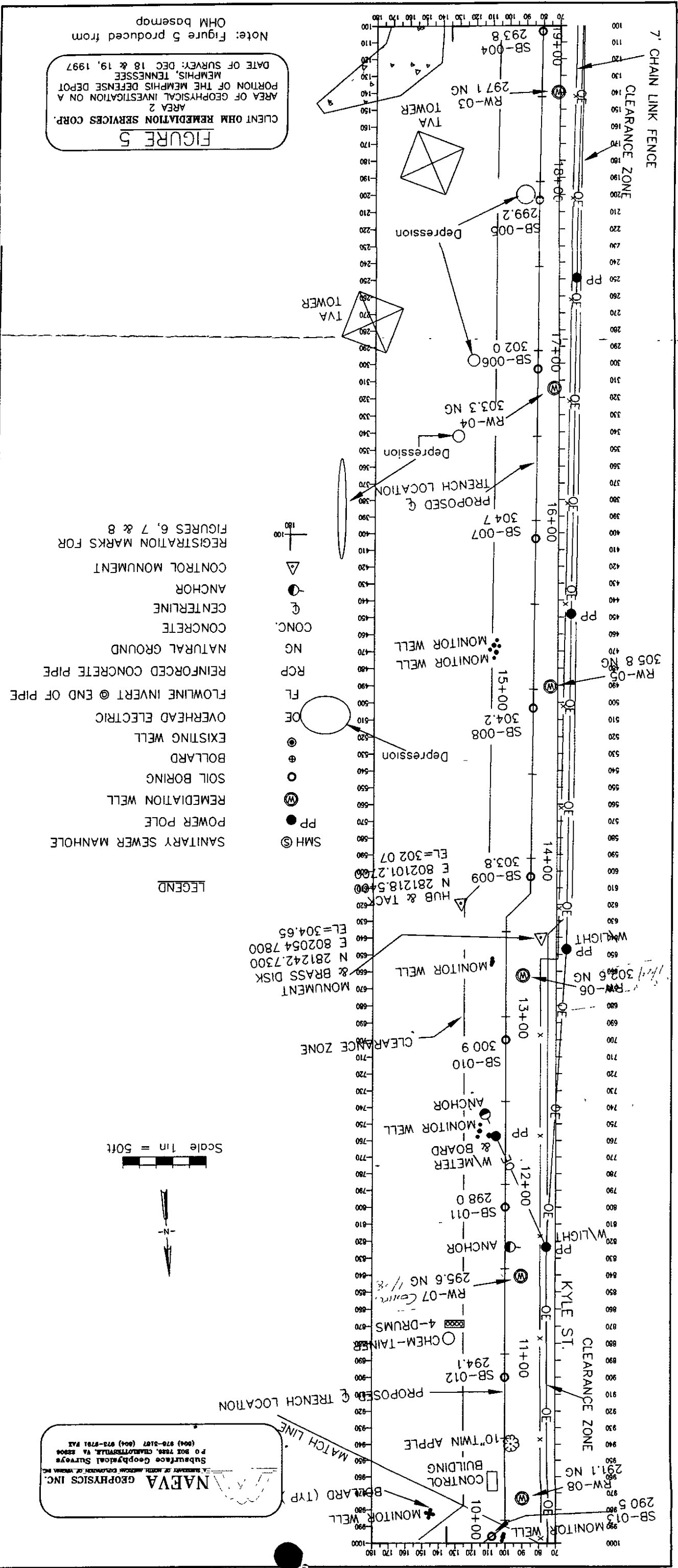
EM-61 BOTTOM COIL DATA CONTOURS

MEMPHIS DEFENSE DEPOT

MEMPHIS, TENNESSEE

DATE OF SURVEY: DEC. 18 & 19, 1997



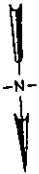


NAEVA  
GEOPHYSICS INC.  
A SUBSIDIARY OF NORTH AMERICAN CORPORATION OF VIRGINIA, INC.  
P.O. BOX 7585, CHARLOTTESVILLE, VA 22906  
(904) 978-5187 (904) 978-5781 FAX

FIGURE 5  
CLIENT OHM REMEDIATION SERVICES CORP.  
AREA 2  
PORTION OF THE MEMPHIS DEFENSE DEPOT  
MEMPHIS, TENNESSEE  
DATE OF SURVEY: DEC 18 & 19, 1997  
Note: Figure 5 produced from  
OHM base map

FIGURE 6  
CLIENT OHM REMEDIATION SERVICES CORP.  
AREA 2  
EM-31 TERRAIN CONDUCTIVITY CONTOURS  
MEMPHIS DEFENSE DEPOT  
MEMPHIS, TENNESSEE  
DATE OF SURVEY DEC 18 & 19, 1997

Scale 1 in = 50 ft

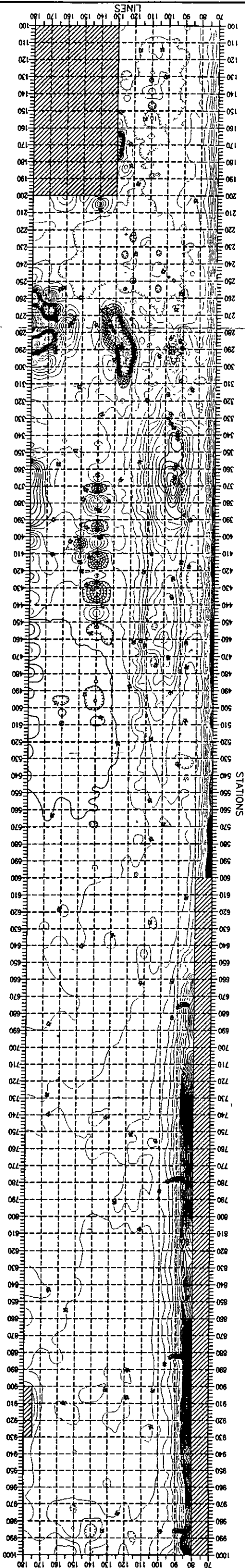


Legend  
Not Surveyed

CONTOUR INTERVAL. 5 mS/m

| Color   | Range    |
|---------|----------|
| Cyan    | < 0      |
| Blue    | 0 - 20   |
| Green   | 25 - 70  |
| Red     | 75 - 120 |
| Magenta | > 120    |

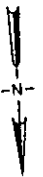
NAEVA GEOPHYSICS INC.  
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Subsurface Geophysical Surveys  
P.O. BOX 7555, CHARLOTTESVILLE, VA 22905  
(804) 978-3187 (fax) 978-9781 FAX



CLIENT OHM REMEDIATION SERVICES CORP.  
AREA 2  
EM-31 INPHASE CONTOURS  
MEMPHIS DEFENSE DEPOT  
MEMPHIS, TENNESSEE  
DATE OF SURVEY DEC. 18 & 19, 1997

FIGURE 7

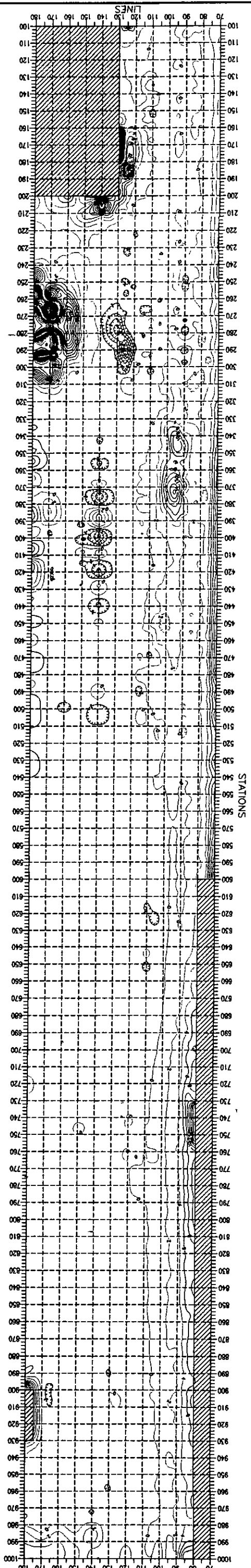
Scale: 1 in = 50 ft



Legend  
Not Surveyed

CONTOUR INTERVAL: 2 pt  
Range  
Color  
< 0 Blue  
0 - 4 Green  
6 - 12 Red  
> 12 Magenta

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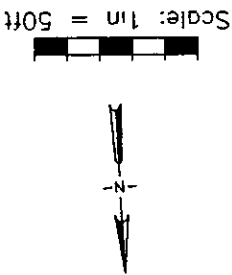




**NAEVA**  
 GEOPHYSICS INC.  
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 P.O. BOX 7888, CHARLOTTESVILLE, VA 22908  
 (800) 578-3187 (local) 573-8791 FAX

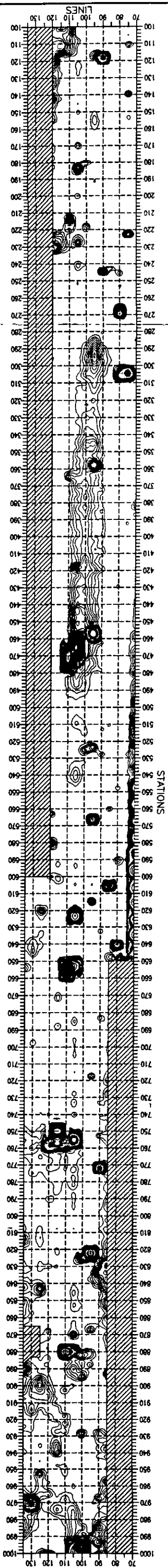
| Color   | Contour Interval (mS/m) | Range (mS/m) |
|---------|-------------------------|--------------|
| Blue    | 5                       | 0 - 45       |
| Green   | 5                       | 50 - 95      |
| Red     | 5                       | 100 - 145    |
| Magenta | 100                     | > 145        |

Legend  
 Not Surveyed



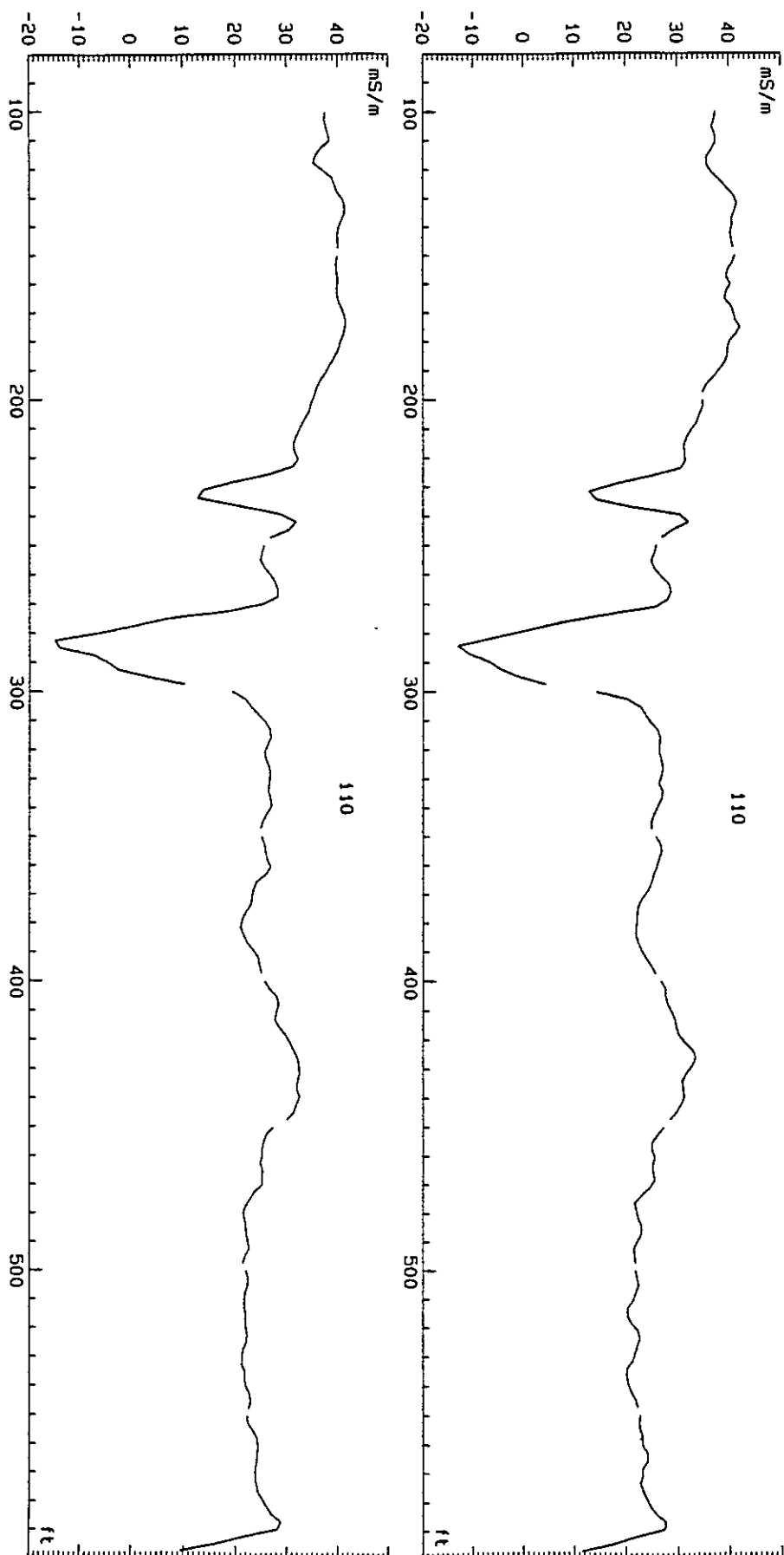
CLIENT OHM REMEDIATION SERVICES CORP.  
 AREA 2  
 EM-61 BOTTOM COIL DATA CONTOURS  
 MEMPHIS DEFENSE DEPOT  
 MEMPHIS, TENNESSEE  
 DATE OF SURVEY DEC. 18 & 19, 1997

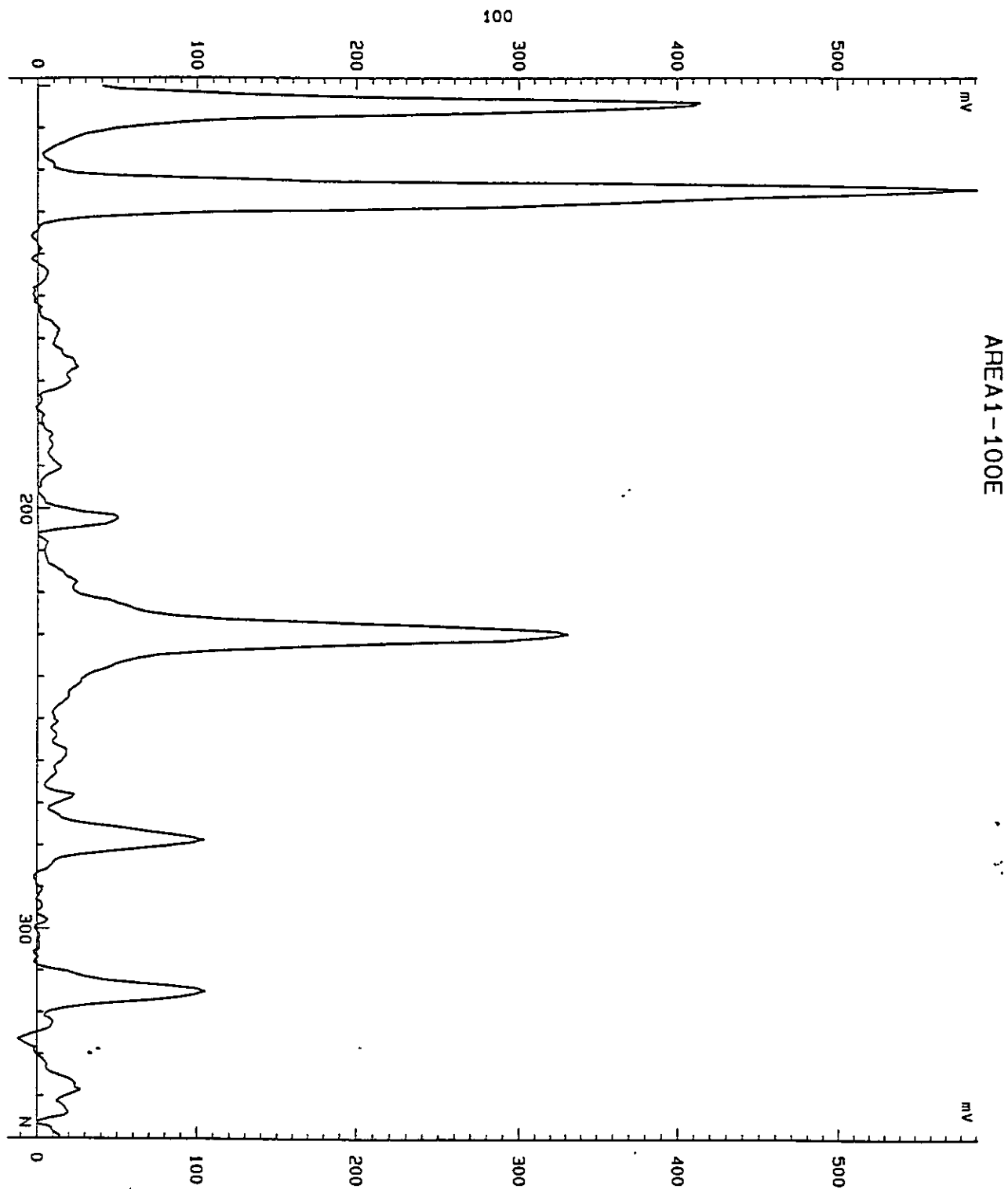
FIGURE 8



## APPENDIX A

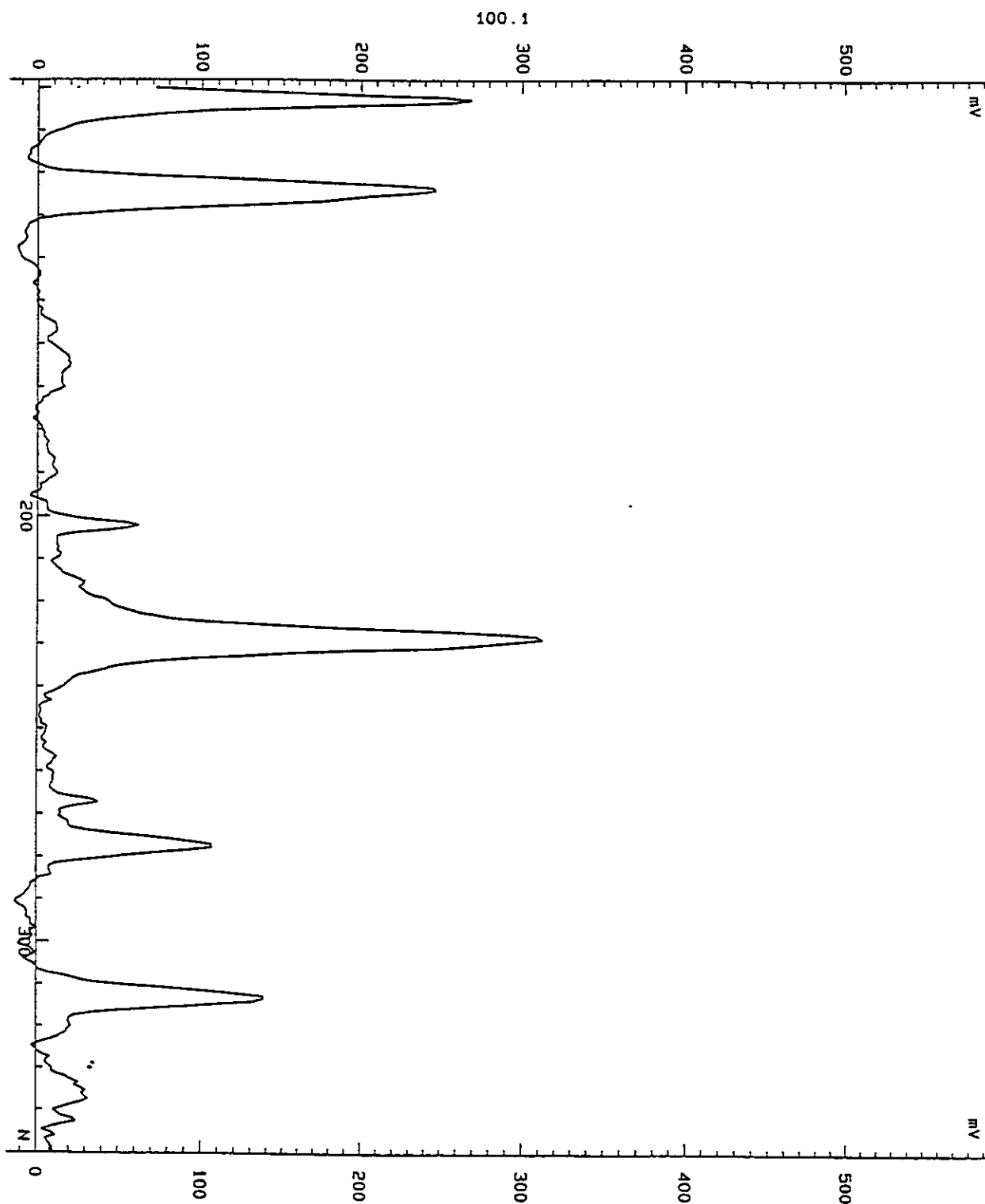
Area 1-110E Repeat and Original





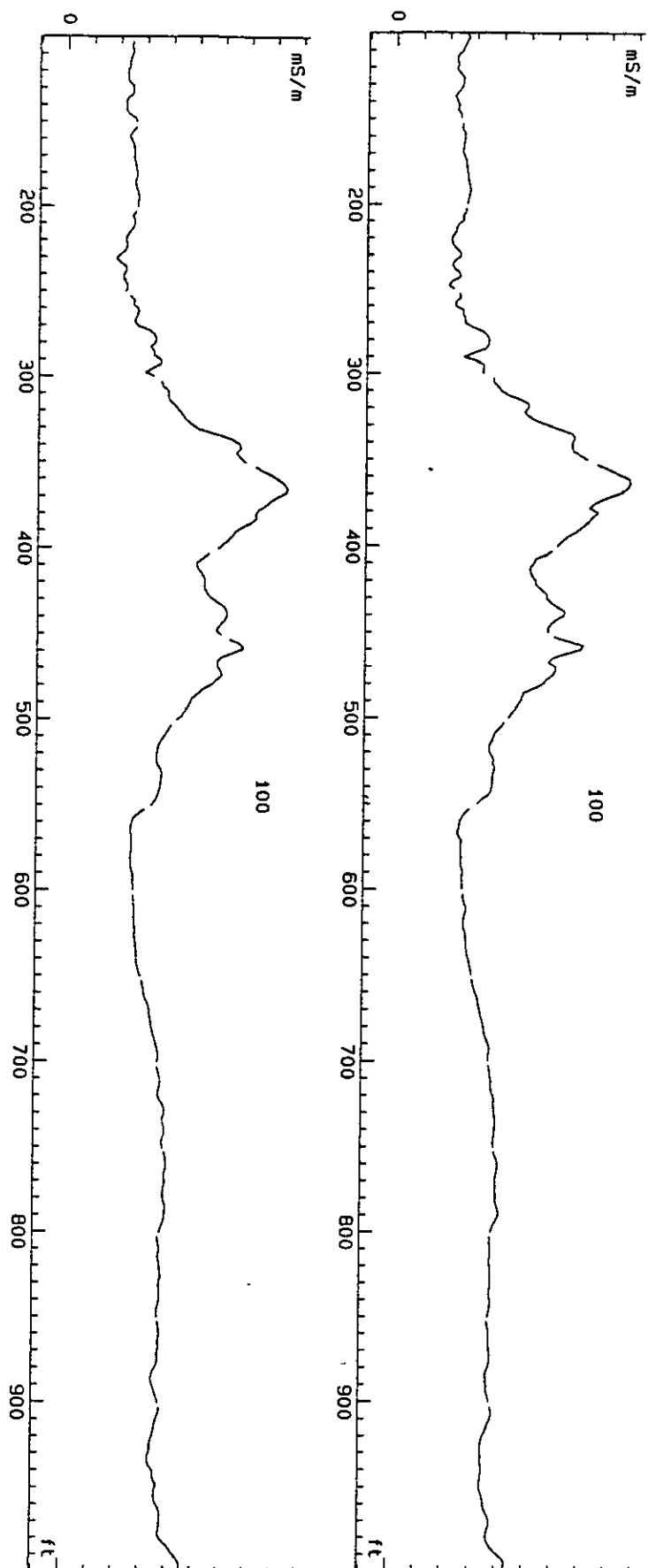


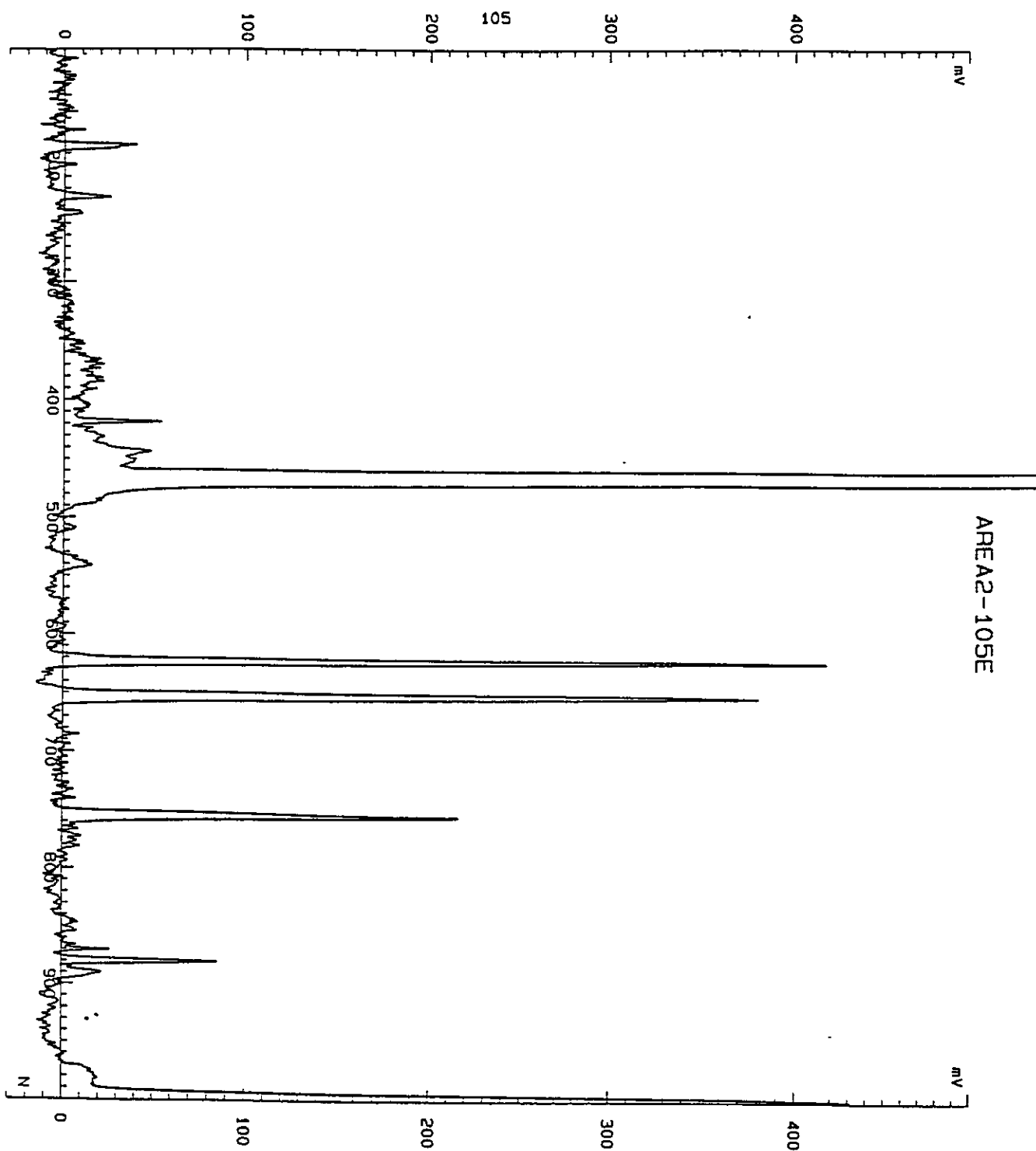
AREA1-100E REPEAT

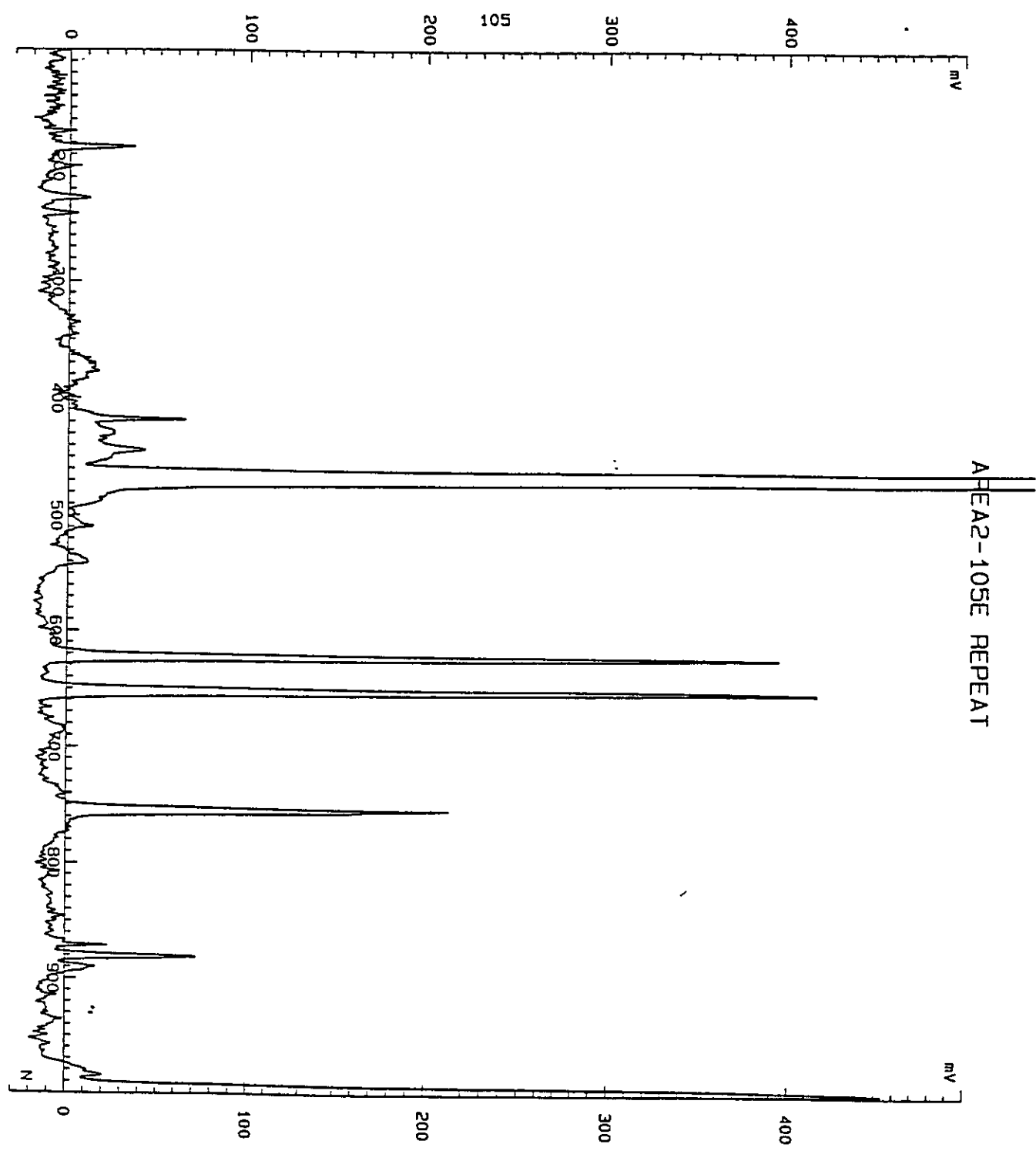


## APPENDIX B

Area 2-100E Repeat and Original







## APPENDIX A-2



**OHM Remediation  
Services Corp.**  
A Subsidiary of OHM Corporation

# TECHNICAL MEMORANDUM

5445 Triangle Parkway, Suite 400, Norcross, Georgia

OHM Project No. 20022

**To:** John W. Rollyson, P.E., Area Engineer  
USACE/Tennessee Area Office

**From:** Stephen Offner, P.G., OHM/Norcross

**PC:** Dana Conkin, USACE/Tennessee Area Office    Glenn L. Kaden, DDMT  
Dorothy Richards, USACE/Huntsville    John Lore, OHM/Norcross  
Angelo Liberatore, OHM/Norcross

**Re:** Results of the Expanded Geophysical Investigation  
Dunn Field, Defense Depot, Memphis, Tennessee  
Contract No. DACA45-96-D-0014  
Delivery Order No. 0007

**Date:** February 4, 1998

On January 20 and 21, 1998, OHM's subcontractor, NAEVA Geophysics, Inc. of Charlottesville, Virginia, conducted an expanded EM-31 and EM-61 geophysical investigation at Dunn Field, DDMT. This investigation was conducted according to the associated scope of work outlined in the OHM Technical Memorandum, dated January 6, 1998, and the January 14, 1998, meeting at the Defense Depot between representatives of USACE and OHM.

## Scope of Work

The initial geophysical investigation was conducted on a 1450 feet long by 50 feet wide corridor located along the northwest portion of Dunn Field where OHM will be conducting intrusive activities associated with the installation of the interim groundwater remediation system. This corridor corresponds to the western and northern boundaries of Area B identified on Map M-3 in the Archives Search Report, dated January 1995 (*Attachment A*). The results of the initial geophysical survey were presented in the OHM Technical Memorandum dated January 6, 1998.

The area of the expanded investigation is the remainder of the site where OHM will be conducting intrusive activities. This area measures approximately 1170 feet long by 50 feet wide along the north, northeast, west, and southwest portions of the site. This corridor corresponds to the northern boundary of Area C and the northwestern boundary of Area A, identified on Map M-3 of the Archives Search Report. The purpose of the initial and expanded investigations was to identify unexplained subsurface geophysical anomalies that could potentially represent covered pits/trenches and/or burial sites within the referenced area of planned intrusive activities.

## Methodology

Three separate grid areas (identified as Area 1-Extension, Area 3, and Area 4) were established as part of the expanded investigation. Area 1-Extension is 560 feet long, located along the north boundary of Dunn Field and is the northeastern extension of the previously identified Area 1 (see Figure 1 of *Attachment B*). Area 3 is 210 feet long, located along the north boundary of Dunn Field and extends from Area 1-Extension to the northeast corner of Dunn Field (see Figure 5 of *Attachment B*). Area 4 is 400 feet long, located along the west boundary of Dunn Field and is the southern extension of the previously identified Area 2 (see Figure 9 of *Attachment B*). The report of the expanded investigation findings, as prepared by NAEVA, is included as *Attachment B*. The report includes the technical approach, methodologies used, QA/QC procedures, survey results and conclusions and supporting graphics.

## Geophysical Investigation Results

Area 1-Extension According to the findings, there were no unexplained subsurface anomalies of concern in Area 1-Extension (see Figures 2 through 4 of *Attachment B*). Explainable anomalies include the facility fence, railroad spur, concrete ditch, two monitoring wells with bollards, and the OHM temporary snow fence with metal posts.

Area 3 There were no unexplained subsurface anomalies of concern in Area 3 (see Figures 6 through 8 of *Attachment B*). Explainable anomalies include the facility fence, power poles and overhead electric lines, and the OHM temporary snow fence with metal posts.

Area 4 In addition to the existing cultural interferences (rip-rap swale area with underground culverts, and the OHM decontamination station), numerous unexplained EM-31 and EM-61 subsurface anomalies were detected in Area 4 (see Figures 9 through 12 of *Attachment B*). Two isolated anomalies were detected at NAEVA stations N294/E110 and N312/E095. Extensive anomalies were detected south of the rip-rap swale area. These anomalies correspond with NAEVA stations N220 to N100 and E100 to E200. The location of the proposed pipeline trench through Area 4 is detailed on Figure 9 of *Attachment B*.

## Conclusions

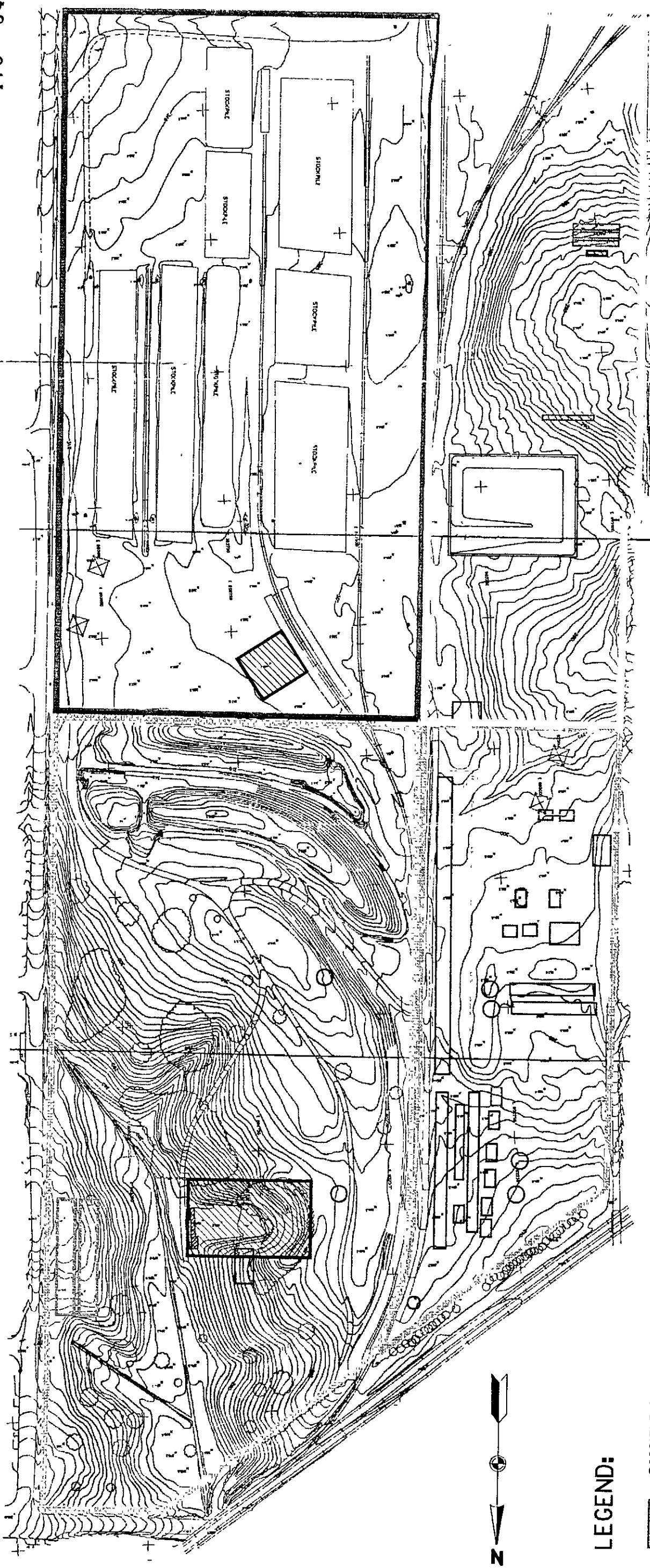
Based on the findings from the expanded geophysical investigation, the following conclusions are presented:

- 1) No subsurface anomalies of concern were identified in Area 1-Extension or Area 3. This constitutes approximately 770 linear feet of the proposed pipeline trench; and



- 2) Extensive unexplained subsurface anomalies were detected in Area 4. The referenced anomalies detected at NAEVA stations N220 to N150 cannot be avoided by relocating the pipeline trench. Based on this information and the fact that the installation of recovery wells RW-01 and RW-02 are not part of the current work scope, one alternative would be to terminate the proposed pipeline trench at the location of recovery well RW-03, which is north of the anomalies identified in Area 4. This would eliminate intrusive activities in areas of the identified subsurface anomalies until further investigation can be conducted. The referenced segment of pipeline (approximately 385 linear feet) could then be constructed when recovery wells RW-01 and RW-02 are installed.

## **ATTACHMENT A**



### LEGEND:

- POSSIBLE SITE OF JULY 1946 DESTRUCTION OF GERMAN MUSTARD BOMBS.
- 86,100 LBS CC-2 IMPREGNITE (18 FEB. 1947).
- 300,000 LBS XX-CC-3 IMPREGNITE
- 1955-1956 AREA USED TO BURY CHEMICAL ID SETS AND XX-CC-3 IMPREGNITE. POSSIBLE BURIAL OF DANC. CHLORINATED LIME AND RH195.

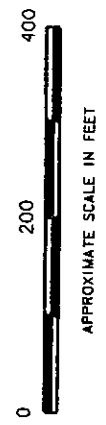
- CHLORINATE LIME PITS.
- FLAME THROWER TEST AREA.
- USATHAMA IDENTIFIED BURIAL OF CHEMICAL ID SETS.
- BURIALS PREVIOUSLY IDENTIFIED BY USATHAMA.
- UNIDENTIFIED CLEARED AREA (LOCATED ON 1958 AERIAL PHOTO).
- PISTOL RANGE

### CANISTERS (POSSIBLE GAS MASK FILTERS)

- AREA A
- AREA B - SEE NOTE 2
- AREA C
- AREA D

### BURIALS NOT LOCATED:

- AREA A: PITS USED TO DESTROY ORDNANCE.
- AREAS A, B, OR C: 1947 BURIAL OF 32,636 LBS OF ACETYLENE TETRACHLORIDE.
- NOTE 1: LOCATIONS ARE APPROXIMATE
- NOTE 2: AREA USED AS A BORROW PIT, TO TEST HEAVY ENGINEER EQUIPMENT, AND AS A VEHICLE HOLDING AREA.



### M-3

MEMPHIS ORDNANCE DEPOT  
MEMPHIS, TENNESSEE  
GARVER AND GARVER DRAWING

## **ATTACHMENT B**

.



## Subsurface Geophysical Surveys

GPR  
ELECTROMAGNETICS  
SEISMICS  
RESISTIVITY  
UTILITY LOCATION  
BOREHOLE LOGGING  
BOREHOLE CAMERA  
STAFF SUPPORT

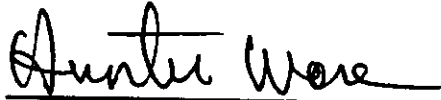
## Results of Geophysical Investigation

**Memphis Defense Depot**  
Memphis, Tennessee

Prepared for: **OHM Remediation Services Corp.**  
Norcross, Georgia

Date Of Investigation: **January 20 and 21, 1998**

Prepared By:



G. Hunter Ware  
Senior Geophysicist



R. Preston Hawkins  
Geologist

|                                   |
|-----------------------------------|
| Contents                          |
| Introduction                      |
| Survey Grid                       |
| Methods                           |
| Geophysical Data Processing       |
| Quality Assurance/Quality Control |
| Survey Results                    |
| Conclusions                       |

|            |                                                        |
|------------|--------------------------------------------------------|
| Figure 1   | Area 1-Extended Grid/Culture Map                       |
| Figure 2   | Area 1-Extended EM-31 Terrain Conductivity Contour Map |
| Figure 3   | Area 1-Extended EM-31 In-phase Data Contour Map        |
| Figure 4   | Area 1-Extended EM-61 Bottom Coil Contour Map          |
| Figure 5   | Area 3 Grid/Culture Map                                |
| Figure 6   | Area 3 EM-31 Terrain Conductivity Contour Map          |
| Figure 7   | Area 3 EM-31 Inphase Data Contour Map                  |
| Figure 8   | Area 3 EM-61 Bottom Coil Contour Data                  |
| Figure 9   | Area 4 Grid/Culture Map                                |
| Figure 10  | Area 4 EM-31 Terrain Conductivity Contour Map          |
| Figure 11  | Area 4 EM-31 Inphase Data Contour Map                  |
| Figure 12  | Area 4 EM-61 Bottom Coil Contour Map                   |
| Appendix A | Area 1-Extended Repeat Profiles                        |
| Appendix B | Area 4 Repeated Repeat Profiles                        |

### NEW YORK

P.O. Box 576  
Tappan  
New York 10983  
(914) 268-1800  
(914) 268-1802 Fax

### VIRGINIA

P.O. Box 7325  
Chattanooga  
Virginia 22906  
(804) 978-3187  
(804) 973-9791 Fax

**Memphis Defense Depot  
Memphis, Tennessee**

---

## **INTRODUCTION**

OHM Remediation Services Corp. contracted NAEVA Geophysics to conduct further geophysical investigations at the Memphis Defense Depot in Memphis, Tennessee. The areas of investigation were extensions approximately 900 feet north and 400 feet south of the previously investigated 50-foot wide corridor where a proposed pipeline is to be buried. The objectives of the investigation were to identify geophysical anomalies that could represent covered pits, trenches, or burial sites.

The investigation is separated into three areas (Area 1-Extended, Area 3, and Area 4) bordered on the north, northeast, and west sides by a chain-link fence, and defines the west boundary of the entire survey corridor. Power poles with overhead electric lines run parallel to the chain-link fence. Included in the eastern portion of the three survey grids is a newly erected plastic mesh fence with metal posts defining the "Clearance Zone" for the eastern boundary of the pipeline corridor.

Field work was conducted on January 20 and 21, 1998. Surveying and operation of the EM-31 and EM-61 took place both days with preliminary maps generated on-site and submitted to Tom McCrory.

---

## **SURVEY GRIDS**

As is consistent with Areas 1 and 2, the staked survey line coincident with the center of the proposed trench served as Line 100E in all three areas. Control stations were marked with pin flags at 100 foot intervals and with paint at 50 foot intervals along lines spaced five feet apart.

### Area 1 - Extension

Grid origin for the Area 1-Extension is Line 100E and station 600N. This control point served as the southern-most boundary of Area 1-Extended with stations increasing northeastward to 1160N (see figure 1). North of previous work, Area 1-Extended is approximately 560 feet long and is tied into the Area 1 Survey conducted in December, 1997. Two steel monitor wells, a gravel road, railroad grade, and a concrete drainage ditch were located in this survey area.

### Area 3

Area 3 (see figure 5) is approximately 210 feet long and continues to the northeasternmost extent of the surveyed pipeline. The grid origin of Area 3 is survey stake SB-024, and was designated 100N + 100E.

---

#### Area 4

Area 4 (see figure 9) includes the corridor 400 feet south of previous work in Area 2. The grid origin of Area 4 is survey stake SB-004. This point was designated 400N + 100E. In the southern portion of the area, lines increased to the east so as to fully encompass the change in direction of the proposed trench. A drainage ditch with rip-rap, and a "Decontamination Station" occurred in this survey area. A major high-voltage powerline passes across Area 2 just north of Area 4, and may have contributed to higher EM-61 noise levels.

---

### **METHODS**

Non-intrusive surveys over the areas of concern were conducted utilizing a Geonics EM-31 and EM-61. The Geonics EM-31 is a frequency domain electromagnetic instrument primarily used to measure ground conductivity. Anomalous changes in conductivity may represent areas containing buried waste. The Geonics EM-61 is a time domain electromagnetic instrument designed to detect shallow ferrous and non-ferrous metallic objects with good spatial resolution. EM-61 anomalies could represent metal objects incorporated within buried waste materials.

The EM-31 measures the quadrature (conductivity) and in-phase components of the induced electromagnetic field, which are recorded simultaneously. The quadrature is a measure of the electrical conductivity, expressed in milliSiemens/meter. Electrical conductivity in this case is a function of permeability, conductivity of included soil moisture, degree of saturation and compaction, and subsurface material type. While absolute values of terrain conductivity are not usually diagnostic, their spatial variations are important in identifying areas containing foreign or disturbed material. The in-phase component is primarily used to detect buried metal, using relative units of parts per thousand(ppt). A negative response is most commonly expected over areas containing shallow buried metal debris, although a positive response can be exhibited. The EM-31 was operated in vertical dipole mode.

The EM-61 system is a time domain metal detector with very high sensitivity. The resolution is much greater with the EM-61 than with the EM-31, but it does not measure soil conductivity. The system consists of two air-cored receiver coils, each 1 meter x 1 meter in area. Secondary voltages induced in both coils are measured in millivolts. The coils are arranged so that the larger coils (EM source and coincident receiver) lie 40 cm below the second receiver coil. Because the upper coil is less sensitive than the lower coil, only the lower coil data is presented for this investigation. The system was operated in wheel mode, where distance along profiles is recorded by an internal odometer. Markers were also entered into the data at control stations to further ensure accuracy. Data was collected every 0.65 feet along the lines.

---

### **GEOPHYSICAL DATA PROCESSING**

Data collected with the EM-31 and EM-61 were transferred from palmtop computer and polycorder to a laptop PC for processing with Geonics Dat 31/61 software. Data were reviewed initially as profiles, where distances were adjusted to fiducial marks, and then prepared for contouring using Golden's Surfer Program. Contour maps were created using a variety of

---

contour intervals to determine the most effective presentation. For the EM-31, a contour interval of 5 millisiemens/meter (mS/m) was selected for the quadrature data, providing good definition of detected features. An interval of 2 parts per thousand (ppt) was selected to present in-phase data. A contour interval of 5 millivolts (mV) was selected to 145mV values, and a 100 mV contour interval was selected for values greater than 145 mV for the EM-61 data in Area 1-Extended and Area 3. A contour interval of 10 mV was selected for Area 4 up to 250 mV values, and 50 mV was selected for values greater. These intervals are selected to show all significant features while staying above the noise level.

---

### QUALITY ASSURANCE/QUALITY CONTROL

Calibration checks of the geophysical instruments were performed each morning before initiation of surveying in an area free of cultural interference. For the EM-31, calibration was done in accordance with the manufacturer's recommendations. Repeats of line 100E in Area 1-Extended from 600N to 1000N, and of line 100E in Area 4, were run and plotted in profile and are provided in Appendix A. Calibration of the EM-61 was checked each morning over a test object and found to be proper. Repeats of a portion of line 100E in Area 1-Extended and line 100E in Area 4 were measured and are provided in Appendix B.

---

### SURVEY RESULTS

#### Area 1-Extension

No anomalies were defined in the Em-31 and EM-61 data that cannot be explained by known cultural features (see figures 2, 3, and 4). These cultural features include the fenceline along the north side of the area, a railroad spur in the southwest corner, monitor wells, and a concrete ditch crossing at approximately 1050N. The temporary mesh fence along the east side of the survey area is evident in the Em-61 data but not in the EM-31 data. The temporary fence is slightly oblique to survey lines and occurs at approximately 120E-130E along the length of the survey area.

#### Area 3

EM-31 and EM-61 data defined only cultural anomalies caused by fencing along the perimeter of the area (see figures 6, 7, and 8). Once again, the temporary mesh fence is recognized at approximately 120E-125E in the EM-61 data and occurs along the length of the survey area.

#### Area 4

In addition to the response of the culvert in the rip-rap swale area, Area 4 exhibits numerous strong metal anomalies in both EM-31 and EM-61 data, which are not explained by known surface features and evidently contain abundant buried waste material along and near the proposed pipeline (see figures 10, 11, and 12).

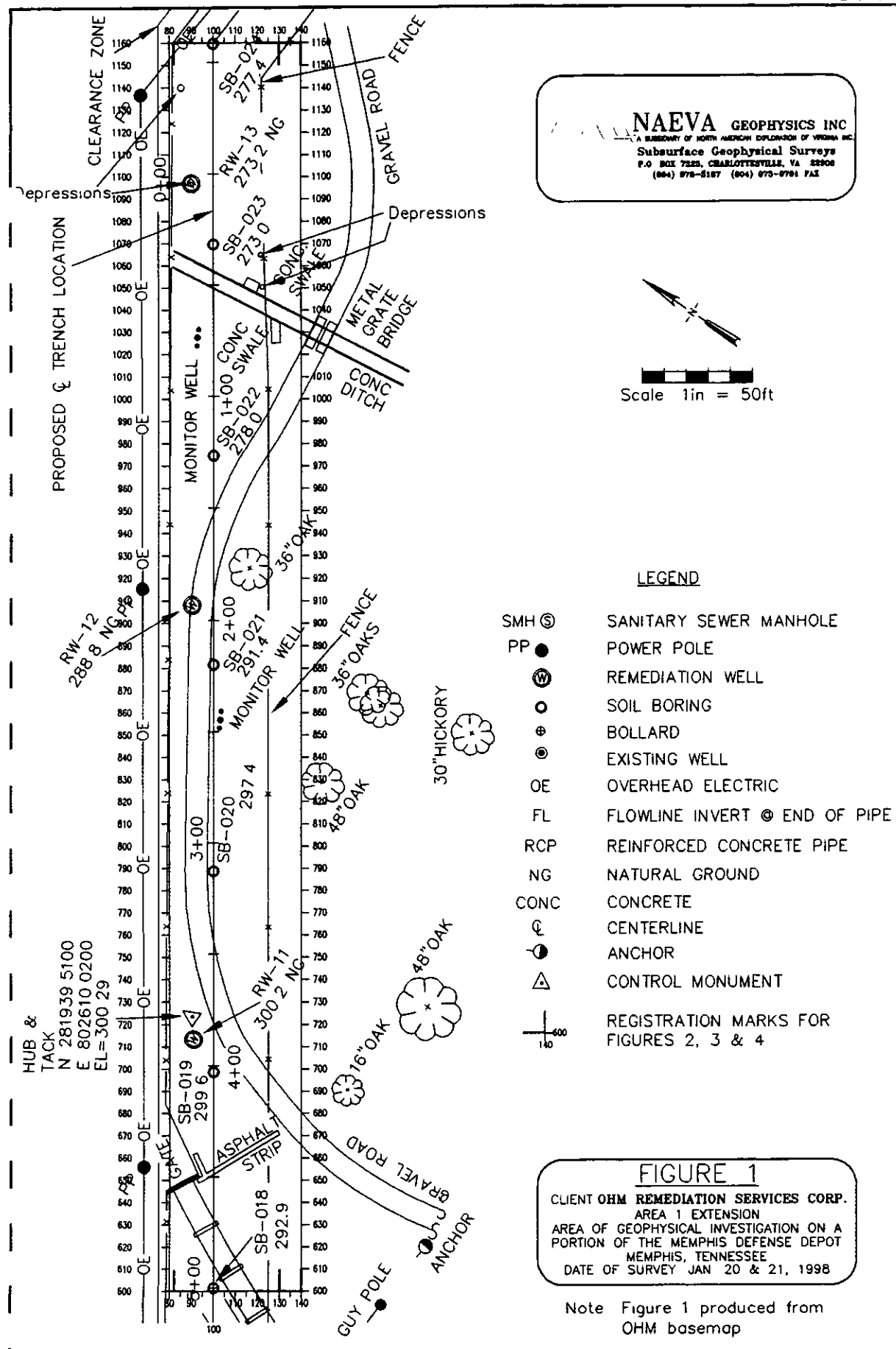
In the EM-61 data, discrete anomalies occur at 312N, 95E, and at 293N, 110E. A linear anomaly crosses the area from 250N, 95E to 275N, 129E. An extensive anomalous area along the pipeline occurs from 220N to 160N, and a smaller anomalous area is evident from 160-165N, 115-125E. The two areas of concern may be associated. A large area of disturbance exists from 130N-150N, to the general area of 150N-170N, 160E-190E, north of the clearance

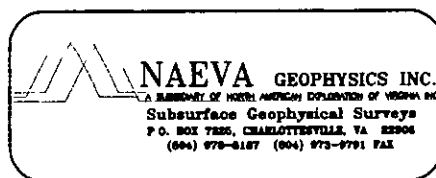
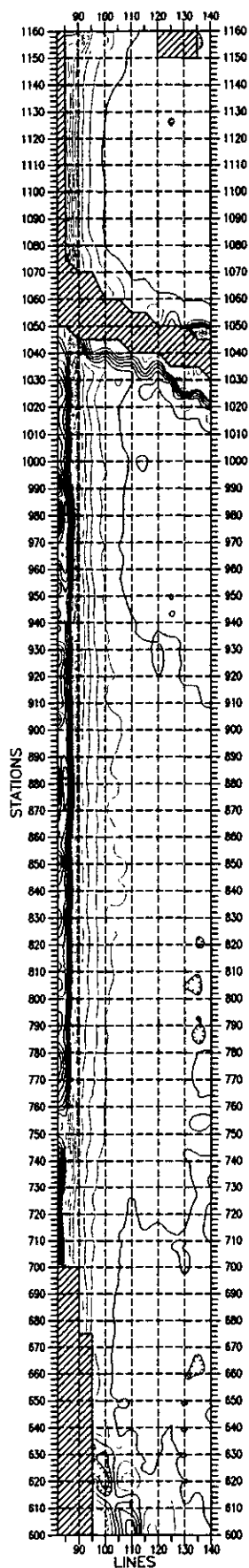
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## CONCLUSION

There are evidently multiple anomalies in area 4, indicating an extensive area of buried material near the proposed pipeline which should be investigated with caution. It should be noted that the scope of work was to define relatively large areas of disturbance, not every small discrete object. The line spacing for this survey (5 feet) is not close enough to detect and resolve all small objects which may be present, but it is adequate to detect significant burial trenches and/or disposal pits.





CONTOUR INTERVAL: 5 mS/m

| Range    | Color   |
|----------|---------|
| < 0      | Cyan    |
| 0 - 20   | Blue    |
| 25 - 70  | Green   |
| 75 - 120 | Red     |
| > 120    | Magenta |

Legend

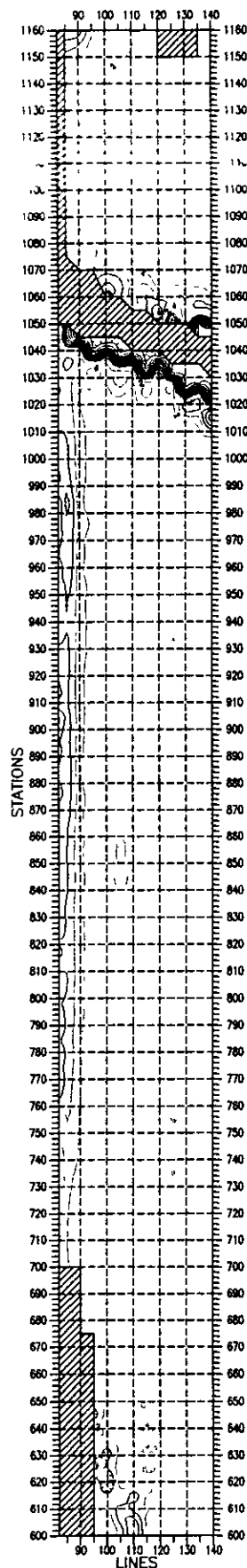
 Not Surveyed



  
Scale 1 in = 50ft

**FIGURE 2**

CLIENT OHM REMEDIATION SERVICES CORP.  
AREA 1 EXTENSION  
EM-31 TERRAIN CONDUCTIVITY CONTOURS  
MEMPHIS DEFENSE DEPOT  
MEMPHIS, TENNESSEE  
DATE OF SURVEY JAN 20 & 21, 1998



**NAEVA GEOPHYSICS INC.**  
 A DIVISION OF NAEVA GEOPHYSICAL CORPORATION OF MEMPHIS, TN  
 Subsurface Geophysical Surveys  
 P.O. BOX 7538, CHARLOTTEVILLE, VA 22906  
 (804) 979-2487 (804) 979-9791 FAX

CONTOUR INTERVAL 2 ppt

| Range | Color |
|-------|-------|
| < 0   | Blue  |
| 0 - 4 | Green |
| > 4   | Red   |

Legend

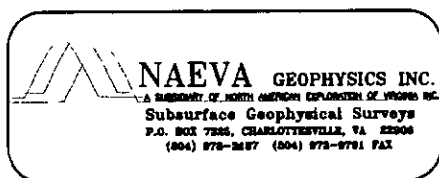
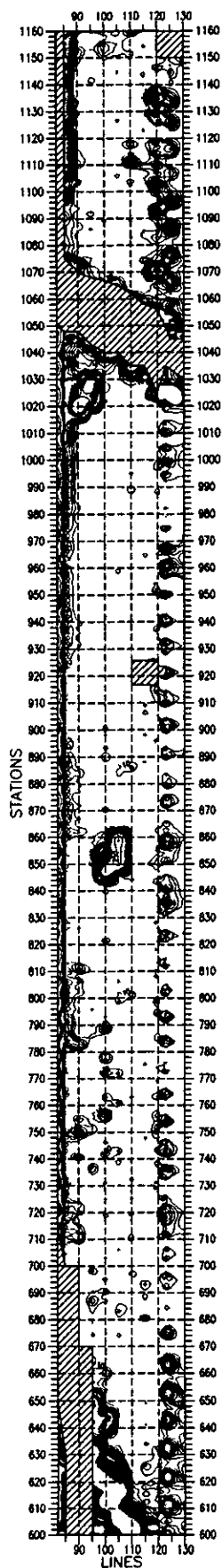
 Not Surveyed



  
 Scale 1in = 50ft

**FIGURE 3**

CLIENT **OHM REMEDIATION SERVICES CORP.**  
 AREA 1 EXTENSION  
 EM-31 INPHASE CONTOURS  
 MEMPHIS DEFENSE DEPOT  
 MEMPHIS, TENNESSEE  
 DATE OF SURVEY: JAN 20 & 21, 1998



| <u>Range (mV)</u> | <u>Contour Interval (mV)</u> | <u>Color</u> |
|-------------------|------------------------------|--------------|
| 10 - 45           | 5                            | Blue         |
| 50 - 95           | 5                            | Green        |
| 100 - 145         | 5                            | Red          |
| > 145             | 100                          | Magenta      |

#### Legend

 Not Surveyed



  
Scale 1 in = 50ft

#### FIGURE 4

CLIENT OHM REMEDIATION SERVICES CORP.  
AREA 1 EXTENSION  
EM-61 BOTTOM COIL DATA CONTOURS  
MEMPHIS DEFENSE DEPOT  
MEMPHIS, TENNESSEE  
DATE OF SURVEY JAN 20 & 21, 1998



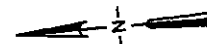
**NAEVA GEOPHYSICS INC.**

A SUBSIDIARY OF NORTH AMERICAN EXPLORATION OF VIRGINIA, INC.

Subsurface Geophysical Surveys

P.O. BOX 7385, CHARLOTTESVILLE, VA 22908

(804) 978-3187 (804) 973-9791 FAX



Scale: 1 in = 50 ft

### LEGEND

|       |                                         |
|-------|-----------------------------------------|
| SMH © | SANITARY SEWER MANHOLE                  |
| PP ●  | POWER POLE                              |
| ⊙     | REMEDIATION WELL                        |
| ○     | SOIL BORING                             |
| ⊕     | BOLLARD                                 |
| ⊙     | EXISTING WELL                           |
| OE    | OVERHEAD ELECTRIC                       |
| FL    | FLOWLINE INVERT @ END OF PIPE           |
| RCP   | REINFORCED CONCRETE PIPE                |
| NG    | NATURAL GROUND                          |
| CONC. | CONCRETE                                |
| ⊕     | CENTERLINE                              |
| ⊙     | ANCHOR                                  |
| △     | CONTROL MONUMENT                        |
| +     | REGISTRATION MARKS FOR FIGURES 6, 7 & 8 |

### FIGURE 5

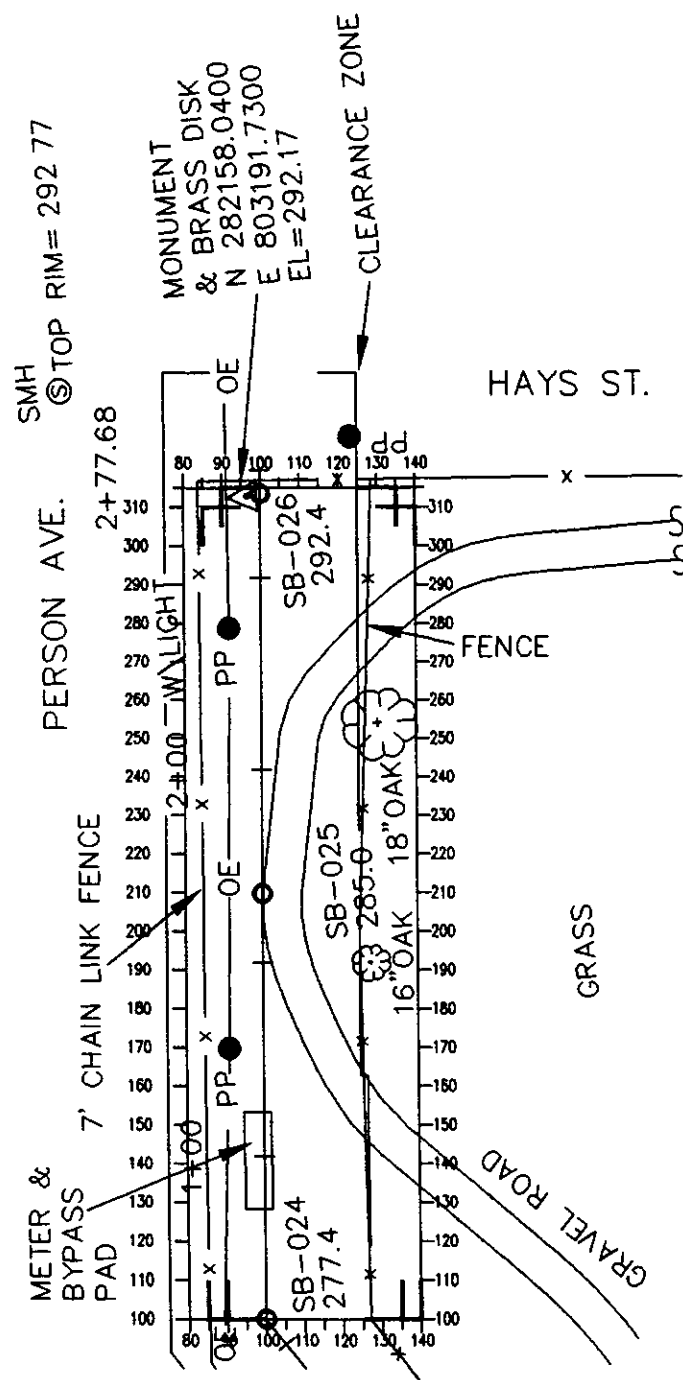
CLIENT **OHM REMEDIATION SERVICES CORP.**

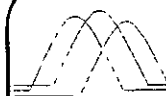
AREA 3

AREA OF GEOPHYSICAL INVESTIGATION ON A  
PORTION OF THE MEMPHIS DEFENSE DEPOT  
MEMPHIS, TENNESSEE

DATE OF SURVEY: JAN. 20 & 21, 1998

Note: Figure 5 produced from  
OHM basemap.





**NAEVA GEOPHYSICS INC.**

A SUBSIDIARY OF NORTH AMERICAN EXPLORATION OF VIRGINIA, INC.

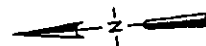
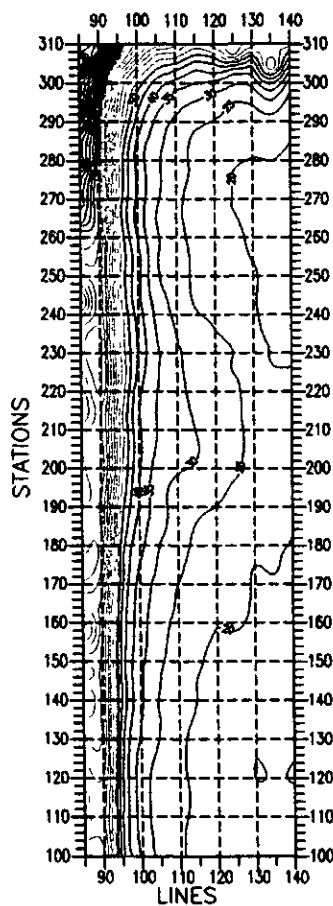
Subsurface Geophysical Surveys

P.O. BOX 7325, CHARLOTTESVILLE, VA 22906

(804) 978-8187 (804) 973-9791 FAX

CONTOUR INTERVAL: 5 mS/m

| <u>Range</u> | <u>Color</u> |
|--------------|--------------|
| 10 - 50      | Blue         |
| 55 - 100     | Green        |
| 105 - 150    | Red          |
| > 150        | Magenta      |



Scale: 1in = 50ft

## FIGURE 6

CLIENT: OHM REMEDIATION SERVICES CORP.

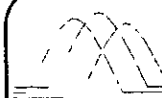
AREA 3

EM-31 TERRAIN CONDUCTIVITY CONTOURS

MEMPHIS DEFENSE DEPOT

MEMPHIS, TENNESSEE

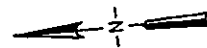
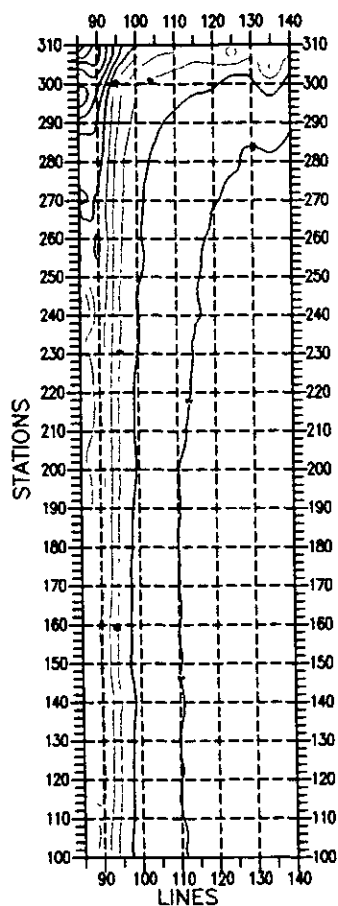
DATE OF SURVEY: JAN. 20 & 21, 1998



**NAEVA GEOPHYSICS INC.**  
 A SUBSIDIARY OF NORTH AMERICAN EXPLORATION OF VIRGINIA INC.  
 Subsurface Geophysical Surveys  
 P.O. BOX 7325, CHARLOTTESVILLE, VA 22906  
 (804) 978-8187 (804) 978-9791 FAX

CONTOUR INTERVAL: 2 ppt

| <u>Range</u> | <u>Color</u> |
|--------------|--------------|
| 0 - 5        | Blue         |
| 6 - 10       | Green        |
| > 10         | Red          |

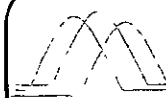


Scale: 1 in = 50ft

## FIGURE 7

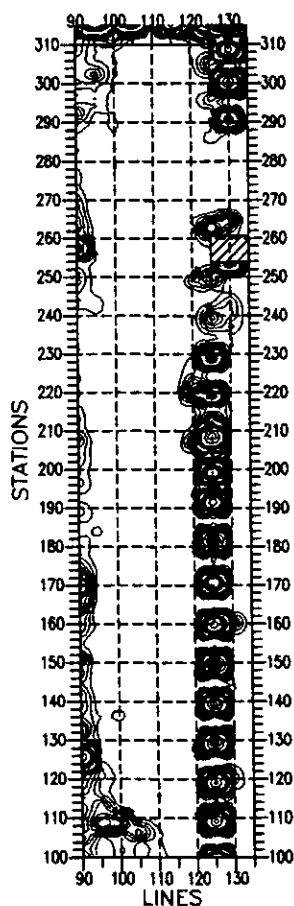
CLIENT: OHM REMEDIATION SERVICES CORP.  
 AREA 3  
 EM-31 INPHASE CONTOURS  
 MEMPHIS DEFENSE DEPOT  
 MEMPHIS, TENNESSEE  
 DATE OF SURVEY: JAN. 20 & 21, 1998





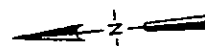
**NAEVA GEOPHYSICS INC.**  
 A SUBSIDIARY OF NORTH AMERICAN EXPLORATION OF VIRGINIA INC.  
 Subsurface Geophysical Surveys  
 P.O. BOX 7826, CHARLOTTESVILLE, VA 22906  
 (804) 978-3187 (804) 973-9791 FAX

| <u>Range (mV)</u> | <u>Contour Interval (mV)</u> | <u>Color</u> |
|-------------------|------------------------------|--------------|
| 10 - 45           | 5                            | Blue         |
| 50 - 95           | 5                            | Green        |
| 100 - 145         | 5                            | Red          |
| > 145             | 100                          | Magenta      |



### Legend

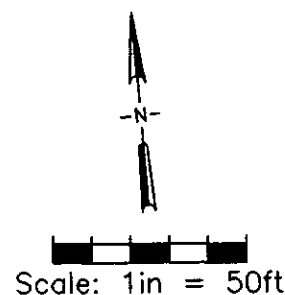
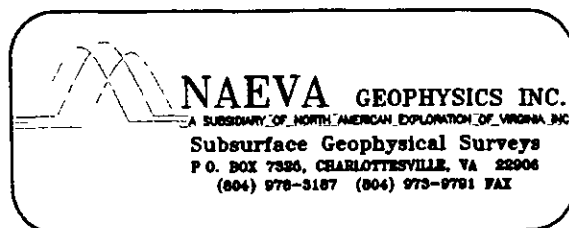
 Not Surveyed



Scale: 1in = 50ft

### FIGURE 8

CLIENT: OHM REMEDIATION SERVICES CORP.  
 AREA 3  
 EM-61 BOTTOM COIL DATA CONTOURS  
 MEMPHIS DEFENSE DEPOT  
 MEMPHIS, TENNESSEE  
 DATE OF SURVEY: JAN. 20 & 21, 1998

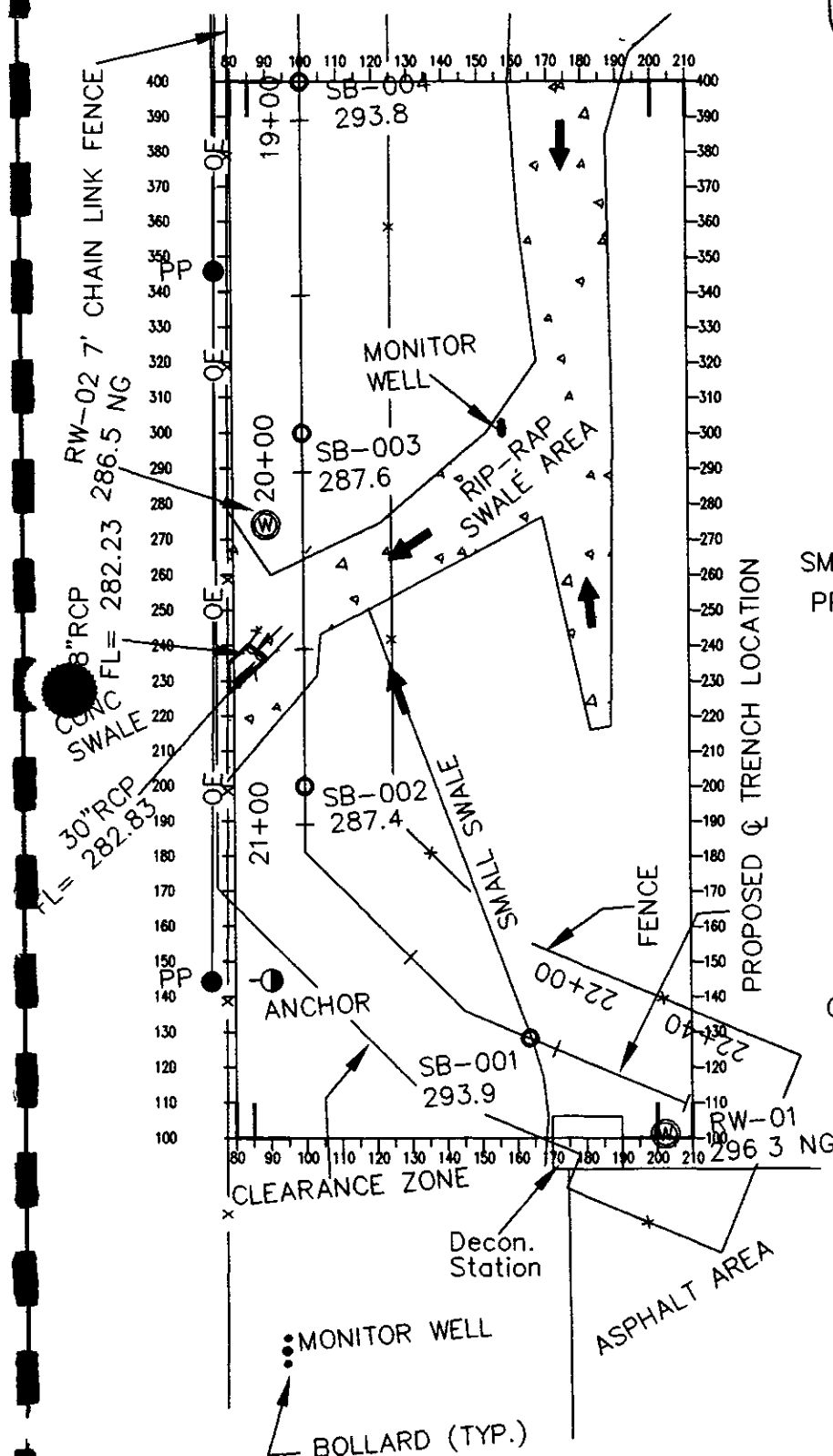
**LEGEND**

|       |                                            |
|-------|--------------------------------------------|
| SMH ⊙ | SANITARY SEWER MANHOLE                     |
| PP ●  | POWER POLE                                 |
| ⊙ W   | REMEDATION WELL                            |
| ○     | SOIL BORING                                |
| ⊕     | BOLLARD                                    |
| ⊙     | EXISTING WELL                              |
| OE    | OVERHEAD ELECTRIC                          |
| FL    | FLOWLINE INVERT @ END OF PIPE              |
| RCP   | REINFORCED CONCRETE PIPE                   |
| NG    | NATURAL GROUND                             |
| CONC  | CONCRETE                                   |
| ⊙     | CENTERLINE                                 |
| ⊙     | ANCHOR                                     |
| △     | CONTROL MONUMENT                           |
| +     | REGISTRATION MARKS FOR FIGURES 10, 11 & 12 |

**FIGURE 9**

CLIENT: **OHM REMEDIATION SERVICES CORP.**  
 AREA 4  
 AREA OF GEOPHYSICAL INVESTIGATION ON A  
 PORTION OF THE MEMPHIS DEFENSE DEPOT  
 MEMPHIS, TENNESSEE  
 DATE OF SURVEY: JAN. 20 & 21, 1998

Note: Figure 9 produced from  
 OHM basemap.





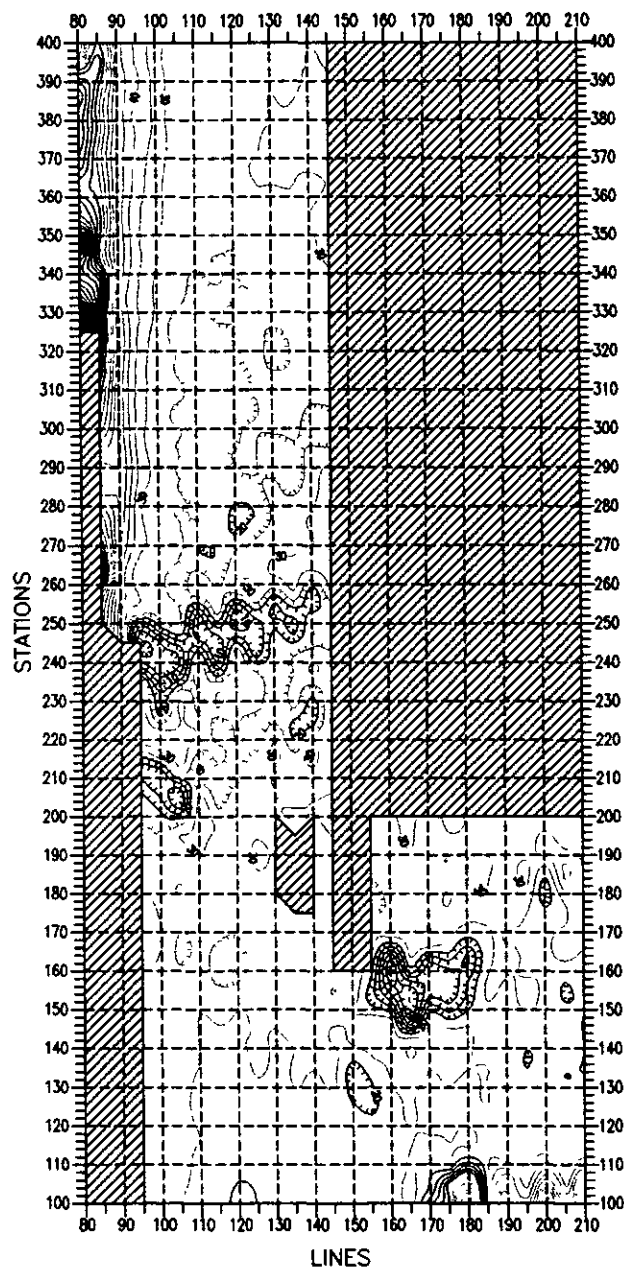
**NAEVA GEOPHYSICS INC.**

A SUBSIDIARY OF NORTH AMERICAN EXPLORATION OF VIRGINIA INC.

Subsurface Geophysical Surveys

P.O. BOX 7325, CHARLOTTESVILLE, VA 22906

(804) 978-3187 (804) 978-9791 FAX

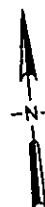


CONTOUR INTERVAL: 5 mS/m

| Range    | Color   |
|----------|---------|
| < 0      | Cyan    |
| 0 - 20   | Blue    |
| 25 - 70  | Green   |
| 75 - 120 | Red     |
| > 120    | Magenta |

Legend

 Not Surveyed



Scale: 1 in = 50 ft

**FIGURE 10**

CLIENT: OHM REMEDIATION SERVICES CORP.

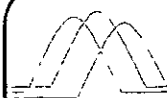
AREA 4

EM-31 TERRAIN CONDUCTIVITY CONTOURS

MEMPHIS DEFENSE DEPOT

MEMPHIS, TENNESSEE

DATE OF SURVEY: JAN. 20 & 21, 1998



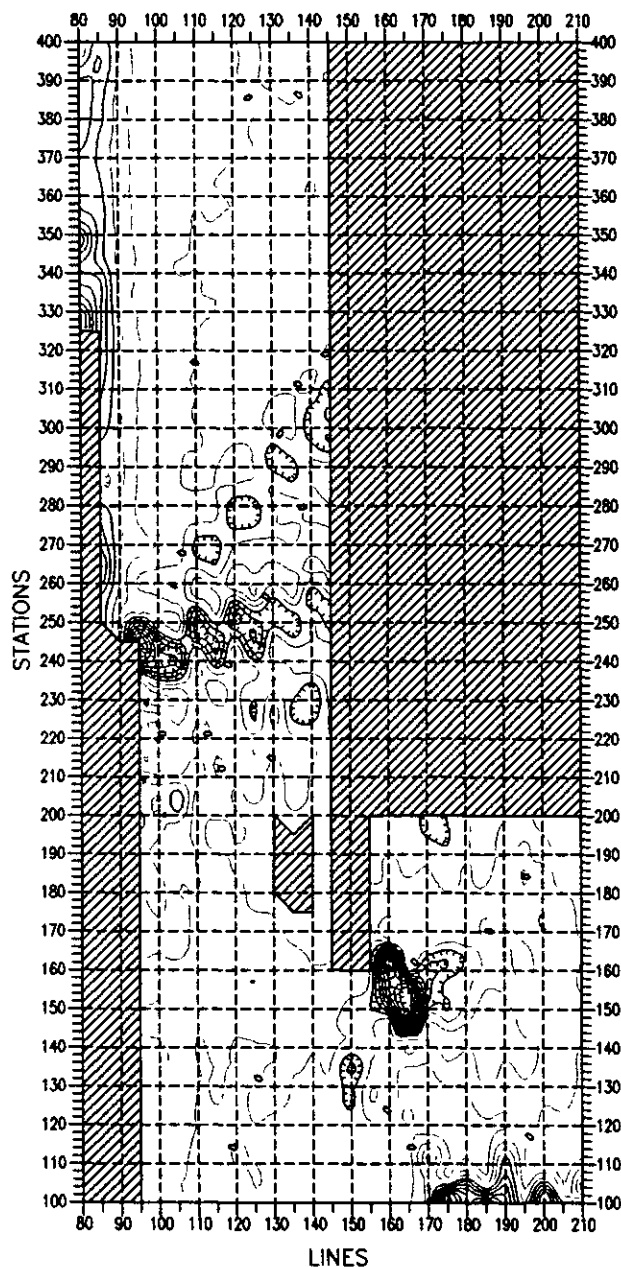
**NAEVA GEOPHYSICS INC.**

A SUBSIDIARY OF NORTH AMERICAN EXPLORATION OF VIRGINIA INC.

Subsurface Geophysical Surveys

P.O. BOX 7325, CHARLOTTESVILLE, VA 22906

(804) 978-3187 (804) 973-9791 FAX

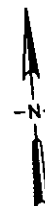


CONTOUR INTERVAL: 2 ppt

| Range | Color |
|-------|-------|
| < 0   | Blue  |
| 0 - 4 | Green |
| > 4   | Red   |

Legend

 Not Surveyed



Scale: 1 in = 50 ft

**FIGURE 11**

CLIENT: OHM REMEDIATION SERVICES CORP.

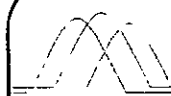
AREA 4

EM-31 INPHASE CONTOURS

MEMPHIS DEFENSE DEPOT

MEMPHIS, TENNESSEE

DATE OF SURVEY: JAN. 20 & 21, 1998



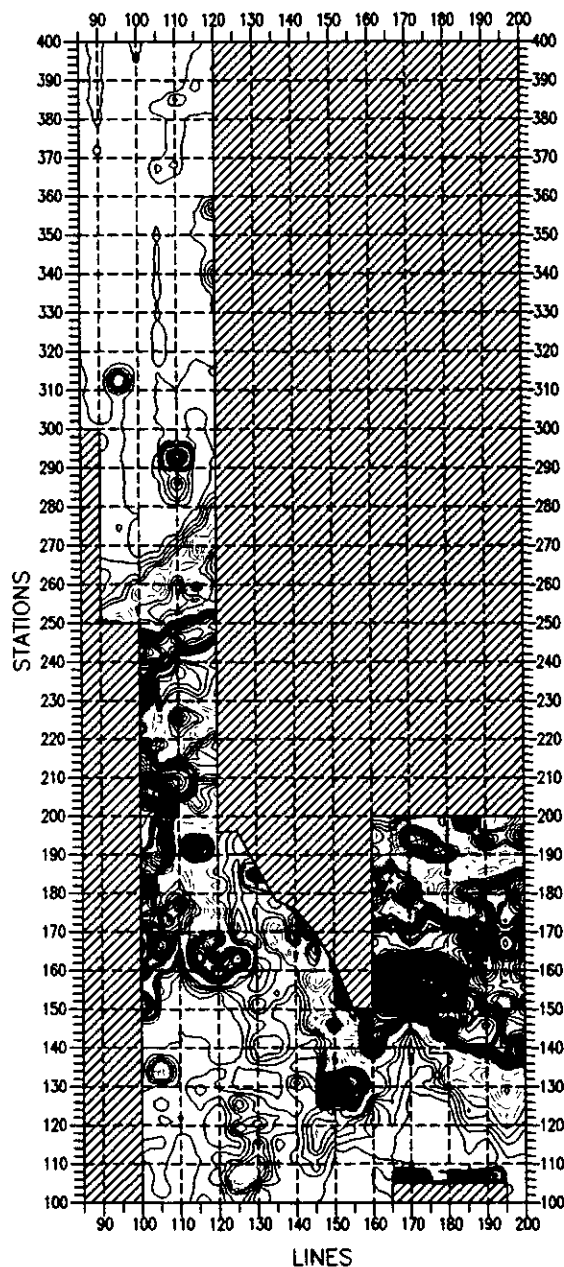
**NAEVA GEOPHYSICS INC.**

A SUBSIDIARY OF NORTH AMERICAN EXPLORATION OF VIRGINIA, INC.

Subsurface Geophysical Surveys

P.O. BOX 7825, CHARLOTTESVILLE, VA 22906

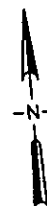
(804) 976-3187 (804) 973-9791 FAX



| Range (mV) | Contour Interval (mV) | Color   |
|------------|-----------------------|---------|
| 10 - 50    | 10                    | Blue    |
| 60 - 100   | 10                    | Green   |
| 110 - 250  | 10                    | Red     |
| > 250      | 50                    | Magenta |

#### Legend

 Not Surveyed



  
Scale: 1in = 50ft

#### FIGURE 12

CLIENT: OHM REMEDIATION SERVICES CORP.

AREA 4

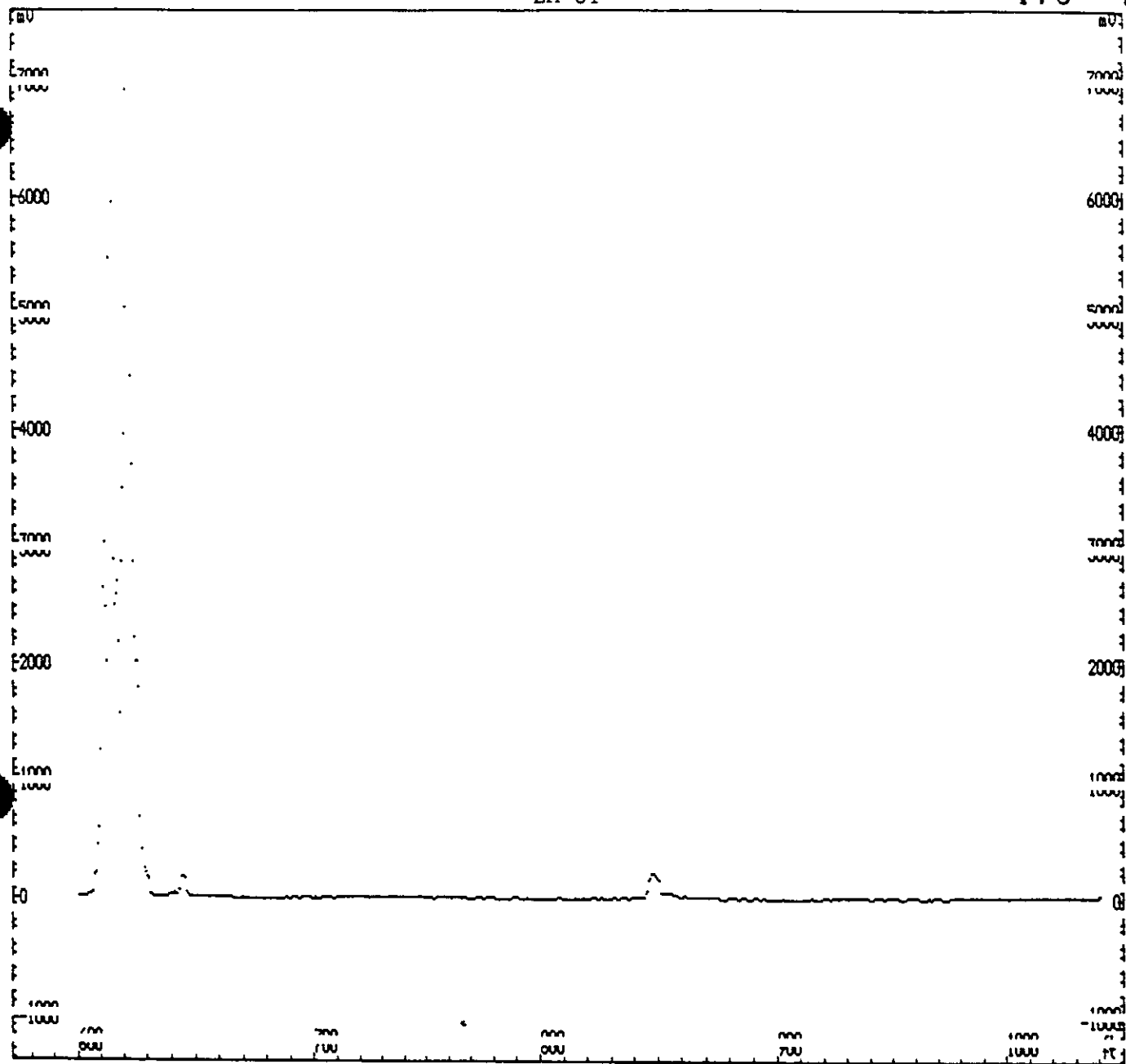
EM-61 BOTTOM COIL DATA CONTOURS

MEMPHIS DEFENSE DEPOT

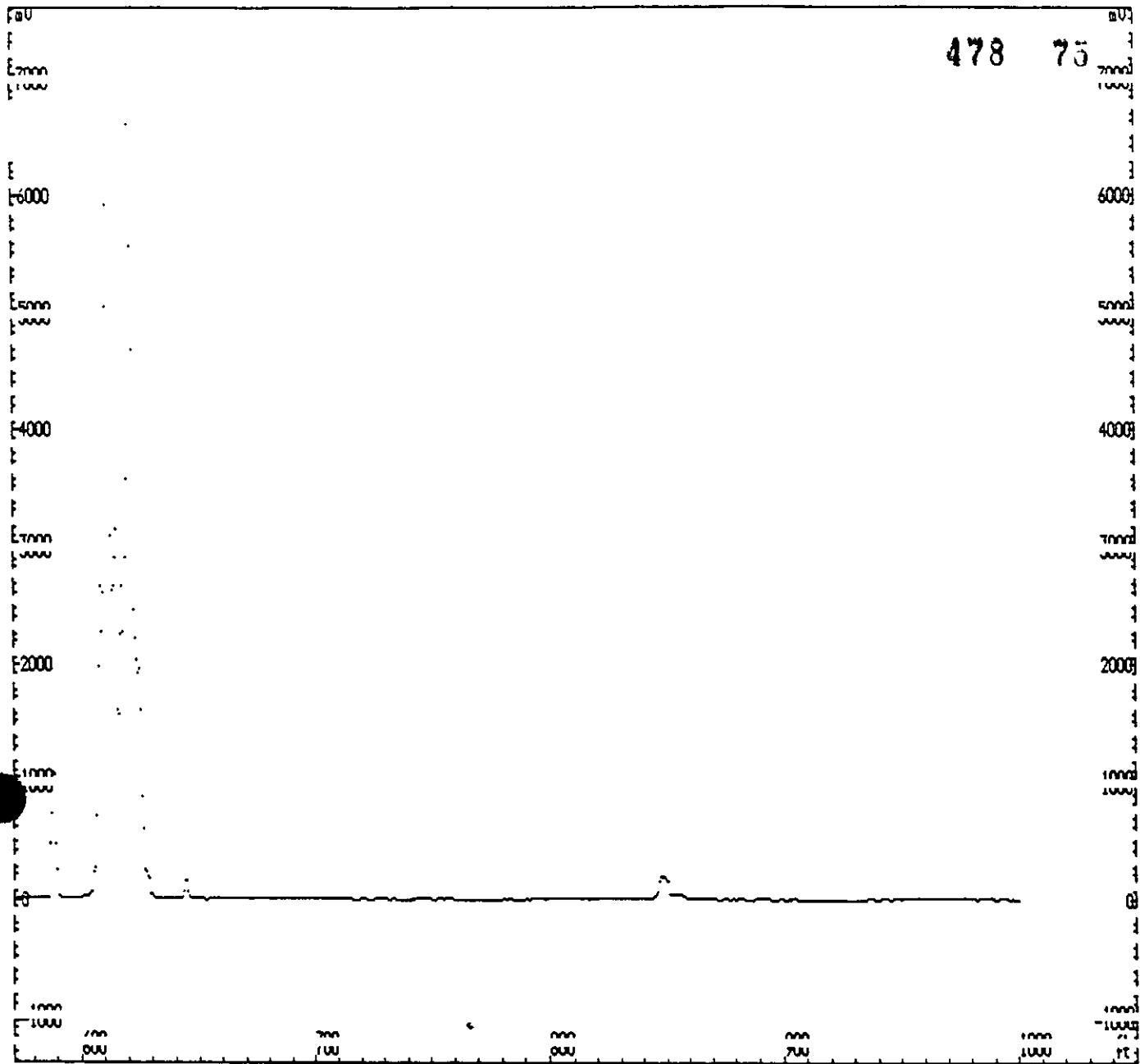
MEMPHIS, TENNESSEE

DATE OF SURVEY: JAN. 20 & 21, 1998

## APPENDIX A



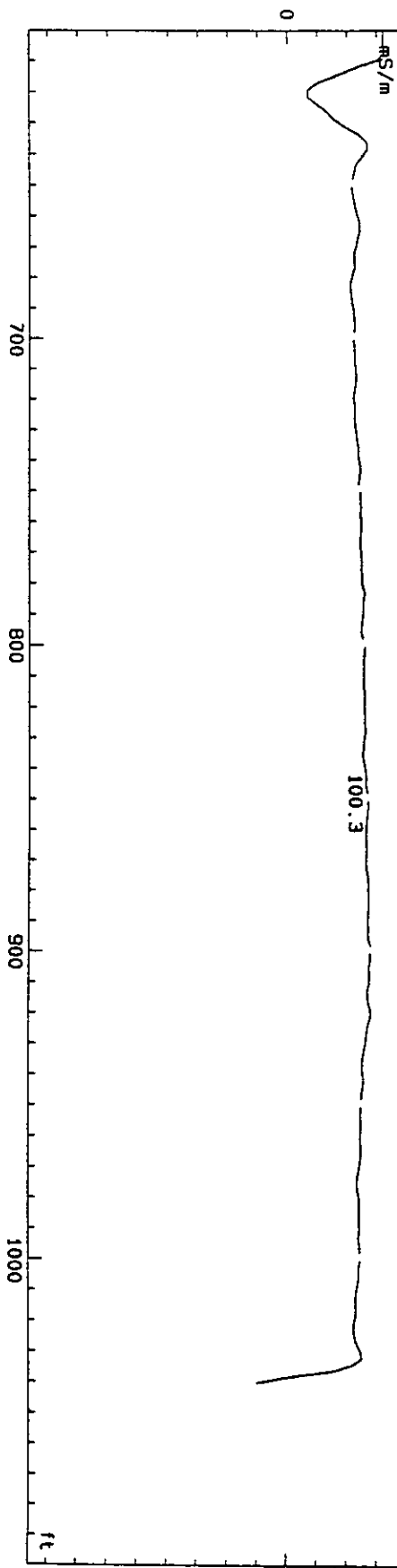
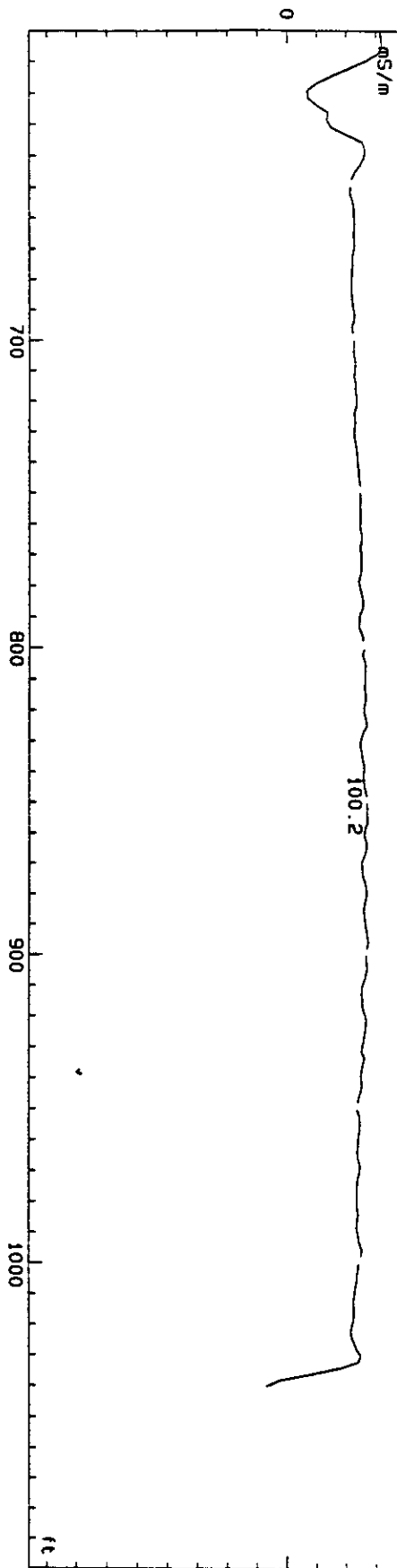
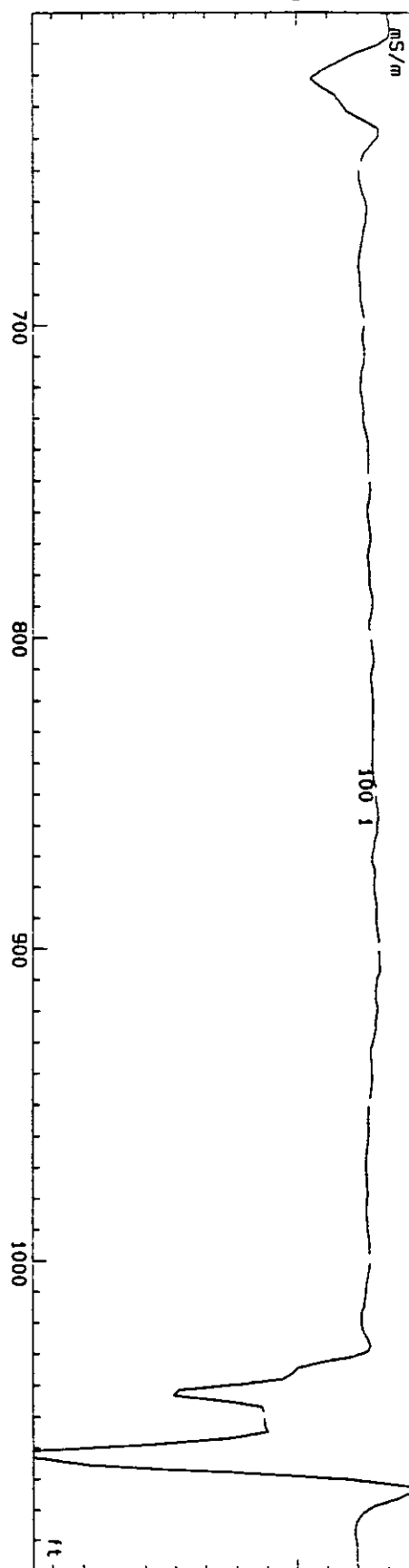
1/20/98 OHM Area 1Extension Repeat Line 100E +30ft with metal ball  
EM-61





EM-31

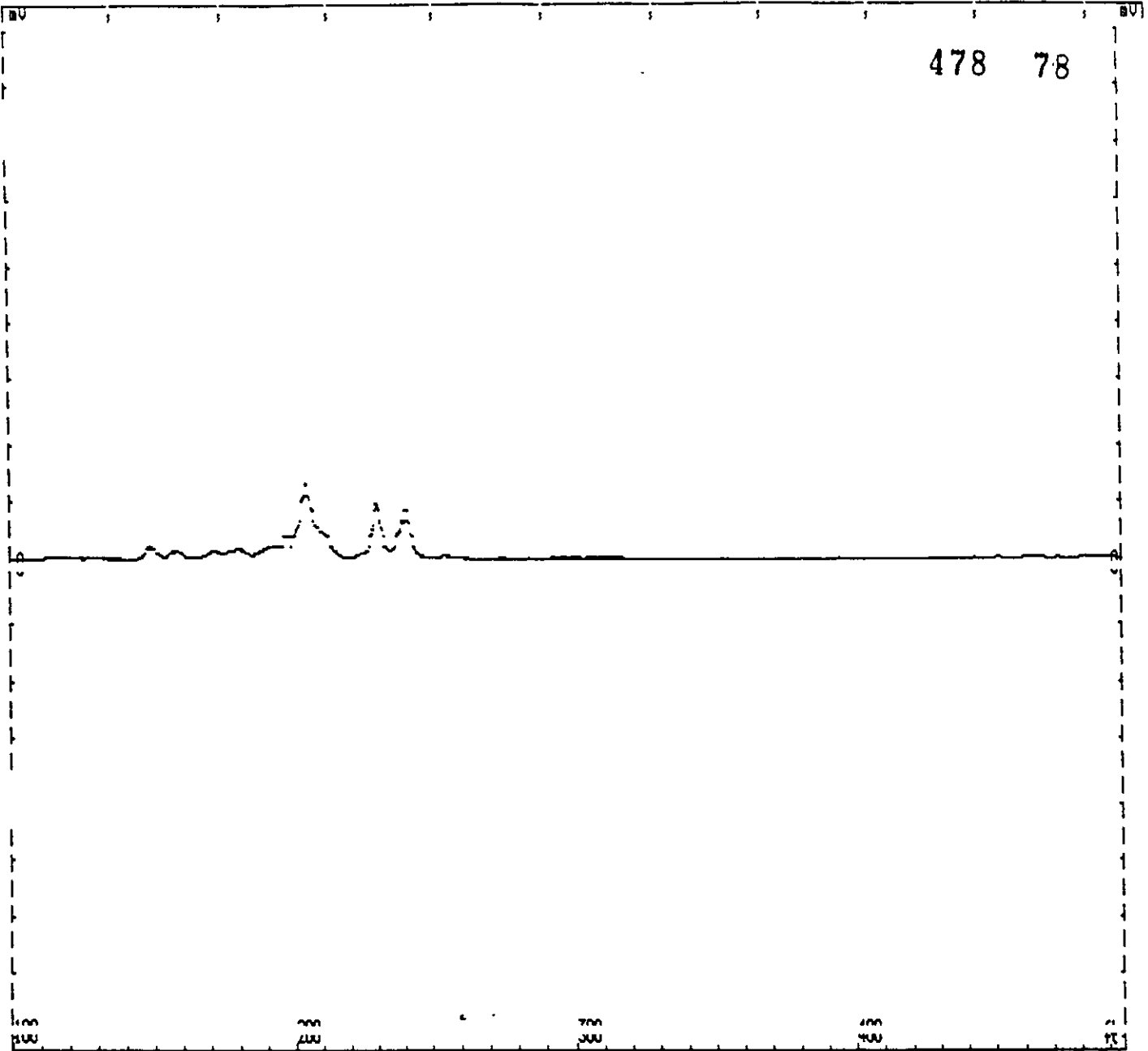
478 76

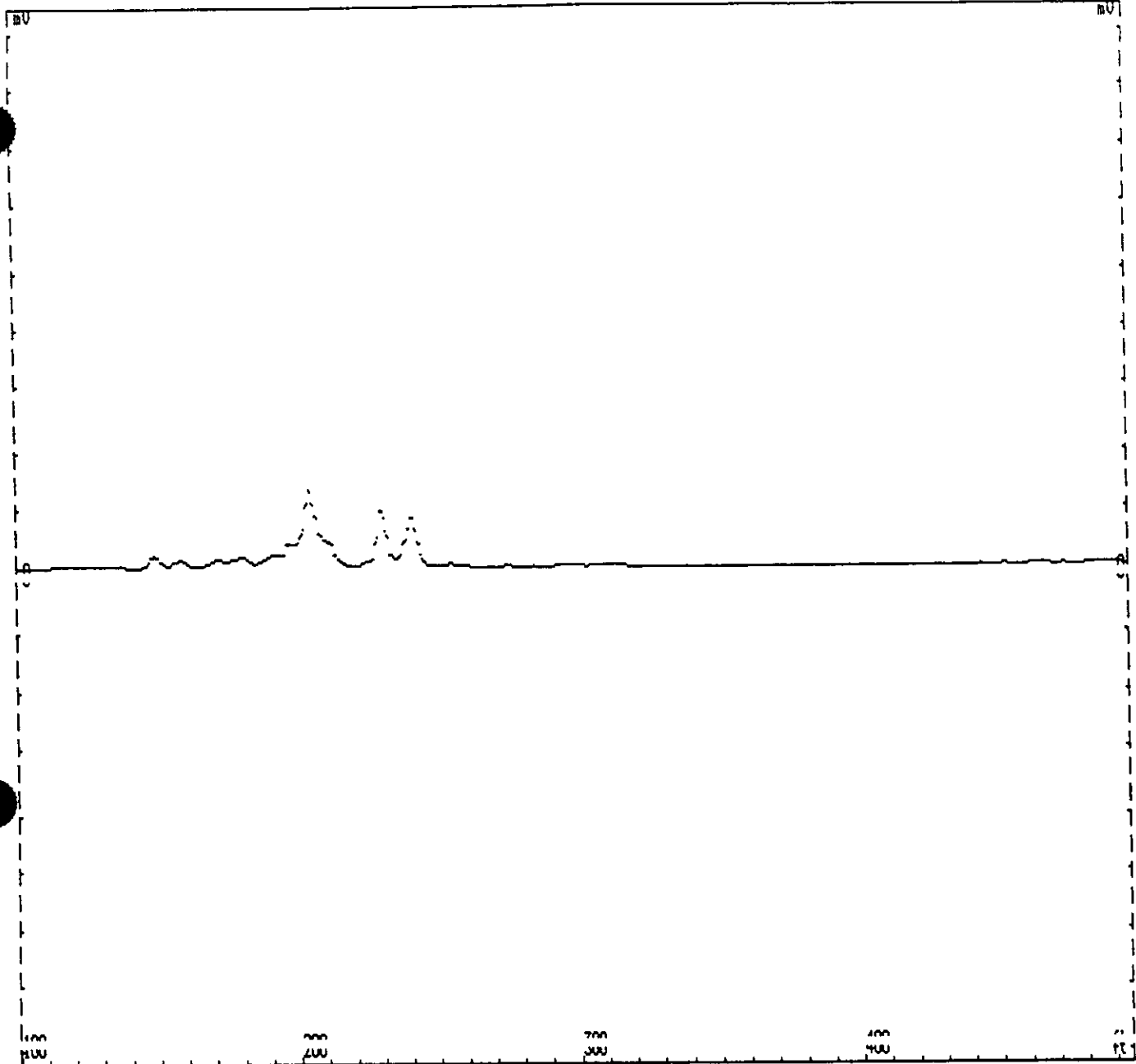


## APPENDIX B

• •

478 78



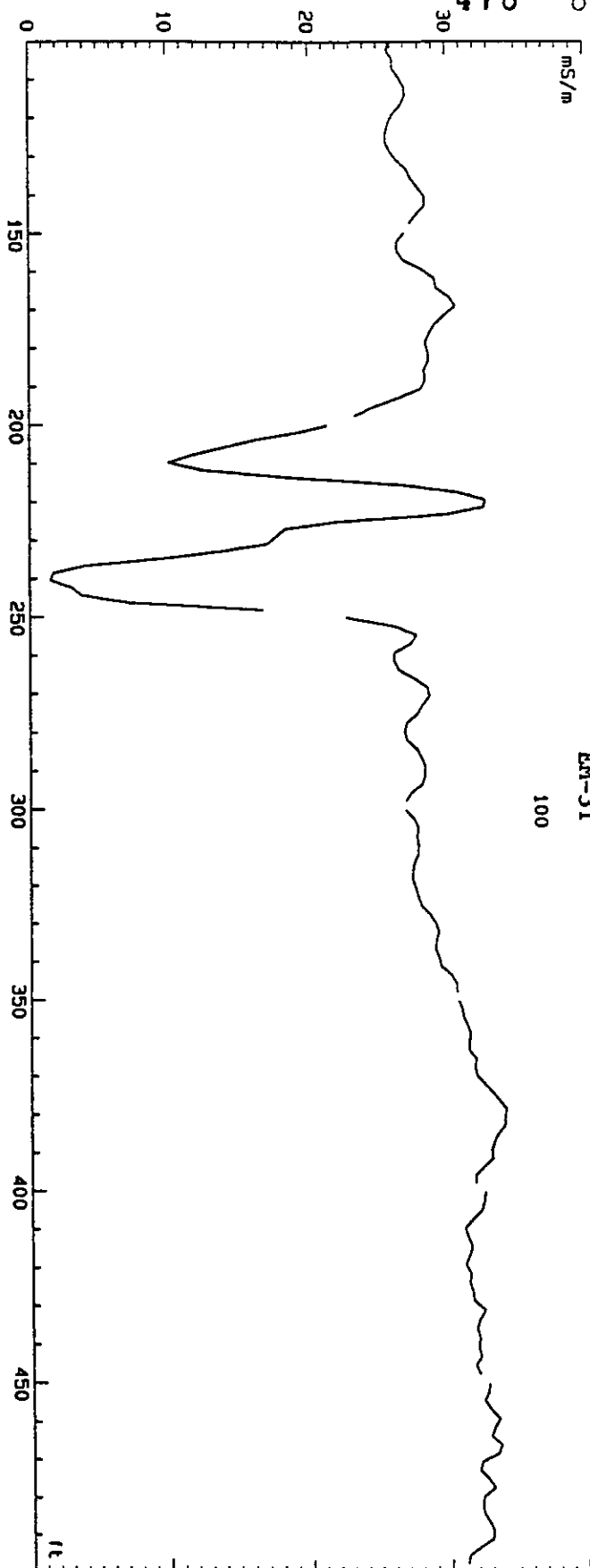


1/21/98 OHM Area 4 Line 100E and repeats

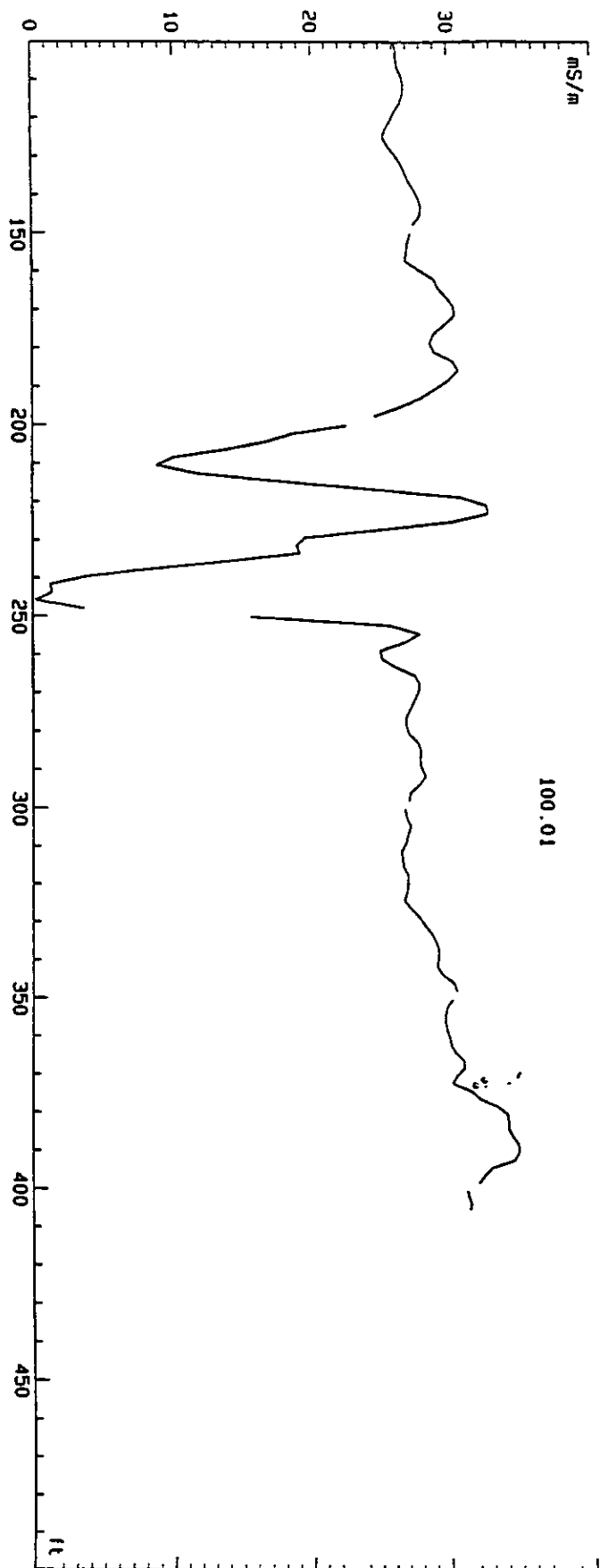
EM-31

100

478 80



100.01



# TAB

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Appendix B



# TECHNICAL MEMORANDUM

5445 Triangle Parkway, Suite 400, Norcross, Georgia

OHM Project No. 20022

**To:** John W. Rollyson, P.E., Area Engineer  
USACE/Tennessee Area Office

**From:** Stephen Offner, P.G., OHM/Norcross

**PC:** Dana Conkin, USACE/Tennessee Area Office  
Glenn L. Kaden, Defense Depot/Memphis  
John Lore, OHM/Norcross

**Re:** Analytical Results of the Soil Borings for Disposal Characterization  
Dunn Field, Defense Depot, Memphis, Tennessee  
Contract No. DACA45-96-D-0014  
Delivery Order No. 0007

**Date:** February 9, 1998

On January 13 and 14, 1998, representatives of OHM Remediation Services Corp. (OHM) collected 26 soil samples (designated SB-001 to SB-026) from each 100 foot segment of the proposed 2550 foot pipeline trench for analytical disposal characterization. The locations of the 26 soil samples are illustrated on the site surveys included in *Appendix A*. The purpose of the soil sampling and analyses was to determine if the soil to be excavated from the pipeline trench was hazardous or non-hazardous waste, as defined by 40 CFR 261.

This work was conducted in accordance with OHM's Contractor's Sampling and Analysis Plan (dated November 1997), Appendix A of CH2M HILL's Technical Specifications and Appendices (dated August 1997), and OHM's letter dated December 10, 1997.

## Scope of Work

On January 13, 1998, OHM excavated to four feet below land surface (bls) to collect a total of seven composite soil samples identified to be located within unexplained geophysical subsurface anomalies (see OHM Technical Memorandum, dated January 6, 1998). These seven composite soil samples (designated SB-006, -007, -008, -009, -013, -014 and -015) were collected by use of a backhoe bucket in level B personnel protection.

On January 14, 1998, 19 composite soil samples were collected by OHM by use of stainless steel hand augers. The samples were collected from land surface to four feet bls, and were designated SB-001 through SB-005, SB-010 through SB-012, and SB-016 through SB-026.

## Methodologies

A total of 26 composite soil samples were collected on January 13 and 14, 1998. Samples SB-007, -016 and -025 were collected in duplicate. In addition, three equipment blanks were collected as part of the sampling event. At the end of each day's sampling event, the soil samples and associated field QC samples were packed into coolers with bagged wet ice and the corresponding chain of custody forms, and forwarded via overnight courier to Analytical Services, Inc., in Norcross, Georgia.

All soil samples were analyzed for: Ignitability (SW-846 method 1010); pH (SW-846 method 9045); reactive cyanide and sulfate (SW-846 methods 7.3.3.2 and 7.3.4.2); TCLP metals (SW-846 methods 1311/6010 and 7470); TCLP chlorinated pesticides (SW-846 methods 1311/8081); TCLP chlorinated herbicides (SW-846 methods 1311/8150); TCLP semivolatile organic compounds (SW-846 methods 1311/8270); and TCLP volatile organic compounds (SW-846 methods 1311/8260).

## Analytical Results

According to the analytical results, the pH of the 26 samples ranged from 5.36 to 8.17. TCLP barium was detected in the 26 samples at concentrations ranging from 0.5 mg/L to 2.1 mg/L, which are well below the 40 CFR 261 regulatory level of 100 mg/L. TCLP cadmium was detected in sample SB-002 at a concentration of 0.06 mg/L and TCLP chromium was detected in sample SB-007 at a concentration of 0.01 mg/L. The 40 CFR 261 regulatory limits for TCLP cadmium and chromium are 1 mg/L and 5 mg/L, respectively.

TCLP tetrachloroethene (PCE) was detected in 24 of 25 samples at concentrations ranging from 0.03 mg/L to 0.44 mg/L, which are below the 40 CFR 261 regulatory limit of 0.7 mg/L. No TCLP PCE was detected in sample SB-022 (<0.02 mg/L). TCLP PCE was detected at a concentration of 0.83 mg/L in sample SB-015. This concentration exceeds the 40 CFR 261 regulatory level of 0.7 mg/L, indicating hazardous waste levels of PCE. Further review of the laboratory analytical data indicated the following: (1) no PCE was detected in the three equipment rinseate blanks collected during the sampling event; (2) no PCE was detected in the two trip blanks; and (3) no PCE was detected in the laboratory method blanks for each of the sample batches. A summary of the analytical results is included in *Appendix B*, and a copy of the laboratory analytical results are included in *Appendix C*.

In addition to the laboratory analytical results of the soil samples, buried manmade materials were encountered during the soil sampling. In three soil boring locations (SB-013, -014 and -015) relatively small metal canister with glass vials were uncovered. The metal canisters were approximately 1.5-inches in diameter and approximately three inches long. Where intact, the canisters contained four small glass vials with cork stoppers. A white liquid or white crystalline



material were observed in some of the vials. The metals canisters were observed to be in fair to poor condition; many were completely rusted through. Soil boring locations SB-013, -014 and -015 were located within an area of unexplained geophysical subsurface anomalies (see OHM Technical Memorandum, dated January 6, 1998). The contents of the metal canisters/glass vials is not known at this time; however, a CEHNC CWM/UXO representative (Mr. Hank Hubbard) determined that the encountered metals canisters and glass vials were not suspect CWM or UXO.

Buried concrete, scrap metal and wood were present in soil borings SB-006, -007 and -008. These soil boring locations were located within an area of an unexplained geophysical subsurface anomaly (see OHM Technical Memorandum, dated January 6, 1998). Buried metal, burnt wood and other manmade materials were also encountered in soil borings SB-001 and SB-002. These soil boring locations were located within a relatively large area of unexplained geophysical subsurface anomalies (see OHM Technical Memorandum, dated February 4, 1998)

### **Conclusions and Recommendations**

Based on the findings from the soil sampling event, the following conclusions and recommendations are presented:

- 1) In accordance with Appendix A of the Technical Specifications, the excavated soil associated with boring SB-015 (an approximate length of 200 feet, depth of 4 feet and width of 2 feet) should be placed on plastic sheeting near the trench. This soil should be resampled for TCLP PCE to determine if it must be handled as a hazardous waste;
- 2) The contents of the metal canisters and glass vials should be analyzed to determine the proper transportation and disposal of these materials. One representative sample should be collected and analyzed for: CWM degradation compounds; explosives; TCL organics; TAL inorganics; full TCLP organic and inorganic list; and reactivity, corrosivity, and ignitability; and
- 3) Based on the analytical data, the excavated soil from the remaining portion of the pipeline trench can be disposed at a RCRA subtitle D landfill as non-hazardous waste.

## APPENDIX A

Architects  
Engineers

2430 Poplar Avenue  
Memphis, TN 38112  
P O Box 12788  
Memphis, TN 38182-0788

Telephone 901.327 8  
Facsimile 901.324 7

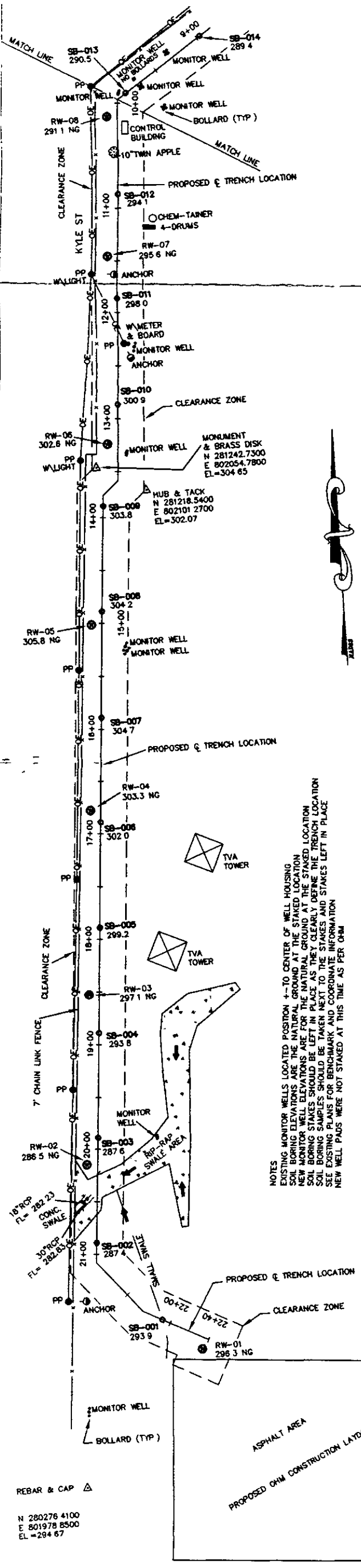


DUNN FIELD  
MEMPHIS DEFENSE DEPT  
OHM

MEMPHIS, TENNESSEE

SURVEY

Drawn JAF  
Checked JBC  
Date 12/15/86  
Job No. M1909C2001  
CAD F. M1909C



NOTES  
EXISTING MONITOR WELLS LOCATED POSITION 4'-TO CENTER OF WELL HOUSING  
SOIL BORING ELEVATIONS ARE THE NATURAL GROUND AT THE STAKED LOCATION  
NEW MONITOR WELL ELEVATIONS ARE THE NATURAL GROUND AT THE STAKED LOCATION  
SOIL BORING STAKES SHOULD BE LEFT IN PLACE AS THE CLEARLY DEFINE THE TRENCH LOCATION  
SEE EXISTING PLANS FOR BENCHMARK AND COORDINATE INFORMATION  
NEW WELL PADS WERE NOT STAKED AT THIS TIME AS PER OHM

LEGEND

SMH

PP

OE

FL

RCP

NG

CONC

CE

ANCHOR

CONTROL MONUMENT

SANITARY SEWER MANHOLE

POWER POLE

REMEDIAL WELLS

SOIL BORING

BOLLARD

EXISTING WELL

OVERHEAD ELECTRIC

FLOWLINE INVERT @ END OF PIPE

REINFORCED CONCRETE PIPE

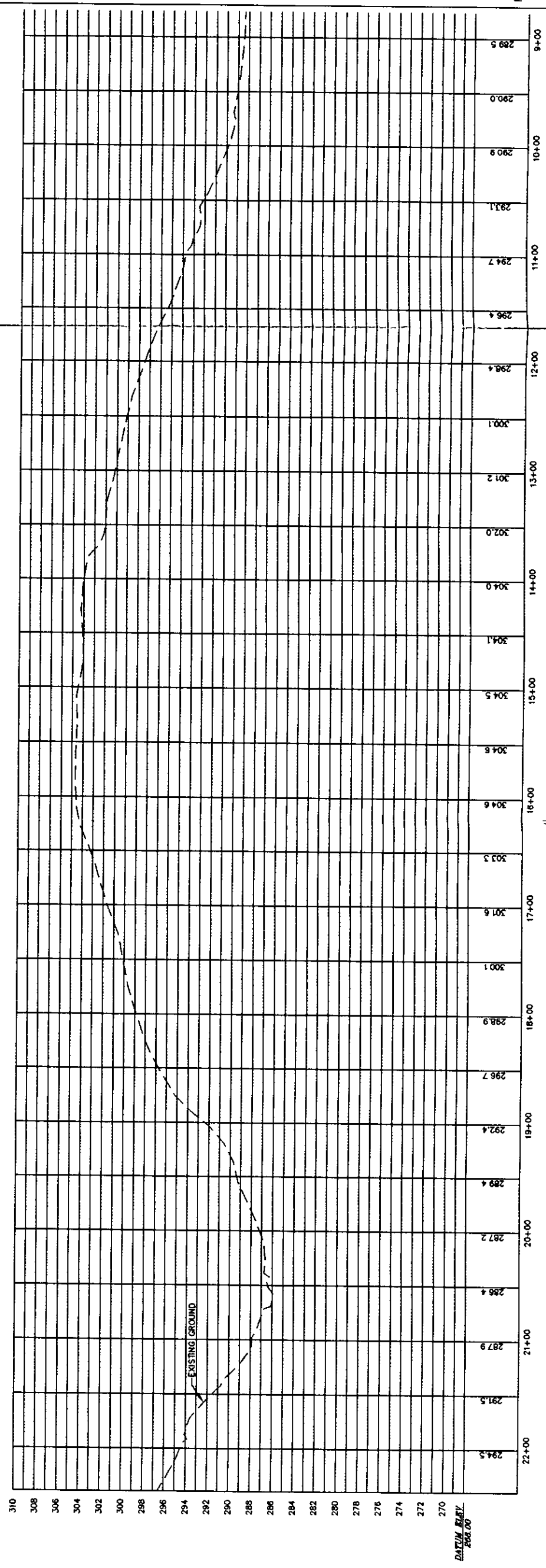
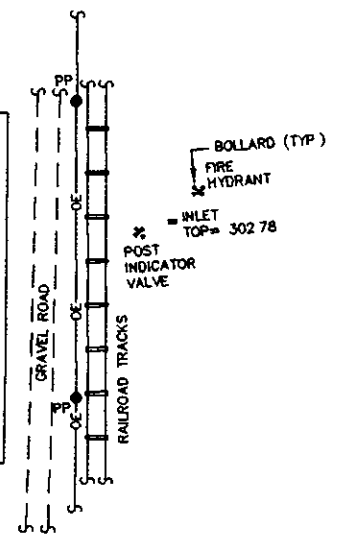
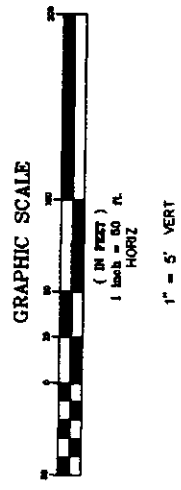
NATURAL GROUND

CONCRETE

CENTERLINE

ANCHOR

CONTROL MONUMENT



Architects  
Engineers

2430 Poplar Avenue  
Memphis, Tn 38112  
P O Box 12788  
Memphis, Tn 38182 0788

Telephone 901 327.8222  
Facsimile 901 324 715



No. Revision Date

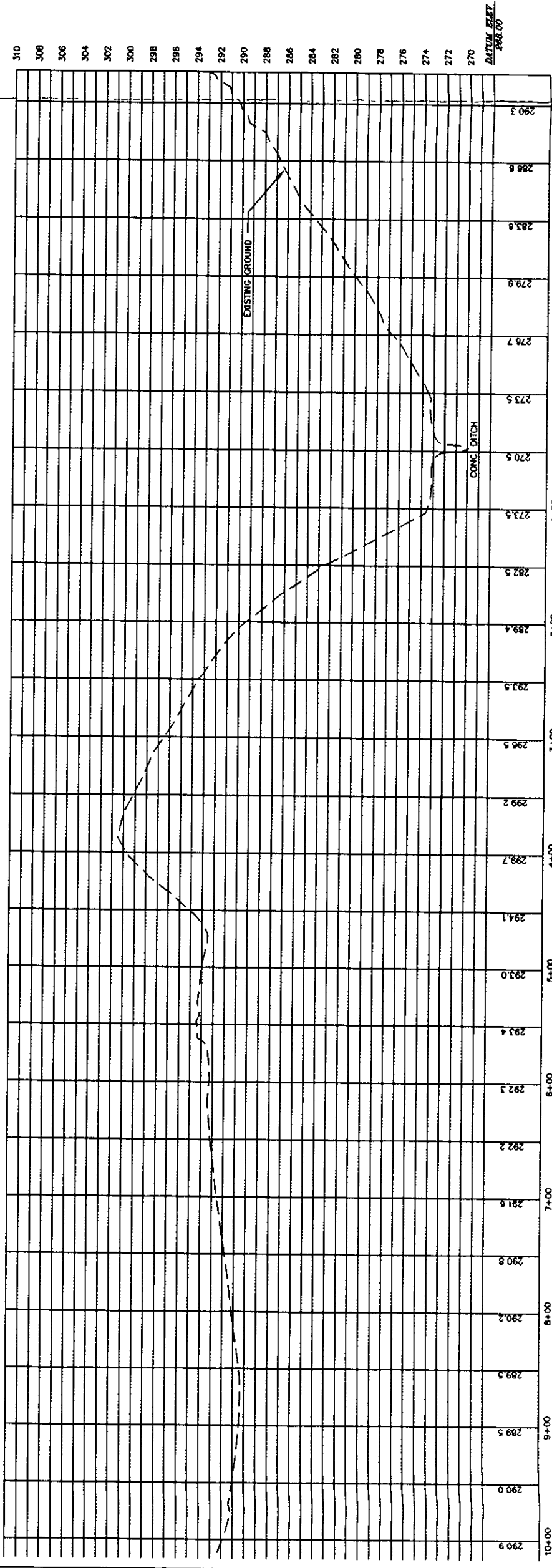
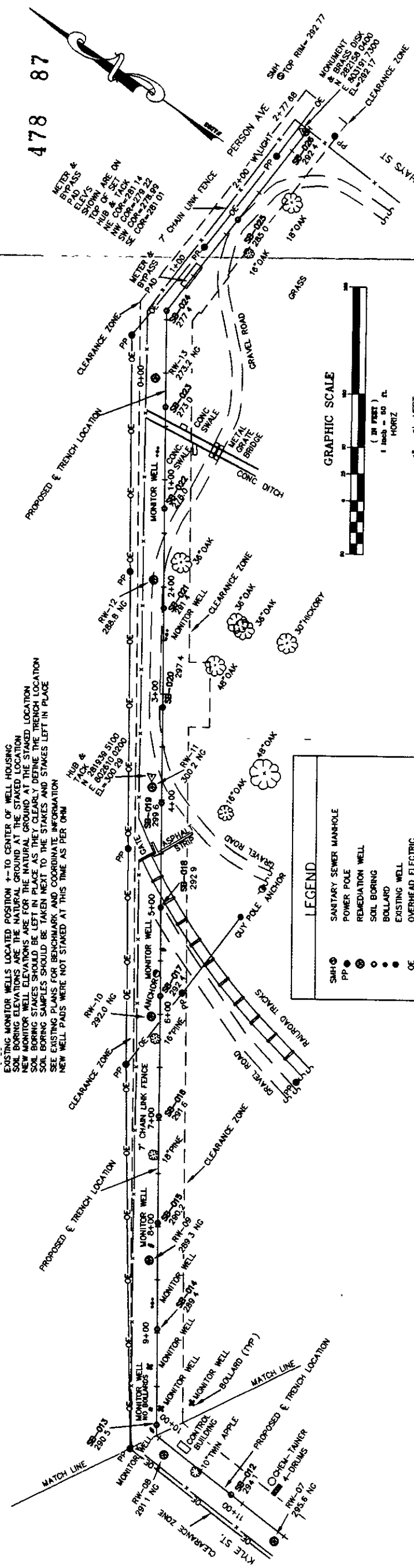
DUNN FIELD  
MEMPHIS DEFENSE DEPOT  
OHM

MEMPHIS, TENNESSEE

SURVEY

Drawn JAF  
Job No M1909C2001  
Checked JBC  
Date 12/15/97  
CAD File M1909C2001

SV1.2



## APPENDIX B

**Summary of Analytical Results for Soil Disposal Characterization  
Dunn Field, Defense Depot  
Memphis, Tennessee**

**478 89**

| Soil Boring No./Field No.                        |      |            | SB-001     | SB-002    | SB-003    | SB-004    | SB-005    | SB-006    | 40 CFR 261<br>Regulatory<br>Levels |
|--------------------------------------------------|------|------------|------------|-----------|-----------|-----------|-----------|-----------|------------------------------------|
| Laboratory ID No.                                |      |            | 90937-1    | 90937-2   | 90937-3   | 90937-4   | 90937-5   | 90797-7   |                                    |
| Depth Sample Collected (ft, bis)                 |      |            | 0-4'       | 0-4'      | 0-4'      | 0-4'      | 0-4'      | 0-4'      |                                    |
| Date Sample Collected                            |      |            | 14-Jan-98  | 14-Jan-98 | 14-Jan-98 | 14-Jan-98 | 14-Jan-98 | 13-Jan-98 |                                    |
| LABORATORY ANALYSES                              |      |            | EPA HW No. | Units     |           |           |           |           |                                    |
| Ignitability (EPA 1010)                          | D001 | °F         |            | >212      | >212      | >212      | >212      | >212      | <140                               |
| pH (EPA 9045)                                    | D002 | stdn units |            | 8.15      | 8.17      | 6.81      | 6.09      | 5.40      | NS                                 |
| Reactive Cyanide (EPA 7 3 3 2)                   | D003 | mg/kg      |            | <1        | <1        | <1        | <1        | <1        | 250*                               |
| Reactive Sulfide (EPA 7 3 4 2)                   | D003 | mg/kg      |            | <5        | <5        | <5        | <5        | <5        | 500*                               |
| <b>TCLP NON-VOLATILE EXTRACTION (EPA 1311)</b>   |      |            |            |           |           |           |           |           |                                    |
| Arsenic (EPA 6010)                               | D004 | mg/L       |            | <2.5      | <2.5      | <2.5      | <2.5      | <2.5      | 5.00                               |
| Barium (EPA 6010)                                | D005 | mg/L       |            | 1.7       | 1.6       | 1.0       | 0.9       | 0.8       | 100.00                             |
| Cadmium (EPA 6010)                               | D006 | mg/L       |            | <0.01     | 0.06      | <0.01     | <0.01     | <0.01     | 1.00                               |
| Chlordane (EPA 8081)                             | D020 | mg/L       |            | <0.01     | <0.01     | <0.01     | <0.01     | <0.01     | 0.03                               |
| Chromium (EPA 6010)                              | D007 | mg/L       |            | <0.01     | <0.01     | <0.01     | <0.01     | <0.01     | 5.00                               |
| Cresol, total (EPA 8270)                         | D026 | mg/L       |            | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 200.00                             |
| 2,4-D (EPA 8150)                                 | D016 | mg/L       |            | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 10.00                              |
| 1,4-Dichlorobenzene (EPA 8270)                   | D027 | mg/L       |            | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 7.50                               |
| 2,4-Dinitrotoluene (EPA 8270)                    | D030 | mg/L       |            | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 0.13                               |
| Endrin (EPA 8081)                                | D012 | mg/L       |            | <0.001    | <0.001    | <0.001    | <0.001    | <0.001    | 0.02                               |
| Heptachlor (EPA 8081)                            | D031 | mg/L       |            | <0.001    | <0.001    | <0.001    | <0.001    | <0.001    | 0.008                              |
| Heptachlor Epoxide (EPA 8081)                    | D031 | mg/L       |            | <0.001    | <0.001    | <0.001    | <0.001    | <0.001    | 0.008                              |
| Hexachlorobenzene (EPA 8270)                     | D032 | mg/L       |            | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 0.13                               |
| Hexachlorobutadiene (EPA 8270)                   | D033 | mg/L       |            | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 0.50                               |
| Hexachloroethane (EPA 8270)                      | D034 | mg/L       |            | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 3.00                               |
| Lead (EPA 6010)                                  | D008 | mg/L       |            | <0.1      | <0.1      | <0.1      | <0.1      | <0.1      | 5.00                               |
| Lindane (EPA 8081)                               | D013 | mg/L       |            | <0.01     | <0.01     | <0.01     | <0.01     | <0.01     | 0.40                               |
| Mercury (EPA 7470)                               | D009 | mg/L       |            | <0.005    | <0.005    | <0.005    | <0.005    | <0.005    | 0.20                               |
| Methoxychlor (EPA 8081)                          | D014 | mg/L       |            | <0.5      | <0.5      | <0.5      | <0.5      | <0.5      | 10.00                              |
| Nitrobenzene (EPA 8270)                          | D036 | mg/L       |            | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 2.00                               |
| Pentachlorophenol (EPA 8270)                     | D037 | mg/L       |            | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 100.00                             |
| Selenium (EPA 6010)                              | D010 | mg/L       |            | <0.5      | <0.5      | <0.5      | <0.5      | <0.5      | 1.00                               |
| Silver (EPA 6010)                                | D011 | mg/L       |            | <0.01     | <0.01     | <0.01     | <0.01     | <0.01     | 5.00                               |
| Toxaphene (EPA 8081)                             | D015 | mg/L       |            | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 0.50                               |
| 2,4,5-Trichlorophenol (EPA 8270)                 | D041 | mg/L       |            | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 400.00                             |
| 2,4,6-Trichlorophenol (EPA 8270)                 | D042 | mg/L       |            | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 2.00                               |
| 2,4,5-TP Silvex (EPA 8150)                       | D017 | mg/L       |            | <0.1      | <0.1      | <0.1      | <0.1      | <0.1      | 1.00                               |
| Pyridine (EPA 8270)                              | D038 | mg/L       |            | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 5.00                               |
| <b>TCLP ZERO HEADSPACE EXTRACTION (EPA 1311)</b> |      |            |            |           |           |           |           |           |                                    |
| Benzene (EPA 8260)                               | D018 | mg/L       |            | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | 0.50                               |
| Carbon Tetrachloride (EPA 8260)                  | D019 | mg/L       |            | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | 0.50                               |
| Chlorobenzene (EPA 8260)                         | D021 | mg/L       |            | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | 100.00                             |
| Chloroform (EPA 8260)                            | D022 | mg/L       |            | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | 6.00                               |
| 1,2-Dichloroethane (EPA 8260)                    | D028 | mg/L       |            | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | 0.50                               |
| 1,1-Dichloroethene (EPA 8260)                    | D029 | mg/L       |            | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | 0.70                               |
| Methyl Ethyl Ketone (EPA 8260)                   | D035 | mg/L       |            | <0.5      | <0.5      | <0.5      | <0.5      | <0.5      | 200.00                             |
| Tetrachloroethene (EPA 8260)                     | D039 | mg/L       |            | 0.07      | 0.05      | 0.08      | 0.16      | 0.06      | 0.70                               |
| Trichloroethene (EPA 8260)                       | D040 | mg/L       |            | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | 0.50                               |
| Vinyl Chloride (EPA 8260)                        | D043 | mg/L       |            | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | 0.20                               |

mg/L = milligrams per liter

mg/kg = milligrams per kilogram

HW = hazardous waste

NS = no standard due to sample being solid matrix

Regulatory levels as defined in 40 CFR Part 261 21, 261 22, 261 23 & 261 24

TCLP = toxicity characteristic leaching procedure

SB = soil boring

bis = below land surface

\* = as defined in SW-846 7 3 3 2 and 7 3 4 2

**Summary of Analytical Results for Soil Disposal Characterization**  
**Dunn Field, Defense Depot**  
**Memphis, Tennessee**

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| Soil Boring No./Field No.                        |      |            | SB-007     | DUP (SB-027) | SB-008            | SB-009    | SB-010    | SB-011    | 40 CFR 261<br>Regulatory<br>Levels |
|--------------------------------------------------|------|------------|------------|--------------|-------------------|-----------|-----------|-----------|------------------------------------|
| Laboratory ID No. (Total/SPLP)                   |      |            | 90797-7    | 90797-6      | 90797-5           | 90797-4   | 90935     | 90937-7   |                                    |
| Depth Sample Collected (ft, bls)                 |      |            | 0-4'       | 0-4'         | 0-4'              | 0-4'      | 0-4'      | 0-4'      |                                    |
| Date Sample Collected                            |      |            | 13-Jan-98  | 13-Jan-98    | 13-Jan-98         | 13-Jan-98 | 14-Jan-98 | 14-Jan-98 |                                    |
| LABORATORY ANALYSES                              |      |            | EPA HW No. | Units        | duplicate samples |           |           |           |                                    |
| Ignitability (EPA 1010)                          | D001 | °F         |            |              | >212              | >212      | >212      | >212      | <140                               |
| pH (EPA 9045)                                    | D002 | stdn units |            |              | 7.41              | 7.33      | 7.26      | 6.95      | 7.60                               |
| Reactive Cyanide (EPA 7 3 3 2)                   | D003 | mg/kg      |            |              | <1                | <1        | <1        | <1        | <1                                 |
| Reactive Sulfide (EPA 7.3 4.2)                   | D003 | mg/kg      |            |              | <5                | <5        | <5        | <5        | <5                                 |
| <b>TCLP NON-VOLATILE EXTRACTION (EPA 1311)</b>   |      |            |            |              |                   |           |           |           |                                    |
| Arsenic (EPA 6010)                               | D004 | mg/L       |            |              | <2.5              | <2.5      | <2.5      | <2.5      | <2.5                               |
| Barium (EPA 6010)                                | D005 | mg/L       |            |              | 2.1               | 1.8       | 1.2       | 2.1       | 0.7                                |
| Cadmium (EPA 6010)                               | D006 | mg/L       |            |              | <0.01             | <0.01     | <0.01     | <0.01     | <0.01                              |
| Chlordane (EPA 8081)                             | D020 | mg/L       |            |              | <0.01             | <0.01     | <0.01     | <0.01     | <0.01                              |
| Chromium (EPA 6010)                              | D007 | mg/L       |            |              | 0.01              | 0.01      | <0.01     | <0.01     | <0.01                              |
| Cresol, total (EPA 8270)                         | D026 | mg/L       |            |              | <0.05             | <0.05     | <0.05     | <0.05     | <0.05                              |
| 2,4-D (EPA 8150)                                 | D016 | mg/L       |            |              | <0.05             | <0.05     | <0.05     | <0.05     | <0.05                              |
| 1,4-Dichlorobenzene (EPA 8270)                   | D027 | mg/L       |            |              | <0.05             | <0.05     | <0.05     | <0.05     | <0.05                              |
| 2,4-Dinitrotoluene (EPA 8270)                    | D030 | mg/L       |            |              | <0.05             | <0.05     | <0.05     | <0.05     | <0.05                              |
| Endrin (EPA 8081)                                | D012 | mg/L       |            |              | <0.001            | <0.001    | <0.001    | <0.001    | <0.001                             |
| Heptachlor (EPA 8081)                            | D031 | mg/L       |            |              | <0.001            | <0.001    | <0.001    | <0.001    | <0.001                             |
| Heptachlor Epoxide (EPA 8081)                    | D031 | mg/L       |            |              | <0.001            | <0.001    | <0.001    | <0.001    | <0.001                             |
| Hexachlorobenzene (EPA 8270)                     | D032 | mg/L       |            |              | <0.05             | <0.05     | <0.05     | <0.05     | <0.05                              |
| Hexachlorobutadiene (EPA 8270)                   | D033 | mg/L       |            |              | <0.05             | <0.05     | <0.05     | <0.05     | <0.05                              |
| Hexachloroethane (EPA 8270)                      | D034 | mg/L       |            |              | <0.05             | <0.05     | <0.05     | <0.05     | <0.05                              |
| Lead (EPA 6010)                                  | D008 | mg/L       |            |              | <0.1              | <0.1      | <0.1      | <0.1      | <0.1                               |
| Lindane (EPA 8081)                               | D013 | mg/L       |            |              | <0.01             | <0.01     | <0.01     | <0.01     | <0.01                              |
| Mercury (EPA 7470)                               | D009 | mg/L       |            |              | <0.005            | <0.005    | <0.005    | <0.005    | <0.005                             |
| Methoxychlor (EPA 8081)                          | D014 | mg/L       |            |              | <0.5              | <0.5      | <0.5      | <0.5      | <0.5                               |
| Nitrobenzene (EPA 8270)                          | D036 | mg/L       |            |              | <0.05             | <0.05     | <0.05     | <0.05     | <0.05                              |
| Pentachlorophenol (EPA 8270)                     | D037 | mg/L       |            |              | <0.05             | <0.05     | <0.05     | <0.05     | <0.05                              |
| Selenium (EPA 6010)                              | D010 | mg/L       |            |              | <0.5              | <0.5      | <0.5      | <0.5      | <0.5                               |
| Silver (EPA 6010)                                | D011 | mg/L       |            |              | <0.01             | <0.01     | <0.01     | <0.01     | <0.01                              |
| Toxaphene (EPA 8081)                             | D015 | mg/L       |            |              | <0.05             | <0.05     | <0.05     | <0.05     | <0.05                              |
| 2,4,5-Trichlorophenol (EPA 8270)                 | D041 | mg/L       |            |              | <0.05             | <0.05     | <0.05     | <0.05     | <0.05                              |
| 2,4,6-Trichlorophenol (EPA 8270)                 | D042 | mg/L       |            |              | <0.05             | <0.05     | <0.05     | <0.05     | <0.05                              |
| 2,4,5-TP Silvex (EPA 8150)                       | D017 | mg/L       |            |              | <0.1              | <0.1      | <0.1      | <0.1      | <0.1                               |
| Pyridine (EPA 8270)                              | D038 | mg/L       |            |              | <0.05             | <0.05     | <0.05     | <0.05     | <0.05                              |
| <b>TCLP ZERO HEADSPACE EXTRACTION (EPA 1311)</b> |      |            |            |              |                   |           |           |           |                                    |
| Benzene (EPA 8260)                               | D018 | mg/L       |            |              | <0.02             | <0.02     | <0.02     | <0.02     | <0.02                              |
| Carbon Tetrachloride (EPA 8260)                  | D019 | mg/L       |            |              | <0.02             | <0.02     | <0.02     | <0.02     | <0.02                              |
| Chlorobenzene (EPA 8260)                         | D021 | mg/L       |            |              | <0.02             | <0.02     | <0.02     | <0.02     | <0.02                              |
| Chloroform (EPA 8260)                            | D022 | mg/L       |            |              | <0.02             | <0.02     | <0.02     | <0.02     | <0.02                              |
| 1,2-Dichloroethane (EPA 8260)                    | D028 | mg/L       |            |              | <0.02             | <0.02     | <0.02     | <0.02     | <0.02                              |
| 1,1-Dichloroethene (EPA 8260)                    | D029 | mg/L       |            |              | <0.02             | <0.02     | <0.02     | <0.02     | <0.02                              |
| Methyl Ethyl Ketone (EPA 8260)                   | D035 | mg/L       |            |              | <0.5              | <0.5      | <0.5      | <0.5      | <0.5                               |
| Tetrachloroethene (EPA 8260)                     | D039 | mg/L       |            |              | 0.18              | 0.18      | 0.03      | 0.25      | 0.22                               |
| Trichloroethene (EPA 8260)                       | D040 | mg/L       |            |              | <0.02             | <0.02     | <0.02     | <0.02     | <0.02                              |
| Vinyl Chloride (EPA 8260)                        | D043 | mg/L       |            |              | <0.02             | <0.02     | <0.02     | <0.02     | <0.02                              |

mg/L = milligrams per liter

mg/kg = milligrams per kilogram

HW = hazardous waste

NS = no standard due to sample being solid matrix

Regulatory levels as defined in 40 CFR Part 261.21, 261.22, 261.23 & 261.24

TCLP = toxicity characteristic leaching procedure

SB = soil boring

bls = below land surface

\* = as defined in SW-846 7 3 3 2 and 7 3 4 2

**Summary of Analytical Results for Soil Disposal Characterization**  
**Dunn Field, Defense Depot**  
**Memphis, Tennessee**

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| QA Sample No.                    | SB-008 EQB | SB-018 EQB       | SB-026 EQB | Trip Blank | Trip Blank  |      |
|----------------------------------|------------|------------------|------------|------------|-------------|------|
| Laboratory ID No.                | 90797-9    | 90937-22         | 90937-21   | 90797-10   | 90937-23    |      |
| Date Sample Collected            | 13-Jan-98  | 14-Jan-98        | 14-Jan-98  | 13-Jan-98  | 14-Jan-98   |      |
| LABORATORY ANALYSES              | Units      | equipment blanks |            |            | trip blanks |      |
| pH (EPA 9040)                    | std units  | 5.53             | 6.50       | 6.89       | NA          | NA   |
| Reactive Cyanide (EPA 7 3 3 2)   | mg/L       | <1               | <1         | <1         | NA          | NA   |
| Reactive Sulfide (EPA 7 3 4.2)   | mg/L       | <5               | <1         | <5         | NA          | NA   |
| Arsenic (EPA 6010)               | mg/L       | <0 01            | <0 01      | <0 01      | NA          | NA   |
| Barium (EPA 6010)                | mg/L       | <0 2             | <0 2       | <0 2       | NA          | NA   |
| Benzene (EPA 8260)               | mg/L       | <0 4             | <0 4       | <0 4       | <0 4        | <0 4 |
| Cadmium (EPA 6010)               | mg/L       | <0 005           | <0 005     | <0 005     | NA          | NA   |
| Carbon Tetrachloride (EPA 8260)  | mg/L       | <2 1             | <2 1       | <2 1       | <2 1        | <2 1 |
| Chlordane (EPA 8081)             | mg/L       | <0.5             | <0 5       | <0 5       | NA          | NA   |
| Chlorobenzene (EPA 8260)         | mg/L       | <0 4             | <0 4       | <0 4       | <0 4        | <0 4 |
| Chloroform (EPA 8260)            | mg/L       | 6                | <0 3       | 0.84       | <0.3        | <0 3 |
| Chromium (EPA 6010)              | mg/L       | <0 01            | <0.01      | <0 01      | NA          | NA   |
| Cresol, total (EPA 8270)         | mg/L       | <10              | <10        | <10        | NA          | NA   |
| 2,4-D (EPA 8150)                 | mg/L       | <5               | <5         | <5         | NA          | NA   |
| 1,4-Dichlorobenzene (EPA 8270)   | mg/L       | <10              | <10        | <10        | NA          | NA   |
| 1,2-Dichloroethane (EPA 8260)    | mg/L       | <0 6             | <0 6       | <0 6       | <0 6        | <0 6 |
| 1,1-Dichloroethene (EPA 8260)    | mg/L       | <1 2             | <1 2       | <1 2       | <1 2        | <1 2 |
| 2,4-Dinitrotoluene (EPA 8270)    | mg/L       | <10              | <10        | <10        | NA          | NA   |
| Endrin (EPA 8081)                | mg/L       | <0 1             | <0 1       | <0 1       | NA          | NA   |
| Heptachlor (EPA 8081)            | mg/L       | <0 1             | <0 1       | <0 1       | NA          | NA   |
| Heptachlor Epoxide (EPA 8081)    | mg/L       | <0 1             | <0 1       | <0 1       | NA          | NA   |
| Hexachlorobenzene (EPA 8270)     | mg/L       | <10              | <10        | <10        | NA          | NA   |
| Hexachlorobutadiene (EPA 8270)   | mg/L       | <10              | <10        | <10        | NA          | NA   |
| Hexachloroethane (EPA 8270)      | mg/L       | <10              | <10        | <10        | NA          | NA   |
| Lead (EPA 6010)                  | mg/L       | <0 003           | <0 003     | <0 003     | NA          | NA   |
| Lindane (EPA 8081)               | mg/L       | <0 1             | <0 1       | <0 1       | NA          | NA   |
| Mercury (EPA 7470)               | mg/L       | <0 0005          | <0 0005    | <0 0005    | NA          | NA   |
| Methoxychlor (EPA 8081)          | mg/L       | <0 3             | <0 3       | <0 3       | NA          | NA   |
| Methyl Ethyl Ketone (EPA 8260)   | mg/L       | 4                | <1         | <1         | <1          | <1   |
| Nitrobenzene (EPA 8270)          | mg/L       | <10              | <10        | <10        | NA          | NA   |
| Pentachlorophenol (EPA 8270)     | mg/L       | <25              | <25        | <25        | NA          | NA   |
| Pyridine (EPA 8270)              | mg/L       | <10              | <10        | <10        | NA          | NA   |
| Selenium (EPA 6010)              | mg/L       | <0 005           | <0 005     | <0 005     | NA          | NA   |
| Silver (EPA 6010)                | mg/L       | <0 01            | <0 01      | <0 01      | NA          | NA   |
| Tetrachloroethene (EPA 8260)     | mg/L       | <1 4             | <1 4       | <1 4       | <1 4        | <1 4 |
| Toxaphene (EPA 8081)             | mg/L       | <5               | <5         | <5         | NA          | NA   |
| Trichloroethene (EPA 8260)       | mg/L       | <1               | <1         | <1         | <1          | <1   |
| 2,4,5-Trichlorophenol (EPA 8270) | mg/L       | <25              | <25        | <25        | NA          | NA   |
| 2,4,6-Trichlorophenol (EPA 8270) | mg/L       | <10              | <10        | <10        | NA          | NA   |
| 2,4,5-TP Silvex (EPA 8150)       | mg/L       | <10              | <10        | <10        | NA          | NA   |
| Vinyl Chloride (EPA 8260)        | mg/L       | <1 1             | <1 1       | <1 1       | <1 4        | <1 1 |

mg/L = milligrams per liter  
 QA = quality assurance

SB = soil boring  
 EQB = equipment blank



**Summary of Analytical Results for Soil Disposal Characterization  
Dunn Field, Defense Depot  
Memphis, Tennessee**

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| Soil Boring No./Field No.                        |      |           | SB-023     | SB-024    | SB-025            | DUP (SB-029) | SB-026    | 40 CFR 261 |
|--------------------------------------------------|------|-----------|------------|-----------|-------------------|--------------|-----------|------------|
| Laboratory ID No.                                |      |           | 90937-9    | 90937-10  | 90937-11          | 90937-12     | 90937-13  | Regulatory |
| Depth Sample Collected (ft, bls)                 |      |           | 0-4'       | 0-4'      | 0-4'              | 0-4'         | 0-4'      | Levels     |
| Date Sample Collected                            |      |           | 14-Jan-98  | 14-Jan-98 | 14-Jan-98         | 14-Jan-98    | 14-Jan-98 |            |
| LABORATORY ANALYSES                              |      |           | EPA HW No. | Units     | duplicate samples |              |           |            |
| Ignitability (EPA 1010)                          | D001 | °F        | >212       | >212      | >212              | >212         | >212      | <140       |
| pH (EPA 9045)                                    | D002 | std units | 6.90       | 5.94      | 6.11              | 7.50         | 5.71      | NS         |
| Reactive Cyanide (EPA 7 3 3 2)                   | D003 | mg/kg     | <1         | <1        | <1                | <1           | <1        | 250*       |
| Reactive Sulfide (EPA 7 3 4 2)                   | D003 | mg/kg     | <5         | <5        | <5                | <5           | <5        | 500*       |
| <b>TCLP NON-VOLATILE EXTRACTION (EPA 1311)</b>   |      |           |            |           |                   |              |           |            |
| Arsenic (EPA 6010)                               | D004 | mg/L      | <2 5       | <2 5      | <2 5              | <2 5         | <2 5      | 5 00       |
| Barium (EPA 6010)                                | D005 | mg/L      | 0.9        | 0.8       | 0.5               | 0.8          | 1.1       | 100 00     |
| Cadmium (EPA 6010)                               | D006 | mg/L      | <0 01      | <0 01     | <0 01             | <0 01        | <0 01     | 1 00       |
| Chlordane (EPA 8081)                             | D020 | mg/L      | <0 01      | <0 01     | <0 01             | <0 01        | <0 01     | 0 03       |
| Chromium (EPA 6010)                              | D007 | mg/L      | <0 01      | <0 01     | <0 01             | <0 01        | <0 01     | 5 00       |
| Cresol, total (EPA 8270)                         | D026 | mg/L      | <0 05      | <0 05     | <0 05             | <0 05        | <0 05     | 200 00     |
| 2,4-D (EPA 8150)                                 | D016 | mg/L      | <0 05      | <0 05     | <0 05             | <0 05        | <0 05     | 10 00      |
| 1,4-Dichlorobenzene (EPA 8270)                   | D027 | mg/L      | <0 05      | <0 05     | <0 05             | <0 05        | <0 05     | 7 50       |
| 2,4-Dinitrotoluene (EPA 8270)                    | D030 | mg/L      | <0 05      | <0 05     | <0 05             | <0 05        | <0 05     | 0 13       |
| Endrin (EPA 8081)                                | D012 | mg/L      | <0 001     | <0 001    | <0 001            | <0 001       | <0 001    | 0 02       |
| Heptachlor (EPA 8081)                            | D031 | mg/L      | <0 001     | <0 001    | <0 001            | <0 001       | <0 001    | 0 008      |
| Heptachlor Epoxide (EPA 8081)                    | D031 | mg/L      | <0 001     | <0 001    | <0 001            | <0 001       | <0 001    | 0.008      |
| Hexachlorobenzene (EPA 8270)                     | D032 | mg/L      | <0 05      | <0 05     | <0 05             | <0 05        | <0.05     | 0 13       |
| Hexachlorobutadiene (EPA 8270)                   | D033 | mg/L      | <0 05      | <0 05     | <0 05             | <0 05        | <0 05     | 0 50       |
| Hexachloroethane (EPA 8270)                      | D034 | mg/L      | <0 05      | <0 05     | <0 05             | <0 05        | <0 05     | 3 00       |
| Lead (EPA 6010)                                  | D008 | mg/L      | <0.1       | <0 1      | <0.1              | <0.1         | <0 1      | 5 00       |
| Lindane (EPA 8081)                               | D013 | mg/L      | <0 01      | <0 01     | <0 01             | <0 01        | <0.01     | 0 40       |
| Mercury (EPA 7470)                               | D009 | mg/L      | <0 005     | <0 005    | <0 005            | <0 005       | <0 005    | 0 20       |
| Methoxychlor (EPA 8081)                          | D014 | mg/L      | <0 5       | <0 5      | <0 5              | <0 5         | <0 5      | 10 00      |
| Nitrobenzene (EPA 8270)                          | D036 | mg/L      | <0 05      | <0 05     | <0 05             | <0 05        | <0 05     | 2 00       |
| Pentachlorophenol (EPA 8270)                     | D037 | mg/L      | <0 05      | <0 05     | <0 05             | <0 05        | <0 05     | 100 00     |
| Selenium (EPA 6010)                              | D010 | mg/L      | <0 5       | <0 5      | <0 5              | <0 5         | <0 5      | 1 00       |
| Silver (EPA 6010)                                | D011 | mg/L      | <0 01      | <0 01     | <0 01             | <0 01        | <0 01     | 5 00       |
| Toxaphene (EPA 8081)                             | D015 | mg/L      | <0 05      | <0 05     | <0 05             | <0 05        | <0 05     | 0 50       |
| 2,4,5-Trichlorophenol (EPA 8270)                 | D041 | mg/L      | <0 05      | <0 05     | <0 05             | <0 05        | <0 05     | 400 00     |
| 2,4,6-Trichlorophenol (EPA 8270)                 | D042 | mg/L      | <0 05      | <0 05     | <0 05             | <0 05        | <0 05     | 2 00       |
| 2,4,5-TP Silvex (EPA 8150)                       | D017 | mg/L      | <0 1       | <0 1      | <0 1              | <0 1         | <0 1      | 1 00       |
| Pyridine (EPA 8270)                              | D038 | mg/L      | <0 05      | <0 05     | <0 05             | <0 05        | <0 05     | 5 00       |
| <b>TCLP ZERO HEADSPACE EXTRACTION (EPA 1311)</b> |      |           |            |           |                   |              |           |            |
| Benzene (EPA 8260)                               | D018 | mg/L      | <0 02      | <0 02     | <0 02             | <0 02        | <0 02     | 0 50       |
| Carbon Tetrachloride (EPA 8260)                  | D019 | mg/L      | <0 02      | <0 02     | <0 02             | <0 02        | <0 02     | 0 50       |
| Chlorobenzene (EPA 8260)                         | D021 | mg/L      | <0 02      | <0 02     | <0 02             | <0 02        | <0 02     | 100.00     |
| Chloroform (EPA 8260)                            | D022 | mg/L      | <0 02      | <0 02     | <0 02             | <0 02        | <0 02     | 6 00       |
| 1,2-Dichloroethane (EPA 8260)                    | D028 | mg/L      | <0 02      | <0 02     | <0 02             | <0 02        | <0 02     | 0 50       |
| 1,1-Dichloroethene (EPA 8260)                    | D029 | mg/L      | <0.02      | <0 02     | <0 02             | <0 02        | <0 02     | 0 70       |
| Methyl Ethyl Ketone (EPA 8260)                   | D035 | mg/L      | <0 5       | <0 5      | <0 5              | <0 5         | <0 5      | 200 00     |
| Tetrachloroethene (EPA 8260)                     | D039 | mg/L      | 0.08       | 0.18      | 0 05              | <0 02        | 0.10      | 0 70       |
| Trichloroethene (EPA 8260)                       | D040 | mg/L      | <0 02      | <0 02     | <0 02             | <0 02        | <0 02     | 0 50       |
| Vinyl Chloride (EPA 8260)                        | D043 | mg/L      | <0 02      | <0 02     | <0 02             | <0 02        | <0 02     | 0 20       |

mg/L = milligrams per liter

mg/kg = milligrams per kilogram

HW = hazardous waste

NS = no standard due to sample being solid matrix

Regulatory levels as defined in 40 CFR Part 261.21, 261.22, 261.23 & 261.24

TCLP = toxicity characteristic leaching procedure

SB = soil boring

bls = below land surface

\* = as defined in SW-846 7 3 3 2 and 7 3 4 2

**Summary of Analytical Results for Soil Disposal Characterization  
Dunn Field, Defense Depot  
Memphis, Tennessee**

478 93

| Soil Boring No./Field No.                        |            |            | SB-017    | SB-018    | SB-019    | SB-020    | SB-021    | SB-022    | 40 CFR 261<br>Regulatory<br>Levels |
|--------------------------------------------------|------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|------------------------------------|
| Laboratory ID No.                                |            |            | 90937-9   | 90937-10  | 90937-11  | 90937-12  | 90937-13  | 90937-14  |                                    |
| Depth Sample Collected (ft, bls)                 |            |            | 0-4'      | 0-4'      | 0-4'      | 0-4'      | 0-4'      | 0-4'      |                                    |
| Date Sample Collected                            |            |            | 14-Jan-98 | 14-Jan-98 | 14-Jan-98 | 14-Jan-98 | 14-Jan-98 | 14-Jan-98 |                                    |
| LABORATORY ANALYSES                              | EPA HW No. | Units      |           |           |           |           |           |           |                                    |
| Ignitability (EPA 1010)                          | D001       | °F         | >212      | >212      | >212      | >212      | >212      | >212      | <140                               |
| pH (EPA 9045)                                    | D002       | stdn units | 6.35      | 7.30      | 6.46      | 6.37      | 6.81      | 5.58      | NS                                 |
| Reactive Cyanide (EPA 7 3 3 2)                   | D003       | mg/kg      | <1        | <1        | <1        | <1        | <1        | <1        | 250*                               |
| Reactive Sulfide (EPA 7 3 4 2)                   | D003       | mg/kg      | <5        | <5        | <5        | <5        | <5        | <5        | 500*                               |
| <b>TCLP NON-VOLATILE EXTRACTION (EPA 1311)</b>   |            |            |           |           |           |           |           |           |                                    |
| Arsenic (EPA 6010)                               | D004       | mg/L       | <2.5      | <2.5      | <2.5      | <2.5      | <2.5      | <2.5      | 5.00                               |
| Barium (EPA 6010)                                | D005       | mg/L       | 1.0       | 2.0       | 0.7       | 0.9       | 0.8       | 0.7       | 100.00                             |
| Cadmium (EPA 6010)                               | D006       | mg/L       | <0.01     | <0.01     | <0.01     | <0.01     | <0.01     | <0.01     | 1.00                               |
| Chlordane (EPA 8081)                             | D020       | mg/L       | <0.01     | <0.01     | <0.01     | <0.01     | <0.01     | <0.01     | 0.03                               |
| Chromium (EPA 6010)                              | D007       | mg/L       | <0.01     | <0.01     | <0.01     | <0.01     | <0.01     | <0.01     | 5.00                               |
| Cresol, total (EPA 8270)                         | D026       | mg/L       | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 200.00                             |
| 2,4-D (EPA 8150)                                 | D016       | mg/L       | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 10.00                              |
| 1,4-Dichlorobenzene (EPA 8270)                   | D027       | mg/L       | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 7.50                               |
| 2,4-Dinitrotoluene (EPA 8270)                    | D030       | mg/L       | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 0.13                               |
| Endrin (EPA 8081)                                | D012       | mg/L       | <0.001    | <0.001    | <0.001    | <0.001    | <0.001    | <0.001    | 0.02                               |
| Heptachlor (EPA 8081)                            | D031       | mg/L       | <0.001    | <0.001    | <0.001    | <0.001    | <0.001    | <0.001    | 0.008                              |
| Heptachlor Epoxide (EPA 8081)                    | D031       | mg/L       | <0.001    | <0.001    | <0.001    | <0.001    | <0.001    | <0.001    | 0.008                              |
| Hexachlorobenzene (EPA 8270)                     | D032       | mg/L       | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 0.13                               |
| Hexachlorobutadiene (EPA 8270)                   | D033       | mg/L       | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 0.50                               |
| Hexachloroethane (EPA 8270)                      | D034       | mg/L       | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 3.00                               |
| Lead (EPA 6010)                                  | D008       | mg/L       | <0.1      | <0.1      | <0.1      | <0.1      | <0.1      | <0.1      | 5.00                               |
| Lindane (EPA 8081)                               | D013       | mg/L       | <0.01     | <0.01     | <0.01     | <0.01     | <0.01     | <0.01     | 0.40                               |
| Mercury (EPA 7470)                               | D009       | mg/L       | <0.005    | <0.005    | <0.005    | <0.005    | <0.005    | <0.005    | 0.20                               |
| Methoxychlor (EPA 8081)                          | D014       | mg/L       | <0.5      | <0.5      | <0.5      | <0.5      | <0.5      | <0.5      | 10.00                              |
| Nitrobenzene (EPA 8270)                          | D036       | mg/L       | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 2.00                               |
| Pentachlorophenol (EPA 8270)                     | D037       | mg/L       | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 100.00                             |
| Selenium (EPA 6010)                              | D010       | mg/L       | <0.5      | <0.5      | <0.5      | <0.5      | <0.5      | <0.5      | 1.00                               |
| Silver (EPA 6010)                                | D011       | mg/L       | <0.01     | <0.01     | <0.01     | <0.01     | <0.01     | <0.01     | 5.00                               |
| Toxaphene (EPA 8081)                             | D015       | mg/L       | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 0.50                               |
| 2,4,5-Trichlorophenol (EPA 8270)                 | D041       | mg/L       | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 400.00                             |
| 2,4,6-Trichlorophenol (EPA 8270)                 | D042       | mg/L       | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 2.00                               |
| 2,4,5-TP Silvex (EPA 8150)                       | D017       | mg/L       | <0.1      | <0.1      | <0.1      | <0.1      | <0.1      | <0.1      | 1.00                               |
| Pyridine (EPA 8270)                              | D038       | mg/L       | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | <0.05     | 5.00                               |
| <b>TCLP ZERO HEADSPACE EXTRACTION (EPA 1311)</b> |            |            |           |           |           |           |           |           |                                    |
| Benzene (EPA 8260)                               | D018       | mg/L       | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | 0.50                               |
| Carbon Tetrachloride (EPA 8260)                  | D019       | mg/L       | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | 0.50                               |
| Chlorobenzene (EPA 8260)                         | D021       | mg/L       | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | 100.00                             |
| Chloroform (EPA 8260)                            | D022       | mg/L       | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | 6.00                               |
| 1,2-Dichloroethane (EPA 8260)                    | D028       | mg/L       | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | 0.50                               |
| 1,1-Dichloroethene (EPA 8260)                    | D029       | mg/L       | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | 0.70                               |
| Methyl Ethyl Ketone (EPA 8260)                   | D035       | mg/L       | <0.5      | <0.5      | <0.5      | <0.5      | <0.5      | <0.5      | 200.00                             |
| Tetrachloroethene (EPA 8260)                     | D039       | mg/L       | 0.08      | 0.16      | 0.06      | 0.13      | 0.09      | <0.02     | 0.70                               |
| Trichloroethene (EPA 8260)                       | D040       | mg/L       | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | 0.50                               |
| Vinyl Chloride (EPA 8260)                        | D043       | mg/L       | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | <0.02     | 0.20                               |

mg/L = milligrams per liter

mg/kg = milligrams per kilogram

HW = hazardous waste

NS = no standard due to sample being solid matrix

Regulatory levels as defined in 40 CFR Part 261 21, 261 22, 261 23 & 261 24

TCLP = toxicity characteristic leaching procedure

SB = soil boring

bls = below land surface

\* = as defined in SW-846 7 3 3 2 and 7 3 4 2

## APPENDIX C

**ASI****ANALYTICAL SERVICES, INC.**

ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

20 January, 1998

## Case Narrative Report 90797

The samples were collected on 13 January, 1998 and received by ASI 14 January, 1998. All conditions for proper sample receipt were met. The samples were logged into the LIMS as report 90797 for the following analyses as per client request: Aqueous samples - BNA (EPA 8270), HERB (EPA 8150), PEST (EPA 8080), VOA (EPA 8260), Mercury (EPA 7470), Metals (EPA 6010), pH (EPA 9040), Reactive Sulfide (EPA 7.3.4.2), and Reactive CN (EPA 7.3.3.2); Solid samples - TCLP BNA, PEST, HERB, VOA, Mercury, and Metals, pH (EPA 9045), Ignitability (EPA 1010), Reactive Sulfide (EPA 7.3.4.2), and Reactive CN (EPA 7.3.3.2). Holding times for sample preparation and analysis were met with the exception of pH which should be analyzed in the field.

BNA analysis (EPA 8270) for aqueous samples gave high MSRPD for 4-Nitrophenol, low MS for Pentachlorophenol and high MSRPD for Pentachlorophenol. Acceptable surrogate recoveries were obtained with the exception that 90797-9 gave low recoveries for 2-Fluorophenol, Phenol-d5, and 2,4,6-Tribromophenol. Re-extraction and reanalysis of 90797-9 gave acceptable recoveries for all surrogates.

HERB analysis (EPA 8150) for aqueous samples met all data quality objectives.

PEST analysis (EPA 8080) for aqueous samples gave acceptable spike and surrogate recoveries with the exception that the matrix spike gave a high recovery for Decachlorobiphenyl due to a matrix effect.

VOA analysis (EPA 8260) for aqueous samples gave high MSRPD for Trichloroethene, Benzene and Toluene. All other spike and surrogate recoveries were acceptable.

Mercury analysis (EPA 7470) for aqueous samples met all data quality objectives.

Metals analysis (EPA 6010) for aqueous samples met all data quality objectives.

pH analysis (EPA 9040) for aqueous samples met all data quality objectives.

Reactive Sulfide (EPA 7.3.4.2) for aqueous samples met all data quality objectives.

Reactive CN (EPA 7.3.3.2) for aqueous samples met all data quality objectives.

TCLP analysis for BNA met all data quality objectives. TCLP analysis for PEST gave a high MSRPD for Toxaphene due to the TCLP matrix. All other PEST spike and surrogate recoveries were acceptable. TCLP HERB gave low MSD recoveries for 2,4-D and 2,4,5-TP, and high MSRPD for 2,4-D and 2,4,5-TP due to the TCLP matrix. All

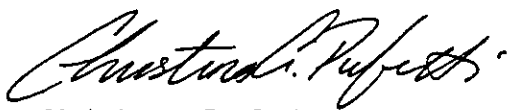
other HERB spike and surrogate recoveries were acceptable. TCLP analysis for VOA gave a low MS for Chlorobenzene and 1,2-Dichloroethane, and a high MSD for MEK (2-Butanone). All other TCLP VOA spike and surrogate recoveries were acceptable. TCLP analysis for Mercury met all data quality objectives. TCLP Metals gave acceptable spike recoveries. The detection limit was raised for Ba due to a high blank value, but all samples produced hits which were higher than the elevated detection limit.

pH analysis (EPA 9045) for solid samples met all data quality objectives.

Ignitability analysis (EPA 1010) for solid samples met all data quality objectives.

Reactive Sulfide analysis (EPA 7.3.4.2) for solid samples met all data quality objectives.

Reactive CN analysis (EPA 7.3.3.2) for solid samples met all data quality objectives.



Christina A. Perfetti  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.****ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 22, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90797-7**Sample Description**Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-006,  
01/13/98, 14:00, received 01/14/98**RESULTS**

|                                              |        | <u>Result</u> | <u>Detection Limit</u> |
|----------------------------------------------|--------|---------------|------------------------|
| Ignitability ( $^{\circ}$ F) (EPA 1010)..... |        | >212          | 70                     |
| pH (laboratory) (EPA 9045).....              |        | 6.64          | -                      |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2).....  |        | BDL           | 1                      |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2).....  |        | BDL           | 5                      |
| Toxicity Characteristic Leaching Procedure   |        |               |                        |
| TCLP Non-volatile Extraction (EPA 1311)      |        |               |                        |
| EPA HW                                       | Result | Detection     | Regulatory             |
| Number      Parameter                        | (mg/l) | Limit         | Limit                  |
|                                              |        | (mg/l)        | (mg/l)                 |
| D004    Arsenic (As).....                    | BDL    | 2.5           | 5.0                    |
| D005    Barium (Ba).....                     | 1.4    | 0.2           | 100.0                  |
| D006    Cadmium (Cd).....                    | BDL    | 0.01          | 1.0                    |
| D020    Chlordane.....                       | BDL    | 0.01          | 0.03                   |
| D007    Chromium (Cr).....                   | BDL    | 0.01          | 5.0                    |
| D026    Total Cresol.....                    | BDL    | 0.05          | 200.0                  |
| D016    2,4-D.....                           | BDL    | 0.05          | 10.0                   |
| D027    1,4-Dichlorobenzene.....             | BDL    | 0.05          | 7.5                    |
| D030    2,4-Dinitrotoluene.....              | BDL    | 0.05          | 0.13                   |
| D012    Endrin.....                          | BDL    | 0.001         | 0.02                   |
| D031    Heptachlor.....                      | BDL    | 0.001         | 0.008                  |
| D031    Heptachlor epoxide.....              | BDL    | 0.001         | 0.008                  |
| D032    Hexachlorobenzene.....               | BDL    | 0.05          | 0.13                   |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

January 22, 1998  
Report No. 90797-7

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-006,  
01/13/98, 14:00, received 01/14/98

### RESULTS

Toxicity Characteristic Leaching Procedure  
TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

Toxicity Characteristic Leaching Procedure  
TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.44             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. Roberts*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.****ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 22, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90797-6**Sample Description**Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-007,  
01/13/98, 13:25, received 01/14/98**RESULTS**

|                                             |               | <u>Result</u>    | <u>Detection Limit</u> |
|---------------------------------------------|---------------|------------------|------------------------|
| Ignitability (°F) (EPA 1010).....           |               | >212             | 70                     |
| pH (laboratory) (EPA 9045).....             |               | 7.41             | -                      |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |               | BDL              | 1                      |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |               | BDL              | 5                      |
| Toxicity Characteristic Leaching Procedure  |               |                  |                        |
| TCLP Non-volatile Extraction (EPA 1311)     |               |                  |                        |
| <u>EPA HW</u>                               | <u>Result</u> | <u>Detection</u> | <u>Regulatory</u>      |
| <u>Number</u> <u>Parameter</u>              | <u>(mg/l)</u> | <u>Limit</u>     | <u>Limit</u>           |
|                                             |               | <u>(mg/l)</u>    | <u>(mg/l)</u>          |
| D004 Arsenic (As).....                      | BDL           | 2.5              | 5.0                    |
| D005 Barium (Ba).....                       | 2.1           | 0.2              | 100.0                  |
| D006 Cadmium (Cd).....                      | BDL           | 0.01             | 1.0                    |
| D020 Chlordane.....                         | BDL           | 0.01             | 0.03                   |
| D007 Chromium (Cr).....                     | 0.01          | 0.01             | 5.0                    |
| D026 Total Cresol.....                      | BDL           | 0.05             | 200.0                  |
| D016 2,4-D.....                             | BDL           | 0.05             | 10.0                   |
| D027 1,4-Dichlorobenzene.....               | BDL           | 0.05             | 7.5                    |
| D030 2,4-Dinitrotoluene.....                | BDL           | 0.05             | 0.13                   |
| D012 Endrin.....                            | BDL           | 0.001            | 0.02                   |
| D031 Heptachlor.....                        | BDL           | 0.001            | 0.008                  |
| D031 Heptachlor epoxide.....                | BDL           | 0.001            | 0.008                  |
| D032 Hexachlorobenzene.....                 | BDL           | 0.05             | 0.13                   |

BDL - Below Detection Limit



OHM Remediation Services Corp.  
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January 22, 1998  
Report No. 90797-6

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-007,  
01/13/98, 13:25, received 01/14/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW |                            | Result | Detection       | Regulatory      |
|--------|----------------------------|--------|-----------------|-----------------|
| Number | Parameter                  | (mg/l) | Limit<br>(mg/l) | Limit<br>(mg/l) |
| D033   | Hexachlorobutadiene.....   | BDL    | 0.05            | 0.5             |
| D034   | Hexachloroethane.....      | BDL    | 0.05            | 3.0             |
| D008   | Lead (Pb).....             | BDL    | 0.1             | 5.0             |
| D013   | Lindane.....               | BDL    | 0.01            | 0.4             |
| D009   | Mercury (Hg).....          | BDL    | 0.005           | 0.2             |
| D014   | Methoxychlor.....          | BDL    | 0.5             | 10.0            |
| D036   | Nitrobenzene.....          | BDL    | 0.05            | 2.0             |
| D037   | Pentachlorophenol.....     | BDL    | 0.05            | 100.0           |
| D010   | Selenium (Se).....         | BDL    | 0.5             | 1.0             |
| D011   | Silver (Ag).....           | BDL    | 0.01            | 5.0             |
| D015   | Toxaphene.....             | BDL    | 0.05            | 0.5             |
| D041   | 2,4,5-Trichlorophenol..... | BDL    | 0.05            | 400.0           |
| D042   | 2,4,6-Trichlorophenol..... | BDL    | 0.05            | 2.0             |
| D017   | 2,4,5-TP Silvex.....       | BDL    | 0.1             | 1.0             |
| D038   | Pyridine.....              | BDL    | 0.05            | 5.0             |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW |                           | Result | Detection       | Regulatory      |
|--------|---------------------------|--------|-----------------|-----------------|
| Number | Parameter                 | (mg/l) | Limit<br>(mg/l) | Limit<br>(mg/l) |
| D018   | Benzene.....              | BDL    | 0.02            | 0.5             |
| D019   | Carbon tetrachloride..... | BDL    | 0.02            | 0.5             |
| D021   | Chlorobenzene.....        | BDL    | 0.02            | 100.0           |
| D022   | Chloroform.....           | BDL    | 0.02            | 6.0             |
| D028   | 1,2-Dichloroethane.....   | BDL    | 0.02            | 0.5             |
| D029   | 1,1-Dichloroethene.....   | BDL    | 0.02            | 0.7             |
| D035   | Methyl ethyl ketone.....  | BDL    | 0.5             | 200.0           |
| D039   | Tetrachloroethene.....    | 0.18   | 0.02            | 0.7             |
| D040   | Trichloroethene.....      | BDL    | 0.02            | 0.5             |
| D043   | Vinyl chloride.....       | BDL    | 0.02            | 0.2             |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. Pabst*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

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**ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 22, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90797-5**Sample Description**Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-008,  
01/13/98, 13:00, received 01/14/98**RESULTS**

|                                             | <u>Result</u> | <u>Detection Limit</u> |
|---------------------------------------------|---------------|------------------------|
| Ignitability (°F) (EPA 1010).....           | >212          | 70                     |
| pH (laboratory) (EPA 9045).....             | 7.26          | -                      |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... | BDL           | 1                      |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... | BDL           | 5                      |

**Toxicity Characteristic Leaching Procedure  
TCLP Non-volatile Extraction (EPA 1311)**

| <u>EPA HW</u><br><u>Number</u> | <u>Parameter</u>         | <u>Result</u><br><u>(mg/l)</u> | <u>Detection Limit</u><br><u>(mg/l)</u> | <u>Regulatory Limit</u><br><u>(mg/l)</u> |
|--------------------------------|--------------------------|--------------------------------|-----------------------------------------|------------------------------------------|
| D004                           | Arsenic (As).....        | BDL                            | 2.5                                     | 5.0                                      |
| D005                           | Barium (Ba).....         | 1.2                            | 0.2                                     | 100.0                                    |
| D006                           | Cadmium (Cd).....        | BDL                            | 0.01                                    | 1.0                                      |
| D020                           | Chlordane.....           | BDL                            | 0.01                                    | 0.03                                     |
| D007                           | Chromium (Cr).....       | BDL                            | 0.01                                    | 5.0                                      |
| D026                           | Total Cresol.....        | BDL                            | 0.05                                    | 200.0                                    |
| D016                           | 2,4-D.....               | BDL                            | 0.05                                    | 10.0                                     |
| D027                           | 1,4-Dichlorobenzene..... | BDL                            | 0.05                                    | 7.5                                      |
| D030                           | 2,4-Dinitrotoluene.....  | BDL                            | 0.05                                    | 0.13                                     |
| D012                           | Endrin.....              | BDL                            | 0.001                                   | 0.02                                     |
| D031                           | Heptachlor.....          | BDL                            | 0.001                                   | 0.008                                    |
| D031                           | Heptachlor epoxide.....  | BDL                            | 0.001                                   | 0.008                                    |
| D032                           | Hexachlorobenzene.....   | BDL                            | 0.05                                    | 0.13                                     |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
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January 22, 1998  
Report No. 90797-5

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-008,  
01/13/98, 13:00, received 01/14/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.03             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina P. Palett*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.****ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 22, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90797-4**Sample Description**Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-009,  
01/13/98, 12:35, received 01/14/98**RESULTS**

|                                             |               | <u>Result</u>          | <u>Detection Limit</u>  |
|---------------------------------------------|---------------|------------------------|-------------------------|
| Ignitability (°F) (EPA 1010).....           |               | >212                   | 70                      |
| pH (laboratory) (EPA 9045).....             |               | 6.95                   | -                       |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |               | BDL                    | 1                       |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |               | BDL                    | 5                       |
| Toxicity Characteristic Leaching Procedure  |               |                        |                         |
| TCLP Non-volatile Extraction (EPA 1311)     |               |                        |                         |
| <u>EPA HW</u>                               | <u>Result</u> | <u>Detection Limit</u> | <u>Regulatory Limit</u> |
| <u>Number</u> <u>Parameter</u>              | <u>(mg/l)</u> | <u>(mg/l)</u>          | <u>(mg/l)</u>           |
| D004    Arsenic (As).....                   | BDL           | 2.5                    | 5.0                     |
| D005    Barium (Ba).....                    | 2.1           | 0.2                    | 100.0                   |
| D006    Cadmium (Cd).....                   | BDL           | 0.01                   | 1.0                     |
| D020    Chlordane.....                      | BDL           | 0.01                   | 0.03                    |
| D007    Chromium (Cr).....                  | BDL           | 0.01                   | 5.0                     |
| D026    Total Cresol.....                   | BDL           | 0.05                   | 200.0                   |
| D016    2,4-D.....                          | BDL           | 0.05                   | 10.0                    |
| D027    1,4-Dichlorobenzene.....            | BDL           | 0.05                   | 7.5                     |
| D030    2,4-Dinitrotoluene.....             | BDL           | 0.05                   | 0.13                    |
| D012    Endrin.....                         | BDL           | 0.001                  | 0.02                    |
| D031    Heptachlor.....                     | BDL           | 0.001                  | 0.008                   |
| D031    Heptachlor epoxide.....             | BDL           | 0.001                  | 0.008                   |
| D032    Hexachlorobenzene.....              | BDL           | 0.05                   | 0.13                    |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
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January 22, 1998  
Report No. 90797-4

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-009,  
01/13/98, 12:35, received 01/14/98

### RESULTS

Toxicity Characteristic Leaching Procedure  
TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

Toxicity Characteristic Leaching Procedure  
TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.25             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina P. P. P.*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

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## ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201LABORATORY REPORTOHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 22, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90797-3Sample DescriptionSoil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-013,  
01/13/98, 10:25, received 01/14/98RESULTS

|                                                |                          | <u>Result</u>            | <u>Detection<br/>Limit</u>            |                                        |
|------------------------------------------------|--------------------------|--------------------------|---------------------------------------|----------------------------------------|
| Ignitability ( <sup>o</sup> F) (EPA 1010)..... |                          | >212                     | 70                                    |                                        |
| pH (laboratory) (EPA 9045).....                |                          | 5.36                     | -                                     |                                        |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2).....    |                          | BDL                      | 1                                     |                                        |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2).....    |                          | BDL                      | 5                                     |                                        |
| Toxicity Characteristic Leaching Procedure     |                          |                          |                                       |                                        |
| TCLP Non-volatile Extraction (EPA 1311)        |                          |                          |                                       |                                        |
| <u>EPA HW<br/>Number</u>                       | <u>Parameter</u>         | <u>Result<br/>(mg/l)</u> | <u>Detection<br/>Limit<br/>(mg/l)</u> | <u>Regulatory<br/>Limit<br/>(mg/l)</u> |
| D004                                           | Arsenic (As).....        | BDL                      | 2.5                                   | 5.0                                    |
| D005                                           | Barium (Ba).....         | 1.7                      | 0.2                                   | 100.0                                  |
| D006                                           | Cadmium (Cd).....        | BDL                      | 0.01                                  | 1.0                                    |
| D020                                           | Chlordane.....           | BDL                      | 0.01                                  | 0.03                                   |
| D007                                           | Chromium (Cr).....       | BDL                      | 0.01                                  | 5.0                                    |
| D026                                           | Total Cresol.....        | BDL                      | 0.05                                  | 200.0                                  |
| D016                                           | 2,4-D.....               | BDL                      | 0.05                                  | 10.0                                   |
| D027                                           | 1,4-Dichlorobenzene..... | BDL                      | 0.05                                  | 7.5                                    |
| D030                                           | 2,4-Dinitrotoluene.....  | BDL                      | 0.05                                  | 0.13                                   |
| D012                                           | Endrin.....              | BDL                      | 0.001                                 | 0.02                                   |
| D031                                           | Heptachlor.....          | BDL                      | 0.001                                 | 0.008                                  |
| D031                                           | Heptachlor epoxide.....  | BDL                      | 0.001                                 | 0.008                                  |
| D032                                           | Hexachlorobenzene.....   | BDL                      | 0.05                                  | 0.13                                   |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
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January 22, 1998  
Report No. 90797-3

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-013,  
01/13/98, 10:25, received 01/14/98

### RESULTS

Toxicity Characteristic Leaching Procedure  
TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

Toxicity Characteristic Leaching Procedure  
TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.33             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*

Project Manager

*Christina A. Pappas*

Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

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**ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 22, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90797-2**Sample Description**Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-014,  
01/13/98, 09:30, received 01/14/98**RESULTS**

|                                                 | <u>Result</u> | <u>Detection Limit</u> |
|-------------------------------------------------|---------------|------------------------|
| Ignitability ( <sup>o</sup> F) (EPA 1010) ..... | >212          | 70                     |
| pH (laboratory) (EPA 9045) .....                | 6.50          | -                      |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2) .....    | BDL           | 1                      |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2) .....    | BDL           | 5                      |

**Toxicity Characteristic Leaching Procedure  
TCLP Non-volatile Extraction (EPA 1311)**

| <u>EPA HW</u> |                           | <u>Result</u> | <u>Detection Limit</u> | <u>Regulatory Limit</u> |
|---------------|---------------------------|---------------|------------------------|-------------------------|
| <u>Number</u> | <u>Parameter</u>          | <u>(mg/l)</u> | <u>(mg/l)</u>          | <u>(mg/l)</u>           |
| D004          | Arsenic (As) .....        | BDL           | 2.5                    | 5.0                     |
| D005          | Barium (Ba) .....         | 2.0           | 0.2                    | 100.0                   |
| D006          | Cadmium (Cd) .....        | BDL           | 0.01                   | 1.0                     |
| D020          | Chlordane .....           | BDL           | 0.01                   | 0.03                    |
| D007          | Chromium (Cr) .....       | BDL           | 0.01                   | 5.0                     |
| D026          | Total Cresol .....        | BDL           | 0.05                   | 200.0                   |
| D016          | 2,4-D .....               | BDL           | 0.05                   | 10.0                    |
| D027          | 1,4-Dichlorobenzene ..... | BDL           | 0.05                   | 7.5                     |
| D030          | 2,4-Dinitrotoluene .....  | BDL           | 0.05                   | 0.13                    |
| D012          | Endrin .....              | BDL           | 0.001                  | 0.02                    |
| D031          | Heptachlor .....          | BDL           | 0.001                  | 0.008                   |
| D031          | Heptachlor epoxide .....  | BDL           | 0.001                  | 0.008                   |
| D032          | Hexachlorobenzene .....   | BDL           | 0.05                   | 0.13                    |

BDL - Below Detection Limit



OHM Remediation Services Corp.  
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January 22, 1998  
Report No. 90797-2

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-014,  
01/13/98, 09:30, received 01/14/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.14             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina E. Palko*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

478 109

## ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201LABORATORY REPORTOHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 22, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90797-1Sample DescriptionSoil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-015,  
01/13/98, 08:25, received 01/14/98RESULTS

|                                             |                          | <u>Result</u> | <u>Detection</u><br><u>Limit</u> |                                   |
|---------------------------------------------|--------------------------|---------------|----------------------------------|-----------------------------------|
| Ignitability (°F) (EPA 1010).....           |                          | >212          | 70                               |                                   |
| pH (laboratory) (EPA 9045).....             |                          | 7.40          | -                                |                                   |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL           | 1                                |                                   |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL           | 5                                |                                   |
| Toxicity Characteristic Leaching Procedure  |                          |               |                                  |                                   |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |               |                                  |                                   |
| <u>EPA HW</u>                               |                          | <u>Result</u> | <u>Detection</u><br><u>Limit</u> | <u>Regulatory</u><br><u>Limit</u> |
| <u>Number</u>                               | <u>Parameter</u>         | <u>(mg/l)</u> | <u>(mg/l)</u>                    | <u>(mg/l)</u>                     |
| D004                                        | Arsenic (As).....        | BDL           | 2.5                              | 5.0                               |
| D005                                        | Barium (Ba).....         | 1.9           | 0.2                              | 100.0                             |
| D006                                        | Cadmium (Cd).....        | BDL           | 0.01                             | 1.0                               |
| D020                                        | Chlordane.....           | BDL           | 0.01                             | 0.03                              |
| D007                                        | Chromium (Cr).....       | BDL           | 0.01                             | 5.0                               |
| D026                                        | Total Cresol.....        | BDL           | 0.05                             | 200.0                             |
| D016                                        | 2,4-D.....               | BDL           | 0.05                             | 10.0                              |
| D027                                        | 1,4-Dichlorobenzene..... | BDL           | 0.05                             | 7.5                               |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL           | 0.05                             | 0.13                              |
| D012                                        | Endrin.....              | BDL           | 0.001                            | 0.02                              |
| D031                                        | Heptachlor.....          | BDL           | 0.001                            | 0.008                             |
| D031                                        | Heptachlor epoxide.....  | BDL           | 0.001                            | 0.008                             |
| D032                                        | Hexachlorobenzene.....   | BDL           | 0.05                             | 0.13                              |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
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January 22, 1998  
Report No. 90797-1

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-015,  
01/13/98, 08:25, received 01/14/98

### RESULTS

Toxicity Characteristic Leaching Procedure  
TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

Toxicity Characteristic Leaching Procedure  
TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.83             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. Peiffer*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.****ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201LABORATORY REPORTOHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 22, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90797-8Sample DescriptionSoil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-027,  
01/13/98, 16:00, received 01/14/98RESULTS

|                                                                                       |                          | <u>Result</u>          | <u>Detection Limit</u>  |
|---------------------------------------------------------------------------------------|--------------------------|------------------------|-------------------------|
| Ignitability ( <sup>o</sup> F) (EPA 1010).....                                        |                          | >212                   | 70                      |
| pH (laboratory) (EPA 9045).....                                                       |                          | 7.33                   | -                       |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2).....                                           |                          | BDL                    | 1                       |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2).....                                           |                          | BDL                    | 5                       |
| Toxicity Characteristic Leaching Procedure<br>TCLP Non-volatile Extraction (EPA 1311) |                          | <u>Detection Limit</u> | <u>Regulatory Limit</u> |
| <u>EPA HW</u>                                                                         | <u>Result</u>            | <u>Limit</u>           | <u>Limit</u>            |
| <u>Number</u> <u>Parameter</u>                                                        | <u>(mg/l)</u>            | <u>(mg/l)</u>          | <u>(mg/l)</u>           |
| D004                                                                                  | Arsenic (As).....        | BDL                    | 2.5                     |
| D005                                                                                  | Barium (Ba).....         | 1.8                    | 0.2                     |
| D006                                                                                  | Cadmium (Cd).....        | BDL                    | 0.01                    |
| D020                                                                                  | Chlordane.....           | BDL                    | 0.01                    |
| D007                                                                                  | Chromium (Cr).....       | 0.01                   | 0.01                    |
| D026                                                                                  | Total Cresol.....        | BDL                    | 0.05                    |
| D016                                                                                  | 2,4-D.....               | BDL                    | 0.05                    |
| D027                                                                                  | 1,4-Dichlorobenzene..... | BDL                    | 0.05                    |
| D030                                                                                  | 2,4-Dinitrotoluene.....  | BDL                    | 0.05                    |
| D012                                                                                  | Endrin.....              | BDL                    | 0.001                   |
| D031                                                                                  | Heptachlor.....          | BDL                    | 0.001                   |
| D031                                                                                  | Heptachlor epoxide.....  | BDL                    | 0.001                   |
| D032                                                                                  | Hexachlorobenzene.....   | BDL                    | 0.05                    |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
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January 22, 1998  
Report No. 90797-8

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-027,  
01/13/98, 16:00, received 01/14/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.18             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina A. Paletti*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.** 478 113

ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201LABORATORY REPORTOHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 22, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90797-9Sample DescriptionWater, grab, DDMT\Dunn Field Memphis TN, Project #20022, SB-008-EQB,  
01/13/98, 12:35, received 01/14/98RESULTS

|                                            | <u>Result</u> | <u>Detection Limit</u> |
|--------------------------------------------|---------------|------------------------|
| pH (laboratory) (EPA 9040).....            | 5.53          | -                      |
| Reactive Cyanide (mg/l) (EPA 7.3.3.2)..... | BDL           | 1                      |
| Reactive Sulfide (mg/l) (EPA 7.3.4.2)..... | BDL           | 5                      |
| <u>Metals</u>                              | <u>(mg/l)</u> | <u>(mg/l)</u>          |
| Total Arsenic (As) (EPA 6010).....         | BDL           | 0.01                   |
| Total Barium (Ba) (EPA 6010).....          | BDL           | 0.2                    |
| Total Cadmium (Cd) (EPA 6010).....         | BDL           | 0.005                  |
| Total Chromium (Cr) (EPA 6010).....        | BDL           | 0.01                   |
| Total Lead (Pb) (EPA 6010).....            | BDL           | 0.003                  |
| Total Mercury (Hg) (EPA 7470).....         | BDL           | 0.0005                 |
| Total Selenium (Se) (EPA 6010).....        | BDL           | 0.005                  |
| Total Silver (Ag) (EPA 6010).....          | BDL           | 0.01                   |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 3

January 22, 1998  
Report No. 90797-9

Water, grab, DDMT\Dunn Field Memphis TN, Project #20022, SB-008-EQB,  
01/13/98, 12:35, received 01/14/98

### RESULTS

| <u>Volatile Organics (EPA 8260)</u>                 | <u>Result</u><br><u>(ug/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(ug/l)</u> |
|-----------------------------------------------------|--------------------------------|---------------------------------------------------|
| Benzene.....                                        | BDL                            | 0.4                                               |
| Carbon tetrachloride.....                           | BDL                            | 2.1                                               |
| Chlorobenzene.....                                  | BDL                            | 0.4                                               |
| Chloroform.....                                     | 6                              | 0.3                                               |
| 1,2-Dichloroethane.....                             | BDL                            | 0.6                                               |
| 1,1-Dichloroethene.....                             | BDL                            | 1.2                                               |
| Methyl ethyl ketone.....                            | 4                              | 1                                                 |
| Tetrachloroethene.....                              | BDL                            | 1.4                                               |
| Trichloroethene.....                                | BDL                            | 1                                                 |
| Vinyl chloride.....                                 | BDL                            | 1.1                                               |
| <u>Acid Extractable Organics (EPA 8270)</u>         | <u>(ug/l)</u>                  | <u>(ug/l)</u>                                     |
| Cresols.....                                        | BDL                            | 10                                                |
| Pentachlorophenol.....                              | BDL                            | 25                                                |
| 2,4,5-Trichlorophenol.....                          | BDL                            | 25                                                |
| 2,4,6-Trichlorophenol.....                          | BDL                            | 10                                                |
| <u>Base/Neutral Extractable Organics (EPA 8270)</u> | <u>(ug/l)</u>                  | <u>(ug/l)</u>                                     |
| 1,4-Dichlorobenzene.....                            | BDL                            | 10                                                |
| 2,4-Dinitrotoluene.....                             | BDL                            | 10                                                |
| Hexachlorobenzene.....                              | BDL                            | 10                                                |
| Hexachlorobutadiene.....                            | BDL                            | 10                                                |
| Hexachloroethane.....                               | BDL                            | 10                                                |
| Nitrobenzene.....                                   | BDL                            | 10                                                |
| Pyridine.....                                       | BDL                            | 10                                                |

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BDL - Below Detection Limit

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OHM Remediation Services Corp.

January 22, 1998

Report No. 90797-9

Page 3 of 3

Water, grab, DDMT\Dunn Field Memphis TN, Project #20022, SB-008-EQB,  
01/13/98, 12:35, received 01/14/98

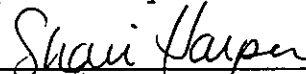
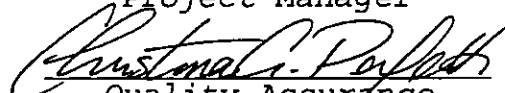
RESULTS

|                                          | Result | Detection |
|------------------------------------------|--------|-----------|
|                                          | (ug/l) | Limit     |
|                                          | (ug/l) | (ug/l)    |
| <u>Pesticides (EPA 8081)</u>             |        |           |
| Chlordane.....                           | BDL    | 0.50      |
| BHC-gamma (Lindane).....                 | BDL    | 0.10      |
| Endrin.....                              | BDL    | 0.10      |
| Heptachlor.....                          | BDL    | 0.10      |
| Heptachlor epoxide.....                  | BDL    | 0.10      |
| Methoxychlor.....                        | BDL    | 0.30      |
| Toxaphene.....                           | BDL    | 5.0       |
| <u>Chlorinated Herbicides (EPA 8151)</u> | (ug/l) | (ug/l)    |
| 2,4-D.....                               | BDL    | 5.0       |
| 2,4,5-TP (Silvex).....                   | BDL    | 10        |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

  
Project Manager  
Quality Assurance





# ANALYTICAL SERVICES, INC.

## ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

### LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 22, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90797-10

### Sample Description

Water,, DDMT\Dunn Field Memphis TN, Project #20022, Trip Blank,,, received  
01/14/98

### RESULTS

| <u>Volatile Organics (EPA 8260)</u> | <u>Result</u><br><u>(ug/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(ug/l)</u> |
|-------------------------------------|--------------------------------|---------------------------------------------------|
| Benzene.....                        | BDL                            | 0.4                                               |
| Carbon tetrachloride.....           | BDL                            | 2.1                                               |
| Chlorobenzene.....                  | BDL                            | 0.4                                               |
| Chloroform.....                     | BDL                            | 0.3                                               |
| 1,2-Dichloroethane.....             | BDL                            | 0.6                                               |
| 1,1-Dichloroethene.....             | BDL                            | 1.2                                               |
| Methyl ethyl ketone.....            | BDL                            | 1                                                 |
| Tetrachloroethene.....              | BDL                            | 1.4                                               |
| Trichloroethene.....                | BDL                            | 1                                                 |
| Vinyl chloride.....                 | BDL                            | 1.4                                               |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. R. R. R.*  
Quality Assurance

Analytical Services Inc. Batch QC  
For Report Number :90797  
Base Neutrals / Acids

Matrix : Aqueous

Batch # 35514

Method : EPA 8270

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Phenol                             | 31         | 37          | 16        | 12 - 89            | 0 - 42       |
| 2-Chlorophenol                     | 54         | 64          | 18        | 27 - 123           | 0 - 40       |
| 1,4-Dichlorobenzene                | 44         | 54          | 20        | 36 - 97            | 0 - 28       |
| N-Nitrosodipropylamine             | 51         | 58          | 12        | 41 - 116           | 0 - 38       |
| 1,2,4-Trichlorobenzene             | 69         | 80          | 16        | 44 - 142           | 0 - 28       |
| 4-Chloro-3-methylphenol            | 64         | 70          | 9         | 23 - 97            | 0 - 42       |
| Acenaphthene                       | 88         | 105         | 17        | 46 - 118           | 0 - 31       |
| 2,4-Dinitrotoluene                 | 77         | 80          | 4         | 24 - 96            | 0 - 38       |
| 4-Nitrophenol                      | 18         | 24          | 29        | 10 - 80            | 0 - 50       |
| Pentachlorophenol                  | 34         | 41          | 18        | 9 - 103            | 0 - 50       |
| Pyrene                             | 97         | 98          | 2         | 26 - 127           | 0 - 31       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Phenol                              | 47         | 48          | 0         | 12 - 89            | 0 - 42       |
| 2-Chlorophenol                      | 51         | 57          | 12        | 27 - 123           | 0 - 40       |
| 1,4-Dichlorobenzene                 | 54         | 42          | 25        | 36 - 97            | 0 - 28       |
| N-Nitrosodipropylamine              | 55         | 43          | 25        | 41 - 116           | 0 - 38       |
| 1,2,4-Trichlorobenzene              | 76         | 60          | 24        | 44 - 142           | 0 - 28       |
| 4-Chloro-3-methylphenol             | 66         | 62          | 7         | 23 - 97            | 0 - 42       |
| Acenaphthene                        | 98         | 80          | 20        | 46 - 118           | 0 - 31       |
| 2,4-Dinitrotoluene                  | 73         | 73          | 1         | 24 - 96            | 0 - 38       |
| 4-Nitrophenol                       | 18         | 40          | 77        | 10 - 80            | 0 - 50       |
| Pentachlorophenol                   | 6          | 38          | 149       | 9 - 103            | 0 - 50       |
| Pyrene                              | 100        | 94          | 6         | 26 - 127           | 0 - 31       |



Analytical Services Inc. Batch QC  
Surrogate Recovery  
Base Neutrals / Acids

Matrix : Aqueous

Batch # 35514

Method : EPA 8270

% Recovery Objectives

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|    |                      |          |
|----|----------------------|----------|
| S1 | 2-Fluorophenol       | 21 - 100 |
| S2 | Phenol-d5            | 10 - 94  |
| S3 | Nitrobenzene-d5      | 35 - 114 |
| S4 | 2-Fluorobiphenyl     | 43 - 116 |
| S5 | 2,4,6-Tribromophenol | 10 - 123 |
| S6 | Terphenyl-d14        | 33 - 141 |

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| Sample    | File  | S1 | S2 | S3 | S4 | S5 | S6  |
|-----------|-------|----|----|----|----|----|-----|
| 90797-9RR | A7525 | 47 | 36 | 82 | 91 | 50 | 102 |
| 90955     | B3439 | 45 | 32 | 75 | 73 | 78 | 59  |

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Q.C. Information for Batch # 35514

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Printed: 01/22/98 18:20:14Blank Results Information  
Base Neutrals / Acids Method : EPA 8270

| Analyte               | Blank Result | Detection Limit |
|-----------------------|--------------|-----------------|
| Cresols               | BDL          | 10              |
| Pentachlorophenol     | BDL          | 25              |
| 2,4,5-Trichlorophenol | BDL          | 25              |
| 2,4,6-Trichlorophenol | BDL          | 10              |
| 1,4-Dichlorobenzene   | BDL          | 10              |
| 2,4-Dinitrotoluene    | BDL          | 10              |
| Hexachlorobenzene     | BDL          | 10              |
| Hexachlorobutadiene   | BDL          | 10              |
| Hexachloroethane      | BDL          | 10              |
| Nitrobenzene          | BDL          | 10              |
| Pyridine              | BDL          | 10              |

Sample Batch Information  
Base Neutrals / Acids      Method : EPA 8270

| Sample ID    | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst |
|--------------|-------------|------|-------|----------------------|----------|------|-----|------|
|              | Date        | Time | By    |                      | Date     | Time | By  |      |
| 35514BLK     | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 1124 | TAS | 5970 |
| 35514LCS     | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 1155 | TAS | 5970 |
| 35514LCSD    | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 1227 | TAS | 5970 |
| 90578-1      | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 1259 | TAS | 5970 |
| 90578-2      | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 1330 | TAS | 5970 |
| 90578-3      | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 1402 | TAS | 5970 |
| 90578-4      | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 1434 | TAS | 5970 |
| 90578-5      | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 1506 | TAS | 5970 |
| 90578-5MS    | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 2023 | TAS | 5970 |
| 90578-5MSD   | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 2054 | TAS | 5970 |
| 90578-6      | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 1537 | TAS | 5970 |
| 90578-7      | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 1609 | TAS | 5970 |
| 90578-8      | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 1641 | TAS | 5970 |
| 90578-9      | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 1713 | TAS | 5970 |
| 90578-10     | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 1744 | TAS | 5970 |
| 90578-11     | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 1816 | TAS | 5970 |
| 90578-11DUP  | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 2126 | TAS | 5970 |
| 90578-12     | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 1848 | TAS | 5970 |
| 90578-13     | 01/09/98    | 1300 | JW/TB |                      | 01/10/98 | 1919 | TAS | 5970 |
| 90578-9D     | /           | /    |       |                      | 01/12/98 | 1714 | TAS | 5970 |
| 90578-10D    | /           | /    |       |                      | 01/12/98 | 1746 | TAS | 5970 |
| 90578-11D    | /           | /    |       |                      | 01/12/98 | 1818 | TAS | 5970 |
| 90578-11DUPD | /           | /    |       |                      | 01/12/98 | 1850 | TAS | 5970 |
| 90794-6      | 01/15/98    | 1000 | TB/JW |                      | /        | /    |     |      |
| 90803-2      | 01/15/98    | 1000 | TB/JW |                      | 01/15/98 | 1811 | TAS | 5971 |
| 90797-9      | 01/16/98    | 0800 | TB    |                      | 01/17/98 | 0003 | TAS | 5970 |
| 90797-9RR    | 01/19/98    | 0700 | TB    |                      | 01/19/98 | 1054 | TAS | 5970 |
| 90955        | 01/20/98    | 1000 | JW    |                      | 01/20/98 | 1555 | TAS | 5971 |

Analytical Services Inc. Batch QC  
For Report Number :90797  
Chlorinated Herbicides

Matrix : Aqueous

Batch # 35520

Method : EPA 8150 / 615

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                              | 100        | 117         | 16        | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                  | 77         | 93          | 19        | 40 - 140           | 0 - 40       |
| 2,4,5-T                            | 62         | 75          | 18        | 40 - 140           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                               | 123        | 122         | 1         | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 54         | 52          | 4         | 40 - 140           | 0 - 40       |
| 2,4,5-T                             | 97         | 118         | 20        | 40 - 140           | 0 - 40       |

## Analytical Services Inc. Batch QC

Surrogate Recovery  
Chlorinated Herbicides

Matrix : Aqueous

Batch # 35520

Method : EPA 8150 / 615

## % Recovery Objectives

|           |            | S1  |    | DCAA |    | 20 - 160 |    |
|-----------|------------|-----|----|------|----|----------|----|
| Sample    | File       | S1  | S2 | S3   | S4 | S5       | S6 |
| 35520BLK  | 011298003F | 65  |    |      |    |          |    |
| 35520LCS  | 011298004F | 79  |    |      |    |          |    |
| 35520LCSD | 011298005F | 99  |    |      |    |          |    |
| 90666MS   | 011298006F | 131 |    |      |    |          |    |
| 90666MSD  | 011298007F | 131 |    |      |    |          |    |
| 90666     | 011298008F | 69  |    |      |    |          |    |
| 90559     | 011498003F | 70  |    |      |    |          |    |
| 90786     | 011598004F | 81  |    |      |    |          |    |
| 90721     | 011598006F | 60  |    |      |    |          |    |
| 90721DUP  | 011598007F | 69  |    |      |    |          |    |
| 90797-9   | 011698019R | 72  |    |      |    |          |    |
| 90816     | 011698020R | 69  |    |      |    |          |    |
| 90838-1   | 012098004R | 110 |    |      |    |          |    |
| 90888     | 012098005F | 29  |    |      |    |          |    |
| 90858-1   | 012098006F | 74  |    |      |    |          |    |



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Q.C. Information for Batch # 35520

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Blank Results Information  
Chlorinated Herbicides Method : EPA 8150 / 615

| Analyte  | Blank<br>Result | Detection<br>Limit |
|----------|-----------------|--------------------|
| 2,4-D    | BDL             | 5.0                |
| 2,4,5-TP | BDL             | 10                 |

Q.C. Information for Batch # 35520

Printed: 01/22/98 18:20:15

Sample Batch Information  
Chlorinated Herbicides Method : EPA 8150 ./ 615

| Sample ID | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst |
|-----------|-------------|------|-------|----------------------|----------|------|-----|------|
|           | Date        | Time | By    |                      | Date     | Time | By  |      |
| 90666     | 01/12/98    | 0825 | DH    |                      | 01/12/98 | 2036 | JQZ | GC-1 |
| 90559     | 01/12/98    | 0825 | DH    |                      | 01/14/98 | 1441 | JQZ | GC-1 |
| 90666MS   | 01/12/98    | 0825 | DH    |                      | 01/12/98 | 1940 | JQZ | GC-1 |
| 90666MSD  | 01/12/98    | 0825 | DH    |                      | 01/12/98 | 2008 | JQZ | GC-1 |
| 90721     | 01/14/98    | 0815 | DH    |                      | 01/15/98 | 2055 | JQZ | GC-1 |
| 90721DUP  | 01/14/98    | 0815 | DH    |                      | 01/15/98 | 2124 | JQZ | GC-1 |
| 35520BLK  | 01/12/98    | 0825 | DH    |                      | 01/12/98 | 1816 | JQZ | GC-1 |
| 35520LCS  | 01/12/98    | 0825 | DH    |                      | 01/12/98 | 1844 | JQZ | GC-1 |
| 35520LCSD | 01/12/98    | 0825 | DH    |                      | 01/12/98 | 1912 | JQZ | GC-1 |
| 90786     | 01/15/98    | 0845 | DH    |                      | 01/15/98 | 1959 | JQZ | GC-1 |
| 90797-9   | 01/16/98    | 0915 | DH/DY |                      | 01/17/98 | 0500 | JQZ | GC-1 |
| 90816     | 01/16/98    | 0915 | DH/DY |                      | 01/17/98 | 0528 | JQZ | GC-1 |
| 90838-1   | 01/19/98    | 0830 | DH    |                      | 01/20/98 | 1153 | JQZ | GC-1 |
| 90888     | 01/19/98    | 0830 | DH    |                      | 01/20/98 | 1249 | JQZ | GC-1 |
| 90858-1   | 01/19/98    | 0830 | DH    |                      | 01/20/98 | 1217 | JQZ | GC-1 |

Analytical Services Inc. Batch QC  
For Report Number :90797  
Organochlorine Pesticides

Matrix : Aqueous

Batch # 35589

Method : EPA 8080 / 608

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                | 90         | 90          | 0         | 32 - 127           | 0 - 40       |
| Heptachlor                         | 90         | 91          | 1         | 34 - 111           | 0 - 40       |
| Aldrin                             | 92         | 95          | 3         | 42 - 122           | 0 - 40       |
| Dieldrin                           | 39         | 40          | 2         | 36 - 146           | 0 - 40       |
| Endrin                             | 36         | 36          | 1         | 30 - 147           | 0 - 40       |
| 4,4'-DDT                           | 29         | 31          | 5         | 25 - 160           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                 | 99         | 118         | 17        | 32 - 127           | 0 - 40       |
| Heptachlor                          | 102        | 104         | 3         | 34 - 111           | 0 - 40       |
| Aldrin                              | 102        | 109         | 7         | 42 - 122           | 0 - 40       |
| Dieldrin                            | 42         | 47          | 11        | 36 - 146           | 0 - 40       |
| Endrin                              | 40         | 41          | 3         | 30 - 147           | 0 - 40       |
| 4,4'-DDT                            | 29         | 26          | 13        | 25 - 160           | 0 - 40       |

Analytical Services Inc. Batch QC  
Surrogate Recovery  
Organochlorine Pesticides  
Matrix : Aqueous Batch # 35589 Method : EPA 8080 / 608

% Recovery Objectives

|    |                      |          |
|----|----------------------|----------|
| S1 | Dibutylchlorendate   | 14 - 161 |
| S2 | Tetrachloro-m-xylene | 47 - 113 |
| S3 | Decachlorobiphenyl   | 10 - 139 |

| Sample      | File       | S1  | S2  | S3  | S4 | S5 | S6 |
|-------------|------------|-----|-----|-----|----|----|----|
| 35589BLK    | 011698006F | 101 | 91  | 108 |    |    |    |
| 35589LCS    | 011698007F | 93  | 95  | 111 |    |    |    |
| 35589LCSD   | 011698008F | 107 | 97  | 127 |    |    |    |
| 90797-9     | 011698009F | 99  | 97  | 122 |    |    |    |
| 90786       | 011698055F | 26  |     | 22  |    |    |    |
| 90786MS     | 011698059F | 119 | 97  | 143 |    |    |    |
| 90786MSD    | 011698060F | 117 | 95  | 138 |    |    |    |
| 90838-1     | 011998017F | 59  | 49  | 43  |    |    |    |
| 90816       | 011998015F | 73  | 72  | 49  |    |    |    |
| 90816DUP    | 011998016R | 71  | 94  | 82  |    |    |    |
| 90888       | 011998018R | 81  | 106 | 124 |    |    |    |
| 90858-1     | 011998019r | 51  | 46  | 68  |    |    |    |
| 90879-1     | 011998020F |     | 103 | 134 |    |    |    |
| ^^Note: PCB |            |     |     |     |    |    |    |
| 90879-2     | 011998021F |     | 102 | 132 |    |    |    |
| ^^Note: PCB |            |     |     |     |    |    |    |
| 90879-3     | 011998022F |     | 100 | 123 |    |    |    |
| ^^Note: PCB |            |     |     |     |    |    |    |
| 90937-21    | 011998032F | 84  | 84  | 49  |    |    |    |
| 90937-22    | 011998033F | 76  | 71  | 87  |    |    |    |
| 90955       | 011998034F | 71  | 84  | 59  |    |    |    |
| 90950       | 011998039F | 33  | 41  | 23  |    |    |    |

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Blank Results Information  
Organochlorine Pesticides      Method : EPA 8080 / 608

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| Analyte            | Blank<br>Result | Detection<br>Limit |
|--------------------|-----------------|--------------------|
| Chlordane          | BDL             | 0.50               |
| BHC-gamma          | BDL             | 0.10               |
| Endrin             | BDL             | 0.10               |
| Heptachlor         | BDL             | 0.10               |
| Heptachlor epoxide | BDL             | 0.10               |
| Methoxychlor       | BDL             | 0.30               |
| Toxaphene          | BDL             | 5.0                |

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Q.C. Information for Batch # 35589

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Sample Batch Information  
 Organochlorine Pesticides Method : EPA 8080 / 608

| Sample ID   | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst |
|-------------|-------------|------|-------|----------------------|----------|------|-----|------|
|             | Date        | Time | By    |                      | Date     | Time | By  |      |
| 35589BLK    | 01/15/98    | 1000 | TB/JW |                      | 01/16/98 | 1131 | JQZ | GC-3 |
| 35589LCS    | 01/15/98    | 1000 | TB/JW |                      | 01/16/98 | 1204 | JQZ | GC-3 |
| 35589LCSD   | 01/15/98    | 1000 | TB/JW |                      | 01/16/98 | 1237 | JQZ | GC-3 |
| 90786       | 01/15/98    | 1000 | TB/JW |                      | 01/17/98 | 1303 | JQZ | GC-3 |
| 90786MS     | 01/15/98    | 1000 | TB/JW |                      | 01/17/98 | 1514 | JQZ | GC-3 |
| 90786MSD    | 01/15/98    | 1000 | TB/JW |                      | 01/17/98 | 1548 | JQZ | GC-3 |
| 90797-9     | 01/16/98    | 0830 | TB    |                      | 01/16/98 | 1301 | JQZ | GC-3 |
| 90816       | 01/16/98    | 0830 | TB    |                      | 01/20/98 | 0446 | JQZ | GC-3 |
| 90816DUP    | 01/16/98    | 0830 | TB    |                      | 01/20/98 | 0446 | JQZ | GC-3 |
| 90838-1     | 01/19/98    | 1500 | TB/JW |                      | 01/20/98 | 0552 | JQZ | GC-3 |
| 90858-1     | 01/19/98    | 1500 | TB/JW |                      | 01/20/98 | 0624 | JQZ | GC-3 |
| 90888       | 01/19/98    | 1500 | TB/JW |                      | 01/20/98 | 0552 | JQZ | GC-3 |
| 90879-1     | 01/19/98    | 1500 | TB/JW | PCB ONLY             | 01/20/98 | 0730 | JQZ | GC-3 |
| 90879-2     | 01/19/98    | 1500 | TB/JW | PCB ONLY             | 01/20/98 | 0803 | JQZ | GC-3 |
| 90879-3     | 01/19/98    | 1500 | TB/JW | PCB ONLY             | 01/20/98 | 0836 | JQZ | GC-3 |
| 35589BLKPCB | 01/19/98    | 1500 | TB/JW | PCB ONLY             | /        | /    |     |      |
| 90937-21    | 01/20/98    | 0900 | JW/TB |                      | 01/20/98 | 1653 | JQZ | GC-3 |
| 90937-22    | 01/20/98    | 0900 | JW/TB |                      | 01/20/98 | 1726 | JQZ | GC-3 |
| 90955       | 01/20/98    | 0900 | JW/TB |                      | 01/20/98 | 1759 | JQZ | GC-3 |
| 90950       | 01/20/98    | 0900 | JW/TB |                      | 01/20/98 | 2043 | JQZ | GC-3 |
| 90968-4     | 01/21/98    | 0830 | TB    |                      | /        | /    |     |      |
| 90974-1     | 01/21/98    | 0830 | TB    | PCB ONLY             | /        | /    |     |      |
| 90974-2     | 01/21/98    | 0830 | TB    | PCB ONLY             | /        | /    |     |      |
| 90974-3     | 01/21/98    | 0830 | TB    | PCB ONLY             | /        | /    |     |      |
| 90974-4     | 01/21/98    | 0830 | TB    | PCB ONLY             | /        | /    |     |      |
| 90974-5     | 01/21/98    | 0830 | TB    | PCB ONLY             | /        | /    |     |      |
| 90968-1     | /           | /    |       |                      | /        | /    |     |      |

Analytical Services Inc. Batch QC  
For Report Number :90797  
Volatile Organics

Matrix : Aqueous

Batch # 35607

Method : EPA 8260

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 1,1-Dichloroethene                 | 101        | 103         | 2         | 61 - 145           | 0 - 14       |
| Trichloroethene                    | 110        | 120         | 8         | 71 - 120           | 0 - 14       |
| Benzene                            | 101        | 108         | 7         | 76 - 127           | 0 - 11       |
| Toluene                            | 102        | 104         | 2         | 76 - 125           | 0 - 13       |
| Chlorobenzene                      | 97         | 98          | 1         | 75 - 130           | 0 - 13       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 1,1-Dichloroethene                  | 110        | 96          | 13        | 61 - 145           | 0 - 14       |
| Trichloroethene                     | 119        | 102         | 15        | 71 - 120           | 0 - 14       |
| Benzene                             | 115        | 99          | 15        | 76 - 127           | 0 - 11       |
| Toluene                             | 106        | 88          | 18        | 76 - 125           | 0 - 13       |
| Chlorobenzene                       | 98         | 92          | 7         | 75 - 130           | 0 - 13       |

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Aqueous

Batch # 35607

Method : EPA 8260

## % Recovery Objectives

|    |                       |          |
|----|-----------------------|----------|
| S1 | 1,2-Dichloroethane-d4 | 76 - 119 |
| S2 | Toluene-d8            | 88 - 110 |
| S3 | Ethylbenzene-d10      | 75 - 115 |
| S4 | 4-Bromofluorobenzene  | 86 - 120 |

| Sample       | File  | S1  | S2  | S3  | S4  | S5 | S6 |
|--------------|-------|-----|-----|-----|-----|----|----|
| 35607BLK     | B2171 | 107 | 97  | 96  | 103 |    |    |
| 35607LCS     | B2169 | 109 | 99  | 96  | 98  |    |    |
| 35607LCSD    | B2170 | 111 | 99  | 96  | 95  |    |    |
| 90564-1      | B2172 | 110 | 102 | 99  | 99  |    |    |
| 90564-2      | B2173 | 117 | 101 | 96  | 103 |    |    |
| 90564-4      | B2174 | 120 | 98  | 97  | 103 |    |    |
| 90686-1      | B2176 | 115 | 100 | 100 | 104 |    |    |
| 90686-1MS    | B2177 | 116 | 104 | 96  | 99  |    |    |
| 90686-1MSD   | B2178 | 117 | 97  | 98  | 100 |    |    |
| 90686-2      | B2179 | 119 | 99  | 99  | 102 |    |    |
| 90686-2DUP   | B2180 | 125 | 103 | 98  | 102 |    |    |
| 90686-3      | B2181 | 132 | 97  | 97  | 100 |    |    |
| 90686-4      | B2182 | 123 | 99  | 97  | 104 |    |    |
| 90686-5      | B2183 | 123 | 97  | 93  | 102 |    |    |
| 90686-6      | B2184 | 114 | 97  | 98  | 105 |    |    |
| 90686-7      | B2185 | 126 | 98  | 93  | 98  |    |    |
| 90686-9      | B2186 | 124 | 98  | 99  | 102 |    |    |
| 90697-1      | B2187 | 124 | 105 | 100 | 105 |    |    |
| 90697-2      | B2188 | 120 | 100 | 98  | 98  |    |    |
| 90697-3      | B2189 | 118 | 99  | 100 | 100 |    |    |
| 90697-4      | B2190 | 118 | 101 | 94  | 100 |    |    |
| 90697-4DUP   | B2191 | 122 | 100 | 94  | 98  |    |    |
| 90564-4DUP   | C0802 | 102 | 102 | 100 | 97  |    |    |
| 90686-3D     | C0793 | 112 | 103 | 100 | 102 |    |    |
| ^^Note: DF=5 |       |     |     |     |     |    |    |
| 90686-4DUP   | C0794 | 98  | 100 | 99  | 98  |    |    |
| 90686-5DUP   | C0795 | 103 | 100 | 99  | 96  |    |    |
| 90686-7DUP   | C0796 | 105 | 101 | 99  | 98  |    |    |
| 90686-9DUP   | C0797 | 105 | 101 | 99  | 97  |    |    |
| 90697-1DUP   | C0798 | 105 | 101 | 100 | 96  |    |    |
| 90697-2DUP   | C0799 | 104 | 101 | 100 | 97  |    |    |
| 90697-4DUP   | C0801 | 104 | 102 | 100 | 97  |    |    |
| 90797-9      | C0862 | 98  | 99  | 98  | 93  |    |    |
| 90797-10     | C0863 | 94  | 99  | 101 | 94  |    |    |
| 90915-24     | C0844 | 96  | 100 | 100 | 90  |    |    |
| 90686-3DUP   | C0884 | 90  | 96  | 96  | 91  |    |    |



Analytical Services Inc. Batch QC  
Surrogate Recovery  
Volatile Organics

Matrix : Aqueous

Batch # 35607

Method : EPA 8260

## % Recovery Objectives

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|    |                       |          |
|----|-----------------------|----------|
| S1 | 1,2-Dichloroethane-d4 | 76 - 119 |
| S2 | Toluene-d8            | 88 - 110 |
| S3 | Ethylbenzene-d10      | 75 - 115 |
| S4 | 4-Bromofluorobenzene  | 86 - 120 |

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| Sample   | File  | S1  | S2  | S3 | S4  | S5 | S6 |
|----------|-------|-----|-----|----|-----|----|----|
| 90641-1  | B2295 | 113 | 103 | 90 | 93  |    |    |
| 90641-2  | B2296 | 106 | 99  | 94 | 101 |    |    |
| 90697-4D | C0861 | 114 | 101 | 97 | 92  |    |    |

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^^Note: DF=10

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Q.C. Information for Batch # 35607

Printed: 01/22/98 18:20:17

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Blank Results Information  
Volatile Organics      Method : EPA 8260

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| Analyte              | Blank<br>Result | Detection<br>Limit |
|----------------------|-----------------|--------------------|
| Benzene              | BDL             | 0.4                |
| Carbon tetrachloride | BDL             | 2.1                |
| Chlorobenzene        | BDL             | 0.4                |
| Chloroform           | BDL             | 0.3                |
| 1,2-Dichloroethane   | BDL             | 0.6                |
| 1,1-Dichloroethene   | BDL             | 1.2                |
| Methyl ethyl ketone  | BDL             | 1                  |
| Tetrachloroethene    | BDL             | 1.4                |
| Trichloroethene      | BDL             | 1                  |
| Vinyl chloride       | BDL             | 1.1                |

Sample Batch Information  
Volatile Organics Method : EPA 8260

| Sample ID  | Preparation |      |    | Preparation<br>Notes | Analysis |      |     | Ins  |
|------------|-------------|------|----|----------------------|----------|------|-----|------|
|            | Date        | Time | By |                      | Date     | Time | By  |      |
| 35607BLK   | /           | /    |    |                      | 01/15/98 | 1245 | TLW | VOA2 |
| 35607LCS   | /           | /    |    |                      | 01/15/98 | 1157 | TLW | VOA2 |
| 35607LCSD  | /           | /    |    |                      | 01/15/98 | 1221 | TLW | VOA2 |
| 90564-1    | /           | /    |    |                      | 01/15/98 | 1435 | TLW | VOA2 |
| 90564-2    | /           | /    |    |                      | 01/15/98 | 1500 | TLW | VOA2 |
| 90564-4    | /           | /    |    |                      | 01/15/98 | 1524 | TLW | VOA2 |
| 90686-1    | /           | /    |    |                      | 01/15/98 | 1614 | TLW | VOA2 |
| 90686-1MS  | /           | /    |    |                      | 01/15/98 | 1638 | TLW | VOA2 |
| 90686-1MSD | /           | /    |    |                      | 01/15/98 | 1703 | TLW | VOA2 |
| 90686-2    | /           | /    |    |                      | 01/15/98 | 1728 | TLW | VOA2 |
| 90686-2DUP | /           | /    |    |                      | 01/15/98 | 1752 | TLW | VOA2 |
| 90686-3    | /           | /    |    |                      | 01/15/98 | 1817 | TLW | VOA2 |
| 90686-4    | /           | /    |    |                      | 01/15/98 | 1841 | TLW | VOA2 |
| 90686-5    | /           | /    |    |                      | 01/15/98 | 1905 | TLW | VOA2 |
| 90686-6    | /           | /    |    |                      | 01/15/98 | 1930 | TLW | VOA2 |
| 90686-7    | /           | /    |    |                      | 01/15/98 | 1954 | TLW | VOA2 |
| 90686-9    | /           | /    |    |                      | 01/15/98 | 2019 | TLW | VOA2 |
| 90697-1    | /           | /    |    |                      | 01/15/98 | 2043 | TLW | VOA2 |
| 90697-2    | /           | /    |    |                      | 01/15/98 | 2108 | TLW | VOA2 |
| 90697-3    | /           | /    |    |                      | 01/15/98 | 2132 | TLW | VOA2 |
| 90697-4    | /           | /    |    |                      | 01/15/98 | 2156 | TLW | VOA2 |
| 90697-4DUP | /           | /    |    |                      | 01/16/98 | 2021 | LLP | VOA3 |
| 90564-4DUP | /           | /    |    |                      | 01/16/98 | 2207 | LLP | VOA3 |
| 90686-3D   | /           | /    |    |                      | 01/16/98 | 1248 | LLP | VOA3 |
| 90686-4DUP | /           | /    |    |                      | 01/16/98 | 1314 | LLP | VOA3 |
| 90686-5DUP | /           | /    |    |                      | 01/16/98 | 1534 | LLP | VOA3 |
| 90686-7DUP | /           | /    |    |                      | 01/16/98 | 1601 | LLP | VOA3 |
| 90686-9DUP | /           | /    |    |                      | 01/16/98 | 1628 | LLP | VOA3 |
| 90697-1DUP | /           | /    |    |                      | 01/16/98 | 1805 | LLP | VOA3 |
| 90697-2DUP | /           | /    |    |                      | 01/16/98 | 1831 | LLP | VOA3 |
| 90797-9    | /           | /    |    |                      | 01/18/98 | 1448 | RFA | VOA3 |
| 90797-10   | /           | /    |    |                      | 01/18/98 | 1514 | RFA | VOA3 |
| 90915-24   | /           | /    |    |                      | 01/17/98 | 2131 | RFA | VOA3 |
| 90686-3DUP | /           | /    |    |                      | 01/19/98 | 0931 | LLP | VOA3 |
| 90641-1    | /           | /    |    |                      | 01/19/98 | 1114 | RFA | VOA2 |
| 90641-2    | /           | /    |    |                      | 01/19/98 | 1139 | RFA | VOA2 |
| 90697-4D   | /           | /    |    |                      | 01/18/98 | 1421 | LLP | VOA3 |

Analytical Services Inc. Batch QC  
For Report Number :90797  
Base Neutrals / Acids

Matrix : TCLP

Batch # 35614

Method : EPA 8270

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| o-Cresol                           | 67         | 63          | 5         | 10 - 150           | 0 - 50       |
| m-Cresol + p-Cresol                | 58         | 58          | 1         | 10 - 150           | 0 - 50       |
| 1,4-Dichlorobenzene                | 48         | 50          | 6         | 36 - 97            | 0 - 28       |
| 2,4-Dinitrotoluene                 | 49         | 47          | 5         | 24 - 96            | 0 - 38       |
| Hexachlorobenzene                  | 91         | 91          | 0         | 10 - 152           | 0 - 40       |
| Hexachlorobutadiene                | 54         | 59          | 8         | 24 - 116           | 0 - 40       |
| Hexachloroethane                   | 41         | 40          | 2         | 40 - 113           | 0 - 40       |
| Nitrobenzene                       | 64         | 65          | 2         | 35 - 180           | 0 - 40       |
| Pentachlorophenol                  | 46         | 56          | 18        | 9 - 103            | 0 - 50       |
| Pyridine                           | 21         | 25          | 19        | 10 - 110           | 0 - 90       |
| 2,4,5-Trichlorophenol              | 64         | 77          | 19        | 10 - 150           | 0 - 50       |
| 2,4,6-Trichlorophenol              | 55         | 69          | 21        | 37 - 144           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Cresol                              | 66         | 66          | 1         | 10 - 150           | 0 - 50       |
| m-Cresol + p-Cresol                 | 58         | 58          | 0         | 10 - 150           | 0 - 50       |
| 1,4-Dichlorobenzene                 | 53         | 53          | 0         | 36 - 97            | 0 - 28       |
| 2,4-Dinitrotoluene                  | 50         | 54          | 7         | 24 - 96            | 0 - 38       |
| Hexachlorobenzene                   | 91         | 94          | 3         | 10 - 152           | 0 - 40       |
| Hexachlorobutadiene                 | 62         | 61          | 2         | 24 - 116           | 0 - 40       |
| Hexachloroethane                    | 43         | 44          | 2         | 40 - 113           | 0 - 40       |
| Nitrobenzene                        | 64         | 60          | 6         | 35 - 180           | 0 - 40       |
| Pentachlorophenol                   | 25         | 27          | 8         | 9 - 103            | 0 - 50       |
| Pyridine                            | 21         | 19          | 15        | 10 - 110           | 0 - 90       |
| 2,4,5-Trichlorophenol               | 86         | 83          | 4         | 10 - 150           | 0 - 50       |
| 2,4,6-Trichlorophenol               | 79         | 74          | 6         | 37 - 144           | 0 - 40       |

## Analytical Services Inc. Batch QC

## Surrogate Recovery

## Base Neutrals / Acids

Matrix : TCLP

Batch # 35614

Method : EPA 8270

## % Recovery Objectives

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|    |                      |          |
|----|----------------------|----------|
| S1 | 2-Fluorophenol       | 21 - 100 |
| S2 | Phenol-d5            | 10 - 94  |
| S3 | Nitrobenzene-d5      | 35 - 114 |
| S4 | 2-Fluorobiphenyl     | 43 - 116 |
| S5 | 2,4,6-Tribromophenol | 10 - 123 |
| S6 | Terphenyl-d14        | 33 - 141 |

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| Sample     | File  | S1 | S2 | S3 | S4 | S5 | S6 |
|------------|-------|----|----|----|----|----|----|
| 35614BLK   | A7500 | 41 | 31 | 57 | 70 | 75 | 87 |
| 35614LCS   | A7501 | 34 | 29 | 58 | 73 | 64 | 89 |
| 35614LCSD  | A7502 | 42 | 32 | 58 | 69 | 77 | 88 |
| 90797-1    | A7503 | 21 | 19 | 57 | 71 | 37 | 77 |
| 90797-2    | A7504 | 30 | 26 | 77 | 93 | 51 | 83 |
| 90797-3    | A7505 | 31 | 25 | 78 | 97 | 53 | 87 |
| 90797-4    | A7506 | 36 | 29 | 54 | 68 | 58 | 88 |
| 90797-4MS  | A7507 | 43 | 31 | 57 | 75 | 78 | 91 |
| 90797-4MSD | A7508 | 44 | 31 | 54 | 71 | 78 | 84 |
| 90797-5    | A7509 | 35 | 28 | 63 | 82 | 65 | 95 |
| 90797-6    | A7510 | 38 | 26 | 45 | 56 | 75 | 74 |
| 90797-7    | A7511 | 24 | 19 | 51 | 67 | 49 | 76 |
| 90797-8    | A7512 | 30 | 23 | 55 | 72 | 62 | 91 |
| 90797-6DUP | A7513 | 29 | 25 | 55 | 73 | 61 | 90 |

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Q.C. Information for Batch # 35614

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Blank Results Information  
Base Neutrals / Acids      Method : EPA 8270

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| Analyte |                       | Blank<br>Result | Detection<br>Limit |
|---------|-----------------------|-----------------|--------------------|
| D026    | Total Cresol          | BDL             | 0.05               |
| D027    | 1,4-Dichlorobenzene   | BDL             | 0.05               |
| D030    | 2,4-Dinitrotoluene    | BDL             | 0.05               |
| D032    | Hexachlorobenzene     | BDL             | 0.05               |
| D033    | Hexachlorobutadiene   | BDL             | 0.05               |
| D034    | Hexachloroethane      | BDL             | 0.05               |
| D036    | Nitrobenzene          | BDL             | 0.05               |
| D037    | Pentachlorophenol     | BDL             | 0.05               |
| D041    | 2,4,5-Trichlorophenol | BDL             | 0.05               |
| D042    | 2,4,6-Trichlorophenol | BDL             | 0.05               |
| D038    | Pyridine              | BDL             | 0.05               |

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Sample Batch Information  
Base Neutrals / Acids      Method : EPA 8270

| Sample ID  | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-------------|------|-------|----------------------|----------|------|-----|------|
|            | Date        | Time | By    |                      | Date     | Time | By  |      |
| 35614BLK   | 01/16/98    | 0800 | JW/TB |                      | 01/16/98 | 1606 | TAS | 5970 |
| 35614LCS   | 01/16/98    | 0800 | JW/TB |                      | 01/16/98 | 1640 | TAS | 5970 |
| 35614LCSD  | 01/16/98    | 0800 | JW/TB |                      | 01/16/98 | 1715 | TAS | 5970 |
| 90797-1    | 01/16/98    | 0800 | JW/TB |                      | 01/16/98 | 1749 | TAS | 5970 |
| 90797-2    | 01/16/98    | 0800 | JW/TB |                      | 01/16/98 | 1823 | TAS | 5970 |
| 90797-3    | 01/16/98    | 0800 | JW/TB |                      | 01/16/98 | 1857 | TAS | 5970 |
| 90797-4    | 01/16/98    | 0800 | JW/TB |                      | 01/16/98 | 1931 | TAS | 5970 |
| 90797-5    | 01/16/98    | 0800 | JW/TB |                      | 01/16/98 | 2113 | TAS | 5970 |
| 90797-6    | 01/16/98    | 0800 | JW/TB |                      | 01/16/98 | 2147 | TAS | 5970 |
| 90797-7    | 01/16/98    | 0800 | JW/TB |                      | 01/16/98 | 2221 | TAS | 5970 |
| 90797-8    | 01/16/98    | 0800 | JW/TB |                      | 01/16/98 | 2255 | TAS | 5970 |
| 90797-4MS  | 01/16/98    | 0800 | JW/TB |                      | 01/16/98 | 2005 | TAS | 5970 |
| 90797-4MSD | 01/16/98    | 0800 | JW/TB |                      | 01/16/98 | 2039 | TAS | 5970 |
| 90797-6DUP | 01/16/98    | 0800 | JW/TB |                      | 01/16/98 | 2329 | TAS | 5970 |

Analytical Services Inc. Batch QC  
 For Report Number : 90797  
 Organochlorine Pesticides

Matrix : TCLP

Batch # 35619

Method : EPA 8080

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                | 107        | 106         | 1         | 32 - 127           | 0 - 40       |
| Heptachlor                         | 110        | 108         | 2         | 34 - 111           | 0 - 40       |
| Toxaphene                          | 88         | 84          | 5         | 25 - 160           | 0 - 40       |
| Heptachlor epoxide                 | 119        | 119         | 0         | 25 - 160           | 0 - 40       |
| Endrin                             | 88         | 86          | 3         | 30 - 147           | 0 - 40       |
| Chlordane                          | 30         | 28          | 10        | 25 - 160           | 0 - 40       |
| Methoxychlor                       | 91         | 89          | 2         | 25 - 160           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                 | 98         | 100         | 2         | 32 - 127           | 0 - 40       |
| Heptachlor                          | 103        | 106         | 3         | 34 - 111           | 0 - 40       |
| Toxaphene                           | 75         | 132         | 56        | 25 - 160           | 0 - 40       |
| Heptachlor epoxide                  | 108        | 114         | 5         | 25 - 160           | 0 - 40       |
| Endrin                              | 83         | 104         | 22        | 30 - 147           | 0 - 40       |
| Chlordane                           | 26         | 34          | 27        | 25 - 160           | 0 - 40       |
| Methoxychlor                        | 87         | 88          | 1         | 25 - 160           | 0 - 40       |



Analytical Services Inc. Batch QC  
Surrogate Recovery  
Organochlorine Pesticides

Matrix : TCLP

Batch # 35619

Method : EPA 8080

## % Recovery Objectives

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|    |                      |          |
|----|----------------------|----------|
| S1 | Dibutylchlorendate   | 34 - 151 |
| S2 | Tetrachloro-m-xylene | 40 - 111 |
| S3 | Decachlorobiphenyl   | 24 - 153 |

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| Sample      | File       | S1  | S2  | S3  | S4 | S5 | S6 |
|-------------|------------|-----|-----|-----|----|----|----|
| 35619BLK    | 011698021F | 106 | 99  | 138 |    |    |    |
| 35619LCS    | 011698022F | 111 | 107 | 151 |    |    |    |
| 35619LCSD   | 011698023F | 122 | 111 | 153 |    |    |    |
| 90797-1     | 011698024F | 116 | 110 | 145 |    |    |    |
| 90797-2     | 011698025F | 113 | 100 | 145 |    |    |    |
| 90797-3     | 011698026F | 101 | 93  | 136 |    |    |    |
| 90797-4     | 011698027F | 101 | 100 | 140 |    |    |    |
| 90797-4MSD  | 011698029F | 115 | 103 | 142 |    |    |    |
| 90797-4MS   | 011698028F | 111 | 96  | 140 |    |    |    |
| 90797-5     | 011698030F | 107 | 102 | 146 |    |    |    |
| 90797-5DUP  | 011698034F | 105 | 105 | 144 |    |    |    |
| 90797-6     | 011698035F | 97  | 95  | 132 |    |    |    |
| 90797-7     | 011698036F | 98  | 102 | 134 |    |    |    |
| 90797-8     | 011698037F | 103 | 97  | 137 |    |    |    |
| 90814-1     | 011998027F | 98  | 101 | 116 |    |    |    |
| 90814-2     | 011998028F | 116 | 101 | 137 |    |    |    |
| 35619BLKPCB | 011998029F |     | 95  | 114 |    |    |    |

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^^Note: PCB ONLY

Q.C. Information for Batch # 35619

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Blank Results Information  
Organochlorine Pesticides      Method : EPA 8080

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| Analyte |                    | Blank<br>Result | Detection<br>Limit |
|---------|--------------------|-----------------|--------------------|
| D020    | Chlordane          | BDL             | 0.01               |
| D012    | Endrin             | BDL             | 0.001              |
| D031    | Heptachlor         | BDL             | 0.001              |
| D031    | Heptachlor epoxide | BDL             | 0.001              |
| D013    | Lindane            | BDL             | 0.01               |
| D014    | Methoxychlor       | BDL             | 0.5                |
| D015    | Toxaphene          | BDL             | 0.05               |

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Q.C. Information for Batch # 35619

Printed: 01/22/98 18:20:20

Sample Batch Information  
Organochlorine Pesticides Method : EPA 8080

| Sample ID   | Preparation |      |    | Preparation<br>Notes | Analysis |      |     | Inst |
|-------------|-------------|------|----|----------------------|----------|------|-----|------|
|             | Date        | Time | By |                      | Date     | Time | By  |      |
| 35619BLK    | 01/16/98    | 0800 | TB |                      | 01/16/98 | 1825 | JQZ | GC-3 |
| 35619LCS    | 01/16/98    | 0800 | TB |                      | 01/16/98 | 1857 | JQZ | GC-3 |
| 35619LCSD   | 01/16/98    | 0800 | TB |                      | 01/16/98 | 1930 | JQZ | GC-3 |
| 90797-1     | 01/16/98    | 0800 | TB |                      | 01/16/98 | 2003 | JQZ | GC-3 |
| 90797-2     | 01/16/98    | 0800 | TB |                      | 01/16/98 | 2035 | JQZ | GC-3 |
| 90797-3     | 01/16/98    | 0800 | TB |                      | 01/16/98 | 2108 | JQZ | GC-3 |
| 90797-4     | 01/16/98    | 1400 | TB |                      | 01/16/98 | 2141 | JQZ | GC-3 |
| 90797-5     | 01/16/98    | 1400 | TB |                      | 01/16/98 | 2320 | JQZ | GC-3 |
| 90797-6     | 01/16/98    | 1400 | TB |                      | 01/17/98 | 0204 | JQZ | GC-3 |
| 90797-7     | 01/16/98    | 1400 | TB |                      | 01/17/98 | 0237 | JQZ | GC-3 |
| 90797-8     | 01/16/98    | 1400 | TB |                      | 01/17/98 | 0310 | JQZ | GC-3 |
| 90797-4MSD  | 01/16/98    | 1400 | TB |                      | 01/16/98 | 2247 | JQZ | GC-3 |
| 90797-4MS   | 01/16/98    | 1400 | TB |                      | 01/16/98 | 2214 | JQZ | GC-3 |
| 90797-5DUP  | 01/16/98    | 1400 | TB |                      | 01/17/98 | 0132 | JQZ | GC-3 |
| 90814-1     | 01/19/98    | 1500 | TB |                      | 01/20/98 | 1400 | JQZ | GC-3 |
| 90814-2     | 01/19/98    | 1500 | TB |                      | 01/20/98 | 1441 | JQZ | GC-3 |
| 35619BLKPCB | 01/19/98    | 1500 | TB |                      | 01/20/98 | 1514 | JQZ | GC-3 |

Analytical Services Inc. Batch QC  
For Report Number :90797  
Chlorinated Herbicides

Matrix : TCLP

Batch # 35632

Method : EPA 8150

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                              | 72         | 58          | 22        | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                  | 56         | 52          | 7         | 40 - 140           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                               | 70         | 3           | 184       | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 70         | 4           | 178       | 40 - 140           | 0 - 40       |

Analytical Services Inc. Batch QC  
Surrogate Recovery  
Chlorinated Herbicides  
Batch # 35632

Matrix : TCLP

Method : EPA 8150

## % Recovery Objectives

|            |            | S1  | DCAA |    |    | 18 - 163 |    |
|------------|------------|-----|------|----|----|----------|----|
| Sample     | File       | S1  | S2   | S3 | S4 | S5       | S6 |
| 35632BLK   | 011698003R | 74  |      |    |    |          |    |
| 35632LCS   | 011698004R | 80  |      |    |    |          |    |
| 35632LCSD  | 011698005R | 70  |      |    |    |          |    |
| 90797-1    | 011698006R | 81  |      |    |    |          |    |
| 90797-2    | 011698007R | 71  |      |    |    |          |    |
| 90797-3    | 011698008R | 87  |      |    |    |          |    |
| 90797-3MS  | 011698009R | 90  |      |    |    |          |    |
| 90797-3MSD | 011698010R | 20  |      |    |    |          |    |
| 90797-4    | 011698011R | 83  |      |    |    |          |    |
| 90797-5    | 011698012R | 92  |      |    |    |          |    |
| 90797-6    | 011698015R | 73  |      |    |    |          |    |
| 90797-7    | 011698016R | 68  |      |    |    |          |    |
| 90797-8    | 011698017R | 84  |      |    |    |          |    |
| 90797-6DUP | 011698018R | 27  |      |    |    |          |    |
| 90814-1    | 012098019F | 103 |      |    |    |          |    |
| 90814-2    | 012098020F | 155 |      |    |    |          |    |

Q.C. Information for Batch # 35632

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Blank Results Information  
Chlorinated Herbicides Method : EPA 8150

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| Analyte |                 | Blank<br>Result | Detection<br>Limit |
|---------|-----------------|-----------------|--------------------|
| D016    | 2,4-D           | BDL             | 0.05               |
| D017    | 2,4,5-TP Silvex | BDL             | 0.1                |

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Sample Batch Information  
Chlorinated Herbicides Method : EPA 8150

| Sample ID  | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Ins  |
|------------|-------------|------|-------|----------------------|----------|------|-----|------|
|            | Date        | Time | By    |                      | Date     | Time | By  |      |
| 35632BLK   | 01/16/98    | 0915 | DH/DY |                      | 01/16/98 | 2130 | JQZ | GC-1 |
| 35632LCS   | 01/16/98    | 0915 | DH/DY |                      | 01/16/98 | 2158 | JQZ | GC-1 |
| 35632LCSD  | 01/16/98    | 0915 | DH/DY |                      | 01/16/98 | 2226 | JQZ | GC-1 |
| 90797-3    | 01/16/98    | 0915 | DH/DY |                      | 01/16/98 | 2351 | JQZ | GC-1 |
| 90797-3MS  | 01/16/98    | 0915 | DH/DY |                      | 01/17/98 | 0019 | JQZ | GC-1 |
| 90797-3MSD | 01/16/98    | 0915 | DH/DY |                      | 01/17/98 | 0047 | JQZ | GC-1 |
| 90797-1    | 01/16/98    | 0915 | DH/DY |                      | 01/16/98 | 2255 | JQZ | GC-1 |
| 90797-2    | 01/16/98    | 0915 | DH/DY |                      | 01/16/98 | 2323 | JQZ | GC-1 |
| 90797-4    | 01/16/98    | 0915 | DH/DY |                      | 01/17/98 | 0115 | JQZ | GC-1 |
| 90797-5    | 01/16/98    | 0915 | DH/DY |                      | 01/17/98 | 0143 | JQZ | GC-1 |
| 90797-6    | 01/16/98    | 0915 | DH/DY |                      | 01/17/98 | 0307 | JQZ | GC-1 |
| 90797-7    | 01/16/98    | 0915 | DH/DY |                      | 01/17/98 | 0336 | JQZ | GC-1 |
| 90797-8    | 01/16/98    | 0915 | DH/DY |                      | 01/17/98 | 0405 | JQZ | GC-1 |
| 90797-6DUP | 01/16/98    | 0915 | DH/DY |                      | 01/17/98 | 0432 | JQZ | GC-1 |
| 90814-1    | 01/19/98    | 1230 | DH    |                      | 01/20/98 | 1938 | JQZ | GC-1 |
| 90814-2    | 01/20/98    | 1230 | DH    |                      | 01/21/98 | 2006 | JQZ | GC-1 |

Analytical Services Inc. Batch QC  
For Report Number :90797  
Volatile Organics

Matrix : TCLP

Batch # 35650

Method : EPA 8260

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Benzene                            | 97         | 101         | 3         | 90 - 115           | 0 - 13       |
| Carbon tetrachloride               | 100        | 103         | 3         | 55 - 115           | 0 - 15       |
| Chlorobenzene                      | 101        | 105         | 3         | 87 - 109           | 0 - 10       |
| Chloroform                         | 97         | 99          | 2         | 55 - 115           | 0 - 15       |
| 1,2-Dichloroethane                 | 91         | 94          | 4         | 90 - 115           | 0 - 13       |
| 1,1-Dichloroethene                 | 92         | 99          | 8         | 55 - 111           | 0 - 15       |
| MEK (2-Butanone)                   | 100        | 103         | 3         | 55 - 115           | 0 - 15       |
| Tetrachloroethene                  | 103        | 106         | 3         | 55 - 115           | 0 - 15       |
| Trichloroethene                    | 87         | 89          | 1         | 78 - 110           | 0 - 11       |
| Vinyl chloride                     | 82         | 87          | 6         | 55 - 115           | 0 - 15       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Benzene                             | 91         | 95          | 5         | 90 - 115           | 0 - 13       |
| Carbon tetrachloride                | 86         | 93          | 8         | 55 - 115           | 0 - 15       |
| Chlorobenzene                       | 86         | 93          | 8         | 87 - 109           | 0 - 10       |
| Chloroform                          | 87         | 92          | 5         | 55 - 115           | 0 - 15       |
| 1,2-Dichloroethane                  | 89         | 93          | 5         | 90 - 115           | 0 - 13       |
| 1,1-Dichloroethene                  | 81         | 87          | 6         | 55 - 111           | 0 - 15       |
| MEK (2-Butanone)                    | 115        | 121         | 5         | 55 - 115           | 0 - 15       |
| Tetrachloroethene                   | 77         | 88          | 13        | 55 - 115           | 0 - 15       |
| Trichloroethene                     | 78         | 83          | 7         | 78 - 110           | 0 - 11       |
| Vinyl chloride                      | 80         | 83          | 4         | 55 - 115           | 0 - 15       |



Analytical Services Inc. Batch QC  
Surrogate Recovery  
Volatile Organics

Matrix : TCLP

Batch # 35650

Method : EPA 8260

## % Recovery Objectives

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|    |                       |          |
|----|-----------------------|----------|
| S1 | 1,2-Dichloroethane-d4 | 76 - 119 |
| S2 | Toluene-d8            | 88 - 110 |
| S3 | Ethylbenzene-d10      | 75 - 115 |
| S4 | 4-Bromofluorobenzene  | 86 - 115 |

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| Sample     | File  | S1  | S2  | S3 | S4 | S5 | S6 |
|------------|-------|-----|-----|----|----|----|----|
| 35650BLK   | C0883 | 90  | 96  | 95 | 93 |    |    |
| 35650LCS   | C0881 | 87  | 96  | 97 | 93 |    |    |
| 35650LCSD  | C0882 | 88  | 95  | 97 | 92 |    |    |
| 90797-1    | C0885 | 106 | 97  | 93 | 93 |    |    |
| 90797-2    | C0886 | 104 | 98  | 93 | 92 |    |    |
| 90797-3    | C0887 | 96  | 98  | 97 | 91 |    |    |
| 90797-4    | C0888 | 96  | 98  | 96 | 91 |    |    |
| 90797-5    | C0889 | 113 | 99  | 91 | 92 |    |    |
| 90797-6    | C0890 | 114 | 100 | 92 | 95 |    |    |
| 90797-7    | C0891 | 108 | 99  | 94 | 92 |    |    |
| 90797-7DUP | C0893 | 99  | 98  | 97 | 91 |    |    |
| 90797-8    | C0892 | 100 | 99  | 96 | 90 |    |    |
| 90797-8MS  | C0894 | 98  | 99  | 98 | 92 |    |    |
| 90797-8MSD | C0895 | 96  | 99  | 98 | 91 |    |    |

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Q.C. Information for Batch # 35650

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Blank Results Information  
Volatile Organics Method : EPA 8260

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| Analyte |                      | Blank<br>Result | Detection<br>Limit |
|---------|----------------------|-----------------|--------------------|
| D018    | Benzene              | BDL             | 0.02               |
| D019    | Carbon tetrachloride | BDL             | 0.02               |
| D021    | Chlorobenzene        | BDL             | 0.02               |
| D022    | Chloroform           | BDL             | 0.02               |
| D028    | 1,2-Dichloroethane   | BDL             | 0.02               |
| D029    | 1,1-Dichloroethene   | BDL             | 0.02               |
| D035    | Methyl ethyl ketone  | BDL             | 0.5                |
| D039    | Tetrachloroethene    | BDL             | 0.02               |
| D040    | Trichloroethene      | BDL             | 0.02               |
| D043    | Vinyl chloride       | BDL             | 0.02               |

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Q.C. Information for Batch # 35650

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Sample Batch Information  
Volatile Organics Method : EPA 8260

| Sample ID  | Preparation |         | Preparation<br>Notes | Analysis |          |  | Inst |
|------------|-------------|---------|----------------------|----------|----------|--|------|
|            | Date        | Time By |                      | Date     | Time By  |  |      |
| 35650BLK   | /           | /       |                      | 01/19/98 | 0904 RFA |  | VOA3 |
| 35650LCS   | /           | /       |                      | 01/19/98 | 0812 RFA |  | VOA3 |
| 35650LCSD  | /           | /       |                      | 01/19/98 | 0838 RFA |  | VOA3 |
| 90797-1    | /           | /       |                      | 01/19/98 | 0957 RFA |  | VOA3 |
| 90797-2    | /           | /       |                      | 01/19/98 | 1024 RFA |  | VOA3 |
| 90797-3    | /           | /       |                      | 01/19/98 | 1050 RFA |  | VOA3 |
| 90797-4    | /           | /       |                      | 01/19/98 | 1116 RFA |  | VOA3 |
| 90797-5    | /           | /       |                      | 01/19/98 | 1143 RFA |  | VOA3 |
| 90797-6    | /           | /       |                      | 01/19/98 | 1210 RFA |  | VOA3 |
| 90797-7    | /           | /       |                      | 01/19/98 | 1237 RFA |  | VOA3 |
| 90797-7DUP | /           | /       |                      | 01/19/98 | 1331 RFA |  | VOA3 |
| 90797-8    | /           | /       |                      | 01/19/98 | 1304 RFA |  | VOA3 |
| 90797-8MS  | /           | /       |                      | 01/19/98 | 1358 RFA |  | VOA3 |
| 90797-8MSD | /           | /       |                      | 01/19/98 | 1425 RFA |  | VOA3 |

Analytical Services Inc. Batch QC  
For Report Number :90797

## Batch General Information

| Batch Number                     | Analyte   | Analysis Method | Matrix   |   | Blank Result | Prep. Method |
|----------------------------------|-----------|-----------------|----------|---|--------------|--------------|
| 34880                            | Hg        | EPA 7470        | TCLP     | < | 0.0002       |              |
| 34881                            | Hg        | EPA 7470        | Aqueous  | < | 0.0002       |              |
| ^^Note : 90797-9 USED FOR MS/MSD |           |                 |          |   |              |              |
| 35369                            | Ag        | EPA 6010        | Aqueous  | < | 0.0050       |              |
| 35369                            | As        | EPA 6010        | Aqueous  | < | 0.0100       |              |
| 35369                            | Ba        | EPA 6010        | Aqueous  | < | 0.0100       |              |
| 35369                            | Cd        | EPA 6010        | Aqueous  | < | 0.0050       |              |
| 35369                            | Cr        | EPA 6010        | Aqueous  | < | 0.0050       |              |
| 35369                            | Pb        | EPA 6010        | Aqueous  | < | 0.0030       |              |
| 35369                            | Se        | EPA 6010        | Aqueous  | < | 0.0050       |              |
| 35370                            | Ag        | EPA 6010        | TCLP     | < | 0.0100       |              |
| 35370                            | As        | EPA 6010        | TCLP     | < | 0.0300       |              |
| 35370                            | Ba        | EPA 6010        | TCLP     | < | 0.2000       |              |
| ^^Note : ADJUSTED D.L.           |           |                 |          |   |              |              |
| 35370                            | Cd        | EPA 6010        | TCLP     | < | 0.0100       |              |
| 35370                            | Cr        | EPA 6010        | TCLP     | < | 0.0100       |              |
| 35370                            | Pb        | EPA 6010        | TCLP     | < | 0.0250       |              |
| 35370                            | Se        | EPA 6010        | TCLP     | < | 0.0400       |              |
| 35588                            | pH        | EPA 9040        | Aqueous  |   | 5.8100       |              |
| 35588                            | pH        | EPA 9045        | Soil     |   | 5.8100       |              |
| 35617                            | Ign       | EPA 1010        | Aq/Solid |   | 0.0000       |              |
| 35653                            | React S2  | EPA 7.3.4.2     | Aq/Soil  | < | 5.0000       |              |
| 35654                            | React. CN | EPA 7.3.3.2     | Aq/Soil  | < | 1.0000       |              |

## Lab Control Information

| Batch Number | Analyte | Method   | LC %Rec | LCD %Rec | LC RPD | %Recovery Range | RPD Range |
|--------------|---------|----------|---------|----------|--------|-----------------|-----------|
| 34880        | Hg      | EPA 7470 | 93      | 94       | 1      | 76 - 124        | 0 - 20    |
| 34881        | Hg      | EPA 7470 | 90      | 93       | 3      | 76 - 124        | 0 - 20    |
| 35369        | Ag      | EPA 6010 | 100     | 89       | 12     | 76 - 124        | 0 - 20    |
| 35369        | As      | EPA 6010 | 100     | 91       | 9      | 76 - 124        | 0 - 20    |
| 35369        | Ba      | EPA 6010 | 97      | 87       | 11     | 76 - 124        | 0 - 20    |
| 35369        | Cd      | EPA 6010 | 93      | 84       | 10     | 76 - 124        | 0 - 20    |
| 35369        | Cr      | EPA 6010 | 100     | 90       | 11     | 76 - 124        | 0 - 20    |
| 35369        | Pb      | EPA 6010 | 96      | 86       | 11     | 76 - 124        | 0 - 20    |
| 35369        | Se      | EPA 6010 | 90      | 81       | 11     | 76 - 124        | 0 - 20    |
| 35370        | Ag      | EPA 6010 | 114     | 119      | 4      | 76 - 124        | 0 - 20    |
| 35370        | As      | EPA 6010 | 94      | 96       | 2      | 76 - 124        | 0 - 20    |
| 35370        | Ba      | EPA 6010 | 87      | 90       | 3      | 76 - 124        | 0 - 20    |
| 35370        | Cd      | EPA 6010 | 81      | 82       | 1      | 76 - 124        | 0 - 20    |
| 35370        | Cr      | EPA 6010 | 90      | 93       | 3      | 76 - 124        | 0 - 20    |

Analytical Services Inc. Batch QC  
For Report Number :90797

## Lab Control Information

| Batch<br>Number | Analyte   | Method      | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-----------------|-----------|-------------|------------|-------------|-----------|--------------------|--------------|
| 35370           | Pb        | EPA 6010    | 82         | 84          | 2         | 76 - 124           | 0 - 20       |
| 35370           | Se        | EPA 6010    | 89         | 91          | 2         | 76 - 124           | 0 - 20       |
| 35588           | pH        | EPA 9040    | 102        | 102         | 0         | 80 - 120           | 0 - 20       |
| 35588           | pH        | EPA 9045    | 102        | 102         | 0         | 80 - 120           | 0 - 20       |
| 35653           | React S2  | EPA 7.3.4.2 | 113        | 112         | 1         | 60 - 140           | 0 - 40       |
| 35654           | React. CN | EPA 7.3.3.2 | 109        | 111         | 2         | 75 - 125           | 0 - 30       |

## Matrix Spike Information

| Batch<br>Number | Analyte | Method   | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-----------------|---------|----------|------------|-------------|-----------|--------------------|--------------|
| 34880           | Hg      | EPA 7470 | 85         | 83          | 2         | 76 - 124           | 0 - 20       |
| 34881           | Hg      | EPA 7470 | 94         | 94          | 0         | 76 - 124           | 0 - 20       |
| 35369           | Ag      | EPA 6010 | 86         | 91          | 6         | 76 - 124           | 0 - 20       |
| 35369           | As      | EPA 6010 | 88         | 93          | 6         | 76 - 124           | 0 - 20       |
| 35369           | Ba      | EPA 6010 | 84         | 89          | 6         | 76 - 124           | 0 - 20       |
| 35369           | Cd      | EPA 6010 | 81         | 86          | 6         | 76 - 124           | 0 - 20       |
| 35369           | Cr      | EPA 6010 | 88         | 93          | 6         | 76 - 124           | 0 - 20       |
| 35369           | Pb      | EPA 6010 | 84         | 89          | 6         | 76 - 124           | 0 - 20       |
| 35369           | Se      | EPA 6010 | 80         | 84          | 5         | 76 - 124           | 0 - 20       |
| 35370           | Ag      | EPA 6010 | 105        | 120         | 13        | 76 - 124           | 0 - 20       |
| 35370           | As      | EPA 6010 | 97         | 98          | 1         | 76 - 124           | 0 - 20       |
| 35370           | Ba      | EPA 6010 | 104        | 106         | 2         | 76 - 124           | 0 - 20       |
| 35370           | Cd      | EPA 6010 | 82         | 83          | 1         | 76 - 124           | 0 - 20       |
| 35370           | Cr      | EPA 6010 | 92         | 93          | 1         | 76 - 124           | 0 - 20       |
| 35370           | Pb      | EPA 6010 | 84         | 85          | 1         | 76 - 124           | 0 - 20       |
| 35370           | Se      | EPA 6010 | 92         | 93          | 1         | 76 - 124           | 0 - 20       |

## Post Digestion Spike Information

| Batch<br>Number | Analyte | Method   | PDS<br>%Rec | %Recovery<br>Range |
|-----------------|---------|----------|-------------|--------------------|
| 35369           | Ag      | EPA 6010 | 97          | 76 - 124           |
| 35369           | As      | EPA 6010 | 90          | 76 - 124           |
| 35369           | Ba      | EPA 6010 | 87          | 76 - 124           |
| 35369           | Cd      | EPA 6010 | 85          | 76 - 124           |
| 35369           | Cr      | EPA 6010 | 92          | 76 - 124           |
| 35369           | Pb      | EPA 6010 | 88          | 76 - 124           |
| 35369           | Se      | EPA 6010 | 83          | 76 - 124           |
| 35370           | Ag      | EPA 6010 | 95          | 76 - 124           |
| 35370           | As      | EPA 6010 | 92          | 76 - 124           |
| 35370           | Ba      | EPA 6010 | 98          | 76 - 124           |
| 35370           | Cd      | EPA 6010 | 82          | 76 - 124           |

Analytical Services Inc. Batch QC  
For Report Number :90797

## Post Digestion Spike Information

| Batch<br>Number | Analyte | Method   | PDS<br>%Rec | %Recovery<br>Range |
|-----------------|---------|----------|-------------|--------------------|
| 35370           | Cr      | EPA 6010 | 91          | 76 - 124           |
| 35370           | Pb      | EPA 6010 | 83          | 76 - 124           |
| 35370           | Se      | EPA 6010 | 91          | 76 - 124           |

## Unspiked Sample Duplicate Information

| Batch<br>Number | Analyte   | Method      | Sample 1<br>RPD | Sample 2<br>RPD | RPD<br>Range |
|-----------------|-----------|-------------|-----------------|-----------------|--------------|
| 35588           | pH        | EPA 9040    | 4               | 0               | 0 - 20       |
| 35588           | pH        | EPA 9045    | 4               | 0               | 0 - 20       |
| 35653           | React S2  | EPA 7.3.4.2 | 0               |                 | 0 - 40       |
| 35654           | React. CN | EPA 7.3.3.2 | 0               |                 | 0 - 30       |

Sample Batch Information  
Analysis : Hg

| Sample ID  | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | In  |
|------------|-----|-------------|------|-----|----------------------|----------|------|-----|-----|
|            |     | Date        | Time | By  |                      | Date     | Time | By  |     |
| 34880BLANK | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1140 | FBS | AA1 |
| 34880LCS   | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1146 | FBS | AA1 |
| 34880LCSD  | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1145 | FBS | AA1 |
| 90797-1MS  | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1147 | FBS | AA1 |
| 90797-1MSD | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1150 | FBS | AA1 |
| 90797-2DUP | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1152 | FBS | AA1 |
| 90780      | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1217 | FBS | AA1 |
| 90797-1    | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1154 | FBS | AA1 |
| 90797-2    | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1156 | FBS | AA1 |
| 90797-3    | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1159 | FBS | AA1 |
| 90797-4    | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1206 | FBS | AA1 |
| 90797-5    | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1208 | FBS | AA1 |
| 90797-6    | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1210 | FBS | AA1 |
| 90797-7    | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1213 | FBS | AA1 |
| 90797-8    | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1215 | FBS | AA1 |
| 90799      | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1220 | FBS | AA1 |
| 90802-1    | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1222 | FBS | AA1 |
| 90802-2    | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1224 | FBS | AA1 |
| 90802-3    | HG  | 01/19/98    | 0730 | FBS | HG1                  | 01/19/98 | 1227 | FBS | AA1 |

Q.C. Information for Batch # 34881

For Report Number :90797

## Sample Batch Information

Analysis : Hg

| Sample ID  | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|            |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 34881BLANK | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1335 | FBS | HG1  |
| 34881LCS   | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1337 | FBS | HG1  |
| 34881LCSD  | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1339 | FBS | HG1  |
| 90797-9MS  | HG  | 01/19/98    | 0915 | FBS | EPA 7470             | 01/19/98 | 1342 | FBS | HG1  |
| 90797-9MSD | HG  | 01/19/98    | 0915 | FBS | EPA 7470             | 01/19/98 | 1344 | FBS | HG1  |
| 90797-9DUP | HG  | 01/19/98    | 0915 | FBS | EPA 7470             | 01/19/98 | 1346 | FBS | HG1  |
| 90797-9    | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1306 | FBS | HG1  |
| 90816      | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1355 | FBS | HG1  |
| 90838-1    | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1311 | FBS | HG1  |
| 90845-1    | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1313 | FBS | HG1  |
| 90845-2    | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1316 | FBS | HG1  |
| 90858-1    | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1318 | FBS | HG1  |
| 90858-2    | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1320 | FBS | HG1  |
| 90877-1    | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1322 | FBS | HG1  |
| 90884      | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1309 | FBS | HG1  |
| 90888      | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1325 | FBS | HG1  |
| 90897-1    | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1327 | FBS | HG1  |
| 90897-2    | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1403 | FBS | HG1  |
| 90897-3    | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1405 | FBS | HG1  |
| 90897-4    | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1408 | FBS | HG1  |
| 90897-5    | HG  | 01/19/98    | 0915 | FBS |                      | 01/19/98 | 1410 | FBS | HG1  |
| 90884MS    | HG  | 01/19/98    | 0915 | FBS | EPA 245.1            | 01/19/98 | 1348 | FBS | HG1  |
| 90884MSD   | HG  | 01/19/98    | 0915 | FBS | EPA 245.1            | 01/19/98 | 1351 | FBS | HG1  |
| 90884DUP   | HG  | 01/19/98    | 0915 | FBS | EPA 245.1            | 01/19/98 | 1353 | FBS | HG1  |



Sample Batch Information  
Analysis : Ag, As, Ba, Cd, Cr, Pb, Se

| Sample ID  | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Ins  |
|------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|            |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 35369BLANK |     | 01/16/98    | 0820 | DCM | TRACE                | 01/16/98 | 1845 | MAB | ICP2 |
| 35369LCS   |     | 01/16/98    | 0820 | DCM | TRACE                | 01/16/98 | 1849 | MAB | ICP2 |
| 35369LCSD  |     | 01/16/98    | 0820 | DCM | TRACE                | 01/16/98 | 1852 | MAB | ICP2 |
| 90797-9MSD |     | 01/16/98    | 0820 | DCM | TRACE                | 01/16/98 | 1858 | MAB | ICP2 |
| 90835-2PDS |     | 01/16/98    | 0820 | DCM | TRACE                | 01/16/98 | 1902 | MAB | ICP2 |
| 90835-2DUP |     | 01/16/98    | 0820 | DCM | TRACE                | 01/16/98 | 1912 | MAB | ICP2 |
| 90797-9    |     | 01/16/98    | 0820 | DCM | TRACE                | 01/16/98 | 1915 | MAB | ICP2 |
| 90835-2QC  |     | 01/16/98    | 0820 | DCM | TRACE                | 01/16/98 | 1908 | MAB | ICP2 |
| 90797-9MS  |     | 01/16/98    | 0820 | DCM | TRACE                | 01/16/98 | 1855 | MAB | ICP2 |
| 90797-9QC  |     | 01/16/98    | 1030 | DCM | TRACE                | 01/16/98 | 1905 | MAB | ICP2 |

Q.C. Information for Batch # 35370

For Report Number :90797

Sample Batch Information  
Analysis : Ag, As, Ba, Cd, Cr, Pb, Se

| Sample ID  | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|            |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 35370BLANK |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 1939 | MAB | ICP2 |
| 35370LCS   |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 1943 | MAB | ICP2 |
| 35370LCSD  |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 1949 | MAB | ICP2 |
| 90797-1MS  |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 1952 | MAB | ICP2 |
| 90797-1MSD |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 1956 | MAB | ICP2 |
| 90797-7PDS |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 1959 | MAB | ICP2 |
| 90797-7DUP |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 2010 | MAB | ICP2 |
| 90780      |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 2014 | MAB | ICP2 |
| 90797-1    |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 2003 | MAB | ICP2 |
| 90797-2    |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 2025 | MAB | ICP2 |
| 90797-3    |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 2029 | MAB | ICP2 |
| 90797-4    |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 2032 | MAB | ICP2 |
| 90797-5    |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 2036 | MAB | ICP2 |
| 90797-6    |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 2040 | MAB | ICP2 |
| 90797-7    |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 2007 | MAB | ICP2 |
| 90797-8    |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 2043 | MAB | ICP2 |
| 90799      |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/19/98 | 1110 | MAB | ICP2 |
| 90802-1    |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 2145 | MAB | ICP2 |
| 90802-2    |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 2148 | MAB | ICP2 |
| 90802-3    |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 2152 | MAB | ICP2 |
| LCD1       |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 2156 | MAB | ICP2 |
| LCD1       |     | 01/16/98    | 1130 | KSP | TCLP                 | 01/16/98 | 2159 | MAB | ICP2 |

Q.C. Information for Batch # 35588

For Report Number :90797

Sample Batch Information  
Analysis : pH, pH

| Sample ID   | Tag | Preparation<br>Date | Preparation<br>Time By | Preparation<br>Notes | Analysis<br>Date | Analysis<br>Time By | Ins  |
|-------------|-----|---------------------|------------------------|----------------------|------------------|---------------------|------|
| 35588CALCHK |     | / /                 |                        |                      | 01/15/98         | 1100 JN             | 410A |
| 35588LCS    |     | / /                 |                        |                      | 01/15/98         | 1100 JN             | 410A |
| 35588LCSD   |     | / /                 |                        |                      | 01/15/98         | 1100 JN             | 410A |
| 35588BLK    |     | / /                 |                        |                      | 01/15/98         | 1100 JN             | 410A |
| 90797-9     |     | / /                 |                        |                      | 01/15/98         | 1100 JN             | 410A |
| 90799       |     | / /                 |                        |                      | 01/15/98         | 1100 JN             | 410A |
| 90799DUP    |     | / /                 |                        |                      | 01/15/98         | 1100 JN             | 410A |
| 90797-1     |     | / /                 |                        |                      | 01/15/98         | 1200 JN             | 410A |
| 90797-1DUP  |     | / /                 |                        |                      | 01/15/98         | 1200 JN             | 410A |
| 90797-2     |     | / /                 |                        |                      | 01/15/98         | 1200 JN             | 410A |
| 90797-3     |     | / /                 |                        |                      | 01/15/98         | 1200 JN             | 410A |
| 90797-4     |     | / /                 |                        |                      | 01/15/98         | 1200 JN             | 410A |
| 90797-5     |     | / /                 |                        |                      | 01/15/98         | 1200 JN             | 410A |
| 90797-6     |     | / /                 |                        |                      | 01/15/98         | 1200 JN             | 410A |
| 90797-7     |     | / /                 |                        |                      | 01/15/98         | 1200 JN             | 410A |
| 90797-8     |     | / /                 |                        |                      | 01/15/98         | 1200 JN             | 410A |
| 90817-2     |     | / /                 |                        |                      | 01/15/98         | 1630 JN             | 410A |
| 90828-2     |     | / /                 |                        |                      | 01/15/98         | 1630 JN             | 410A |
| 90838-1     |     | / /                 |                        |                      | 01/15/98         | 1700 JN             | 410A |
| 90838-2     |     | / /                 |                        |                      | 01/15/98         | 1700 JN             | 410A |
| 90838-3     |     | / /                 |                        |                      | 01/15/98         | 1700 JN             | 410A |
| 90846       |     | / /                 |                        |                      | 01/15/98         | 1800 JN             | 410A |
| 90857-2     |     | / /                 |                        |                      | 01/15/98         | 1800 JN             | 410A |
| 90859-2     |     | / /                 |                        |                      | 01/15/98         | 1800 JN             | 410A |
| 90852-3     |     | / /                 |                        |                      | 01/15/98         | 1800 JN             | 410A |

Q.C. Information for Batch # 35617

For Report Number :90797

Sample Batch Information  
Analysis : Ign

| Sample ID  | Tag | Preparation<br>Date | Preparation<br>Time By | Preparation<br>Notes | Analysis<br>Date | Analysis<br>Time By | Inst |
|------------|-----|---------------------|------------------------|----------------------|------------------|---------------------|------|
| 90797-1    |     | /                   | /                      |                      | 01/15/98         | 1530 NL             |      |
| 90797-2    |     | /                   | /                      |                      | 01/15/98         | 1530 NL             |      |
| 90797-3    |     | /                   | /                      |                      | 01/15/98         | 1530 NL             |      |
| 90797-4    |     | /                   | /                      |                      | 01/15/98         | 1530 NL             |      |
| 90797-5    |     | /                   | /                      |                      | 01/15/98         | 1530 NL             |      |
| 90797-6    |     | /                   | /                      |                      | 01/15/98         | 1530 NL             |      |
| 90797-7    |     | /                   | /                      |                      | 01/15/98         | 1530 NL             |      |
| 90797-8    |     | /                   | /                      |                      | 01/15/98         | 1530 NL             |      |
| 90797-8DUP |     | /                   | /                      |                      | 01/15/98         | 1530 NL             |      |
| 90799      |     | /                   | /                      |                      | 01/15/98         | 1530 NL             |      |

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Q.C. Information for Batch # 35653

For Report Number :90797

Sample Batch Information  
Analysis : React S2

| Sample ID  | Tag | Preparation |      |    | Preparation<br>Notes | Analysis |      |    | Ins |
|------------|-----|-------------|------|----|----------------------|----------|------|----|-----|
|            |     | Date        | Time | By |                      | Date     | Time | By |     |
| 35653BLK   | Q   | 01/19/98    | 1630 | JN | 7.5mL                | 01/19/98 | 1700 | JN |     |
| 35653LCS   |     | 01/19/98    | 1000 | JN | 350mL                | 01/19/98 | 1200 | JN |     |
| 35653LCSD  |     | 01/19/98    | 1000 | JN | 350mL                | 01/19/98 | 1200 | JN |     |
| 90797-1    |     | 01/19/98    | 1430 | JN | 7.5g                 | 01/19/98 | 1530 | JN |     |
| 90797-2    |     | 01/19/98    | 1430 | JN | 7.5g                 | 01/19/98 | 1530 | JN |     |
| 90797-3    |     | 01/19/98    | 1430 | JN | 7.5g                 | 01/19/98 | 1530 | JN |     |
| 90797-4    |     | 01/19/98    | 1430 | JN | 7.5g                 | 01/19/98 | 1530 | JN |     |
| 90797-5    |     | 01/19/98    | 1500 | JN | 7.5g                 | 01/19/98 | 1630 | JN |     |
| 90797-6    |     | 01/19/98    | 1500 | JN | 7.5g                 | 01/19/98 | 1630 | JN |     |
| 90797-7    |     | 01/19/98    | 1500 | JN | 7.5g                 | 01/19/98 | 1630 | JN |     |
| 90797-8    |     | 01/19/98    | 1500 | JN | 7.5g                 | 01/19/98 | 1630 | JN |     |
| 90797-8DUP |     | 01/19/98    | 1630 | JN | 7.5g                 | 01/19/98 | 1700 | JN |     |
| 90797-9    |     | 01/19/98    | 1630 | JN | 7.5mL                | 01/19/98 | 1700 | JN |     |
| 90799      |     | 01/19/98    | 1630 | JN | 7.5mL                | 01/19/98 | 1700 | JN |     |

Q.C. Information for Batch # 35654

For Report Number :90797

Sample Batch Information  
Analysis : React. CN

| Sample ID  | Tag | Preparation |      | Preparation | Analysis |      |     | Inst |
|------------|-----|-------------|------|-------------|----------|------|-----|------|
|            |     | Date        | Time | Notes       | Date     | Time | By  |      |
| 35654BLK   |     | /           | /    |             | 01/19/98 | 1730 | ARS | GENE |
| 35654LCS   |     | /           | /    |             | 01/19/98 | 1730 | ARS | GENE |
| 35654LCSD  |     | /           | /    |             | 01/19/98 | 1730 | ARS | GENE |
| 35654CAL5  |     | /           | /    |             | 01/19/98 | 1730 | ARS | GENE |
| 90797-1    |     | /           | /    |             | 01/19/98 | 1730 | ARS | GENE |
| 90797-2    |     | /           | /    |             | 01/19/98 | 1730 | ARS | GENE |
| 90797-3    |     | /           | /    |             | 01/19/98 | 1730 | ARS | GENE |
| 90797-4    |     | /           | /    |             | 01/19/98 | 1730 | ARS | GENE |
| 90797-5    |     | /           | /    |             | 01/19/98 | 1730 | ARS | GENE |
| 90797-6    |     | /           | /    |             | 01/19/98 | 1730 | ARS | GENE |
| 90797-7    |     | /           | /    |             | 01/19/98 | 1730 | ARS | GENE |
| 90797-8    |     | /           | /    |             | 01/19/98 | 1730 | ARS | GENE |
| 90797-8DUP |     | /           | /    |             | 01/19/98 | 1730 | ARS | GENE |
| 90797-9    |     | /           | /    |             | 01/19/98 | 1730 | ARS | GENE |
| 90799      |     | /           | /    |             | 01/19/98 | 1730 | ARS | GENE |

WO# 90797



**OHM Remediation Services Corp**  
Subsidiary of OHM Corporation  
448 Route 224 East • Findlay, Ohio 44840 • (419) 423-2536

5445 Tringle Pkwy, Ste. 400  
Norcross GA 30092

# CHAIN-OF-CUSTODY RECORD

LABORATORY COPY

206427

FORM (M19) REV 2 97

|                                 |  |                                           |  |                                       |  |                                                   |  |                                |  |                                |  |
|---------------------------------|--|-------------------------------------------|--|---------------------------------------|--|---------------------------------------------------|--|--------------------------------|--|--------------------------------|--|
| OHM'S LAB COORDINATOR           |  | LAB COORDINATOR'S PHONE                   |  | LAB COORDINATOR'S FAX                 |  | LABORATORY SERVICE ID                             |  | LABORATORY CONTACT             |  | MAIL REPORT (COMPANY NAME)     |  |
| PROJECT NAME<br>DDMT/Dunn Field |  | PROJECT LOCATION<br>Memphis, TN           |  | PROJECT NUMBER<br>20022               |  | LABORATORY PHONE<br>770.734.4200                  |  | LABORATORY FAX<br>770.734.4201 |  | OHM Remediation Services Corp. |  |
| PROJECT CONTACT<br>Steve Oliver |  | PROJECT PHONE NUMBER<br>770-326-2571      |  | PROJECT FAX<br>770-453-7716           |  | LABORATORY ADDRESS<br>Norcross, GA                |  | RECIPIENT NAME                 |  | ADDRESS                        |  |
| PROJECT ADDRESS<br>Defense Dept |  | CITY, STATE AND ZIP CODE<br>Memphis Tenn. |  | CLIENT<br>USACE                       |  | CITY, STATE AND ZIP CODE<br>Tennessee Area Office |  | RECIPIENT NAME                 |  | ADDRESS                        |  |
| PROJECT MANAGER<br>John Lane    |  | PROJECT MANAGER'S PHONE<br>305-622-2811   |  | PROJECT MANAGER'S FAX<br>305-624-7367 |  | CITY, STATE AND ZIP CODE                          |  | RECIPIENT NAME                 |  | ADDRESS                        |  |

| Item | Sample Identifier                | Matrix |       |       | Date     | Time | Preserved | # of Cont | QC Level | TAT | Analytes | Comments                                                                                      |
|------|----------------------------------|--------|-------|-------|----------|------|-----------|-----------|----------|-----|----------|-----------------------------------------------------------------------------------------------|
|      |                                  | Soil   | Water | Other |          |      |           |           |          |     |          |                                                                                               |
| 1    | SB-015                           | Soil   |       |       | 11/13/98 | 0825 | 0         | 1         | 7        | X   | X        | → See OHM P.O.                                                                                |
| 2    | SB-014                           | Soil   |       |       | 1/13     | 0930 | 0         | 1         | 7        | X   | X        | for QA/QC                                                                                     |
| 3    | SB-013                           | Soil   |       |       | 1/13     | 1025 | 0         | 1         | 7        | X   | X        | requirements                                                                                  |
| 4    | SB-012-009                       | Soil   |       |       | 1/13     | 1235 | 0         | 1         | 7        | X   | X        | and DOOs                                                                                      |
| 5    | SB-008                           | Soil   |       |       | 1/13     | 1300 | 0         | 1         | 7        | X   | X        | → Equipment Blank                                                                             |
| 6    | SB-007                           | Soil   |       |       | 1/13     | 1325 | 0         | 1         | 7        | X   | X        | is for total analyses                                                                         |
| 7    | SB-006                           | Soil   |       |       | 1/13     | 1400 | 0         | 1         | 7        | X   | X        | for the TCLP                                                                                  |
| 8    | SB-008-EG2B<br>(Equipment blank) | Water  |       |       | 1/13     | 1235 | 450       | 11        | 7        | X   | X        | List analytes                                                                                 |
| 9    | Temp Blank                       | Water  |       |       |          |      | 14L       | 3         | 7        | X   | X        | Composites per container on<br>Soils, grab-on Equip. Blank                                    |
| 10   | SB-027                           | Soil   |       |       | 1/13     | 1600 | 0         | 1         | 7        | X   | X        | 7 calendar day TAT per RFP<br>changed to 3 calendar day by<br>COOLER TEMPERATURE UPON RECEIPT |

|                                                                                     |                 |              |
|-------------------------------------------------------------------------------------|-----------------|--------------|
| SAMPLES COLLECTED BY<br>CHD-Officer                                                 | DATE<br>1/13/98 | TIME<br>1830 |
| RECEIVED BY<br>CHD-Officer                                                          | DATE<br>1/13/98 | TIME<br>1830 |
| COURIER AND AIR BILL NUMBER<br>FedEx - 3662424382                                   |                 |              |
| COURIER AND AIR BILL NUMBER<br>44000L                                               |                 |              |
| COURIER AND AIR BILL NUMBER<br>1/14/98 0935 1cc, seal intact, Temp = 3 pH = 1 (net) |                 |              |



# ANALYTICAL SERVICES, INC.

478 163

ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

29 January, 1998

Case Narrative Report 90935

The samples were collected 14 January, 1998 and received by ASI 19 January, 1998. As indicated on the Chain of Custody, the samples were received at 0°C. All other conditions for proper sample receipt were met. The sample was logged into the LIMS as report 90935 for the following analyses as per client request: TCLP BNA, PEST, HERB, VOA, Mercury and Metals, pH (EPA 9045), Reactive CN (EPA 7.3.3.2), Reactive Sulfide (EPA 7.3.4.2) and Ignitability (EPA 1010). Holding times for sample preparation and analysis were met with the exception of pH which should be analyzed in the field.

TCLP analysis for BNA met all data quality objectives. TCLP analysis for PEST gave a high LCD for Heptachlor and a high LCRPD for Methoxychlor. All other PEST spike and surrogate recoveries were acceptable. TCLP analysis for HERB met all data quality objectives with the exception that the matrix spike was analyzed at a dilution factor of five due to recoveries exceeding the calibration range. TCLP analysis for VOA gave a high MSRPD for Tetrachloroethene. All other VOA spike and surrogate recoveries were acceptable. TCLP analysis for Mercury met all data quality objectives. TCLP analysis for Metals gave low MS recoveries for Ba and Pb, low MSD recoveries for As, Ba, Cd, Cr and Pb, and low PDS recoveries for Ag, As, Ba, Cd, Cr, and Pb. The detection limit was raised for Ba due to a high blank value, but the sample produced a hit which was higher than the elevated detection limit.

pH analysis (EPA 9045) met all data quality objectives.

Reactive CN analysis (EPA 7.3.3.2) met all data quality objectives.

Reactive Sulfide analysis (EPA 7.3.4.2) met all data quality objectives.

Ignitability analysis (EPA 1010) met all data quality objectives.

Christina A. Perfetti  
Quality Assurance



**ASI****ANALYTICAL SERVICES, INC.****ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 29, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90935**Sample Description**Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-010,  
01/14/98, 11:00, received 01/19/98**RESULTS**

|                                             |               | <u>Result</u>          | <u>Detection Limit</u>  |
|---------------------------------------------|---------------|------------------------|-------------------------|
| Ignitability (°F) (EPA 1010).....           |               | >212                   | 70                      |
| pH (laboratory) (EPA 9045).....             |               | 7.60                   | -                       |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |               | BDL                    | 1                       |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |               | BDL                    | 5                       |
|                                             |               | <u>Detection Limit</u> | <u>Regulatory Limit</u> |
| Toxicity Characteristic Leaching Procedure  |               |                        |                         |
| TCLP Non-volatile Extraction (EPA 1311)     |               |                        |                         |
| <u>EPA HW</u>                               | <u>Result</u> | <u>Limit</u>           | <u>Limit</u>            |
| <u>Number</u> <u>Parameter</u>              | <u>(mg/l)</u> | <u>(mg/l)</u>          | <u>(mg/l)</u>           |
| D004    Arsenic (As).....                   | BDL           | 2.5                    | 5.0                     |
| D005    Barium (Ba).....                    | 0.7           | 0.2                    | 100.0                   |
| D006    Cadmium (Cd).....                   | BDL           | 0.01                   | 1.0                     |
| D020    Chlordane.....                      | BDL           | 0.01                   | 0.03                    |
| D007    Chromium (Cr).....                  | BDL           | 0.01                   | 5.0                     |
| D026    Total Cresol.....                   | BDL           | 0.05                   | 200.0                   |
| D016    2,4-D.....                          | BDL           | 0.05                   | 10.0                    |
| D027    1,4-Dichlorobenzene.....            | BDL           | 0.05                   | 7.5                     |
| D030    2,4-Dinitrotoluene.....             | BDL           | 0.05                   | 0.13                    |
| D012    Endrin.....                         | BDL           | 0.001                  | 0.02                    |
| D031    Heptachlor.....                     | BDL           | 0.001                  | 0.008                   |
| D031    Heptachlor epoxide.....             | BDL           | 0.001                  | 0.008                   |
| D032    Hexachlorobenzene.....              | BDL           | 0.05                   | 0.13                    |

BDL - Below Detection Limit

CHM Remediation Services Corp.  
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January 29, 1998  
Report No. 90935

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-010,  
01/14/98, 11:00, received 01/19/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.22             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina L. Pappalardo*  
Quality Assurance

cc: Mr. John Lore

Analytical Services Inc. Batch QC  
For Report Number :90935  
Base Neutrals / Acids

Matrix : TCLP

Batch # 35663

Method : EPA 8270

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| m-Cresol                           | 62         | 70          | 12        | 10 - 150           | 0 - 50       |
| m-Cresol + p-Cresol                | 53         | 63          | 16        | 10 - 150           | 0 - 50       |
| 1,4-Dichlorobenzene                | 54         | 61          | 13        | 36 - 97            | 0 - 28       |
| 2,4-Dinitrotoluene                 | 67         | 66          | 2         | 24 - 96            | 0 - 38       |
| Hexachlorobenzene                  | 84         | 92          | 9         | 10 - 152           | 0 - 40       |
| Hexachlorobutadiene                | 47         | 54          | 14        | 24 - 116           | 0 - 40       |
| Hexachloroethane                   | 48         | 56          | 14        | 40 - 113           | 0 - 40       |
| Nitrobenzene                       | 77         | 83          | 9         | 35 - 180           | 0 - 40       |
| Pentachlorophenol                  | 22         | 30          | 31        | 9 - 103            | 0 - 50       |
| Pyridine                           | 49         | 49          | 1         | 10 - 110           | 0 - 90       |
| 2,4,5-Trichlorophenol              | 32         | 49          | 43        | 10 - 150           | 0 - 50       |
| 2,4,6-Trichlorophenol              | 61         | 63          | 3         | 37 - 144           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| m-Cresol                            | 66         | 57          | 16        | 10 - 150           | 0 - 50       |
| m-Cresol + p-Cresol                 | 61         | 51          | 17        | 10 - 150           | 0 - 50       |
| 1,4-Dichlorobenzene                 | 55         | 42          | 27        | 36 - 97            | 0 - 28       |
| 2,4-Dinitrotoluene                  | 67         | 83          | 22        | 24 - 96            | 0 - 38       |
| Hexachlorobenzene                   | 78         | 72          | 8         | 10 - 152           | 0 - 40       |
| Hexachlorobutadiene                 | 49         | 36          | 31        | 24 - 116           | 0 - 40       |
| Hexachloroethane                    | 53         | 50          | 7         | 40 - 113           | 0 - 40       |
| Nitrobenzene                        | 75         | 63          | 16        | 35 - 180           | 0 - 40       |
| Pentachlorophenol                   | 50         | 48          | 4         | 9 - 103            | 0 - 50       |
| Pyridine                            | 41         | 37          | 10        | 10 - 110           | 0 - 90       |
| 2,4,5-Trichlorophenol               | 72         | 53          | 31        | 10 - 150           | 0 - 50       |
| 2,4,6-Trichlorophenol               | 67         | 48          | 32        | 37 - 144           | 0 - 40       |

## Analytical Services Inc. Batch QC

## Surrogate Recovery

## Base Neutrals / Acids

Matrix : TCLP

Batch # 35663

Method : EPA 8270

## % Recovery Objectives

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|    |                      |          |
|----|----------------------|----------|
| S1 | 2-Fluorophenol       | 21 - 100 |
| S2 | Phenol-d5            | 10 - 94  |
| S3 | Nitrobenzene-d5      | 35 - 114 |
| S4 | 2-Fluorobiphenyl     | 43 - 116 |
| S5 | 2,4,6-Tribromophenol | 10 - 123 |
| S6 | Terphenyl-d14        | 33 - 141 |

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| Sample             | File  | S1 | S2 | S3 | S4 | S5 | S6  |
|--------------------|-------|----|----|----|----|----|-----|
| <hr/>              |       |    |    |    |    |    |     |
| 35663BLK           | B3445 | 47 | 35 | 87 | 85 | 84 | 91  |
| 35663LCS           | B3446 | 28 | 25 | 80 | 79 | 37 | 101 |
| 35663LCSD          | B3447 | 51 | 33 | 82 | 81 | 77 | 103 |
| 90935              | B3448 | 47 | 29 | 66 | 63 | 73 | 96  |
| 90935MS            | B3449 | 49 | 32 | 79 | 75 | 77 | 90  |
| 90935MSD           | B3450 | 38 | 26 | 65 | 61 | 60 | 75  |
| 90937-1            | B3451 | 56 | 36 | 91 | 86 | 75 | 100 |
| 90937-2            | B3452 | 6  | 1  | 80 | 76 | 3  | 82  |
| ^^Note: RE-EXTRACT |       |    |    |    |    |    |     |
| 90937-3            | B3453 | 42 | 29 | 71 | 68 | 69 | 91  |
| 90937-6            | B3459 | 40 | 29 | 75 | 69 | 55 | 84  |
| 90937-7            | B3460 | 22 | 20 | 77 | 71 | 33 | 90  |
| 90937-8            | B3461 | 29 | 21 | 82 | 78 | 45 | 86  |
| 90937-8DUP         | B3462 | 28 | 18 | 77 | 71 | 53 | 98  |
| 90937-9            | B3463 | 33 | 24 | 77 | 73 | 42 | 84  |
| 90937-10           | B3464 | 39 | 25 | 75 | 70 | 61 | 87  |
| 90937-4            | B3469 | 46 | 31 | 88 | 83 | 66 | 88  |
| 90937-5            | B3470 | 38 | 26 | 81 | 75 | 60 | 86  |
| 91161              | A7625 | 53 | 47 | 85 | 71 | 96 | 92  |

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Blank Results Information  
Base Neutrals / Acids      Method : EPA 8270

| Analyte                    | Blank Result | Detection Limit |
|----------------------------|--------------|-----------------|
| D026 Total Cresol          | BDL          | 0.05            |
| D027 1,4-Dichlorobenzene   | BDL          | 0.05            |
| D030 2,4-Dinitrotoluene    | BDL          | 0.05            |
| D032 Hexachlorobenzene     | BDL          | 0.05            |
| D033 Hexachlorobutadiene   | BDL          | 0.05            |
| D034 Hexachloroethane      | BDL          | 0.05            |
| D036 Nitrobenzene          | BDL          | 0.05            |
| D037 Pentachlorophenol     | BDL          | 0.05            |
| D041 2,4,5-Trichlorophenol | BDL          | 0.05            |
| D042 2,4,6-Trichlorophenol | BDL          | 0.05            |
| D038 Pyridine              | BDL          | 0.05            |

Q.C. Information for Batch # 35663

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Sample Batch Information  
Base Neutrals / Acids Method : EPA 8270

| Sample ID  | Preparation<br>Date | Time | By    | Preparation<br>Notes | Analysis<br>Date | Time | By  | Inst = |
|------------|---------------------|------|-------|----------------------|------------------|------|-----|--------|
| 35663BLK   | 01/20/98            | 1500 | JW/TB |                      | 01/20/98         | 1929 | TAS | 5971   |
| 35663LCS   | 01/20/98            | 1500 | JW/TB |                      | 01/20/98         | 2004 | TAS | 5971   |
| 35663LCSD  | 01/20/98            | 1500 | JW/TB |                      | 01/20/98         | 2040 | TAS | 5971   |
| 90935      | 01/20/98            | 1500 | JW/TB |                      | 01/20/98         | 2115 | TAS | 5971   |
| 90935MS    | 01/20/98            | 1500 | JW/TB |                      | 01/20/98         | 2151 | TAS | 5971   |
| 90935MSD   | 01/20/98            | 1500 | JW/TB |                      | 01/20/98         | 2226 | TAS | 5971   |
| 90937-1    | 01/20/98            | 1500 | JW/TB |                      | 01/20/98         | 2301 | TAS | 5971   |
| 90937-2    | 01/20/98            | 1500 | JW/TB |                      | 01/20/98         | 2337 | TAS | 5971   |
| 90937-3    | 01/20/98            | 1500 | JW/TB |                      | 01/21/98         | 1212 | TAS | 5971   |
| 90937-4    | 01/20/98            | 1500 | JW/TB |                      | 01/21/98         | 0855 | TAS | 5971   |
| 90937-5    | 01/20/98            | 1500 | JW/TB |                      | 01/21/98         | 0930 | TAS | 5971   |
| 90937-6    | 01/20/98            | 1500 | JW/TB |                      | 01/21/98         | 0302 | TAS | 5971   |
| 90937-7    | 01/20/98            | 1500 | JW/TB |                      | 01/21/98         | 0337 | TAS | 5971   |
| 90937-8    | 01/20/98            | 1500 | JW/TB |                      | 01/21/98         | 0412 | TAS | 5971   |
| 90937-8DUP | 01/20/98            | 1500 | JW/TB |                      | 01/21/98         | 0447 | TAS | 5971   |
| 90937-9    | 01/20/98            | 1500 | JW/TB |                      | 01/21/98         | 0523 | TAS | 5971   |
| 90937-10   | 01/20/98            | 1500 | JW/TB |                      | 01/21/98         | 0559 | TAS | 5971   |
| 91161      | 01/26/98            | 1500 | JW    |                      | 01/26/98         | 2134 | TAS | 5970   |

Analytical Services Inc. Batch QC  
 For Report Number :90935  
 Organochlorine Pesticides

Matrix : TCLP

Batch # 35671

Method : EPA 8080

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| γ-HCH (Lindane)                    | 88         | 113         | 25        | 32 - 127           | 0 - 40       |
| γ-HCH                              | 80         | 115         | 35        | 34 - 111           | 0 - 40       |
| Dieldrin                           | 47         | 65          | 32        | 25 - 160           | 0 - 40       |
| γ-HCH epoxide                      | 93         | 115         | 21        | 25 - 160           | 0 - 40       |
| Dieldrin                           | 72         | 88          | 21        | 30 - 147           | 0 - 40       |
| Chlordane                          | 121        | 120         | 0         | 25 - 160           | 0 - 40       |
| Methoxychlor                       | 52         | 121         | 79        | 25 - 160           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| γ-HCH (Lindane)                     | 100        | 103         | 3         | 32 - 127           | 0 - 40       |
| γ-HCH                               | 100        | 104         | 3         | 34 - 111           | 0 - 40       |
| Dieldrin                            | 97         | 102         | 5         | 25 - 160           | 0 - 40       |
| γ-HCH epoxide                       | 104        | 106         | 2         | 25 - 160           | 0 - 40       |
| Dieldrin                            | 78         | 80          | 3         | 30 - 147           | 0 - 40       |
| Chlordane                           | 125        | 105         | 17        | 25 - 160           | 0 - 40       |
| Methoxychlor                        | 102        | 106         | 4         | 25 - 160           | 0 - 40       |

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Organochlorine Pesticides

Matrix : TCLP

Batch # 35671

Method.: EPA 8080

## % Recovery Objectives

|    |                      |          |
|----|----------------------|----------|
| S1 | Dibutylchlorendate   | 34 - 151 |
| S2 | Tetrachloro-m-xylene | 40 - 111 |
| S3 | Decachlorobiphenyl   | 24 - 153 |

| Sample     | File       | S1  | S2  | S3  | S4 | S5 | S6 |
|------------|------------|-----|-----|-----|----|----|----|
| 35671BLK   | 012198008F | 100 | 92  | 123 |    |    |    |
| 35671LCS   | 012198009R | 94  | 90  | 130 |    |    |    |
| 35671LCSD  | 012198010F | 99  | 104 | 138 |    |    |    |
| 90935      | 012198011R | 71  | 71  | 99  |    |    |    |
| 90937-3MS  | 012198012F | 94  | 92  | 121 |    |    |    |
| 90937-3MSD | 012198013F | 96  | 92  | 119 |    |    |    |
| 90937-1    | 012198017F | 101 | 103 | 130 |    |    |    |
| 90937-2    | 012198018F | 103 | 100 | 127 |    |    |    |
| 90937-4    | 012198019F | 99  | 92  | 123 |    |    |    |
| 90937-5    | 012198020F | 102 | 99  | 126 |    |    |    |
| 90937-6    | 012198021F | 100 | 94  | 122 |    |    |    |
| 90937-7    | 012198022F | 103 | 96  | 126 |    |    |    |
| 90937-7DUP | 012198023F | 106 | 100 | 131 |    |    |    |
| 90937-8    | 012198024F | 99  | 94  | 121 |    |    |    |
| 90937-9    | 012198025F | 93  | 92  | 116 |    |    |    |
| 90937-10   | 012198026F | 100 | 100 | 127 |    |    |    |
| 90937-3RE  | 012298080F | 105 | 96  | 126 |    |    |    |



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Blank Results Information  
Organochlorine Pesticides      Method : EPA 8080

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| Analyte                 | Blank<br>Result | Detection<br>Limit |
|-------------------------|-----------------|--------------------|
| D020 Chlordane          | BDL             | 0.01               |
| D012 Endrin             | BDL             | 0.001              |
| D031 Heptachlor         | BDL             | 0.001              |
| D031 Heptachlor epoxide | BDL             | 0.001              |
| D013 Lindane            | BDL             | 0.01               |
| D014 Methoxychlor       | BDL             | 0.5                |
| D015 Toxaphene          | BDL             | 0.05               |

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Q.C. Information for Batch # 35671

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Sample Batch Information  
Organochlorine Pesticides      Method : EPA 8080

| Sample ID  | Preparation<br>Date | Time | By    | Preparation<br>Notes | Analysis<br>Date | Time | By  | Inst = |
|------------|---------------------|------|-------|----------------------|------------------|------|-----|--------|
| 35671BLK   | 01/20/98            | 1630 | JW/TB |                      | 01/21/98         | 1209 | JQZ | GC-3   |
| 35671LCS   | 01/20/98            | 1630 | JW/TB |                      | 01/21/98         | 1242 | JQZ | GC-3   |
| 35671LCSD  | 01/20/98            | 1630 | JW/TB |                      | 01/21/98         | 1348 | JQZ | GC-3   |
| 90935      | 01/20/98            | 1630 | JW/TB |                      | 01/21/98         | 1348 | JQZ | GC-3   |
| 90937-1    | 01/20/98            | 1630 | JW/TB |                      | 01/21/98         | 1739 | JQZ | GC-3   |
| 90937-2    | 01/20/98            | 1630 | JW/TB |                      | 01/21/98         | 1812 | JQZ | GC-3   |
| 90937-3    | 01/20/98            | 1630 | JW/TB |                      | /                | /    |     |        |
| 90937-3MS  | 01/20/98            | 1630 | JW/TB |                      | 01/21/98         | 1454 | JQZ | GC-3   |
| 90937-3MSD | 01/20/98            | 1630 | JW/TB |                      | 01/21/98         | 1527 | JQZ | GC-3   |
| 90937-4    | 01/20/98            | 1630 | JW/TB |                      | 01/21/98         | 1845 | JQZ | GC-3   |
| 90937-5    | 01/20/98            | 1630 | JW/TB |                      | 01/21/98         | 1917 | JQZ | GC-3   |
| 90937-6    | 01/20/98            | 1630 | JW/TB |                      | 01/21/98         | 1950 | JQZ | GC-3   |
| 90937-7    | 01/20/98            | 1630 | JW/TB |                      | 01/21/98         | 2023 | JQZ | GC-3   |
| 90937-7DUP | 01/20/98            | 1630 | JW/TB |                      | 01/21/98         | 2056 | JQZ | GC-3   |
| 90937-8    | 01/20/98            | 1630 | JW/TB |                      | 01/21/98         | 2129 | JQZ | GC-3   |
| 90937-9    | 01/20/98            | 1630 | JW/TB |                      | 01/21/98         | 2202 | JQZ | GC-3   |
| 90937-10   | 01/20/98            | 1630 | JW/TB |                      | 01/21/98         | 2235 | JQZ | GC-3   |
| 90937-3RE  | 01/22/98            | 0800 | JW/TB |                      | 01/23/98         | 0356 | JQZ | GC-3   |

Analytical Services Inc. Batch QC  
For Report Number :90935  
Chlorinated Herbicides

Matrix : TCLP

Batch # 35697

Method : EPA 8150

| Lab Control Information<br>Analyte  | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                               | 88         | 91          | 3         | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 75         | 88          | 16        | 40 - 140           | 0 - 40       |
| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
| 2,4-D                               | 97         | 89          | 9         | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 91         | 79          | 14        | 40 - 140           | 0 - 40       |

Analytical Services Inc. Batch QC  
Surrogate Recovery  
Chlorinated Herbicides

Matrix : TCLP

Batch # 35697

Method : EPA 8150

## % Recovery Objectives

|            |            | S1 | DCAA |    | 18 - 163 |    |    |
|------------|------------|----|------|----|----------|----|----|
| Sample     | File       | S1 | S2   | S3 | S4       | S5 | S6 |
| 35697BLK   | 012298009F | 90 |      |    |          |    |    |
| 35697LCSD  | 012298011F | 86 |      |    |          |    |    |
| 35697LCS   | 012298010F | 88 |      |    |          |    |    |
| 90935      | 012298012F | 67 |      |    |          |    |    |
| 90935MS D  | 012298015F | 21 |      |    |          |    |    |
| ^^Note: 5X |            |    |      |    |          |    |    |
| 90935MSD D | 012298016F | 20 |      |    |          |    |    |
| ^^Note: 5X |            |    |      |    |          |    |    |
| 90937-1    | 012298020F | 71 |      |    |          |    |    |
| 90937-2    | 012298021F | 43 |      |    |          |    |    |
| 90937-3    | 012298022F | 41 |      |    |          |    |    |
| 90937-5    | 012298023F | 68 |      |    |          |    |    |
| 90937-6    | 012298024F | 48 |      |    |          |    |    |
| 90937-7    | 012298025F | 65 |      |    |          |    |    |
| 90937-8    | 012298026F | 73 |      |    |          |    |    |
| 90937-8DUP | 012298027F | 58 |      |    |          |    |    |
| 90937-9    | 012298028F | 70 |      |    |          |    |    |
| 90937-10   | 012298029F | 56 |      |    |          |    |    |

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Q.C. Information for Batch # 35697

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Blank Results Information  
Chlorinated Herbicides Method : EPA 8150

| Analyte              | Blank Result | Detection Limit |
|----------------------|--------------|-----------------|
| D016 2,4-D           | BDL          | 0.05            |
| D017 2,4,5-TP Silvex | BDL          | 0.1             |

Q.C. Information for Batch # 35697

Printed: 01/29/98 19:08:10

Sample Batch Information  
Chlorinated Herbicides Method : EPA 8150

| Sample ID  | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst # |
|------------|-------------|------|-------|----------------------|----------|------|-----|--------|
|            | Date        | Time | By    |                      | Date     | Time | By  |        |
| 35697BLK   | 01/20/98    | 0230 | DH/DY |                      | 01/22/98 | 1352 | JQZ | GC-3   |
| 35697LCSD  | 01/20/98    | 0230 | DH/DY |                      | 01/22/98 | 1448 | JQZ | GC-3   |
| 35697LCS   | 01/20/98    | 0230 | DH/DY |                      | 01/22/98 | 1420 | JQZ | GC-3   |
| 90935      | 01/22/98    | 0230 | DH/DY |                      | 01/22/98 | 1516 | JQZ | GC-3   |
| 90935MS D  | 01/20/98    | 0230 | DH/DY |                      | 01/22/98 | 1640 | JQZ | GC-1   |
| 90935MSD D | 01/20/98    | 0230 | DH/DY |                      | 01/22/98 | 1707 | JQZ | GC-3   |
| 90937-1    | 01/20/98    | 0230 | DH    |                      | 01/22/98 | 1957 | JQZ | GC-3   |
| 90937-2    | 01/20/98    | 0230 | DH    |                      | 01/22/98 | 2025 | JQZ | GC-3   |
| 90937-3    | 01/20/98    | 0230 | DH    |                      | 01/22/98 | 2053 | JQZ | GC-3   |
| 90937-5    | 01/20/98    | 0230 | DH    |                      | 01/22/98 | 2121 | JQZ | GC-3   |
| 90937-6    | 01/20/98    | 0530 | DH    |                      | 01/22/98 | 2149 | JQZ | GC-3   |
| 90937-7    | 01/20/98    | 0530 | DH    |                      | 01/22/98 | 2217 | JQZ | GC-3   |
| 90937-8    | 01/20/98    | 0530 | DH    |                      | 01/22/98 | 2246 | JQZ | GC-3   |
| 90937-9    | 01/20/98    | 0530 | DH    |                      | 01/22/98 | 2342 | JQZ | GC-3   |
| 90937-10   | 01/20/98    | 0530 | DH    |                      | 01/23/98 | 0010 | JQZ | GC-3   |
| 90937-8DUP | 01/20/98    | 0530 | DH    |                      | 01/22/98 | 2314 | JQZ | GC-3   |

Analytical Services Inc. Batch QC  
For Report Number :90935  
Volatile Organics

Matrix : TCLP

Batch # 35698

Method : EPA 8260

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| benzene                            | 98         | 90          | 9         | 90 - 115           | 0 - 13       |
| Carbon tetrachloride               | 109        | 101         | 7         | 55 - 115           | 0 - 15       |
| Chlorobenzene                      | 93         | 92          | 1         | 87 - 109           | 0 - 10       |
| Chloroform                         | 105        | 96          | 9         | 55 - 115           | 0 - 15       |
| 1,2-Dichloroethane                 | 105        | 100         | 5         | 90 - 115           | 0 - 13       |
| 1,1-Dichloroethene                 | 99         | 90          | 9         | 55 - 111           | 0 - 15       |
| MEK (2-Butanone)                   | 112        | 110         | 2         | 55 - 115           | 0 - 15       |
| Tetrachloroethene                  | 105        | 95          | 10        | 55 - 115           | 0 - 15       |
| Trichloroethene                    | 103        | 95          | 8         | 78 - 110           | 0 - 11       |
| Vinyl chloride                     | 98         | 87          | 12        | 55 - 115           | 0 - 15       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| benzene                             | 90         | 92          | 2         | 90 - 115           | 0 - 13       |
| Carbon tetrachloride                | 98         | 107         | 8         | 55 - 115           | 0 - 15       |
| Chlorobenzene                       | 94         | 97          | 3         | 87 - 109           | 0 - 10       |
| Chloroform                          | 97         | 102         | 5         | 55 - 115           | 0 - 15       |
| 1,2-Dichloroethane                  | 100        | 103         | 3         | 90 - 115           | 0 - 13       |
| 1,1-Dichloroethene                  | 102        | 100         | 3         | 55 - 111           | 0 - 15       |
| MEK (2-Butanone)                    | 102        | 98          | 4         | 55 - 115           | 0 - 15       |
| Tetrachloroethene                   | 78         | 92          | 16        | 55 - 115           | 0 - 15       |
| Trichloroethene                     | 98         | 103         | 5         | 78 - 110           | 0 - 11       |
| Vinyl chloride                      | 91         | 92          | 1         | 55 - 115           | 0 - 15       |

Analytical Services Inc. Batch QC  
Surrogate Recovery  
Volatile Organics  
Batch # 35698

Matrix : TCLP

Method : EPA 8260

## % Recovery Objectives

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|    |                       |          |
|----|-----------------------|----------|
| S1 | 1,2-Dichloroethane-d4 | 76 - 119 |
| S2 | Toluene-d8            | 88 - 110 |
| S3 | Ethylbenzene-d10      | 75 - 115 |
| S4 | 4-Bromofluorobenzene  | 86 - 115 |

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| Sample    | File  | S1  | S2 | S3  | S4  | S5 | S6 |
|-----------|-------|-----|----|-----|-----|----|----|
| 35698BLK  | B2383 | 101 | 98 | 98  | 101 |    |    |
| 35698LCS  | B2385 | 117 | 94 | 102 | 103 |    |    |
| 35698LCSD | B2386 | 106 | 99 | 105 | 105 |    |    |
| 90935     | B2387 | 101 | 99 | 92  | 94  |    |    |
| 90935DUP  | B2388 | 113 | 97 | 102 | 101 |    |    |
| 90935MS   | B2389 | 107 | 96 | 106 | 102 |    |    |
| 90935MSD  | B2390 | 105 | 99 | 105 | 104 |    |    |
| 90937-1   | B2391 | 106 | 92 | 98  | 97  |    |    |
| 90937-2   | B2392 | 108 | 90 | 92  | 96  |    |    |
| 90937-3   | B2393 | 110 | 97 | 94  | 98  |    |    |

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Blank Results Information  
Volatile Organics Method : EPA 8260

| Analyte                   | Blank Result | Detection Limit |
|---------------------------|--------------|-----------------|
| D018 Benzene              | BDL          | 0.02            |
| D019 Carbon tetrachloride | BDL          | 0.02            |
| D021 Chlorobenzene        | BDL          | 0.02            |
| D022 Chloroform           | BDL          | 0.02            |
| D028 1,2-Dichloroethane   | BDL          | 0.02            |
| D029 1,1-Dichloroethene   | BDL          | 0.02            |
| D035 Methyl ethyl ketone  | BDL          | 0.5             |
| D039 Tetrachloroethene    | BDL          | 0.02            |
| D040 Trichloroethene      | BDL          | 0.02            |
| D043 Vinyl chloride       | BDL          | 0.02            |

Q.C. Information for Batch # 35698

Printed: 01/29/98 19:08:11

Sample Batch Information  
Volatile Organics Method : EPA 8260

| Sample ID | Preparation |      |    | Preparation<br>Notes | Analysis |      |     | Inst = |
|-----------|-------------|------|----|----------------------|----------|------|-----|--------|
|           | Date        | Time | By |                      | Date     | Time | By  |        |
| 35698BLK  | /           | /    |    |                      | 01/22/98 | 0825 | RFA | VOA2   |
| 35698LCS  | /           | /    |    |                      | 01/22/98 | 0914 | RFA | VOA2   |
| 35698LCSD | /           | /    |    |                      | 01/22/98 | 0938 | RFA | VOA2   |
| 90935     | /           | /    |    |                      | 01/22/98 | 1003 | RFA | VOA2   |
| 90935DUP  | /           | /    |    |                      | 01/22/98 | 1027 | RFA | VOA2   |
| 90935MS   | /           | /    |    |                      | 01/22/98 | 1051 | RFA | VOA2   |
| 90935MSD  | /           | /    |    |                      | 01/22/98 | 1116 | RFA | VOA2   |
| 90937-1   | /           | /    |    |                      | 01/22/98 | 1140 | RFA | VOA2   |
| 90937-2   | /           | /    |    |                      | 01/22/98 | 1204 | RFA | VOA2   |
| 90937-3   | /           | /    |    |                      | 01/22/98 | 1229 | RFA | VOA2   |

Analytical Services Inc. Batch QC  
For Report Number :90935

## QC Batch General Information

| Batch Number                                  | Analyte   | Analysis Method | Matrix   |   | Blank Result | Prep. Method |
|-----------------------------------------------|-----------|-----------------|----------|---|--------------|--------------|
| 34884                                         | Hg        | EPA 7470        | TCLP     | < | 0.0002       |              |
| 35383                                         | Ag        | EPA 6010        | TCLP     | < | 0.0100       |              |
| ^^Note : QC PASSES ON LCS,LCSD,MS,MSD         |           |                 |          |   |              |              |
| 35383                                         | As        | EPA 6010        | TCLP     | < | 0.0300       |              |
| ^^Note : QC PASSES ON LCS,LCSD,MS             |           |                 |          |   |              |              |
| 35383                                         | Ba        | EPA 6010        | TCLP     | < | 0.2000       |              |
| ^^Note : QC PASSES ON LCS,LCSD; ADJUSTED D.L. |           |                 |          |   |              |              |
| 35383                                         | Cd        | EPA 6010        | TCLP     | < | 0.0100       |              |
| ^^Note : QC PASSES ON LCS,LCSD,MS             |           |                 |          |   |              |              |
| 35383                                         | Cr        | EPA 6010        | TCLP     | < | 0.0100       |              |
| ^^Note : QC PASSES ON LCS,LCSD,MS             |           |                 |          |   |              |              |
| 35383                                         | Pb        | EPA 6010        | TCLP     | < | 0.0250       |              |
| ^^Note : QC PASSES ON LCS,LCSD                |           |                 |          |   |              |              |
| 35383                                         | Se        | EPA 6010        | TCLP     | < | 0.0400       |              |
| 35666                                         | Ign       | EPA 1010        | Aq/Solid |   | 0.0000       |              |
| 35669                                         | pH        | EPA 9045        | Soil     |   | 5.8100       |              |
| 35711                                         | React. CN | EPA 7.3.3.2     | Aq/Soil  | < | 1.0000       |              |
| 35717                                         | React S2  | EPA 7.3.4.2     | Aq/Soil  | < | 5.0000       |              |

## Lab Control Information

| Batch Number | Analyte   | Method      | LC %Rec | LCD %Rec | LC RPD | %Recovery Range | RPD Range |
|--------------|-----------|-------------|---------|----------|--------|-----------------|-----------|
| 34884        | Hg        | EPA 7470    | 88      | 91       | 3      | 76 - 124        | 0 - 20    |
| 35383        | Ag        | EPA 6010    | 76      | 77       | 1      | 76 - 124        | 0 - 20    |
| 35383        | As        | EPA 6010    | 100     | 100      | 0      | 76 - 124        | 0 - 20    |
| 35383        | Ba        | EPA 6010    | 94      | 93       | 1      | 76 - 124        | 0 - 20    |
| 35383        | Cd        | EPA 6010    | 110     | 110      | 0      | 76 - 124        | 0 - 20    |
| 35383        | Cr        | EPA 6010    | 100     | 100      | 0      | 76 - 124        | 0 - 20    |
| 35383        | Pb        | EPA 6010    | 100     | 97       | 3      | 76 - 124        | 0 - 20    |
| 35383        | Se        | EPA 6010    | 100     | 100      | 0      | 76 - 124        | 0 - 20    |
| 35669        | pH        | EPA 9045    | 101     | 102      | 1      | 80 - 120        | 0 - 10    |
| 35711        | React. CN | EPA 7.3.3.2 | 109     | 111      | 2      | 75 - 125        | 0 - 30    |
| 35717        | React S2  | EPA 7.3.4.2 | 90      | 95       | 5      | 60 - 140        | 0 - 40    |

Analytical Services Inc. Batch QC  
For Report Number :90935

## Matrix Spike Information

| Batch<br>Number | Analyte | Method   | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-----------------|---------|----------|------------|-------------|-----------|--------------------|--------------|
| 34884           | Hg      | EPA 7470 | 87         | 80          | 8         | 76 - 124           | 0 - 20       |
| 35383           | Ag      | EPA 6010 | 84         | 79          | 6         | 76 - 124           | 0 - 20       |
| 35383           | As      | EPA 6010 | 79         | 75          | 5         | 76 - 124           | 0 - 20       |
| 35383           | Ba      | EPA 6010 | 71         | 66          | 7         | 76 - 124           | 0 - 20       |
| 35383           | Cd      | EPA 6010 | 77         | 74          | 4         | 76 - 124           | 0 - 20       |
| 35383           | Cr      | EPA 6010 | 77         | 72          | 7         | 76 - 124           | 0 - 20       |
| 35383           | Pb      | EPA 6010 | 71         | 68          | 4         | 76 - 124           | 0 - 20       |
| 35383           | Se      | EPA 6010 | 86         | 81          | 6         | 76 - 124           | 0 - 20       |

## Post Digestion Spike Information

| Batch<br>Number | Analyte | Method   | PDS<br>%Rec | %Recovery<br>Range |
|-----------------|---------|----------|-------------|--------------------|
| 35383           | Ag      | EPA 6010 | 69          | 76 - 124           |
| 35383           | As      | EPA 6010 | 74          | 76 - 124           |
| 35383           | Ba      | EPA 6010 | 52          | 76 - 124           |
| 35383           | Cd      | EPA 6010 | 74          | 76 - 124           |
| 35383           | Cr      | EPA 6010 | 74          | 76 - 124           |
| 35383           | Pb      | EPA 6010 | 68          | 76 - 124           |
| 35383           | Se      | EPA 6010 | 87          | 76 - 124           |

## Unspiked Sample Duplicate Information

| Batch<br>Number | Analyte   | Method      | Sample 1<br>RPD | Sample 2<br>RPD | RPD<br>Range |
|-----------------|-----------|-------------|-----------------|-----------------|--------------|
| 35669           | pH        | EPA 9045    | 1               | 3               | 0 - 10       |
| 35711           | React. CN | EPA 7.3.3.2 | 0               |                 | 0 - 30       |
| 35717           | React S2  | EPA 7.3.4.2 | 0               |                 | 0 - 40       |

Q.C. Information for Batch # 34884

For Report Number :90935

Sample Batch Information  
Analysis : Hg

| Sample ID  | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|            |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 34884BLANK | HG  | 01/21/98    | 0745 | FBS |                      | 01/21/98 | 1134 | FBS | HG1  |
| 4884LCS    | HG  | 01/21/98    | 0745 | FBS |                      | 01/21/98 | 1136 | FBS | HG1  |
| 34884LCSD  | HG  | 01/21/98    | 0745 | FBS |                      | 01/21/98 | 1139 | FBS | HG1  |
| 90935MS    | HG  | 01/21/98    | 0745 | FBS |                      | 01/21/98 | 1141 | FBS | HG1  |
| 90935MSD   | HG  | 01/21/98    | 0745 | FBS |                      | 01/21/98 | 1143 | FBS | HG1  |
| 90814-1DUP | HG  | 01/21/98    | 0745 | FBS |                      | 01/21/98 | 1145 | FBS | HG1  |
| 90814-1    | HG  | 01/21/98    | 0745 | FBS |                      | 01/21/98 | 1148 | FBS | HG1  |
| 90814-2    | HG  | 01/21/98    | 0745 | FBS |                      | 01/21/98 | 1150 | FBS | HG1  |
| 90935      | HG  | 01/21/98    | 0745 | FBS |                      | 01/21/98 | 1152 | FBS | HG1  |

Q.C. Information for Batch # 35383

For Report Number :90935

Sample Batch Information  
Analysis : Ag, As, Ba, Cd, Cr, Pb, Se

| Sample ID  | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|            |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 5383BLANK  |     | 01/21/98    | 0940 | KSP | TCLP                 | 01/21/98 | 1155 | MCW | ICP1 |
| 5383LCS    |     | 01/21/98    | 0940 | KSP | TCLP                 | 01/21/98 | 1159 | MCW | ICP1 |
| 5383LCSD   |     | 01/21/98    | 0940 | KSP | TCLP                 | 01/21/98 | 1204 | MCW | ICP1 |
| 90935MS    |     | 01/21/98    | 0940 | KSP | TCLP                 | 01/21/98 | 1208 | MCW | ICP1 |
| 90935MSD   |     | 01/21/98    | 0940 | KSP | TCLP                 | 01/21/98 | 1213 | MCW | ICP1 |
| 90802-3PDS |     | 01/21/98    | 0940 | KSP | TCLP                 | 01/21/98 | 1217 | MCW | ICP1 |
| 90935DUP   |     | 01/21/98    | 0940 | KSP | TCLP                 | 01/21/98 | 1221 | MCW | ICP1 |
| 90935      |     | 01/21/98    | 0940 | KSP | TCLP                 | 01/21/98 | 1226 | MCW | ICP1 |
| 90802-3QC  |     | 01/21/98    | 0940 | KSP | TCLP                 | 01/21/98 | 1230 | MCW | ICP1 |

Q.C. Information for Batch # 35666

For Report Number :90935

Sample Batch Information  
Analysis : Ign

| Sample ID  | Tag | Preparation |      |    | Preparation<br>Notes | Analysis |      |    | Inst |
|------------|-----|-------------|------|----|----------------------|----------|------|----|------|
|            |     | Date        | Time | By |                      | Date     | Time | By |      |
| 0935       |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-1     |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-2     |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-3     |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-4     |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-5     |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-6     |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-7     |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-8     |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-9     |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-10    |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-11    |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-12    |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-13    |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-14    |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-15    |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-16    |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-17    |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-18    |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-19    |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0937-19DUP |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |
| 0935DUP    |     | /           | /    |    |                      | 01/20/98 | 1245 | nl |      |

Q.C. Information for Batch # 35669

For Report Number :90935

Sample Batch Information  
Analysis : pH

| Sample ID   | Tag | Preparation |         | Preparation<br>Notes | Analysis |      |    | Inst |
|-------------|-----|-------------|---------|----------------------|----------|------|----|------|
|             |     | Date        | Time By |                      | Date     | Time | By |      |
| 35669CALCHK |     | /           | /       |                      | 01/20/98 | 1400 | JN | 410A |
| 35669LCS    |     | /           | /       |                      | 01/20/98 | 1400 | JN | 410A |
| 35669LCSD   |     | /           | /       |                      | 01/20/98 | 1400 | JN | 410A |
| 35669BLK    |     | /           | /       |                      | 01/20/98 | 1400 | JN | 410A |
| 90935       |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-1     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-1DUP  |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-2     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-3     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-4     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-5     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-6     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-7     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-8     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-9     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-10    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-11    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-11DUP |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-12    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-13    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-14    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-15    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-16    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-17    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-18    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-19    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |



Q.C. Information for Batch # 35711

For Report Number :90935

Sample Batch Information  
Analysis : React. CN

| Sample ID  | Tag | Preparation |         | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-----|-------------|---------|----------------------|----------|------|-----|------|
|            |     | Date        | Time By |                      | Date     | Time | By  |      |
| 5711BLK    |     | /           | /       |                      | 01/22/98 | 1255 | ARS | GENE |
| 5711LCS    |     | /           | /       |                      | 01/22/98 | 1255 | ARS | GENE |
| 5711LCSD   |     | /           | /       |                      | 01/22/98 | 1255 | ARS | GENE |
| 5711CAL5   |     | /           | /       |                      | 01/22/98 | 1255 | ARS | GENE |
| 0937-21    |     | /           | /       |                      | 01/22/98 | 1255 | ARS | GENE |
| 0937-22    |     | /           | /       |                      | 01/22/98 | 1255 | ARS | GENE |
| 0937-22DUP |     | /           | /       |                      | 01/22/98 | 1255 | ARS | GENE |
| 0935       |     | /           | /       |                      | 01/22/98 | 1255 | ARS | GENE |

Q.C. Information for Batch # 35717

For Report Number :90935

Sample Batch Information  
Analysis : React S2

| Sample ID   | Tag | Preparation |      |    | Preparation<br>Notes | Analysis |      |    | Inst |
|-------------|-----|-------------|------|----|----------------------|----------|------|----|------|
|             |     | Date        | Time | By |                      | Date     | Time | By |      |
| 35717BLK    |     | 01/21/98    | 0900 | JN | 7.5mL                | 01/21/98 | 1800 | JN |      |
| 35717LCS    |     | 01/21/98    | 0900 | JN |                      | 01/21/98 | 1800 | JN |      |
| 35717LCSD   |     | 01/21/98    | 0900 | JN |                      | 01/21/98 | 1800 | JN |      |
| 90935       |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-21    |     | 01/21/98    | 0900 | JN | 7.5mL                | 01/21/98 | 1800 | JN |      |
| 90937-22    |     | 01/21/98    | 0900 | JN | 7.5mL                | 01/21/98 | 1800 | JN |      |
| 90937-22DUP |     | 01/21/98    | 0900 | JN | 7.5mL                | 01/21/98 | 1800 | JN |      |



**OHM Remediation  
Services Corp**  
*Subsidiary of OHM Corporation*  
~~U.S. Route 224 East • Findlay, Ohio~~

## CHAIN-OF-CUSTODY RECORD

LABORATORY COPY  
206418

103

5445 Trumansburg Plwy Switz 400  
Nico SS, 60. 30092

FORM 10019 RIV 2-97

| LAB COORDINATOR      |                   | LAB COORDINATOR'S PHONE     |       | LAB COORDINATOR'S FAX |           | LABORATORY SERVICE ID                      |          | LABORATORY CONTACT                         |          | MAIL REPORT (COMPANY NAME)                 |  |
|----------------------|-------------------|-----------------------------|-------|-----------------------|-----------|--------------------------------------------|----------|--------------------------------------------|----------|--------------------------------------------|--|
| DMT/Dana Field       |                   | 770/326-2571                |       | 770/453-7716          |           | 770/734-4200                               |          | SHARI                                      |          | OHM Remediation Services Corp              |  |
| PROJECT NAME         |                   | PROJECT LOCATION            |       | PROJECT NUMBER        |           | LABORATORY PHONE                           |          | LABORATORY FAX                             |          | RECIPIENT NAME                             |  |
| DMT/Dana Field       |                   | Memphis, TN                 |       | 20022                 |           | 770/734-4200                               |          | 770/734-1201                               |          |                                            |  |
| PROJECT CONTACT      |                   | PROJECT PHONE NUMBER        |       | PROJECT FAX           |           | LABORATORY ADDRESS                         |          | LABORATORY CITY, STATE AND ZIP CODE        |          | ADDRESS                                    |  |
| Steve Offner         |                   | 770/326-2571                |       | 770/453-7716          |           | NORCROSS, GA.                              |          |                                            |          |                                            |  |
| PROJECT ADDRESS      |                   | CITY, STATE AND ZIP CODE    |       | CLIENT                |           | CITY, STATE AND ZIP CODE                   |          | CITY, STATE AND ZIP CODE                   |          | CITY, STATE AND ZIP CODE                   |  |
| Defense Depot        |                   | Memphis, TN.                |       | USACE                 |           | Tennessee Army Office                      |          |                                            |          |                                            |  |
| PROJECT MANAGER      |                   | PROJECT MANAGER'S PHONE     |       | PROJECT MANAGER'S FAX |           | PROJECT MANAGER'S CITY, STATE AND ZIP CODE |          | PROJECT MANAGER'S CITY, STATE AND ZIP CODE |          | PROJECT MANAGER'S CITY, STATE AND ZIP CODE |  |
| John Lone            |                   | 305/622-2811                |       | 305/624-7367          |           |                                            |          |                                            |          |                                            |  |
| Item                 | Sample Identifier | Matrix                      | Date  | Time                  | Preserved | # of Cont                                  | QC Level | TAT                                        | Analyses | Comments                                   |  |
| 1                    | SB-001            | Soil                        | 11/14 | 0855                  | 0         | 1                                          | 7        | X                                          | X        | See OHM P.O.                               |  |
| 2                    | SB-002            | Soil                        | 11/14 | 0915                  | 0         | 1                                          | 7        | X                                          | X        | For QA/QC                                  |  |
| 3                    | SB-003            | Soil                        | 11/14 | 0951                  | 0         | 1                                          | 7        | X                                          | X        | Requirements                               |  |
| 4                    | SB-004            | Soil                        | 11/14 | 1010                  | 0         | 1                                          | 7        | X                                          | X        | DQ'S                                       |  |
| 5                    | SB-005            | Soil                        | 11/14 | 1035                  | 0         | 1                                          | 7        | X                                          | X        |                                            |  |
| 6                    | SB-010            | Soil                        | 11/14 | 1100                  | 0         | 1                                          | 7        | X                                          | X        | *3 day Turn Product                        |  |
| 7                    | SB-011            | Soil                        | 11/14 | 1133                  | 0         | 1                                          | 7        | X                                          | X        | Date entered as 1/14 per containers        |  |
| 8                    | SB-012            | Soil                        | 11/14 | 1155                  | 0         | 1                                          | 7        | X                                          | X        | Composite per containers                   |  |
| 9                    | SB-016            | Soil                        | 11/14 | 1340                  | 0         | 1                                          | 7        | X                                          | X        |                                            |  |
| 10                   | SB-017            | Soil                        | 11/14 | 1405                  | 0         | 1                                          | 7        | X                                          | X        |                                            |  |
| SAMPLES COLLECTED BY |                   | COURIER AND AIR BILL NUMBER |       | RECEIVED BY           |           | DATE                                       |          | TIME                                       |          | SAMPLE CONDITION UPON RECEIPT              |  |
| DFO/H                |                   | FedEx                       |       | 366242404             |           | 1/19/98                                    |          | 0910                                       |          |                                            |  |
|                      |                   |                             |       | 366242404             |           |                                            |          |                                            |          |                                            |  |
|                      |                   |                             |       | 3662424393            |           |                                            |          |                                            |          |                                            |  |
|                      |                   |                             |       | 3662424426            |           |                                            |          |                                            |          |                                            |  |

Distribution: White - Laboratory (To be returned with Analytical Report), Goldenrod - Project File, Yellow - Project Data Manager

**Distribution:** White - Laboratory (To be returned with Analytical Report), Goldenrod - Project File, Yellow - Project Data Manager



# ANALYTICAL SERVICES, INC.

478 191

ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

28 January, 1998

## Case Narrative Report 90937

The samples were collected 14 January, 1998 and received by ASI 19 January, 1998. As indicated on the Chain of Custody, the samples were received at 0°C. All other conditions for proper sample receipt were met. The samples were logged into the LIMS as report 90937 for the following analyses as per client request: Aqueous samples - HERB (EPA 8151), PEST (EPA 8081), BNA (EPA 8270), VOA (EPA 8260), Mercury (EPA 7470), Metals (EPA 6010), pH (EPA 9040), Reactive CN (EPA 7.3.3.2), and Reactive Sulfide (EPA 7.3.4.2); Solid samples - TCLP BNA, PEST, HERB, VOA, Mercury, and Metals, pH (EPA 9045), Ignitability (EPA 1010), Reactive CN (EPA 7.3.3.2) and Reactive Sulfide (EPA 7.3.4.2). Holding times for sample preparation and analysis were met with the exception of pH which should be analyzed in the field.

HERB analysis (EPA 8150) for aqueous samples met all data quality objectives.

PEST analysis (EPA 8080) for aqueous samples gave acceptable spike and surrogate recoveries with the exception that 90786MS gave a high recovery for Decachlorobiphenyl due to a matrix effect.

BNA analysis (EPA 8270) for aqueous samples met all data quality objectives.

VOA analysis (EPA 8260) for aqueous samples gave a low MSD for Toluene, and high MSRPD for 1,1-Dichloroethene, Trichloroethene, Benzene and Toluene. All other spike and surrogate recoveries were acceptable.

Mercury analysis (EPA 7470) for aqueous samples gave low MS/MSD. The batch passes on LCS/LCSD.

Metals analysis (EPA 6010) for aqueous samples met all data quality objectives.

pH analysis (EPA 9040) for aqueous samples met all data quality objectives.

Reactive CN analysis (EPA 7.3.3.2) for aqueous samples met all data quality objectives.

Reactive Sulfide analysis (EPA 7.3.4.2) for aqueous samples met all data quality objectives.

TCLP analysis for BNA was split into two batches. Batch # 35690 gave low MS/MSD for o-Cresol, m-Cresol + p-Cresol, 2,4,5-Trichlorophenol and 2,4,6-Trichlorophenol. 90937-2RR, 90937-2MS and 90937-2MSD gave low recoveries for 2-Fluorophenol, Phenol-d5 and 2,4,6-Tribromophenol; 90937-11 gave low recoveries for 2-

Fluorophenol, Phenol-d5, Nitrobenzene-d5, 2-Fluorobiphenyl and Terphenyl-d14; 90937-15, 90937-17, 90937-20DUP and 90937-11RR gave low recoveries for 2-Fluorophenol. 90937-2 and 90937-11 were both re-extracted. Batch #35663 gave low recoveries for 2-Fluorophenol, Phenol-d5 and 2,4,6-Tribromophenol for 90937-2. All other BNA spike and surrogate recoveries were acceptable.

TCLP analysis for PEST was split into two batches. Batch #35703 gave a high MSD for Heptachlor, and Batch #35671 gave a high LCD for Heptachlor and a high LCRPD for Methoxychlor. 90937-3 was re-extracted due to the turbo vac breaking while concentrating the sample resulting in the sample being lost. All other PEST spike and surrogate recoveries were acceptable.

TCLP analysis for HERB was split into two batches. Both batches met all data quality objectives with the exception that 90937-16 was re-analyzed due to a prior bad injection, and 90935MS/MSD was diluted to a factor of five due to target analytes being out of range.

TCLP analysis for VOA was split into two batches. Batch #35815 gave a high MSD for 1,1-Dichloroethene, and high MSD/RPD for Benzene, Carbon tetrachloride, Chlorobenzene, Chloroform, 1,2-Dichloroethane, 1,1-Dichloroethene, Trichloroethene, and Vinyl chloride. 90937-12 gave a high recovery of 1,2-Dichloroethane-d4. Batch #35698 gave a high MS/RPD for Tetrachloroethene. All other VOA spike and surrogate recoveries were acceptable.

TCLP analysis for Mercury met all data quality objectives.

TCLP analysis for Metals met all data quality objectives.

pH analysis (EPA 9045) for solid samples was split into two batches. Both batches met all data quality objectives.

Ignitability analysis (EPA 1010) for solid samples met all data quality objectives.

Reactive CN analysis (EPA 7.3.3.2) for solid samples was split into two batches. Both batches met all data quality objectives.

Reactive Sulfide analysis (EPA 7.3.4.2) for solid samples was split into two batches. Both batches met all data quality objectives.



Christina A. Perfetti  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

478 193

**ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-1**Sample Description**Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-001,  
01/14/98, 08:55, received 01/19/98**RESULTS**

|                                              | <u>Result</u> | <u>Detection Limit</u> |
|----------------------------------------------|---------------|------------------------|
| Ignitability ( $^{\circ}$ F) (EPA 1010)..... | >212          | 70                     |
| pH (laboratory) (EPA 9045).....              | 8.15          | -                      |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2).....  | BDL           | 1                      |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2).....  | BDL           | 5                      |

**Toxicity Characteristic Leaching Procedure  
TCLP Non-volatile Extraction (EPA 1311)**

| <u>EPA HW Number</u> | <u>Parameter</u>         | <u>Result (mg/l)</u> | <u>Detection Limit (mg/l)</u> | <u>Regulatory Limit (mg/l)</u> |
|----------------------|--------------------------|----------------------|-------------------------------|--------------------------------|
| D004                 | Arsenic (As).....        | BDL                  | 2.5                           | 5.0                            |
| D005                 | Barium (Ba).....         | 1.7                  | 0.3                           | 100.0                          |
| D006                 | Cadmium (Cd).....        | BDL                  | 0.01                          | 1.0                            |
| D020                 | Chlordane.....           | BDL                  | 0.01                          | 0.03                           |
| D007                 | Chromium (Cr).....       | BDL                  | 0.01                          | 5.0                            |
| D026                 | Total Cresol.....        | BDL                  | 0.05                          | 200.0                          |
| D016                 | 2,4-D.....               | BDL                  | 0.05                          | 10.0                           |
| D027                 | 1,4-Dichlorobenzene..... | BDL                  | 0.05                          | 7.5                            |
| D030                 | 2,4-Dinitrotoluene.....  | BDL                  | 0.05                          | 0.13                           |
| D012                 | Endrin.....              | BDL                  | 0.001                         | 0.02                           |
| D031                 | Heptachlor.....          | BDL                  | 0.001                         | 0.008                          |
| D031                 | Heptachlor epoxide.....  | BDL                  | 0.001                         | 0.008                          |
| D032                 | Hexachlorobenzene.....   | BDL                  | 0.05                          | 0.13                           |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-1

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-001,  
01/14/98, 08:55, received 01/19/98

### RESULTS

Toxicity Characteristic Leaching Procedure  
TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

Toxicity Characteristic Leaching Procedure  
TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.07             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina P. Pefetti*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.****ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-2**Sample Description**Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-002,  
01/14/98, 09:15, received 01/19/98**RESULTS**

|                                              |                          | <u>Result</u>          | <u>Detection Limit</u>  |
|----------------------------------------------|--------------------------|------------------------|-------------------------|
| Ignitability ( $^{\circ}$ F) (EPA 1010)..... |                          | >212                   | 70                      |
| pH (laboratory) (EPA 9045).....              |                          | 8.17                   | -                       |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2).....  |                          | BDL                    | 1                       |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2).....  |                          | BDL                    | 5                       |
| Toxicity Characteristic Leaching Procedure   |                          |                        |                         |
| TCLP Non-volatile Extraction (EPA 1311)      |                          |                        |                         |
| EPA HW                                       |                          | <u>Detection Limit</u> | <u>Regulatory Limit</u> |
| <u>Number</u>                                | <u>Parameter</u>         | <u>(mg/l)</u>          | <u>(mg/l)</u>           |
| D004                                         | Arsenic (As).....        | BDL                    | 5.0                     |
| D005                                         | Barium (Ba).....         | 1.6                    | 100.0                   |
| D006                                         | Cadmium (Cd).....        | 0.06                   | 1.0                     |
| D020                                         | Chlordane.....           | BDL                    | 0.03                    |
| D007                                         | Chromium (Cr).....       | BDL                    | 5.0                     |
| D026                                         | Total Cresol.....        | BDL                    | 200.0                   |
| D016                                         | 2,4-D.....               | BDL                    | 10.0                    |
| D027                                         | 1,4-Dichlorobenzene..... | BDL                    | 7.5                     |
| D030                                         | 2,4-Dinitrotoluene.....  | BDL                    | 0.13                    |
| D012                                         | Endrin.....              | BDL                    | 0.02                    |
| D031                                         | Heptachlor.....          | BDL                    | 0.008                   |
| D031                                         | Heptachlor epoxide.....  | BDL                    | 0.008                   |
| D032                                         | Hexachlorobenzene.....   | BDL                    | 0.13                    |

BDL - Below Detection Limit



OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-2

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-002,  
01/14/98, 09:15, received 01/19/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.05             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina L. Pappas*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-3**Sample Description**Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-003,  
01/14/98, 09:51, received 01/19/98**RESULTS**

|                                                |                          | <u>Result</u> | <u>Detection Limit</u> |
|------------------------------------------------|--------------------------|---------------|------------------------|
| Ignitability ( <sup>o</sup> F) (EPA 1010)..... |                          | >212          | 70                     |
| pH (laboratory) (EPA 9045).....                |                          | 6.81          | -                      |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2).....    |                          | BDL           | 1                      |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2).....    |                          | BDL           | 5                      |
| Toxicity Characteristic Leaching Procedure     |                          |               |                        |
| TCLP Non-volatile Extraction (EPA 1311)        |                          |               |                        |
| <u>EPA HW</u>                                  |                          | <u>Result</u> | <u>Detection Limit</u> |
| <u>Number</u>                                  | <u>Parameter</u>         | <u>(mg/l)</u> | <u>(mg/l)</u>          |
| D004                                           | Arsenic (As).....        | BDL           | 2.5                    |
| D005                                           | Barium (Ba).....         | 1.0           | 0.3                    |
| D006                                           | Cadmium (Cd).....        | BDL           | 0.01                   |
| D020                                           | Chlordane.....           | BDL           | 0.01                   |
| D007                                           | Chromium (Cr).....       | BDL           | 0.01                   |
| D026                                           | Total Cresol.....        | BDL           | 0.05                   |
| D016                                           | 2,4-D.....               | BDL           | 0.05                   |
| D027                                           | 1,4-Dichlorobenzene..... | BDL           | 0.05                   |
| D030                                           | 2,4-Dinitrotoluene.....  | BDL           | 0.05                   |
| D012                                           | Endrin.....              | BDL           | 0.001                  |
| D031                                           | Heptachlor.....          | BDL           | 0.001                  |
| D031                                           | Heptachlor epoxide.....  | BDL           | 0.001                  |
| D032                                           | Hexachlorobenzene.....   | BDL           | 0.05                   |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-3

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-003,  
01/14/98, 09:51, received 01/19/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.08             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina L. Pafeth*  
Quality Assurance



# ANALYTICAL SERVICES, INC.

## ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

### LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-4

### Sample Description

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-004,  
01/14/98, 10:10, received 01/19/98

### RESULTS

|                                              | <u>Result</u> | <u>Detection Limit</u> |
|----------------------------------------------|---------------|------------------------|
| Ignitability ( $^{\circ}$ F) (EPA 1010)..... | >212          | 70                     |
| pH (laboratory) (EPA 9045).....              | 6.09          | -                      |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2).....  | BDL           | 1                      |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2).....  | BDL           | 5                      |

### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| <u>EPA HW</u> | <u>Parameter</u>         | <u>Result</u><br><u>(mg/l)</u> | <u>Detection Limit</u><br><u>(mg/l)</u> | <u>Regulatory Limit</u><br><u>(mg/l)</u> |
|---------------|--------------------------|--------------------------------|-----------------------------------------|------------------------------------------|
| D004          | Arsenic (As).....        | BDL                            | 2.5                                     | 5.0                                      |
| D005          | Barium (Ba).....         | 0.9                            | 0.3                                     | 100.0                                    |
| D006          | Cadmium (Cd).....        | BDL                            | 0.01                                    | 1.0                                      |
| D020          | Chlordane.....           | BDL                            | 0.01                                    | 0.03                                     |
| D007          | Chromium (Cr).....       | BDL                            | 0.01                                    | 5.0                                      |
| D026          | Total Cresol.....        | BDL                            | 0.05                                    | 200.0                                    |
| D016          | 2,4-D.....               | BDL                            | 0.05                                    | 10.0                                     |
| D027          | 1,4-Dichlorobenzene..... | BDL                            | 0.05                                    | 7.5                                      |
| D030          | 2,4-Dinitrotoluene.....  | BDL                            | 0.05                                    | 0.13                                     |
| D012          | Endrin.....              | BDL                            | 0.001                                   | 0.02                                     |
| D031          | Heptachlor.....          | BDL                            | 0.001                                   | 0.008                                    |
| D031          | Heptachlor epoxide.....  | BDL                            | 0.001                                   | 0.008                                    |
| D032          | Hexachlorobenzene.....   | BDL                            | 0.05                                    | 0.13                                     |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-4

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-004,  
01/14/98, 10:10, received 01/19/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.16             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina L. Pappas*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

478 201

LABORATORY REPORTOHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-5Sample DescriptionSoil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-005,  
01/14/98, 10:35, received 01/19/98RESULTS

|                                                |                          | <u>Result</u>        | <u>Detection Limit</u>         |
|------------------------------------------------|--------------------------|----------------------|--------------------------------|
| Ignitability ( <sup>o</sup> F) (EPA 1010)..... |                          | >212                 | 70                             |
| pH (laboratory) (EPA 9045).....                |                          | 5.40                 | -                              |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2).....    |                          | BDL                  | 1                              |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2).....    |                          | BDL                  | 5                              |
| Toxicity Characteristic Leaching Procedure     |                          |                      |                                |
| TCLP Non-volatile Extraction (EPA 1311)        |                          |                      |                                |
| EPA HW                                         |                          |                      |                                |
| <u>Number</u>                                  | <u>Parameter</u>         | <u>Result (mg/l)</u> | <u>Detection Limit (mg/l)</u>  |
|                                                |                          |                      | <u>Regulatory Limit (mg/l)</u> |
| D004                                           | Arsenic (As).....        | BDL                  | 2.5                            |
| D005                                           | Barium (Ba).....         | 0.8                  | 0.3                            |
| D006                                           | Cadmium (Cd).....        | BDL                  | 0.01                           |
| D020                                           | Chlordane.....           | BDL                  | 0.01                           |
| D007                                           | Chromium (Cr).....       | BDL                  | 0.01                           |
| D026                                           | Total Cresol.....        | BDL                  | 0.05                           |
| D016                                           | 2,4-D.....               | BDL                  | 0.05                           |
| D027                                           | 1,4-Dichlorobenzene..... | BDL                  | 0.05                           |
| D030                                           | 2,4-Dinitrotoluene.....  | BDL                  | 0.05                           |
| D012                                           | Endrin.....              | BDL                  | 0.001                          |
| D031                                           | Heptachlor.....          | BDL                  | 0.001                          |
| D031                                           | Heptachlor epoxide.....  | BDL                  | 0.001                          |
| D032                                           | Hexachlorobenzene.....   | BDL                  | 0.05                           |

BDL - Below Detection Limit

**ASI****ANALYTICAL SERVICES, INC.****ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-7**Sample Description**Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-012,  
01/14/98, 11:55, received 01/19/98**RESULTS**

|                                             |                          | <u>Result</u> | <u>Detection Limit</u> |
|---------------------------------------------|--------------------------|---------------|------------------------|
| Ignitability (°F) (EPA 1010).....           |                          | >212          | 70                     |
| pH (laboratory) (EPA 9045).....             |                          | 6.75          | -                      |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL           | 1                      |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL           | 5                      |
| Toxicity Characteristic Leaching Procedure  |                          |               |                        |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |               |                        |
| <u>EPA HW</u>                               |                          | <u>Result</u> | <u>Detection Limit</u> |
| <u>Number</u>                               | <u>Parameter</u>         | <u>(mg/l)</u> | <u>(mg/l)</u>          |
| D004                                        | Arsenic (As).....        | BDL           | 2.5                    |
| D005                                        | Barium (Ba).....         | 0.9           | 0.3                    |
| D006                                        | Cadmium (Cd).....        | BDL           | 0.01                   |
| D020                                        | Chlordane.....           | BDL           | 0.01                   |
| D007                                        | Chromium (Cr).....       | BDL           | 0.01                   |
| D026                                        | Total Cresol.....        | BDL           | 0.05                   |
| D016                                        | 2,4-D.....               | BDL           | 0.05                   |
| D027                                        | 1,4-Dichlorobenzene..... | BDL           | 0.05                   |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL           | 0.05                   |
| D012                                        | Endrin.....              | BDL           | 0.001                  |
| D031                                        | Heptachlor.....          | BDL           | 0.001                  |
| D031                                        | Heptachlor epoxide.....  | BDL           | 0.001                  |
| D032                                        | Hexachlorobenzene.....   | BDL           | 0.05                   |

BDL - Below Detection Limit

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January 30, 1998  
Report No. 90937-7

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-012,  
01/14/98, 11:55, received 01/19/98

RESULTS

Toxicity Characteristic Leaching Procedure  
TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| 017              | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| 038              | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

Toxicity Characteristic Leaching Procedure  
TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.07             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. Deeth*  
Quality Assurance



OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-5

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-005,  
01/14/98, 10:35, received 01/19/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.06             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina P. Pajeth*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

478 205

LABORATORY REPORTOHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-6Sample DescriptionSoil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-011,  
01/14/98, 11:33, received 01/19/98RESULTS

|                                                |                          | <u>Result</u>                  | <u>Detection</u><br><u>Limit</u>                  |                                                    |
|------------------------------------------------|--------------------------|--------------------------------|---------------------------------------------------|----------------------------------------------------|
| Ignitability ( <sup>o</sup> F) (EPA 1010)..... |                          | >212                           | 70                                                |                                                    |
| pH (laboratory) (EPA 9045).....                |                          | 7.20                           | -                                                 |                                                    |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2).....    |                          | BDL                            | 1                                                 |                                                    |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2).....    |                          | BDL                            | 5                                                 |                                                    |
| Toxicity Characteristic Leaching Procedure     |                          |                                |                                                   |                                                    |
| TCLP Non-volatile Extraction (EPA 1311)        |                          |                                |                                                   |                                                    |
| <u>EPA HW</u><br><u>Number</u>                 | <u>Parameter</u>         | <u>Result</u><br><u>(mg/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(mg/l)</u> | <u>Regulatory</u><br><u>Limit</u><br><u>(mg/l)</u> |
| D004                                           | Arsenic (As).....        | BDL                            | 2.5                                               | 5.0                                                |
| D005                                           | Barium (Ba).....         | 0.8                            | 0.3                                               | 100.0                                              |
| D006                                           | Cadmium (Cd).....        | BDL                            | 0.01                                              | 1.0                                                |
| D020                                           | Chlordane.....           | BDL                            | 0.01                                              | 0.03                                               |
| D007                                           | Chromium (Cr).....       | BDL                            | 0.01                                              | 5.0                                                |
| D026                                           | Total Cresol.....        | BDL                            | 0.05                                              | 200.0                                              |
| D016                                           | 2,4-D.....               | BDL                            | 0.05                                              | 10.0                                               |
| D027                                           | 1,4-Dichlorobenzene..... | BDL                            | 0.05                                              | 7.5                                                |
| D030                                           | 2,4-Dinitrotoluene.....  | BDL                            | 0.05                                              | 0.13                                               |
| D012                                           | Endrin.....              | BDL                            | 0.001                                             | 0.02                                               |
| D031                                           | Heptachlor.....          | BDL                            | 0.001                                             | 0.008                                              |
| D031                                           | Heptachlor epoxide.....  | BDL                            | 0.001                                             | 0.008                                              |
| D032                                           | Hexachlorobenzene.....   | BDL                            | 0.05                                              | 0.13                                               |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
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January 30, 1998  
Report No. 90937-6

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-011,  
01/14/98, 11:33, received 01/19/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.19             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina L. Rafetti*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

478 207

## ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201LABORATORY REPORTOHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-8Sample DescriptionSoil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-016,  
01/14/98, 13:40, received 01/19/98RESULTS

|                                                |                          | <u>Result</u> | <u>Detection Limit</u> |
|------------------------------------------------|--------------------------|---------------|------------------------|
| Ignitability ( <sup>o</sup> F) (EPA 1010)..... |                          | >212          | 70                     |
| pH (laboratory) (EPA 9045).....                |                          | 7.15          | -                      |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2).....    |                          | BDL           | 1                      |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2).....    |                          | BDL           | 5                      |
| Toxicity Characteristic Leaching Procedure     |                          |               |                        |
| TCLP Non-volatile Extraction (EPA 1311)        |                          |               |                        |
| EPA HW                                         |                          | <u>Result</u> | <u>Detection Limit</u> |
| <u>Number</u>                                  | <u>Parameter</u>         | <u>(mg/l)</u> | <u>Limit (mg/l)</u>    |
| D004                                           | Arsenic (As).....        | BDL           | 2.5                    |
| D005                                           | Barium (Ba).....         | 0.9           | 0.3                    |
| D006                                           | Cadmium (Cd).....        | BDL           | 0.01                   |
| D020                                           | Chlordane.....           | BDL           | 0.01                   |
| D007                                           | Chromium (Cr).....       | BDL           | 0.01                   |
| D026                                           | Total Cresol.....        | BDL           | 0.05                   |
| D016                                           | 2,4-D.....               | BDL           | 0.05                   |
| D027                                           | 1,4-Dichlorobenzene..... | BDL           | 0.05                   |
| D030                                           | 2,4-Dinitrotoluene.....  | BDL           | 0.05                   |
| D012                                           | Endrin.....              | BDL           | 0.001                  |
| D031                                           | Heptachlor.....          | BDL           | 0.001                  |
| D031                                           | Heptachlor epoxide.....  | BDL           | 0.001                  |
| D032                                           | Hexachlorobenzene.....   | BDL           | 0.05                   |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-8

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-016,  
01/14/98, 13:40, received 01/19/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.03             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. Dyetti*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

## ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201LABORATORY REPORTOHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-9Sample DescriptionSoil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-017,  
01/14/98, 14:05, received 01/19/98RESULTS

|                                             |                          | <u>Result</u> | <u>Detection Limit</u> |
|---------------------------------------------|--------------------------|---------------|------------------------|
| Ignitability (°F) (EPA 1010).....           |                          | >212          | 70                     |
| pH (laboratory) (EPA 9045).....             |                          | 6.35          | -                      |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL           | 1                      |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL           | 5                      |
| Toxicity Characteristic Leaching Procedure  |                          |               |                        |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |               |                        |
| <u>EPA HW</u>                               |                          | <u>Result</u> | <u>Detection Limit</u> |
| <u>Number</u>                               | <u>Parameter</u>         | <u>(mg/l)</u> | <u>(mg/l)</u>          |
| D004                                        | Arsenic (As).....        | BDL           | 2.5                    |
| D005                                        | Barium (Ba).....         | 1.0           | 0.3                    |
| D006                                        | Cadmium (Cd).....        | BDL           | 0.01                   |
| D020                                        | Chlordane.....           | BDL           | 0.01                   |
| D007                                        | Chromium (Cr).....       | BDL           | 0.01                   |
| D026                                        | Total Cresol.....        | BDL           | 0.05                   |
| D016                                        | 2,4-D.....               | BDL           | 0.05                   |
| D027                                        | 1,4-Dichlorobenzene..... | BDL           | 0.05                   |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL           | 0.05                   |
| D012                                        | Endrin.....              | BDL           | 0.001                  |
| D031                                        | Heptachlor.....          | BDL           | 0.001                  |
| D031                                        | Heptachlor epoxide.....  | BDL           | 0.001                  |
| D032                                        | Hexachlorobenzene.....   | BDL           | 0.05                   |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-9

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-017,  
01/14/98, 14:05, received 01/19/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.08             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. Pyle*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

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LABORATORY REPORTOHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-10Sample DescriptionSoil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-018,  
01/14/98, 14:15, received 01/19/98RESULTS

|                                              |                           | <u>Result</u>          | <u>Detection Limit</u>  |
|----------------------------------------------|---------------------------|------------------------|-------------------------|
| Ignitability (°F) (EPA 1010) .....           |                           | >212                   | 70                      |
| pH (laboratory) (EPA 9045) .....             |                           | 7.30                   | -                       |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2) ..... |                           | BDL                    | 1                       |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2) ..... |                           | BDL                    | 5                       |
| Toxicity Characteristic Leaching Procedure   |                           |                        |                         |
| TCLP Non-volatile Extraction (EPA 1311)      |                           |                        |                         |
| <u>EPA HW</u>                                |                           | <u>Detection Limit</u> | <u>Regulatory Limit</u> |
| <u>Number</u>                                | <u>Parameter</u>          | <u>(mg/l)</u>          | <u>(mg/l)</u>           |
| D004                                         | Arsenic (As) .....        | BDL                    | 2.5                     |
| D005                                         | Barium (Ba) .....         | 2.0                    | 0.3                     |
| D006                                         | Cadmium (Cd) .....        | BDL                    | 0.01                    |
| D020                                         | Chlordane .....           | BDL                    | 0.01                    |
| D007                                         | Chromium (Cr) .....       | BDL                    | 0.01                    |
| D026                                         | Total Cresol .....        | BDL                    | 0.05                    |
| D016                                         | 2,4-D .....               | BDL                    | 0.05                    |
| D027                                         | 1,4-Dichlorobenzene ..... | BDL                    | 0.05                    |
| D030                                         | 2,4-Dinitrotoluene .....  | BDL                    | 0.05                    |
| D012                                         | Endrin .....              | BDL                    | 0.001                   |
| D031                                         | Heptachlor .....          | BDL                    | 0.001                   |
| D031                                         | Heptachlor epoxide .....  | BDL                    | 0.001                   |
| D032                                         | Hexachlorobenzene .....   | BDL                    | 0.05                    |

BDL - Below Detection Limit



OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-10

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-018,  
01/14/98, 14:15, received 01/19/98

### RESULTS

Toxicity Characteristic Leaching Procedure  
TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

Toxicity Characteristic Leaching Procedure  
TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.16             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. Dylath*  
Quality Assurance



# ANALYTICAL SERVICES, INC.

ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

478 213

## LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-11

## Sample Description

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-019,  
01/14/98, 14:30, received 01/19/98

## RESULTS

|                                             |                          | <u>Result</u> | <u>Detection Limit</u> |                         |
|---------------------------------------------|--------------------------|---------------|------------------------|-------------------------|
| Ignitability (°F) (EPA 1010).....           |                          | >212          | 70                     |                         |
| pH (laboratory) (EPA 9045).....             |                          | 5.46          | -                      |                         |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL           | 1                      |                         |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL           | 5                      |                         |
| Toxicity Characteristic Leaching Procedure  |                          |               |                        |                         |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |               |                        |                         |
| <u>EPA HW</u>                               |                          | <u>Result</u> | <u>Detection Limit</u> | <u>Regulatory Limit</u> |
| <u>Number</u>                               | <u>Parameter</u>         | <u>(mg/l)</u> | <u>(mg/l)</u>          | <u>(mg/l)</u>           |
| D004                                        | Arsenic (As).....        | BDL           | 2.5                    | 5.0                     |
| D005                                        | Barium (Ba).....         | 0.7           | 0.3                    | 100.0                   |
| D006                                        | Cadmium (Cd).....        | BDL           | 0.01                   | 1.0                     |
| D020                                        | Chlordane.....           | BDL           | 0.01                   | 0.03                    |
| D007                                        | Chromium (Cr).....       | BDL           | 0.01                   | 5.0                     |
| D026                                        | Total Cresol.....        | BDL           | 0.05                   | 200.0                   |
| D016                                        | 2,4-D.....               | BDL           | 0.05                   | 10.0                    |
| D027                                        | 1,4-Dichlorobenzene..... | BDL           | 0.05                   | 7.5                     |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL           | 0.05                   | 0.13                    |
| D012                                        | Endrin.....              | BDL           | 0.001                  | 0.02                    |
| D031                                        | Heptachlor.....          | BDL           | 0.001                  | 0.008                   |
| D031                                        | Heptachlor epoxide.....  | BDL           | 0.001                  | 0.008                   |
| D032                                        | Hexachlorobenzene.....   | BDL           | 0.05                   | 0.13                    |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-11

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-019,  
01/14/98, 14:30, received 01/19/98

### RESULTS

Toxicity Characteristic Leaching Procedure  
TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

Toxicity Characteristic Leaching Procedure  
TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.06             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. Pafelt*  
Quality Assurance



# ANALYTICAL SERVICES, INC.

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ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

## LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-12

## Sample Description

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-020,  
01/14/98, 14:50, received 01/19/98

## RESULTS

|                                             |                          | <u>Result</u> | <u>Detection Limit</u> |
|---------------------------------------------|--------------------------|---------------|------------------------|
| Ignitability (°F) (EPA 1010).....           |                          | >212          | 70                     |
| pH (laboratory) (EPA 9045).....             |                          | 6.37          | -                      |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL           | 1                      |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL           | 5                      |
| Toxicity Characteristic Leaching Procedure  |                          |               |                        |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |               |                        |
| <u>EPA HW</u>                               |                          | <u>Result</u> | <u>Detection Limit</u> |
| <u>Number</u>                               | <u>Parameter</u>         | <u>(mg/l)</u> | <u>(mg/l)</u>          |
| D004                                        | Arsenic (As).....        | BDL           | 2.5                    |
| D005                                        | Barium (Ba).....         | 0.9           | 0.3                    |
| D006                                        | Cadmium (Cd).....        | BDL           | 0.01                   |
| D020                                        | Chlordane.....           | BDL           | 0.01                   |
| D007                                        | Chromium (Cr).....       | BDL           | 0.01                   |
| D026                                        | Total Cresol.....        | BDL           | 0.05                   |
| D016                                        | 2,4-D.....               | BDL           | 0.05                   |
| D027                                        | 1,4-Dichlorobenzene..... | BDL           | 0.05                   |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL           | 0.05                   |
| D012                                        | Endrin.....              | BDL           | 0.001                  |
| D031                                        | Heptachlor.....          | BDL           | 0.001                  |
| D031                                        | Heptachlor epoxide.....  | BDL           | 0.001                  |
| D032                                        | Hexachlorobenzene.....   | BDL           | 0.05                   |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-12

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-020,  
01/14/98, 14:50, received 01/19/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.13             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. Pickett*  
Quality Assurance



# ANALYTICAL SERVICES, INC.

## ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

478 217

### LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-13

### Sample Description

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-021,  
01/14/98, 15:07, received 01/19/98

### RESULTS

|                                             |                          | <u>Result</u> | <u>Detection Limit</u> |
|---------------------------------------------|--------------------------|---------------|------------------------|
| Ignitability (°F) (EPA 1010).....           |                          | >212          | 70                     |
| pH (laboratory) (EPA 9045).....             |                          | 6.81          | -                      |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL           | 1                      |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL           | 5                      |
| Toxicity Characteristic Leaching Procedure  |                          |               |                        |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |               |                        |
| <u>EPA HW</u>                               | <u>Parameter</u>         | <u>Result</u> | <u>Detection Limit</u> |
| <u>Number</u>                               |                          | <u>(mg/l)</u> | <u>(mg/l)</u>          |
| D004                                        | Arsenic (As).....        | BDL           | 2.5                    |
| D005                                        | Barium (Ba).....         | 0.8           | 0.3                    |
| D006                                        | Cadmium (Cd).....        | BDL           | 0.01                   |
| D020                                        | Chlordane.....           | BDL           | 0.01                   |
| D007                                        | Chromium (Cr).....       | BDL           | 0.01                   |
| D026                                        | Total Cresol.....        | BDL           | 0.05                   |
| D016                                        | 2,4-D.....               | BDL           | 0.05                   |
| D027                                        | 1,4-Dichlorobenzene..... | BDL           | 0.05                   |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL           | 0.05                   |
| D012                                        | Endrin.....              | BDL           | 0.001                  |
| D031                                        | Heptachlor.....          | BDL           | 0.001                  |
| D031                                        | Heptachlor epoxide.....  | BDL           | 0.001                  |
| D032                                        | Hexachlorobenzene.....   | BDL           | 0.05                   |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-13

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-021,  
01/14/98, 15:07, received 01/19/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.09             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina P. Pappas*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.** 478 219**ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-14**Sample Description**Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-022,  
01/14/98, 15:28, received 01/19/98**RESULTS**

|                                             |                          | <u>Result</u> | <u>Detection Limit</u> |
|---------------------------------------------|--------------------------|---------------|------------------------|
| Ignitability (°F) (EPA 1010).....           |                          | >212          | 70                     |
| pH (laboratory) (EPA 9045).....             |                          | 5.58          | -                      |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL           | 1                      |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL           | 5                      |
| Toxicity Characteristic Leaching Procedure  |                          |               |                        |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |               |                        |
| <u>EPA HW</u>                               | <u>Parameter</u>         | <u>Result</u> | <u>Detection Limit</u> |
| <u>Number</u>                               |                          | <u>(mg/l)</u> | <u>(mg/l)</u>          |
| D004                                        | Arsenic (As).....        | BDL           | 2.5                    |
| D005                                        | Barium (Ba).....         | 0.7           | 0.3                    |
| D006                                        | Cadmium (Cd).....        | BDL           | 0.01                   |
| D020                                        | Chlordane.....           | BDL           | 0.01                   |
| D007                                        | Chromium (Cr).....       | BDL           | 0.01                   |
| D026                                        | Total Cresol.....        | BDL           | 0.05                   |
| D016                                        | 2,4-D.....               | BDL           | 0.05                   |
| D027                                        | 1,4-Dichlorobenzene..... | BDL           | 0.05                   |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL           | 0.05                   |
| D012                                        | Endrin.....              | BDL           | 0.001                  |
| D031                                        | Heptachlor.....          | BDL           | 0.001                  |
| D031                                        | Heptachlor epoxide.....  | BDL           | 0.001                  |
| D032                                        | Hexachlorobenzene.....   | BDL           | 0.05                   |

BDL - Below Detection Limit



OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-14

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-022,  
01/14/98, 15:28, received 01/19/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | BDL              | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. Pyle*  
Quality Assurance



# ANALYTICAL SERVICES, INC.

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## ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

### LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-15

### Sample Description

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-023,  
01/14/98, 15:50, received 01/19/98

### RESULTS

|                                             |                          | <u>Result</u>          | <u>Detection Limit</u>  |
|---------------------------------------------|--------------------------|------------------------|-------------------------|
| Ignitability (°F) (EPA 1010).....           |                          | >212                   | 70                      |
| pH (laboratory) (EPA 9045).....             |                          | 6.90                   | -                       |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL                    | 1                       |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL                    | 5                       |
| Toxicity Characteristic Leaching Procedure  |                          |                        |                         |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |                        |                         |
| EPA HW                                      |                          | <u>Detection Limit</u> | <u>Regulatory Limit</u> |
| <u>Number</u>                               | <u>Parameter</u>         | <u>(mg/l)</u>          | <u>(mg/l)</u>           |
| D004                                        | Arsenic (As).....        | BDL                    | 5.0                     |
| D005                                        | Barium (Ba).....         | 0.9                    | 100.0                   |
| D006                                        | Cadmium (Cd).....        | BDL                    | 1.0                     |
| D020                                        | Chlordane.....           | BDL                    | 0.03                    |
| D007                                        | Chromium (Cr).....       | BDL                    | 5.0                     |
| D026                                        | Total Cresol.....        | BDL                    | 200.0                   |
| D016                                        | 2,4-D.....               | BDL                    | 10.0                    |
| D027                                        | 1,4-Dichlorobenzene..... | BDL                    | 7.5                     |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL                    | 0.13                    |
| D012                                        | Endrin.....              | BDL                    | 0.02                    |
| D031                                        | Heptachlor.....          | BDL                    | 0.008                   |
| D031                                        | Heptachlor epoxide.....  | BDL                    | 0.008                   |
| D032                                        | Hexachlorobenzene.....   | BDL                    | 0.13                    |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-15

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-023,  
01/14/98, 15:50, received 01/19/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.08             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. Pyle*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

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**ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-16**Sample Description**Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-024,  
01/14/98, 16:08, received 01/19/98**RESULTS**

|                                             |                          | <u>Result</u> | <u>Detection Limit</u> |
|---------------------------------------------|--------------------------|---------------|------------------------|
| Ignitability (°F) (EPA 1010).....           |                          | >212          | 70                     |
| pH (laboratory) (EPA 9045).....             |                          | 5.94          | -                      |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL           | 1                      |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL           | 5                      |
| Toxicity Characteristic Leaching Procedure  |                          |               |                        |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |               |                        |
| <u>EPA HW</u>                               |                          | <u>Result</u> | <u>Detection Limit</u> |
| <u>Number</u>                               | <u>Parameter</u>         | <u>(mg/l)</u> | <u>(mg/l)</u>          |
| D004                                        | Arsenic (As).....        | BDL           | 2.5                    |
| D005                                        | Barium (Ba).....         | 0.8           | 0.3                    |
| D006                                        | Cadmium (Cd).....        | BDL           | 0.01                   |
| D020                                        | Chlordane.....           | BDL           | 0.01                   |
| D007                                        | Chromium (Cr).....       | BDL           | 0.01                   |
| D026                                        | Total Cresol.....        | BDL           | 0.05                   |
| D016                                        | 2,4-D.....               | BDL           | 0.05                   |
| D027                                        | 1,4-Dichlorobenzene..... | BDL           | 0.05                   |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL           | 0.05                   |
| D012                                        | Endrin.....              | BDL           | 0.001                  |
| D031                                        | Heptachlor.....          | BDL           | 0.001                  |
| D031                                        | Heptachlor epoxide.....  | BDL           | 0.001                  |
| D032                                        | Hexachlorobenzene.....   | BDL           | 0.05                   |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-16

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-024,  
01/14/98, 16:08, received 01/19/98

### RESULTS

Toxicity Characteristic Leaching Procedure  
TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

Toxicity Characteristic Leaching Procedure  
TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.18             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina B. Pyle*  
Quality Assurance



# ANALYTICAL SERVICES, INC.

## ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

### LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-17

### Sample Description

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-025,  
01/14/98, 16:20, received 01/19/98

### RESULTS

|                                             |               | <u>Result</u>          | <u>Detection Limit</u>  |
|---------------------------------------------|---------------|------------------------|-------------------------|
| Ignitability (°F) (EPA 1010).....           |               | >212                   | 70                      |
| pH (laboratory) (EPA 9045).....             |               | 6.11                   | -                       |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |               | BDL                    | 1                       |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |               | BDL                    | 5                       |
| Toxicity Characteristic Leaching Procedure  |               |                        |                         |
| TCLP Non-volatile Extraction (EPA 1311)     |               |                        |                         |
| <u>EPA HW</u>                               | <u>Result</u> | <u>Detection Limit</u> | <u>Regulatory Limit</u> |
| <u>Number</u> <u>Parameter</u>              | <u>(mg/l)</u> | <u>(mg/l)</u>          | <u>(mg/l)</u>           |
| D004    Arsenic (As).....                   | BDL           | 2.5                    | 5.0                     |
| D005    Barium (Ba).....                    | 0.5           | 0.3                    | 100.0                   |
| D006    Cadmium (Cd).....                   | BDL           | 0.01                   | 1.0                     |
| D020    Chlordane.....                      | BDL           | 0.01                   | 0.03                    |
| D007    Chromium (Cr).....                  | BDL           | 0.01                   | 5.0                     |
| D026    Total Cresol.....                   | BDL           | 0.05                   | 200.0                   |
| D016    2,4-D.....                          | BDL           | 0.05                   | 10.0                    |
| D027    1,4-Dichlorobenzene.....            | BDL           | 0.05                   | 7.5                     |
| D030    2,4-Dinitrotoluene.....             | BDL           | 0.05                   | 0.13                    |
| D012    Endrin.....                         | BDL           | 0.001                  | 0.02                    |
| D031    Heptachlor.....                     | BDL           | 0.001                  | 0.008                   |
| D031    Heptachlor epoxide.....             | BDL           | 0.001                  | 0.008                   |
| D032    Hexachlorobenzene.....              | BDL           | 0.05                   | 0.13                    |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-17

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-025,  
01/14/98, 16:20, received 01/19/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.05             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. Pappas*  
Quality Assurance



# ANALYTICAL SERVICES, INC.

## ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

### LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

Attention: Mr. Steve Offner

January 30, 1998

P.O. No. 1041997

Report No. 90937-18

### Sample Description

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-026,  
01/14/98, 16:35, received 01/19/98

### RESULTS

|                                             |               | <u>Result</u>          | <u>Detection Limit</u>  |
|---------------------------------------------|---------------|------------------------|-------------------------|
| Ignitability (°F) (EPA 1010).....           |               | >212                   | 70                      |
| pH (laboratory) (EPA 9045).....             |               | 5.71                   | -                       |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |               | BDL                    | 1                       |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |               | BDL                    | 5                       |
| Toxicity Characteristic Leaching Procedure  |               |                        |                         |
| TCLP Non-volatile Extraction (EPA 1311)     |               |                        |                         |
| <u>EPA HW</u>                               | <u>Result</u> | <u>Detection Limit</u> | <u>Regulatory Limit</u> |
| <u>Number</u> <u>Parameter</u>              | <u>(mg/l)</u> | <u>(mg/l)</u>          | <u>(mg/l)</u>           |
| D004    Arsenic (As).....                   | BDL           | 2.5                    | 5.0                     |
| D005    Barium (Ba).....                    | 1.1           | 0.3                    | 100.0                   |
| D006    Cadmium (Cd).....                   | BDL           | 0.01                   | 1.0                     |
| D020    Chlordane.....                      | BDL           | 0.01                   | 0.03                    |
| D007    Chromium (Cr).....                  | BDL           | 0.01                   | 5.0                     |
| D026    Total Cresol.....                   | BDL           | 0.05                   | 200.0                   |
| D016    2,4-D.....                          | BDL           | 0.05                   | 10.0                    |
| D027    1,4-Dichlorobenzene.....            | BDL           | 0.05                   | 7.5                     |
| D030    2,4-Dinitrotoluene.....             | BDL           | 0.05                   | 0.13                    |
| D012    Endrin.....                         | BDL           | 0.001                  | 0.02                    |
| D031    Heptachlor.....                     | BDL           | 0.001                  | 0.008                   |
| D031    Heptachlor epoxide.....             | BDL           | 0.001                  | 0.008                   |
| D032    Hexachlorobenzene.....              | BDL           | 0.05                   | 0.13                    |

BDL - Below Detection Limit



OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-18

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-026,  
01/14/98, 16:35, received 01/19/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.10             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina L. Pappas*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.****ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201LABORATORY REPORTOHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-19Sample DescriptionSoil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-028,  
01/14/98, 13:40, received 01/19/98RESULTS

|                                             |                          | <u>Result</u> | <u>Detection Limit</u> |
|---------------------------------------------|--------------------------|---------------|------------------------|
| Ignitability (°F) (EPA 1010).....           |                          | >212          | 70                     |
| pH (laboratory) (EPA 9045).....             |                          | 6.73          | -                      |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL           | 1                      |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL           | 5                      |
| Toxicity Characteristic Leaching Procedure  |                          |               |                        |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |               |                        |
| EPA HW                                      |                          | Detection     | Regulatory             |
| Number                                      | Parameter                | Limit         | Limit                  |
|                                             |                          | (mg/l)        | (mg/l)                 |
| D004                                        | Arsenic (As).....        | BDL           | 5.0                    |
| D005                                        | Barium (Ba).....         | 1.0           | 100.0                  |
| D006                                        | Cadmium (Cd).....        | BDL           | 1.0                    |
| D020                                        | Chlordane.....           | BDL           | 0.03                   |
| D007                                        | Chromium (Cr).....       | BDL           | 5.0                    |
| D026                                        | Total Cresol.....        | BDL           | 200.0                  |
| D016                                        | 2,4-D.....               | BDL           | 10.0                   |
| D027                                        | 1,4-Dichlorobenzene..... | BDL           | 7.5                    |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL           | 0.13                   |
| D012                                        | Endrin.....              | BDL           | 0.02                   |
| D031                                        | Heptachlor.....          | BDL           | 0.008                  |
| D031                                        | Heptachlor epoxide.....  | BDL           | 0.008                  |
| D032                                        | Hexachlorobenzene.....   | BDL           | 0.13                   |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-19

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-028,  
01/14/98, 13:40, received 01/19/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.03             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina L. DeLoach*  
Quality Assurance



# ANALYTICAL SERVICES, INC.

## ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

### LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-20

### Sample Description

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-029,  
01/14/98, 16:20, received 01/19/98

### RESULTS

|                                             |                          | <u>Result</u>          | <u>Detection Limit</u>  |
|---------------------------------------------|--------------------------|------------------------|-------------------------|
| Ignitability (°F) (EPA 1010).....           |                          | >212                   | 70                      |
| pH (laboratory) (EPA 9045).....             |                          | 7.50                   | -                       |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL                    | 1                       |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL                    | 5                       |
|                                             |                          | <u>Detection Limit</u> | <u>Regulatory Limit</u> |
| Toxicity Characteristic Leaching Procedure  |                          |                        |                         |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |                        |                         |
| <u>EPA HW</u>                               | <u>Result</u>            | <u>Limit</u>           | <u>Limit</u>            |
| <u>Number</u>                               | <u>Parameter</u>         | <u>(mg/l)</u>          | <u>(mg/l)</u>           |
| D004                                        | Arsenic (As).....        | BDL                    | 5.0                     |
| D005                                        | Barium (Ba).....         | 0.8                    | 100.0                   |
| D006                                        | Cadmium (Cd).....        | BDL                    | 1.0                     |
| D020                                        | Chlordane.....           | BDL                    | 0.03                    |
| D007                                        | Chromium (Cr).....       | BDL                    | 5.0                     |
| D026                                        | Total Cresol.....        | BDL                    | 200.0                   |
| D016                                        | 2,4-D.....               | BDL                    | 10.0                    |
| D027                                        | 1,4-Dichlorobenzene..... | BDL                    | 7.5                     |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL                    | 0.13                    |
| D012                                        | Endrin.....              | BDL                    | 0.02                    |
| D031                                        | Heptachlor.....          | BDL                    | 0.008                   |
| D031                                        | Heptachlor epoxide.....  | BDL                    | 0.008                   |
| D032                                        | Hexachlorobenzene.....   | BDL                    | 0.13                    |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

January 30, 1998  
Report No. 90937-20

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-029,  
01/14/98, 16:20, received 01/19/98

### RESULTS

Toxicity Characteristic Leaching Procedure  
TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

Toxicity Characteristic Leaching Procedure  
TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | BDL              | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. P. Potts*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

478 233

ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201LABORATORY REPORTOHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-21Sample DescriptionWater, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-026EQB,  
01/14/98, 16:45, received 01/19/98RESULTS

|                                            | <u>Result</u> | <u>Detection Limit</u> |
|--------------------------------------------|---------------|------------------------|
| pH (laboratory) (EPA 9040).....            | 6.89          | -                      |
| Reactive Cyanide (mg/l) (EPA 7.3.3.2)..... | BDL           | 1                      |
| Reactive Sulfide (mg/l) (EPA 7.3.4.2)..... | BDL           | 5                      |
| <u>Metals</u>                              | <u>(mg/l)</u> | <u>(mg/l)</u>          |
| Total Arsenic (As) (EPA 6010).....         | BDL           | 0.01                   |
| Total Barium (Ba) (EPA 6010).....          | BDL           | 0.2                    |
| Total Cadmium (Cd) (EPA 6010).....         | BDL           | 0.005                  |
| Total Chromium (Cr) (EPA 6010).....        | BDL           | 0.01                   |
| Total Lead (Pb) (EPA 6010).....            | BDL           | 0.003                  |
| Total Mercury (Hg) (EPA 7470).....         | BDL           | 0.0005                 |
| Total Selenium (Se) (EPA 6010).....        | BDL           | 0.005                  |
| Total Silver (Ag) (EPA 6010).....          | BDL           | 0.01                   |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 3

January 30, 1998  
Report No. 90937-21

Water, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-026EQB,  
01/14/98, 16:45, received 01/19/98

### RESULTS

|                                                     | Result | Detection |
|-----------------------------------------------------|--------|-----------|
|                                                     | (ug/l) | Limit     |
|                                                     |        | (ug/l)    |
| <u>Volatile Organics (EPA 8260)</u>                 |        |           |
| Benzene.....                                        | BDL    | 0.4       |
| Carbon tetrachloride.....                           | BDL    | 2.1       |
| Chloroform.....                                     | 0.84   | 0.3       |
| Chlorobenzene.....                                  | BDL    | 0.4       |
| 1,2-Dichloroethane.....                             | BDL    | 0.6       |
| 1,1-Dichloroethene.....                             | BDL    | 1.2       |
| Methyl ethyl ketone.....                            | BDL    | 1         |
| Tetrachloroethene.....                              | BDL    | 1.4       |
| Trichloroethene.....                                | BDL    | 1         |
| Vinyl chloride.....                                 | BDL    | 1.1       |
| <u>Acid Extractable Organics (EPA 8270)</u>         |        |           |
|                                                     | (ug/l) | (ug/l)    |
| Cresols.....                                        | BDL    | 10        |
| Pentachlorophenol.....                              | BDL    | 25        |
| 2,4,5-Trichlorophenol.....                          | BDL    | 25        |
| 2,4,6-Trichlorophenol.....                          | BDL    | 10        |
| <u>Base/Neutral Extractable Organics (EPA 8270)</u> |        |           |
|                                                     | (ug/l) | (ug/l)    |
| 1,4-Dichlorobenzene.....                            | BDL    | 10        |
| 2,4-Dinitrotoluene.....                             | BDL    | 10        |
| Hexachlorobenzene.....                              | BDL    | 10        |
| Hexachlorobutadiene.....                            | BDL    | 10        |
| Hexachloroethane.....                               | BDL    | 10        |
| Nitrobenzene.....                                   | BDL    | 10        |
| Pyridine.....                                       | BDL    | 10        |

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BDL - Below Detection Limit

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OHM Remediation Services Corp.  
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January 30, 1998  
Report No. 90937-21

Water, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-026EQB,  
01/14/98, 16:45, received 01/19/98

### RESULTS

|                                          | Result<br>(ug/l) | Detection<br>Limit<br>(ug/l) |
|------------------------------------------|------------------|------------------------------|
| <u>Pesticides (EPA 8081)</u>             |                  |                              |
| Chlordane.....                           | BDL              | 0.50                         |
| BHC-gamma (Lindane).....                 | BDL              | 0.10                         |
| Endrin.....                              | BDL              | 0.10                         |
| Heptachlor.....                          | BDL              | 0.10                         |
| Heptachlor epoxide.....                  | BDL              | 0.10                         |
| Methoxychlor.....                        | BDL              | 0.30                         |
| Toxaphene.....                           | BDL              | 5.0                          |
| <u>Chlorinated Herbicides (EPA 8151)</u> |                  |                              |
| 2,4-D.....                               | BDL              | 5.0                          |
| 2,4,5-TP (Silvex).....                   | BDL              | 10                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina L. Profitt*  
Quality Assurance



**ASI****ANALYTICAL SERVICES, INC.**

ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-22**Sample Description**Water, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-018EQB,  
01/14/98, 14:25, received 01/19/98**RESULTS**

|                                            | <u>Result</u> | <u>Detection<br/>Limit</u> |
|--------------------------------------------|---------------|----------------------------|
| pH (laboratory) (EPA 9040).....            | 6.50          | -                          |
| Reactive Cyanide (mg/l) (EPA 7.3.3.2)..... | BDL           | 1                          |
| Reactive Sulfide (mg/l) (EPA 7.3.4.2)..... | BDL           | 5                          |
| <u>Metals</u>                              | <u>(mg/l)</u> | <u>(mg/l)</u>              |
| Total Arsenic (As) (EPA 6010).....         | BDL           | 0.01                       |
| Total Barium (Ba) (EPA 6010).....          | BDL           | 0.2                        |
| Total Cadmium (Cd) (EPA 6010).....         | BDL           | 0.005                      |
| Total Chromium (Cr) (EPA 6010).....        | BDL           | 0.01                       |
| Total Lead (Pb) (EPA 6010).....            | BDL           | 0.003                      |
| Total Mercury (Hg) (EPA 7470).....         | BDL           | 0.0005                     |
| Total Selenium (Se) (EPA 6010).....        | BDL           | 0.005                      |
| Total Silver (Ag) (EPA 6010).....          | BDL           | 0.01                       |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 3

January 30, 1998  
Report No. 90937-22

Water, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-018EQB,  
01/14/98, 14:25, received 01/19/98

### RESULTS

|                                                     | Result<br>(ug/l) | Detection<br>Limit<br>(ug/l) |
|-----------------------------------------------------|------------------|------------------------------|
| <u>Volatile Organics (EPA 8260)</u>                 |                  |                              |
| Benzene.....                                        | BDL              | 0.4                          |
| Carbon tetrachloride.....                           | BDL              | 2.1                          |
| Chloroform.....                                     | BDL              | 0.3                          |
| Chlorobenzene.....                                  | BDL              | 0.4                          |
| 1,2-Dichloroethane.....                             | BDL              | 0.6                          |
| 1,1-Dichloroethene.....                             | BDL              | 1.2                          |
| Methyl ethyl ketone.....                            | BDL              | 1                            |
| Tetrachloroethene.....                              | BDL              | 1.4                          |
| Trichloroethene.....                                | BDL              | 1                            |
| Vinyl chloride.....                                 | BDL              | 1.1                          |
| <u>Acid Extractable Organics (EPA 8270)</u>         |                  |                              |
| Cresols.....                                        | BDL              | 10                           |
| Pentachlorophenol.....                              | BDL              | 25                           |
| 2,4,5-Trichlorophenol.....                          | BDL              | 25                           |
| 2,4,6-Trichlorophenol.....                          | BDL              | 10                           |
| <u>Base/Neutral Extractable Organics (EPA 8270)</u> |                  |                              |
| 1,4-Dichlorobenzene.....                            | BDL              | 10                           |
| 2,4-Dinitrotoluene.....                             | BDL              | 10                           |
| Hexachlorobenzene.....                              | BDL              | 10                           |
| Hexachlorobutadiene.....                            | BDL              | 10                           |
| Hexachloroethane.....                               | BDL              | 10                           |
| Nitrobenzene.....                                   | BDL              | 10                           |
| Pyridine.....                                       | BDL              | 10                           |

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BDL - Below Detection Limit

OHM Remediation Services Corp.  
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January 30, 1998  
Report No. 90937-22

Water, composite, DDMT\Dunn Field Memphis TN, Project #20022, SB-018EQB,  
01/14/98, 14:25, received 01/19/98

RESULTS

|                                          | Result<br>(ug/l) | Detection<br>Limit<br>(ug/l) |
|------------------------------------------|------------------|------------------------------|
| <u>Pesticides (EPA 8081)</u>             |                  |                              |
| Chlordane.....                           | BDL              | 0.50                         |
| Lindane.....                             | BDL              | 0.10                         |
| Endrin.....                              | BDL              | 0.10                         |
| Heptachlor.....                          | BDL              | 0.10                         |
| Heptachlor epoxide.....                  | BDL              | 0.10                         |
| Methoxychlor.....                        | BDL              | 0.30                         |
| Toxaphene.....                           | BDL              | 5.0                          |
| <u>Chlorinated Herbicides (EPA 8151)</u> |                  |                              |
| 2,4-D.....                               | BDL              | 5.0                          |
| 2,4,5-TP (Silvex).....                   | BDL              | 10                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina L. Pryor*  
Quality Assurance



# ANALYTICAL SERVICES, INC. 478 239

ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

## LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

January 30, 1998

P.O. No. 1041997

Attention: Mr. Steve Offner

Report No. 90937-23

## Sample Description

Water,, DDMT\Dunn Field Memphis TN, Project #20022, Trip Blank, 01/14/98,,  
received 01/19/98

## RESULTS

|                                     | Result | Detection |
|-------------------------------------|--------|-----------|
|                                     | (ug/l) | Limit     |
|                                     |        | (ug/l)    |
| <u>Volatile Organics (EPA 8260)</u> |        |           |
| Benzene.....                        | BDL    | 0.4       |
| Carbon tetrachloride.....           | BDL    | 2.1       |
| Chloroform.....                     | BDL    | 0.3       |
| Chlorobenzene.....                  | BDL    | 0.4       |
| 1,2-Dichloroethane.....             | BDL    | 0.6       |
| 1,1-Dichloroethene.....             | BDL    | 1.2       |
| Methyl ethyl ketone.....            | BDL    | 1         |
| Tetrachloroethene.....              | BDL    | 1.4       |
| Trichloroethene.....                | BDL    | 1         |
| Vinyl chloride.....                 | BDL    | 1.1       |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. Pickett*  
Quality Assurance

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Analytical Services Inc. Batch QC  
For Report Number :90937  
Chlorinated Herbicides

Matrix : Aqueous

Batch # 35520

Method : EPA 8150 / 615

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                              | 100        | 117         | 16        | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                  | 77         | 93          | 19        | 40 - 140           | 0 - 40       |
| 2,4,5-T                            | 62         | 75          | 18        | 40 - 140           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                               | 123        | 122         | 1         | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 54         | 52          | 4         | 40 - 140           | 0 - 40       |
| 2,4,5-T                             | 97         | 118         | 20        | 40 - 140           | 0 - 40       |

Analytical Services Inc. Batch QC  
Surrogate Recovery  
Chlorinated Herbicides

Matrix : Aqueous

Batch # 35520

Method : EPA 8150 / 615

### % Recovery Objectives

|           |            | S1  | DCAA |    | 20 - 160 |    |    |  |
|-----------|------------|-----|------|----|----------|----|----|--|
| Sample    | File       | S1  | S2   | S3 | S4       | S5 | S6 |  |
| 35520BLK  | 011298003F | 65  |      |    |          |    |    |  |
| 35520LCS  | 011298004F | 79  |      |    |          |    |    |  |
| 35520LCSD | 011298005F | 99  |      |    |          |    |    |  |
| 90666MS   | 011298006F | 131 |      |    |          |    |    |  |
| 90666MSD  | 011298007F | 131 |      |    |          |    |    |  |
| 90666     | 011298008F | 69  |      |    |          |    |    |  |
| 90559     | 011498003F | 70  |      |    |          |    |    |  |
| 90786     | 011598004F | 81  |      |    |          |    |    |  |
| 90721     | 011598006F | 60  |      |    |          |    |    |  |
| 90721DUP  | 011598007F | 69  |      |    |          |    |    |  |
| 90797-9   | 011698019R | 72  |      |    |          |    |    |  |
| 90816     | 011698020R | 69  |      |    |          |    |    |  |
| 90838-1   | 012098004R | 110 |      |    |          |    |    |  |
| 90888     | 012098005F | 29  |      |    |          |    |    |  |
| 90858-1   | 012098006F | 74  |      |    |          |    |    |  |
| 90955     | 012298032F | 56  |      |    |          |    |    |  |
| 90918-11  | 012298033F | 78  |      |    |          |    |    |  |
| 90937-21  | 012298034F | 76  |      |    |          |    |    |  |
| 90937-22  | 012298035F | 83  |      |    |          |    |    |  |
| 90918-2   | 012398022F | 90  |      |    |          |    |    |  |
| 90918-3   | 012398023F | 85  |      |    |          |    |    |  |
| 90918-4   | 012398024F | 59  |      |    |          |    |    |  |
| 90918-5   | 012398025F | 72  |      |    |          |    |    |  |
| 90918-6   | 012398028F | 92  |      |    |          |    |    |  |
| 90918-7   | 012398029F | 83  |      |    |          |    |    |  |
| 90918-8   | 012398030F | 80  |      |    |          |    |    |  |

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Q.C. Information for Batch # 35520

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Printed: 01/30/98 15:14:23

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Blank Results Information  
Chlorinated Herbicides      Method : EPA 8150 / 615

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| Analyte  | Blank<br>Result | Detection<br>Limit |
|----------|-----------------|--------------------|
| 2,4-D    | BDL             | 5.0                |
| 2,4,5-TP | BDL             | 10                 |

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Q.C. Information for Batch # 35520

Printed: 01/30/98 15:14:23

Sample Batch Information  
Chlorinated Herbicides      Method : EPA 8150<sup>1</sup> / 615

| Sample ID | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst = |
|-----------|-------------|------|-------|----------------------|----------|------|-----|--------|
|           | Date        | Time | By    |                      | Date     | Time | By  |        |
| 90666     | 01/12/98    | 0825 | DH    |                      | 01/12/98 | 2036 | JQZ | GC-1   |
| 90559     | 01/12/98    | 0825 | DH    |                      | 01/14/98 | 1441 | JQZ | GC-1   |
| 90666MS   | 01/12/98    | 0825 | DH    |                      | 01/12/98 | 1940 | JQZ | GC-1   |
| 90666MSD  | 01/12/98    | 0825 | DH    |                      | 01/12/98 | 2008 | JQZ | GC-1   |
| 90721     | 01/14/98    | 0815 | DH    |                      | 01/15/98 | 2055 | JQZ | GC-1   |
| 90721DUP  | 01/14/98    | 0815 | DH    |                      | 01/15/98 | 2124 | JQZ | GC-1   |
| 35520BLK  | 01/12/98    | 0825 | DH    |                      | 01/12/98 | 1816 | JQZ | GC-1   |
| 35520LCS  | 01/12/98    | 0825 | DH    |                      | 01/12/98 | 1844 | JQZ | GC-1   |
| 35520LCSD | 01/12/98    | 0825 | DH    |                      | 01/12/98 | 1912 | JQZ | GC-1   |
| 90786     | 01/15/98    | 0845 | DH    |                      | 01/15/98 | 1959 | JQZ | GC-1   |
| 90797-9   | 01/16/98    | 0915 | DH/DY |                      | 01/17/98 | 0500 | JQZ | GC-1   |
| 90816     | 01/16/98    | 0915 | DH/DY |                      | 01/17/98 | 0528 | JQZ | GC-1   |
| 90838-1   | 01/19/98    | 0830 | DH    |                      | 01/20/98 | 1153 | JQZ | GC-1   |
| 90888     | 01/19/98    | 0830 | DH    |                      | 01/20/98 | 1249 | JQZ | GC-1   |
| 90858-1   | 01/19/98    | 0830 | DH    |                      | 01/20/98 | 1217 | JQZ | GC-1   |
| 90918-11  | 01/21/98    | 0945 | DH/KF |                      | 01/22/98 | 1400 | JQZ | GC-1   |
| 90955     | 01/22/98    | 0945 | DH/KF |                      | 01/22/98 | 1334 | JQZ | GC-1   |
| 90987-21  | 01/22/98    | 0945 | DH/KF |                      | 01/22/98 | 1431 | JQZ | GC-1   |
| 90987-22  | 01/22/98    | 0945 | DH/KF |                      | 01/22/98 | 1459 | JQZ | GC-1   |
| 90918-1   | 01/22/98    | 0945 | DH    |                      | / /      |      |     |        |
| 90918-2   | 01/22/98    | 0945 | DH    |                      | 01/24/98 | 0510 | JQZ | GC-1   |
| 90918-3   | 01/22/98    | 0945 | DH    |                      | 01/24/98 | 0538 | JQZ | GC-1   |
| 90918-5   | 01/22/98    | 0945 | DH    |                      | 01/24/98 | 0635 | JQZ | GC-1   |
| 90918-6   | 01/22/98    | 0945 | DH    |                      | 01/24/98 | 0759 | JQZ | GC-1   |
| 90918-7   | 01/22/98    | 0945 | DH    |                      | 01/24/98 | 0827 | JQZ | GC-1   |
| 90918-8   | 01/22/98    | 0945 | DH    |                      | 01/24/98 | 0855 | JQZ | GC-1   |
| 90918-4   | 01/22/98    |      |       |                      | 01/24/98 | 0607 | JQZ | GC-1   |



Analytical Services Inc. Batch QC  
For Report Number :90937  
Organochlorine Pesticides

Matrix : Aqueous

Batch # 35589

Method : EPA 8080 / 608

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                | 90         | 90          | 0         | 32 - 127           | 0 - 40       |
| Heptachlor                         | 90         | 91          | 1         | 34 - 111           | 0 - 40       |
| Aldrin                             | 92         | 95          | 3         | 42 - 122           | 0 - 40       |
| Dieldrin                           | 39         | 40          | 2         | 36 - 146           | 0 - 40       |
| Endrin                             | 36         | 36          | 1         | 30 - 147           | 0 - 40       |
| 4,4'-DDT                           | 29         | 31          | 5         | 25 - 160           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                 | 99         | 118         | 17        | 32 - 127           | 0 - 40       |
| Heptachlor                          | 102        | 104         | 3         | 34 - 111           | 0 - 40       |
| Aldrin                              | 102        | 109         | 7         | 42 - 122           | 0 - 40       |
| Dieldrin                            | 42         | 47          | 11        | 36 - 146           | 0 - 40       |
| Endrin                              | 40         | 41          | 3         | 30 - 147           | 0 - 40       |
| 4,4'-DDT                            | 29         | 26          | 13        | 25 - 160           | 0 - 40       |

Matrix : Aqueous

Batch # 35589

Method : EPA 8080 / 608

## % Recovery Objectives

|    |                      |          |
|----|----------------------|----------|
| S1 | Dibutylchloroendate  | 14 - 161 |
| S2 | Tetrachloro-m-xylene | 47 - 113 |
| S3 | Decachlorobiphenyl   | 10 - 139 |

| Sample           | File       | S1  | S2  | S3  | S4 | S5 | S6 |
|------------------|------------|-----|-----|-----|----|----|----|
| 35589BLK         | 011698006F | 101 | 91  | 108 |    |    |    |
| 35589LCS         | 011698007F | 93  | 95  | 111 |    |    |    |
| 35589LCSD        | 011698008F | 107 | 97  | 127 |    |    |    |
| 90797-9          | 011698009F | 99  | 97  | 122 |    |    |    |
| 90786            | 011698055F | 26  |     | 22  |    |    |    |
| 90786MS          | 011698059F | 119 | 97  | 143 |    |    |    |
| 90786MSD         | 011698060F | 117 | 95  | 138 |    |    |    |
| 90838-1          | 011998017F | 59  | 49  | 43  |    |    |    |
| 90816            | 011998015F | 73  | 72  | 49  |    |    |    |
| 90816DUP         | 011998016R | 71  | 94  | 82  |    |    |    |
| 90888            | 011998018R | 81  | 106 | 124 |    |    |    |
| 90858-1          | 011998019r | 51  | 46  | 68  |    |    |    |
| 90879-1          | 011998020F |     | 103 | 134 |    |    |    |
| ^^Note: PCB      |            |     |     |     |    |    |    |
| 90879-2          | 011998021F |     | 102 | 132 |    |    |    |
| ^^Note: PCB      |            |     |     |     |    |    |    |
| 90879-3          | 011998022F |     | 100 | 123 |    |    |    |
| ^^Note: PCB      |            |     |     |     |    |    |    |
| 90937-21         | 011998032F | 84  | 84  | 49  |    |    |    |
| 90937-22         | 011998033F | 76  | 71  | 87  |    |    |    |
| 90955            | 011998034F | 71  | 84  | 59  |    |    |    |
| 90950            | 011998039F | 33  | 41  | 23  |    |    |    |
| 90974-1          | 012198036F |     | 79  | 106 |    |    |    |
| ^^Note: PCB      |            |     |     |     |    |    |    |
| 90974-2          | 012198037R |     | 105 | 133 |    |    |    |
| ^^Note: PCB      |            |     |     |     |    |    |    |
| 90974-3          | 012198038R |     | 97  | 134 |    |    |    |
| ^^Note: PCB ONLY |            |     |     |     |    |    |    |
| 90974-4          | 012198039R |     | 86  | 120 |    |    |    |
| ^^Note: PCB      |            |     |     |     |    |    |    |
| 90974-5          | 012198043R |     | 101 | 141 |    |    |    |
| ^^Note: PCB ONLY |            |     |     |     |    |    |    |

Analytical Services Inc. Batch QC  
Surrogate Recovery  
Organochlorine Pesticides  
Batch # 35589

Matrix : Aqueous

Method : EPA 8080 / 608

## % Recovery Objectives

|    |                      |          |
|----|----------------------|----------|
| S1 | Dibutylchlorendate   | 14 - 161 |
| S2 | Tetrachloro-m-xylene | 47 - 113 |
| S3 | Decachlorobiphenyl   | 10 - 139 |

| Sample           | File       | S1 | S2  | S3 | S4 | S5 | S6 |
|------------------|------------|----|-----|----|----|----|----|
| 90968-4          | 012198044R |    | 102 | 83 |    |    |    |
| ^^Note: PCB ONLY |            |    |     |    |    |    |    |

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Q.C. Information for Batch # 35589

Printed: 01/30/98 15:14:23

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Blank Results Information  
Organochlorine Pesticides Method : EPA 8080 / 608

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| Analyte            | Blank<br>Result | Detection<br>Limit |
|--------------------|-----------------|--------------------|
| Chlordane          | BDL             | 0.50               |
| BHC-gamma          | BDL             | 0.10               |
| Endrin             | BDL             | 0.10               |
| Heptachlor         | BDL             | 0.10               |
| Heptachlor epoxide | BDL             | 0.10               |
| Methoxychlor       | BDL             | 0.30               |
| Toxaphene          | BDL             | 5.0                |
| Lindane            | BDL             | 0.10               |

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Q.C. Information for Batch # 35589

Printed: 01/30/98 15:14:23

Sample Batch Information  
 Organochlorine Pesticides      Method : EPA 8080 / 608

| Sample ID   | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst |
|-------------|-------------|------|-------|----------------------|----------|------|-----|------|
|             | Date        | Time | By    |                      | Date     | Time | By  |      |
| 35589BLK    | 01/15/98    | 1000 | TB/JW |                      | 01/16/98 | 1131 | JQZ | GC-3 |
| 35589LCS    | 01/15/98    | 1000 | TB/JW |                      | 01/16/98 | 1204 | JQZ | GC-3 |
| 35589LCSD   | 01/15/98    | 1000 | TB/JW |                      | 01/16/98 | 1237 | JQZ | GC-3 |
| 90786       | 01/15/98    | 1000 | TB/JW |                      | 01/17/98 | 1303 | JQZ | GC-3 |
| 90786MS     | 01/15/98    | 1000 | TB/JW |                      | 01/17/98 | 1514 | JQZ | GC-3 |
| 90786MSD    | 01/15/98    | 1000 | TB/JW |                      | 01/17/98 | 1548 | JQZ | GC-3 |
| 90797-9     | 01/16/98    | 0830 | TB    |                      | 01/16/98 | 1301 | JQZ | GC-3 |
| 90816       | 01/16/98    | 0830 | TB    |                      | 01/20/98 | 0446 | JQZ | GC-3 |
| 90816DUP    | 01/16/98    | 0830 | TB    |                      | 01/20/98 | 0446 | JQZ | GC-3 |
| 90838-1     | 01/19/98    | 1500 | TB/JW |                      | 01/20/98 | 0552 | JQZ | GC-3 |
| 90858-1     | 01/19/98    | 1500 | TB/JW |                      | 01/20/98 | 0624 | JQZ | GC-3 |
| 90888       | 01/19/98    | 1500 | TB/JW |                      | 01/20/98 | 0552 | JQZ | GC-3 |
| 90879-1     | 01/19/98    | 1500 | TB/JW | PCB ONLY             | 01/20/98 | 0730 | JQZ | GC-3 |
| 90879-2     | 01/19/98    | 1500 | TB/JW | PCB ONLY             | 01/20/98 | 0803 | JQZ | GC-3 |
| 90879-3     | 01/19/98    | 1500 | TB/JW | PCB ONLY             | 01/20/98 | 0836 | JQZ | GC-3 |
| 35589BLKPCB | 01/19/98    | 1500 | TB/JW | PCB ONLY             | 01/20/98 | 0901 | JQZ | GC-3 |
| 90937-21    | 01/20/98    | 0900 | JW/TB |                      | 01/20/98 | 1653 | JQZ | GC-3 |
| 90937-22    | 01/20/98    | 0900 | JW/TB |                      | 01/20/98 | 1726 | JQZ | GC-3 |
| 90955       | 01/20/98    | 0900 | JW/TB |                      | 01/20/98 | 1759 | JQZ | GC-3 |
| 90950       | 01/20/98    | 0900 | JW/TB |                      | 01/20/98 | 2043 | JQZ | GC-3 |
| 90968-4     | 01/21/98    | 0830 | TB    |                      | 01/22/98 | 0755 | JQZ | GC-3 |
| 90974-1     | 01/21/98    | 0830 | TB    | PCB ONLY             | 01/22/98 | 0331 | JQZ | GC-3 |
| 90974-2     | 01/21/98    | 0830 | TB    | PCB ONLY             | 01/22/98 | 0404 | JQZ | GC-3 |
| 90974-3     | 01/21/98    | 0830 | TB    | PCB ONLY             | 01/22/98 | 0437 | JQZ | GC-3 |
| 90974-4     | 01/21/98    | 0830 | TB    | PCB ONLY             | 01/22/98 | 0510 | JQZ | GC-3 |
| 90974-5     | 01/21/98    | 0830 | TB    | PCB ONLY             | 01/22/98 | 0722 | JQZ | GC-3 |

Analytical Services Inc. Batch QC  
For Report Number :90937  
Base Neutrals / Acids

Matrix : Aqueous

Batch # 35646

Method : EPA 8270

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Phenol                             | 25         | 24          | 4         | 12 - 89            | 0 - 42       |
| 2-Chlorophenol                     | 36         | 39          | 8         | 27 - 123           | 0 - 40       |
| 1,4-Dichlorobenzene                | 56         | 54          | 4         | 36 - 97            | 0 - 28       |
| N-Nitrosodipropylamine             | 75         | 69          | 8         | 41 - 116           | 0 - 38       |
| 1,2,4-Trichlorobenzene             | 59         | 59          | 0         | 44 - 142           | 0 - 28       |
| 4-Chloro-3-methylphenol            | 62         | 57          | 9         | 23 - 97            | 0 - 42       |
| Acenaphthene                       | 72         | 67          | 8         | 46 - 118           | 0 - 31       |
| 2,4-Dinitrotoluene                 | 54         | 54          | 0         | 24 - 96            | 0 - 38       |
| 4-Nitrophenol                      | 17         | 12          | 34        | 10 - 80            | 0 - 50       |
| Pentachlorophenol                  | 10         | 15          | 42        | 9 - 103            | 0 - 50       |
| Pyrene                             | 89         | 87          | 3         | 26 - 127           | 0 - 31       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Phenol                              | 39         | 51          | 25        | 12 - 89            | 0 - 42       |
| 2-Chlorophenol                      | 63         | 76          | 18        | 27 - 123           | 0 - 40       |
| 1,4-Dichlorobenzene                 | 51         | 59          | 14        | 36 - 97            | 0 - 28       |
| N-Nitrosodipropylamine              | 60         | 76          | 23        | 41 - 116           | 0 - 38       |
| 1,2,4-Trichlorobenzene              | 55         | 67          | 20        | 44 - 142           | 0 - 28       |
| 4-Chloro-3-methylphenol             | 61         | 78          | 24        | 23 - 97            | 0 - 42       |
| Acenaphthene                        | 66         | 79          | 17        | 46 - 118           | 0 - 31       |
| 2,4-Dinitrotoluene                  | 62         | 81          | 26        | 24 - 96            | 0 - 38       |
| 4-Nitrophenol                       | 38         | 49          | 27        | 10 - 80            | 0 - 50       |
| Pentachlorophenol                   | 46         | 43          | 6         | 9 - 103            | 0 - 50       |
| Pyrene                              | 77         | 88          | 14        | 26 - 127           | 0 - 31       |

## Analytical Services Inc. Batch QC

## Surrogate Recovery

## Base Neutrals / Acids

Matrix : Aqueous

Batch # 35646

Method : EPA 8270

## % Recovery Objectives

|    |                      |          |
|----|----------------------|----------|
| S1 | 2-Fluorophenol       | 21 - 100 |
| S2 | Phenol-d5            | 10 - 94  |
| S3 | Nitrobenzene-d5      | 35 - 114 |
| S4 | 2-Fluorobiphenyl     | 43 - 116 |
| S5 | 2,4,6-Tribromophenol | 10 - 123 |
| S6 | Terphenyl-d14        | 33 - 141 |

| Sample             | File  | S1 | S2 | S3 | S4 | S5  | S6  |
|--------------------|-------|----|----|----|----|-----|-----|
| 35646BLK           | A7530 | 52 | 40 | 80 | 91 | 80  | 106 |
| 35646LCS           | A7531 | 22 | 25 | 66 | 79 | 39  | 93  |
| 35646LCSD          | A7532 | 21 | 24 | 66 | 75 | 50  | 89  |
| 90841-2MS          | B3437 | 51 | 38 | 62 | 65 | 55  | 75  |
| 90841-2MSD         | B3438 | 65 | 50 | 82 | 80 | 68  | 87  |
| 90841-2            | A7535 | 39 | 31 | 69 | 81 | 85  | 84  |
| 90903-1            | A7536 | 45 | 13 | 54 | 81 | 7   | 91  |
| 90903-1DUP         | A7537 | 23 | 21 | 46 | 73 | 61  | 94  |
| 90897-1            | A7538 | 48 | 36 | 68 | 79 | 101 | 107 |
| 90897-2            | A7539 | 48 | 36 | 74 | 85 | 95  | 103 |
| 90897-3            | A7540 | 47 | 36 | 64 | 75 | 79  | 109 |
| 90897-4            | A7541 | 28 | 29 | 63 | 79 | 29  | 103 |
| 90897-5            | A7542 | 39 | 31 | 64 | 83 | 62  | 108 |
| 90937-21           | B3440 | 22 | 23 | 80 | 78 | 23  | 86  |
| 90937-22           | B3441 | 49 | 32 | 81 | 80 | 64  | 100 |
| 90918-1            | B3506 | 6  | 7  | 33 | 42 | 4   | 50  |
| ^^Note: RE-EXTRACT |       |    |    |    |    |     |     |
| 90918-2            | B3507 | 4  | 5  | 59 | 68 | 35  | 99  |
| ^^Note: RE-EXTRACT |       |    |    |    |    |     |     |
| 90918-3            | B3508 | 31 | 19 | 52 | 59 | 56  | 54  |
| 90918-4            | B3509 | 22 | 16 | 49 | 37 | 33  | 33  |
| 90918-5            | B3510 | 36 | 25 | 43 | 48 | 51  | 91  |
| 90918-6            | B3511 | 26 | 18 | 48 | 55 | 49  | 115 |
| 90918-7            | B3512 | 28 | 18 | 41 | 55 | 52  | 74  |
| 90918-8            | B3513 | 43 | 31 | 58 | 68 | 56  | 72  |
| 90918-9            | B3514 | 36 | 24 | 59 | 70 | 55  | 66  |
| 90918-10           | B3515 | 21 | 20 | 63 | 65 | 11  | 86  |
| 90918-11           | B3516 | 21 | 17 | 69 | 68 | 11  | 90  |

Q.C. Information for Batch # 35646

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Blank Results Information  
Base Neutrals / Acids      Method : EPA 8270

| Analyte               | Blank Result | Detection Limit |
|-----------------------|--------------|-----------------|
| Cresols               | BDL          | 10              |
| Pentachlorophenol     | BDL          | 25              |
| 2,4,5-Trichlorophenol | BDL          | 25              |
| 2,4,6-Trichlorophenol | BDL          | 10              |
| 1,4-Dichlorobenzene   | BDL          | 10              |
| 2,4-Dinitrotoluene    | BDL          | 10              |
| Hexachlorobenzene     | BDL          | 10              |
| Hexachlorobutadiene   | BDL          | 10              |
| Hexachloroethane      | BDL          | 10              |
| Nitrobenzene          | BDL          | 10              |
| Pyridine              | BDL          | 10              |



Sample Batch Information  
Base Neutrals / Acids Method : EPA 8270

| Sample ID  | Preparation |      |    | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-------------|------|----|----------------------|----------|------|-----|------|
|            | Date        | Time | By |                      | Date     | Time | By  |      |
| 35646BLK   | 01/19/98    | 0900 | JW |                      | 01/20/98 | 1120 | TAS | 5970 |
| 35646LCS   | 01/19/98    | 0900 | JW |                      | 01/20/98 | 1154 | TAS | 5970 |
| 35646LCSD  | 01/19/98    | 0900 | JW |                      | 01/20/98 | 1227 | TAS | 5970 |
| 0841-2     | 01/19/98    | 0900 | JW |                      | 01/20/98 | 1409 | TAS | 5970 |
| 0841-2MS   | 01/19/98    | 0900 | JW |                      | 01/20/98 | 1449 | TAS | 5971 |
| 0841-2MSD  | 01/19/98    | 0900 | JW |                      | 01/20/98 | 1504 | TAS | 5971 |
| 90903-1    | 01/19/98    | 0900 | JW |                      | 01/20/98 | 1443 | TAS | 5970 |
| 90903-1DUP | 01/19/98    | 0900 | JW |                      | 01/20/98 | 1517 | TAS | 5970 |
| 90897-1    | 01/19/98    | 0900 | JW |                      | 01/20/98 | 1551 | TAS | 5970 |
| 90897-2    | 01/19/98    | 0900 | JW |                      | 01/20/98 | 1625 | TAS | 5970 |
| 90897-3    | 01/19/98    | 0900 | JW |                      | 01/20/98 | 1659 | TAS | 5970 |
| 90897-4    | 01/19/98    | 0900 | JW |                      | 01/20/98 | 1733 | TAS | 5970 |
| 90897-5    | 01/19/98    | 0900 | JW |                      | 01/20/98 | 1807 | TAS | 5970 |
| 90937-21   | 01/20/98    | 0900 | JW |                      | 01/20/98 | 1631 | TAS | 5971 |
| 90937-22   | 01/20/98    | 0900 | JW |                      | 01/20/98 | 1706 | TAS | 5971 |
| 90918-1    | 01/21/98    | 0900 | JW |                      | 01/22/98 | 1324 | TAS | 5971 |
| 90918-2    | 01/21/98    | 0900 | JW |                      | 01/22/98 | 1359 | TAS | 5971 |
| 90918-3    | 01/21/98    | 0900 | JW |                      | 01/22/98 | 1434 | TAS | 5971 |
| 90918-4    | 01/21/98    | 0900 | JW |                      | 01/22/98 | 1509 | TAS | 5971 |
| 90918-5    | 01/21/98    | 0900 | JW |                      | 01/22/98 | 1544 | TAS | 5971 |
| 90918-6    | 01/21/98    | 0900 | JW |                      | 01/22/98 | 1619 | TAS | 5971 |
| 90918-7    | 01/21/98    | 0900 | JW |                      | 01/22/98 | 1655 | TAS | 5971 |
| 90918-8    | 01/21/98    | 0900 | JW |                      | 01/22/98 | 1730 | TAS | 5971 |
| 90918-9    | 01/21/98    | 0900 | JW |                      | 01/22/98 | 1805 | TAS | 5971 |
| 90918-10   | 01/21/98    | 0900 | JW |                      | 01/22/98 | 1840 | TAS | 5971 |
| 90918-11   | 01/21/98    | 0900 | JW |                      | 01/22/98 | 1916 | TAS | 5971 |

Analytical Services Inc. Batch QC  
 For Report Number :90937  
 Base Neutrals / Acids

Matrix : TCLP

Batch # 35663

Method : EPA 8270

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| o-Cresol                           | 62         | 70          | 12        | 10 - 150           | 0 - 50       |
| m-Cresol + p-Cresol                | 53         | 63          | 16        | 10 - 150           | 0 - 50       |
| 1,4-Dichlorobenzene                | 54         | 61          | 13        | 36 - 97            | 0 - 28       |
| 2,4-Dinitrotoluene                 | 67         | 66          | 2         | 24 - 96            | 0 - 38       |
| Hexachlorobenzene                  | 84         | 92          | 9         | 10 - 152           | 0 - 40       |
| Hexachlorobutadiene                | 47         | 54          | 14        | 24 - 116           | 0 - 40       |
| Hexachloroethane                   | 48         | 56          | 14        | 40 - 113           | 0 - 40       |
| Nitrobenzene                       | 77         | 83          | 9         | 35 - 180           | 0 - 40       |
| Pentachlorophenol                  | 22         | 30          | 31        | 9 - 103            | 0 - 50       |
| Pyridine                           | 49         | 49          | 1         | 10 - 110           | 0 - 90       |
| 2,4,5-Trichlorophenol              | 32         | 49          | 43        | 10 - 150           | 0 - 50       |
| 2,4,6-Trichlorophenol              | 61         | 63          | 3         | 37 - 144           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| o-Cresol                            | 66         | 57          | 16        | 10 - 150           | 0 - 50       |
| m-Cresol + p-Cresol                 | 61         | 51          | 17        | 10 - 150           | 0 - 50       |
| 1,4-Dichlorobenzene                 | 55         | 42          | 27        | 36 - 97            | 0 - 28       |
| 2,4-Dinitrotoluene                  | 67         | 83          | 22        | 24 - 96            | 0 - 38       |
| Hexachlorobenzene                   | 78         | 72          | 8         | 10 - 152           | 0 - 40       |
| Hexachlorobutadiene                 | 49         | 36          | 31        | 24 - 116           | 0 - 40       |
| Hexachloroethane                    | 53         | 50          | 7         | 40 - 113           | 0 - 40       |
| Nitrobenzene                        | 75         | 63          | 16        | 35 - 180           | 0 - 40       |
| Pentachlorophenol                   | 50         | 48          | 4         | 9 - 103            | 0 - 50       |
| Pyridine                            | 41         | 37          | 10        | 10 - 110           | 0 - 90       |
| 2,4,5-Trichlorophenol               | 72         | 53          | 31        | 10 - 150           | 0 - 50       |
| 2,4,6-Trichlorophenol               | 67         | 48          | 32        | 37 - 144           | 0 - 40       |

## Analytical Services Inc. Batch QC

Surrogate Recovery

Base Neutrals / Acids

Matrix : TCLP

Batch # 35663

Method : EPA 8270

## % Recovery Objectives

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|    |                      |          |
|----|----------------------|----------|
| S1 | 2-Fluorophenol       | 21 - 100 |
| S2 | Phenol-d5            | 10 - 94  |
| S3 | Nitrobenzene-d5      | 35 - 114 |
| S4 | 2-Fluorobiphenyl     | 43 - 116 |
| S5 | 2,4,6-Tribromophenol | 10 - 123 |
| S6 | Terphenyl-d14        | 33 - 141 |

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| Sample             | File  | S1 | S2 | S3 | S4 | S5 | S6  |
|--------------------|-------|----|----|----|----|----|-----|
| <hr/>              |       |    |    |    |    |    |     |
| 35663BLK           | B3445 | 47 | 35 | 87 | 85 | 84 | 91  |
| 35663LCS           | B3446 | 28 | 25 | 80 | 79 | 37 | 101 |
| 35663LCSD          | B3447 | 51 | 33 | 82 | 81 | 77 | 103 |
| 90935              | B3448 | 47 | 29 | 66 | 63 | 73 | 96  |
| 90935MS            | B3449 | 49 | 32 | 79 | 75 | 77 | 90  |
| 90935MSD           | B3450 | 38 | 26 | 65 | 61 | 60 | 75  |
| 90937-1            | B3451 | 56 | 36 | 91 | 86 | 75 | 100 |
| 90937-2            | B3452 | 6  | 1  | 80 | 76 | 3  | 82  |
| ^^Note: RE-EXTRACT |       |    |    |    |    |    |     |
| <hr/>              |       |    |    |    |    |    |     |
| 90937-3            | B3453 | 42 | 29 | 71 | 68 | 69 | 91  |
| 90937-6            | B3459 | 40 | 29 | 75 | 69 | 55 | 84  |
| 90937-7            | B3460 | 22 | 20 | 77 | 71 | 33 | 90  |
| 90937-8            | B3461 | 29 | 21 | 82 | 78 | 45 | 86  |
| 90937-8DUP         | B3462 | 28 | 18 | 77 | 71 | 53 | 98  |
| 90937-9            | B3463 | 33 | 24 | 77 | 73 | 42 | 84  |
| 90937-10           | B3464 | 39 | 25 | 75 | 70 | 61 | 87  |
| 90937-4            | B3469 | 46 | 31 | 88 | 83 | 66 | 88  |
| 90937-5            | B3470 | 38 | 26 | 81 | 75 | 60 | 86  |
| 91161              | A7625 | 53 | 47 | 85 | 71 | 96 | 92  |

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Q.C. Information for Batch # 35663

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Blank Results Information  
Base Neutrals / Acids Method : EPA 8270

| Analyte |                       | Blank<br>Result | Detection<br>Limit |
|---------|-----------------------|-----------------|--------------------|
| D026    | Total Cresol          | BDL             | 0.05               |
| D027    | 1,4-Dichlorobenzene   | BDL             | 0.05               |
| D030    | 2,4-Dinitrotoluene    | BDL             | 0.05               |
| D032    | Hexachlorobenzene     | BDL             | 0.05               |
| D033    | Hexachlorobutadiene   | BDL             | 0.05               |
| D034    | Hexachloroethane      | BDL             | 0.05               |
| D036    | Nitrobenzene          | BDL             | 0.05               |
| D037    | Pentachlorophenol     | BDL             | 0.05               |
| D041    | 2,4,5-Trichlorophenol | BDL             | 0.05               |
| D042    | 2,4,6-Trichlorophenol | BDL             | 0.05               |
| D038    | Pyridine              | BDL             | 0.05               |

Sample Batch Information  
Base Neutrals / Acids Method : EPA 8270

| Sample ID  | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-------------|------|-------|----------------------|----------|------|-----|------|
|            | Date        | Time | By    |                      | Date     | Time | By  |      |
| 35663BLK   | 01/20/98    | 1500 | JW/TB |                      | 01/20/98 | 1929 | TAS | 5971 |
| 35663LCS   | 01/20/98    | 1500 | JW/TB |                      | 01/20/98 | 2004 | TAS | 5971 |
| 35663LCSD  | 01/20/98    | 1500 | JW/TB |                      | 01/20/98 | 2040 | TAS | 5971 |
| 90935      | 01/20/98    | 1500 | JW/TB |                      | 01/20/98 | 2115 | TAS | 5971 |
| 90935MS    | 01/20/98    | 1500 | JW/TB |                      | 01/20/98 | 2151 | TAS | 5971 |
| 90935MSD   | 01/20/98    | 1500 | JW/TB |                      | 01/20/98 | 2226 | TAS | 5971 |
| 90937-1    | 01/20/98    | 1500 | JW/TB |                      | 01/20/98 | 2301 | TAS | 5971 |
| 90937-2    | 01/20/98    | 1500 | JW/TB |                      | 01/20/98 | 2337 | TAS | 5971 |
| 90937-3    | 01/20/98    | 1500 | JW/TB |                      | 01/21/98 | 1212 | TAS | 5971 |
| 90937-4    | 01/20/98    | 1500 | JW/TB |                      | 01/21/98 | 0855 | TAS | 5971 |
| 90937-5    | 01/20/98    | 1500 | JW/TB |                      | 01/21/98 | 0930 | TAS | 5971 |
| 90937-6    | 01/20/98    | 1500 | JW/TB |                      | 01/21/98 | 0302 | TAS | 5971 |
| 90937-7    | 01/20/98    | 1500 | JW/TB |                      | 01/21/98 | 0337 | TAS | 5971 |
| 90937-8    | 01/20/98    | 1500 | JW/TB |                      | 01/21/98 | 0412 | TAS | 5971 |
| 90937-8DUP | 01/20/98    | 1500 | JW/TB |                      | 01/21/98 | 0447 | TAS | 5971 |
| 90937-9    | 01/20/98    | 1500 | JW/TB |                      | 01/21/98 | 0523 | TAS | 5971 |
| 90937-10   | 01/20/98    | 1500 | JW/TB |                      | 01/21/98 | 0559 | TAS | 5971 |
| 91161      | 01/26/98    | 1500 | JW    |                      | 01/26/98 | 2134 | TAS | 5970 |

Analytical Services Inc. Batch QC  
 For Report Number :90937  
 Organochlorine Pesticides

Matrix : TCLP

Batch # 35671

Method : EPA 8080

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                | 88         | 113         | 25        | 32 - 127           | 0 - 40       |
| Heptachlor                         | 80         | 115         | 35        | 34 - 111           | 0 - 40       |
| Toxaphene                          | 47         | 65          | 32        | 25 - 160           | 0 - 40       |
| Heptachlor epoxide                 | 93         | 115         | 21        | 25 - 160           | 0 - 40       |
| Endrin                             | 72         | 88          | 21        | 30 - 147           | 0 - 40       |
| Chlordane                          | 121        | 120         | 0         | 25 - 160           | 0 - 40       |
| Methoxychlor                       | 52         | 121         | 79        | 25 - 160           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                 | 100        | 103         | 3         | 32 - 127           | 0 - 40       |
| Heptachlor                          | 100        | 104         | 3         | 34 - 111           | 0 - 40       |
| Toxaphene                           | 97         | 102         | 5         | 25 - 160           | 0 - 40       |
| Heptachlor epoxide                  | 104        | 106         | 2         | 25 - 160           | 0 - 40       |
| Endrin                              | 78         | 80          | 3         | 30 - 147           | 0 - 40       |
| Chlordane                           | 125        | 105         | 17        | 25 - 160           | 0 - 40       |
| Methoxychlor                        | 102        | 106         | 4         | 25 - 160           | 0 - 40       |

## Analytical Services Inc. Batch QC

## Surrogate Recovery

## Organochlorine Pesticides

Matrix : TCLP

Batch # 35671

Method : EPA 8080

## % Recovery Objectives

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|    |                      |          |
|----|----------------------|----------|
| S1 | Dibutylchlorendate   | 34 - 151 |
| S2 | Tetrachloro-m-xylene | 40 - 111 |
| S3 | Decachlorobiphenyl   | 24 - 153 |

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| Sample     | File       | S1  | S2  | S3  | S4 | S5 | S6 |
|------------|------------|-----|-----|-----|----|----|----|
| 35671BLK   | 012198008F | 100 | 92  | 123 |    |    |    |
| 35671LCS   | 012198009R | 94  | 90  | 130 |    |    |    |
| 35671LCSD  | 012198010F | 99  | 104 | 138 |    |    |    |
| 90935      | 012198011R | 71  | 71  | 99  |    |    |    |
| 90937-3MS  | 012198012F | 94  | 92  | 121 |    |    |    |
| 90937-3MSD | 012198013F | 96  | 92  | 119 |    |    |    |
| 90937-1    | 012198017F | 101 | 103 | 130 |    |    |    |
| 90937-2    | 012198018F | 103 | 100 | 127 |    |    |    |
| 90937-4    | 012198019F | 99  | 92  | 123 |    |    |    |
| 90937-5    | 012198020F | 102 | 99  | 126 |    |    |    |
| 90937-6    | 012198021F | 100 | 94  | 122 |    |    |    |
| 90937-7    | 012198022F | 103 | 96  | 126 |    |    |    |
| 90937-7DUP | 012198023F | 106 | 100 | 131 |    |    |    |
| 90937-8    | 012198024F | 99  | 94  | 121 |    |    |    |
| 90937-9    | 012198025F | 93  | 92  | 116 |    |    |    |
| 90937-10   | 012198026F | 100 | 100 | 127 |    |    |    |
| 90937-3RE  | 012298080F | 105 | 96  | 126 |    |    |    |

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Q.C. Information for Batch # 35671

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Blank Results Information  
Organochlorine Pesticides Method : EPA 8080

| Analyte |                    | Blank<br>Result | Detection<br>Limit |
|---------|--------------------|-----------------|--------------------|
| D020    | Chlordane          | BDL             | 0.01               |
| D012    | Endrin             | BDL             | 0.001              |
| D031    | Heptachlor         | BDL             | 0.001              |
| D031    | Heptachlor epoxide | BDL             | 0.001              |
| D013    | Lindane            | BDL             | 0.01               |
| D014    | Methoxychlor       | BDL             | 0.5                |
| D015    | Toxaphene          | BDL             | 0.05               |



Sample Batch Information  
Organochlorine Pesticides Method : EPA 8080

| Sample ID | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst |
|-----------|-------------|------|-------|----------------------|----------|------|-----|------|
|           | Date        | Time | By    |                      | Date     | Time | By  |      |
| 5671BLK   | 01/20/98    | 1630 | JW/TB |                      | 01/21/98 | 1209 | JQZ | GC-3 |
| 5671LCS   | 01/20/98    | 1630 | JW/TB |                      | 01/21/98 | 1242 | JQZ | GC-3 |
| 5671LCSD  | 01/20/98    | 1630 | JW/TB |                      | 01/21/98 | 1348 | JQZ | GC-3 |
| 0935      | 01/20/98    | 1630 | JW/TB |                      | 01/21/98 | 1348 | JQZ | GC-3 |
| 0937-1    | 01/20/98    | 1630 | JW/TB |                      | 01/21/98 | 1739 | JQZ | GC-3 |
| 0937-2    | 01/20/98    | 1630 | JW/TB |                      | 01/21/98 | 1812 | JQZ | GC-3 |
| 0937-3    | 01/20/98    | 1630 | JW/TB |                      | /        | /    |     |      |
| 0937-3MS  | 01/20/98    | 1630 | JW/TB |                      | 01/21/98 | 1454 | JQZ | GC-3 |
| 0937-3MSD | 01/20/98    | 1630 | JW/TB |                      | 01/21/98 | 1527 | JQZ | GC-3 |
| 0937-4    | 01/20/98    | 1630 | JW/TB |                      | 01/21/98 | 1845 | JQZ | GC-3 |
| 0937-5    | 01/20/98    | 1630 | JW/TB |                      | 01/21/98 | 1917 | JQZ | GC-3 |
| 0937-6    | 01/20/98    | 1630 | JW/TB |                      | 01/21/98 | 1950 | JQZ | GC-3 |
| 0937-7    | 01/20/98    | 1630 | JW/TB |                      | 01/21/98 | 2023 | JQZ | GC-3 |
| 0937-7DUP | 01/20/98    | 1630 | JW/TB |                      | 01/21/98 | 2056 | JQZ | GC-3 |
| 0937-8    | 01/20/98    | 1630 | JW/TB |                      | 01/21/98 | 2129 | JQZ | GC-3 |
| 0937-9    | 01/20/98    | 1630 | JW/TB |                      | 01/21/98 | 2202 | JQZ | GC-3 |
| 0937-10   | 01/20/98    | 1630 | JW/TB |                      | 01/21/98 | 2235 | JQZ | GC-3 |
| 0937-3RE  | 01/22/98    | 0800 | JW/TB |                      | 01/23/98 | 0356 | JQZ | GC-3 |

Analytical Services Inc. Batch QC  
 For Report Number :90937  
 Base Neutrals / Acids

Matrix : TCLP

Batch # 35690

Method : EPA 8270

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| o-Cresol                           | 81         | 84          | 4         | 10 - 150           | 0 - 50       |
| m-Cresol + p-Cresol                | 71         | 77          | 7         | 10 - 150           | 0 - 50       |
| 1,4-Dichlorobenzene                | 62         | 70          | 12        | 36 - 97            | 0 - 28       |
| 2,4-Dinitrotoluene                 | 67         | 57          | 17        | 24 - 96            | 0 - 38       |
| Hexachlorobenzene                  | 113        | 118         | 4         | 10 - 152           | 0 - 40       |
| Hexachlorobutadiene                | 62         | 72          | 14        | 24 - 116           | 0 - 40       |
| Hexachloroethane                   | 61         | 64          | 5         | 40 - 113           | 0 - 40       |
| Nitrobenzene                       | 99         | 99          | 0         | 35 - 180           | 0 - 40       |
| Pentachlorophenol                  | 36         | 56          | 44        | 9 - 103            | 0 - 50       |
| Pyridine                           | 48         | 39          | 22        | 10 - 110           | 0 - 90       |
| 2,4,5-Trichlorophenol              | 40         | 43          | 9         | 10 - 150           | 0 - 50       |
| 2,4,6-Trichlorophenol              | 39         | 37          | 5         | 37 - 144           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| o-Cresol                            | 0          | 0           | NC        | 10 - 150           | 0 - 50       |
| m-Cresol + p-Cresol                 | 0          | 0           | NC        | 10 - 150           | 0 - 50       |
| 1,4-Dichlorobenzene                 | 63         | 63          | 0         | 36 - 97            | 0 - 28       |
| 2,4-Dinitrotoluene                  | 77         | 59          | 26        | 24 - 96            | 0 - 38       |
| Hexachlorobenzene                   | 116        | 107         | 8         | 10 - 152           | 0 - 40       |
| Hexachlorobutadiene                 | 62         | 66          | 6         | 24 - 116           | 0 - 40       |
| Hexachloroethane                    | 58         | 58          | 0         | 40 - 113           | 0 - 40       |
| Nitrobenzene                        | 97         | 86          | 13        | 35 - 180           | 0 - 40       |
| Pentachlorophenol                   | 14         | 15          | 9         | 9 - 103            | 0 - 50       |
| Pyridine                            | 33         | 34          | 3         | 10 - 110           | 0 - 90       |
| 2,4,5-Trichlorophenol               | 7          | 5           | 25        | 10 - 150           | 0 - 50       |
| 2,4,6-Trichlorophenol               | 6          | 6           | 10        | 37 - 144           | 0 - 40       |

NC = Not Calculated

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Base Neutrals / Acids

Matrix : TCLP

Batch # 35690

Method : EPA 8270

## % Recovery Objectives

|    |                      |          |
|----|----------------------|----------|
| S1 | 2-Fluorophenol       | 21 - 100 |
| S2 | Phenol-d5            | 10 - 94  |
| S3 | Nitrobenzene-d5      | 35 - 114 |
| S4 | 2-Fluorobiphenyl     | 43 - 116 |
| S5 | 2,4,6-Tribromophenol | 10 - 123 |
| S6 | Terphenyl-d14        | 33 - 141 |

| Sample                | File  | S1 | S2 | S3  | S4 | S5  | S6  |
|-----------------------|-------|----|----|-----|----|-----|-----|
| 35690BLK              | A7567 | 42 | 36 | 82  | 82 | 76  | 101 |
| 35690LCS              | A7568 | 32 | 35 | 94  | 84 | 52  | 116 |
| 35690LCSD             | A7569 | 53 | 42 | 91  | 90 | 95  | 122 |
| 90937-2RR             | A7570 | 6  | 2  | 95  | 93 | 7   | 85  |
| ^^Note: MATRIX EFFECT |       |    |    |     |    |     |     |
| 90937-2MS             | A7571 | 5  | 3  | 86  | 87 | 8   | 91  |
| ^^Note: MATRIX EFFECT |       |    |    |     |    |     |     |
| 90937-2MSD            | A7572 | 3  | 1  | 81  | 83 | 7   | 98  |
| ^^Note: MATRIX EFFECT |       |    |    |     |    |     |     |
| 90937-11              | A7573 | 7  | 8  | 31  | 12 | 12  | 22  |
| ^^Note: REEXTRACT     |       |    |    |     |    |     |     |
| 90937-12              | A7574 | 41 | 32 | 74  | 79 | 82  | 101 |
| 90937-13              | A7575 | 26 | 22 | 48  | 50 | 51  | 66  |
| 90937-14              | A7576 | 45 | 35 | 74  | 82 | 81  | 98  |
| 90937-15              | A7577 | 3  | 10 | 72  | 82 | 11  | 96  |
| 90937-16              | A7578 | 38 | 32 | 73  | 76 | 65  | 91  |
| 90937-17              | A7579 | 18 | 10 | 86  | 87 | 62  | 109 |
| 90937-18              | A7580 | 45 | 34 | 73  | 80 | 79  | 118 |
| 90937-19              | A7581 | 42 | 33 | 58  | 59 | 73  | 80  |
| 90937-20              | A7582 | 21 | 13 | 73  | 79 | 60  | 106 |
| 90937-20DUP           | A7583 | 17 | 10 | 55  | 63 | 61  | 97  |
| 90937-11RR            | B3561 | 2  | 13 | 79  | 82 | 14  | 81  |
| 91139-2               | A7661 | 27 | 28 | 44  | 62 | 28  | 66  |
| ^^Note: FV=5ML        |       |    |    |     |    |     |     |
| 91139-3               | A7659 | 27 | 45 | 104 | 92 | 115 | 110 |
| 91139-4               | A7660 | 42 | 45 | 112 | 88 | 11  | 132 |

Blank Results Information  
Base Neutrals / Acids Method : EPA 8270

| Analyte |                       | Blank Result | Detection Limit |
|---------|-----------------------|--------------|-----------------|
| D026    | Total Cresol          | BDL          | 0.05            |
| D027    | 1,4-Dichlorobenzene   | BDL          | 0.05            |
| D030    | 2,4-Dinitrotoluene    | BDL          | 0.05            |
| D032    | Hexachlorobenzene     | BDL          | 0.05            |
| D033    | Hexachlorobutadiene   | BDL          | 0.05            |
| D034    | Hexachloroethane      | BDL          | 0.05            |
| D036    | Nitrobenzene          | BDL          | 0.05            |
| D037    | Pentachlorophenol     | BDL          | 0.05            |
| D041    | 2,4,5-Trichlorophenol | BDL          | 0.05            |
| D042    | 2,4,6-Trichlorophenol | BDL          | 0.05            |
| D038    | Pyridine              | BDL          | 0.05            |

Q.C. Information for Batch # 35690

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Sample Batch Information  
Base Neutrals / Acids      Method : EPA 8270

| Sample ID   | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst |
|-------------|-------------|------|-------|----------------------|----------|------|-----|------|
|             | Date        | Time | By    |                      | Date     | Time | By  |      |
| 35690BLK    | 01/21/98    | 1500 | JW/TB |                      | 01/22/98 | 0830 | TAS | 5970 |
| 35690LCS    | 01/21/98    | 1500 | JW/TB |                      | 01/22/98 | 1007 | TAS | 5970 |
| 35690LCSD   | 01/21/98    | 1500 | JW/TB |                      | 01/22/98 | 1041 | TAS | 5970 |
| 90937-2RR   | 01/21/98    | 1500 | JW/TB |                      | 01/22/98 | 1115 | TAS | 5970 |
| 90937-11    | 01/21/98    | 1500 | JW/TB |                      | 01/22/98 | 1257 | TAS | 5970 |
| 90937-12    | 01/21/98    | 1500 | JW/TB |                      | 01/22/98 | 1331 | TAS | 5970 |
| 90937-13    | 01/21/98    | 1500 | JW/TB |                      | 01/22/98 | 1405 | TAS | 5970 |
| 90937-14    | 01/21/98    | 1500 | JW/TB |                      | 01/22/98 | 1439 | TAS | 5970 |
| 90937-15    | 01/21/98    | 1500 | JW/TB |                      | 01/22/98 | 1513 | TAS | 5970 |
| 90937-16    | 01/21/98    | 1500 | JW/TB |                      | 01/22/98 | 1547 | TAS | 5970 |
| 90937-17    | 01/21/98    | 1500 | JW/TB |                      | 01/22/98 | 1622 | TAS | 5970 |
| 90937-18    | 01/21/98    | 1500 | JW/TB |                      | 01/22/98 | 1656 | TAS | 5970 |
| 90937-19    | 01/21/98    | 1500 | JW/TB |                      | 01/22/98 | 1730 | TAS | 5970 |
| 90937-20    | 01/21/98    | 1500 | JW/TB |                      | 01/22/98 | 1804 | TAS | 5970 |
| 90937-20DUP | 01/21/98    | 1500 | JW/TB |                      | 01/22/98 | 1838 | TAS | 5970 |
| 90937-2MS   | 01/21/98    | 1500 | JW/TB |                      | 01/22/98 | 1149 | TAS | 5970 |
| 90937-2MSD  | 01/21/98    | 1500 | JW/TB |                      | 01/22/98 | 1223 | TAS | 5970 |
| 90937-11RR  | 01/23/98    | 1500 | JW    |                      | 01/24/98 | 1607 | TAS | 5971 |
| 91139-2     | 01/27/98    | 1500 | JW    |                      | 01/28/98 | 1356 | TAS | 5970 |
| 91139-3     | 01/27/98    | 1500 | JW    |                      | 01/28/98 | 1252 | TAS | 5970 |
| 91139-4     | 01/27/98    | 1500 | JW    |                      | 01/28/98 | 1324 | TAS | 5970 |

Analytical Services Inc. Batch QC  
For Report Number :90937  
Chlorinated Herbicides

Matrix : TCLP

Batch # 35697

Method : EPA 8150

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                              | 88         | 91          | 3         | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                  | 75         | 88          | 16        | 40 - 140           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                               | 97         | 89          | 9         | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 91         | 79          | 14        | 40 - 140           | 0 - 40       |

## Analytical Services Inc. Batch QC

Surrogate Recovery

Chlorinated Herbicides

Matrix : TCLP

Batch # 35697

Method : EPA 8150

## % Recovery Objectives

|            |            | S1 |    | DCAA |    | 18 - 163 |    |
|------------|------------|----|----|------|----|----------|----|
| Sample     | File       | S1 | S2 | S3   | S4 | S5       | S6 |
| 35697BLK   | 012298009F | 90 |    |      |    |          |    |
| 35697LCSD  | 012298011F | 86 |    |      |    |          |    |
| 35697LCS   | 012298010F | 88 |    |      |    |          |    |
| 90935      | 012298012F | 67 |    |      |    |          |    |
| 90935MS D  | 012298015F | 21 |    |      |    |          |    |
| ^^Note: 5X |            |    |    |      |    |          |    |
| 90935MSD D | 012298016F | 20 |    |      |    |          |    |
| ^^Note: 5X |            |    |    |      |    |          |    |
| 90937-1    | 012298020F | 71 |    |      |    |          |    |
| 90937-2    | 012298021F | 43 |    |      |    |          |    |
| 90937-3    | 012298022F | 41 |    |      |    |          |    |
| 90937-5    | 012298023F | 68 |    |      |    |          |    |
| 90937-6    | 012298024F | 48 |    |      |    |          |    |
| 90937-7    | 012298025F | 65 |    |      |    |          |    |
| 90937-8    | 012298026F | 73 |    |      |    |          |    |
| 90937-8DUP | 012298027F | 58 |    |      |    |          |    |
| 90937-9    | 012298028F | 70 |    |      |    |          |    |
| 90937-10   | 012298029F | 56 |    |      |    |          |    |

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Q.C. Information for Batch # 35697

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Blank Results Information  
Chlorinated Herbicides Method : EPA 8150

| Analyte              | Blank<br>Result | Detection<br>Limit |
|----------------------|-----------------|--------------------|
| D016 2,4-D           | BDL             | 0.05               |
| D017 2,4,5-TP Silvex | BDL             | 0.1                |



Sample Batch Information  
Chlorinated Herbicides      Method : EPA 8150

| Sample ID  | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-------------|------|-------|----------------------|----------|------|-----|------|
|            | Date        | Time | By    |                      | Date     | Time | By  |      |
| 35697BLK   | / /         |      |       |                      | / /      |      |     |      |
| 35697BLK   | 01/20/98    | 0230 | DH/DY |                      | 01/22/98 | 1352 | JQZ | GC-3 |
| 35697LCSD  | 01/20/98    | 0230 | DH/DY |                      | 01/22/98 | 1448 | JQZ | GC-3 |
| 35697LCS   | 01/20/98    | 0230 | DH/DY |                      | 01/22/98 | 1420 | JQZ | GC-3 |
| 90935      | 01/22/98    | 0230 | DH/DY |                      | 01/22/98 | 1516 | JQZ | GC-3 |
| 90935MS D  | 01/20/98    | 0230 | DH/DY |                      | 01/22/98 | 1640 | JQZ | GC-1 |
| 90935MSD D | 01/20/98    | 0230 | DH/DY |                      | 01/22/98 | 1707 | JQZ | GC-3 |
| 90937-1    | 01/20/98    | 0230 | DH    |                      | 01/22/98 | 1957 | JQZ | GC-3 |
| 90937-2    | 01/20/98    | 0230 | DH    |                      | 01/22/98 | 2025 | JQZ | GC-3 |
| 90937-3    | 01/20/98    | 0230 | DH    |                      | 01/22/98 | 2053 | JQZ | GC-3 |
| 90937-5    | 01/20/98    | 0230 | DH    |                      | 01/22/98 | 2121 | JQZ | GC-3 |
| 90937-6    | 01/20/98    | 0530 | DH    |                      | 01/22/98 | 2149 | JQZ | GC-3 |
| 90937-7    | 01/20/98    | 0530 | DH    |                      | 01/22/98 | 2217 | JQZ | GC-3 |
| 90937-8    | 01/20/98    | 0530 | DH    |                      | 01/22/98 | 2246 | JQZ | GC-3 |
| 90937-9    | 01/20/98    | 0530 | DH    |                      | 01/22/98 | 2342 | JQZ | GC-3 |
| 90937-10   | 01/20/98    | 0530 | DH    |                      | 01/23/98 | 0010 | JQZ | GC-3 |
| 90937-8DUP | 01/20/98    | 0530 | DH    |                      | 01/22/98 | 2314 | JQZ | GC-3 |

Analytical Services Inc. Batch QC  
For Report Number :90937  
Volatile Organics

Matrix : TCLP

Batch # 35698

Method : EPA 8260

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Benzene                            | 98         | 90          | 9         | 90 - 115           | 0 - 13       |
| Carbon tetrachloride               | 109        | 101         | 7         | 55 - 115           | 0 - 15       |
| Chlorobenzene                      | 93         | 92          | 1         | 87 - 109           | 0 - 10       |
| Chloroform                         | 105        | 96          | 9         | 55 - 115           | 0 - 15       |
| 1,2-Dichloroethane                 | 105        | 100         | 5         | 90 - 115           | 0 - 13       |
| 1,1-Dichloroethene                 | 99         | 90          | 9         | 55 - 111           | 0 - 15       |
| MEK (2-Butanone)                   | 112        | 110         | 2         | 55 - 115           | 0 - 15       |
| Tetrachloroethene                  | 105        | 95          | 10        | 55 - 115           | 0 - 15       |
| Trichloroethene                    | 103        | 95          | 8         | 78 - 110           | 0 - 11       |
| Vinyl chloride                     | 98         | 87          | 12        | 55 - 115           | 0 - 15       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Benzene                             | 90         | 92          | 2         | 90 - 115           | 0 - 13       |
| Carbon tetrachloride                | 98         | 107         | 8         | 55 - 115           | 0 - 15       |
| Chlorobenzene                       | 94         | 97          | 3         | 87 - 109           | 0 - 10       |
| Chloroform                          | 97         | 102         | 5         | 55 - 115           | 0 - 15       |
| 1,2-Dichloroethane                  | 100        | 103         | 3         | 90 - 115           | 0 - 13       |
| 1,1-Dichloroethene                  | 102        | 100         | 3         | 55 - 111           | 0 - 15       |
| MEK (2-Butanone)                    | 102        | 98          | 4         | 55 - 115           | 0 - 15       |
| Tetrachloroethene                   | 78         | 92          | 16        | 55 - 115           | 0 - 15       |
| Trichloroethene                     | 98         | 103         | 5         | 78 - 110           | 0 - 11       |
| Vinyl chloride                      | 91         | 92          | 1         | 55 - 115           | 0 - 15       |

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Analytical Services Inc. Batch QC  
Surrogate Recovery  
Volatile Organics

Matrix : TCLP

Batch # 35698

Method : EPA 8260

## % Recovery Objectives

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|    |                       |          |
|----|-----------------------|----------|
| S1 | 1,2-Dichloroethane-d4 | 76 - 119 |
| S2 | Toluene-d8            | 88 - 110 |
| S3 | Ethylbenzene-d10      | 75 - 115 |
| S4 | 4-Bromofluorobenzene  | 86 - 115 |

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| Sample    | File  | S1  | S2 | S3  | S4  | S5 | S6 |
|-----------|-------|-----|----|-----|-----|----|----|
| 35698BLK  | B2383 | 101 | 98 | 98  | 101 |    |    |
| 35698LCS  | B2385 | 117 | 94 | 102 | 103 |    |    |
| 35698LCSD | B2386 | 106 | 99 | 105 | 105 |    |    |
| 90935     | B2387 | 101 | 99 | 92  | 94  |    |    |
| 90935DUP  | B2388 | 113 | 97 | 102 | 101 |    |    |
| 90935MS   | B2389 | 107 | 96 | 106 | 102 |    |    |
| 90935MSD  | B2390 | 105 | 99 | 105 | 104 |    |    |
| 90937-1   | B2391 | 106 | 92 | 98  | 97  |    |    |
| 90937-2   | B2392 | 108 | 90 | 92  | 96  |    |    |
| 90937-3   | B2393 | 110 | 97 | 94  | 98  |    |    |

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Q.C. Information for Batch # 35698

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Blank Results Information  
Volatile Organics Method : EPA 8260

| Analyte |                      | Blank Result | Detection Limit |
|---------|----------------------|--------------|-----------------|
| D018    | Benzene              | BDL          | 0.02            |
| D019    | Carbon tetrachloride | BDL          | 0.02            |
| D021    | Chlorobenzene        | BDL          | 0.02            |
| D022    | Chloroform           | BDL          | 0.02            |
| D028    | 1,2-Dichloroethane   | BDL          | 0.02            |
| D029    | 1,1-Dichloroethene   | BDL          | 0.02            |
| D035    | Methyl ethyl ketone  | BDL          | 0.5             |
| D039    | Tetrachloroethene    | BDL          | 0.02            |
| D040    | Trichloroethene      | BDL          | 0.02            |
| D043    | Vinyl chloride       | BDL          | 0.02            |

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Q.C. Information for Batch # 35698

Printed: 01/30/98 15:14:30

Sample Batch Information  
Volatile Organics Method : EPA 8260

| Sample ID | Preparation |      |    | Preparation<br>Notes | Analysis |      |     | Inst |
|-----------|-------------|------|----|----------------------|----------|------|-----|------|
|           | Date        | Time | By |                      | Date     | Time | By  |      |
| 35698BLK  | /           | /    |    |                      | 01/22/98 | 0825 | RFA | VOA2 |
| 35698LCS  | /           | /    |    |                      | 01/22/98 | 0914 | RFA | VOA2 |
| 35698LCSD | /           | /    |    |                      | 01/22/98 | 0938 | RFA | VOA2 |
| 0935      | /           | /    |    |                      | 01/22/98 | 1003 | RFA | VOA2 |
| 0935DUP   | /           | /    |    |                      | 01/22/98 | 1027 | RFA | VOA2 |
| 90935MS   | /           | /    |    |                      | 01/22/98 | 1051 | RFA | VOA2 |
| 90935MSD  | /           | /    |    |                      | 01/22/98 | 1116 | RFA | VOA2 |
| 90937-1   | /           | /    |    |                      | 01/22/98 | 1140 | RFA | VOA2 |
| 90937-2   | /           | /    |    |                      | 01/22/98 | 1204 | RFA | VOA2 |
| 90937-3   | /           | /    |    |                      | 01/22/98 | 1229 | RFA | VOA2 |

Analytical Services Inc. Batch QC  
For Report Number :90937  
Organochlorine Pesticides

Matrix : TCLP

Batch # 35703

Method : EPA 8080

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                | 92         | 106         | 14        | 32 - 127           | 0 - 40       |
| Heptachlor                         | 97         | 106         | 9         | 34 - 111           | 0 - 40       |
| Toxaphene                          | 38         | 43          | 11        | 25 - 160           | 0 - 40       |
| Heptachlor epoxide                 | 93         | 103         | 11        | 25 - 160           | 0 - 40       |
| Endrin                             | 76         | 82          | 9         | 30 - 147           | 0 - 40       |
| Chlordane                          | 94         | 104         | 10        | 25 - 160           | 0 - 40       |
| Methoxychlor                       | 107        | 115         | 8         | 25 - 160           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                 | 103        | 108         | 5         | 32 - 127           | 0 - 40       |
| Heptachlor                          | 107        | 114         | 6         | 34 - 111           | 0 - 40       |
| Toxaphene                           | 28         | 29          | 4         | 25 - 160           | 0 - 40       |
| Heptachlor epoxide                  | 104        | 110         | 5         | 25 - 160           | 0 - 40       |
| Endrin                              | 81         | 83          | 3         | 30 - 147           | 0 - 40       |
| Chlordane                           | 108        | 113         | 5         | 25 - 160           | 0 - 40       |
| Methoxychlor                        | 122        | 123         | 1         | 25 - 160           | 0 - 40       |

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Analytical Services Inc. Batch QC

Surrogate Recovery

Organochlorine Pesticides

Matrix : TCLP

Batch # 35703

Method : EPA 8080

## % Recovery Objectives

|    |                      |          |
|----|----------------------|----------|
| S1 | Dibutylchlorendate   | 34 - 151 |
| S2 | Tetrachloro-m-xylene | 40 - 111 |
| S3 | Decachlorobiphenyl   | 24 - 153 |

| Sample      | File       | S1  | S2  | S3  | S4 | S5 | S6 |
|-------------|------------|-----|-----|-----|----|----|----|
| 35703BLK    | 012298077F | 100 | 100 | 134 |    |    |    |
| 35703LCS    | 012298078F | 94  | 80  | 114 |    |    |    |
| 35703LCSD   | 012298079F | 103 | 91  | 124 |    |    |    |
| 90937-11    | 012298081F | 93  | 100 | 130 |    |    |    |
| 90937-12    | 012298082F | 101 | 98  | 121 |    |    |    |
| 90937-12MS  | 012298083F | 113 | 94  | 130 |    |    |    |
| 90937-12MSD | 012298084F | 112 | 98  | 123 |    |    |    |
| 90937-13    | 012298085F | 107 | 92  | 135 |    |    |    |
| 90937-14    | 012298086F | 102 | 91  | 129 |    |    |    |
| 90937-15    | 012298090F | 102 | 86  | 122 |    |    |    |
| 90937-16    | 012298091F | 95  | 89  | 126 |    |    |    |
| 90937-17    | 012298092F | 101 | 90  | 131 |    |    |    |
| 90937-18    | 012298093F | 104 | 94  | 133 |    |    |    |
| 90937-19    | 012298094F | 96  | 88  | 125 |    |    |    |
| 90937-19DUP | 012298095F | 88  | 98  | 132 |    |    |    |
| 90937-20    | 012298096F | 112 | 103 | 142 |    |    |    |
| 91161       | 012698014  | 69  | 74  | 51  |    |    |    |

Q.C. Information for Batch # 35703

Printed: 01/30/98 15:14:31

Blank Results Information  
Organochlorine Pesticides Method : EPA 8080

| Analyte |                    | Blank<br>Result | Detection<br>Limit |
|---------|--------------------|-----------------|--------------------|
| D020    | Chlordane          | BDL             | 0.01               |
| D012    | Endrin             | BDL             | 0.001              |
| D031    | Heptachlor         | BDL             | 0.001              |
| D031    | Heptachlor epoxide | BDL             | 0.001              |
| D013    | Lindane            | BDL             | 0.01               |
| D014    | Methoxychlor       | BDL             | 0.5                |
| D015    | Toxaphene          | BDL             | 0.05               |



Sample Batch Information  
Organochlorine Pesticides Method : EPA 8080

| Sample ID   | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst |
|-------------|-------------|------|-------|----------------------|----------|------|-----|------|
|             | Date        | Time | By    |                      | Date     | Time | By  |      |
| 35703BLK    | 01/22/98    | 0800 | JW/TB |                      | 01/23/98 | 0233 | JQZ | GC-3 |
| 35703LCS    | 01/22/98    | 0800 | JW/TB |                      | 02/23/98 | 0301 | JQZ | GC-3 |
| 35703LCSD   | 01/22/98    | 0800 | JW/TB |                      | 02/23/98 | 0329 | JQZ | GC-3 |
| 90937-11    | 01/22/98    | 0800 | JW/TB |                      | 02/23/98 | 0424 | JQZ | GC-3 |
| 90937-12    | 01/22/98    | 0800 | JW/TB |                      | 02/23/98 | 0452 | JQZ | GC-3 |
| 90937-12MS  | 01/22/98    | 0800 | JW/TB |                      | 02/23/98 | 0520 | JQZ | GC-3 |
| 90937-12MSD | 01/22/98    | 0800 | JW/TB |                      | 02/23/98 | 0548 | JQZ | GC-3 |
| 90937-13    | 01/22/98    | 0800 | JW/TB |                      | 02/23/98 | 0616 | JQZ | GC-3 |
| 90937-14    | 01/22/98    | 0800 | JW/TB |                      | 02/23/98 | 0644 | JQZ | GC-3 |
| 90937-15    | 01/22/98    | 0800 | JW/TB |                      | 02/23/98 | 0836 | JQZ | GC-3 |
| 90937-16    | 01/22/98    | 0800 | JW/TB |                      | 02/23/98 | 0904 | JQZ | GC-3 |
| 90937-17    | 01/22/98    | 0800 | JW/TB |                      | 02/23/98 | 0932 | JQZ | GC-3 |
| 90937-18    | 01/22/98    | 0800 | JW/TB |                      | 02/23/98 | 1000 | JQZ | GC-3 |
| 90937-19    | 01/22/98    | 0800 | JW/TB |                      | 02/23/98 | 1028 | JQZ | GC-3 |
| 90937-19DUP | 01/22/98    | 0800 | JW/TB |                      | 02/23/98 | 1028 | JQZ | GC-3 |
| 90937-20    | 01/22/98    | 0800 | JW/TB |                      | 01/23/98 | 1124 | JQZ | GC-3 |
| 91161       | 01/26/98    | 1500 | JW/TB |                      | 01/27/98 | 0115 | JQZ | GC-3 |

Analytical Services Inc. Batch QC  
For Report Number :90937  
Chlorinated Herbicides

Matrix : TCLP

Batch # 35773

Method : EPA 8150

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                              | 75         | 81          | 8         | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                  | 68         | 72          | 6         | 40 - 140           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                               | 78         | 86          | 10        | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 71         | 75          | 5         | 40 - 140           | 0 - 40       |

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Analytical Services Inc. Batch QC

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Surrogate Recovery  
Chlorinated Herbicides

Matrix : TCLP

Batch # 35773

Method : EPA 8150

## % Recovery Objectives

|             |            | S1  | DCAA |    | 18 - 163 |    |    |
|-------------|------------|-----|------|----|----------|----|----|
| Sample      | File       | S1  | S2   | S3 | S4       | S5 | S6 |
| 35773BLK    | 012398004F | 76  |      |    |          |    |    |
| 35773LCS    | 012398005F | 74  |      |    |          |    |    |
| 35773LCSD   | 012398006F | 85  |      |    |          |    |    |
| 90937-4     | 012398007F | 69  |      |    |          |    |    |
| 90937-18    | 012398008F | 72  |      |    |          |    |    |
| 90937-19    | 012398009F | 67  |      |    |          |    |    |
| 90937-19DUP | 012398010F | 65  |      |    |          |    |    |
| 90937-11MS  | 012398033F | 76  |      |    |          |    |    |
| 90937-11MSD | 012398034F | 84  |      |    |          |    |    |
| 90937-11    | 012398035F | 92  |      |    |          |    |    |
| 90937-12    | 012398036F | 134 |      |    |          |    |    |
| 90937-13    | 012398037F | 79  |      |    |          |    |    |
| 90937-14    | 012398038F | 66  |      |    |          |    |    |
| 90937-15    | 012398039F | 49  |      |    |          |    |    |
| 90937-17    | 012398041F | 91  |      |    |          |    |    |
| 90937-20    | 012398042F | 74  |      |    |          |    |    |
| 90937-16RA  | 012398047F | 122 |      |    |          |    |    |
| 91161       | 012798005F | 7   |      |    |          |    |    |

Q.C. Information for Batch # 35773

Printed: 01/30/98 15:14:32

Blank Results Information  
Chlorinated Herbicides Method : EPA 8150

| Analyte |                 | Blank<br>Result | Detection<br>Limit |
|---------|-----------------|-----------------|--------------------|
| D016    | 2,4-D           | BDL             | 0.05               |
| D017    | 2,4,5-TP Silvex | BDL             | 0.1                |

Sample Batch Information  
Chlorinated Herbicides Method : EPA 8150

| Sample ID   | Preparation<br>Date | Time | By    | Preparation<br>Notes | Analysis<br>Date | Time | By  | Inst |
|-------------|---------------------|------|-------|----------------------|------------------|------|-----|------|
| 90937-11    | 01/21/98            | 0500 | DH/KF |                      | 01/24/98         | 1115 | JQZ | GC-1 |
| 90937-12    | 01/21/98            | 0500 | DH/KF |                      | 01/24/98         | 1144 | JQZ | GC-1 |
| 90937-13    | 01/21/98            | 0500 | DH/KF |                      | 01/24/98         | 1212 | JQZ | GC-1 |
| 90937-14    | 01/21/98            | 0500 | DH/KF |                      | 01/24/98         | 1240 | JQZ | GC-1 |
| 90937-15    | 01/21/98            | 0500 | DH/KF |                      | 01/24/98         | 1308 | JQZ | GC-1 |
| 90937-16    | 01/21/98            | 0500 | DH/KF |                      | 01/24/98         | 1336 | JQZ | GC-1 |
| 90937-17    | 01/21/98            | 0500 | DH/KF |                      | 01/24/98         | 1336 | JQZ | GC-1 |
| 90937-18    | 01/21/98            | 0500 | DH/KF |                      | 01/23/98         | 2236 | JQZ | GC-1 |
| 90937-19    | 01/21/98            | 0500 | DH/KF |                      | 01/23/98         | 2304 | JQZ | GC-1 |
| 90937-20    | 01/21/98            | 0500 | DH/KF |                      | 01/24/98         | 1432 | JQZ | GC-1 |
| 90937-4     | 01/21/98            | 0500 | DH/KF |                      | 01/23/98         | 2139 | JQZ | GC-1 |
| 90937-11MS  | 01/21/98            | 0500 | DH/KF |                      | 01/24/98         | 1019 | JQZ | GC-1 |
| 90937-11MSD | 01/21/98            | 0500 | DH/KF |                      | 01/24/98         | 1047 | JQZ | GC-1 |
| 90937-19DUP | 01/21/98            | 0500 | DH/KF |                      | 01/23/98         | 2332 | JQZ | GC-1 |
| 35773BLK    | 01/21/98            | 0500 | DH/KF |                      | 01/23/98         | 0843 | JQZ | GC-1 |
| 35773LCS    | 01/21/98            | 0500 | DH/KF |                      | 01/23/98         | 2111 | JQZ | GC-1 |
| 35773LCSD   | 01/21/98            | 0500 | DH/KF |                      | 01/23/98         | 2139 | JQZ | GC-1 |
| 90937-16RA  | /                   | /    |       |                      | 01/26/98         | 1114 | JQZ | GC-1 |
| 91161       | 01/26/98            | 0355 | DH    |                      | 01/27/98         | 1521 | JQZ | GC-1 |

Analytical Services Inc. Batch QC  
For Report Number :90937  
Volatile Organics

Matrix : Aqueous

Batch # 35808

Method : EPA 8260

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 1,1-Dichloroethene                 | 76         | 79          | 3         | 61 - 145           | 0 - 14       |
| Trichloroethene                    | 85         | 85          | 1         | 71 - 120           | 0 - 14       |
| Benzene                            | 87         | 83          | 4         | 76 - 127           | 0 - 11       |
| Toluene                            | 91         | 93          | 2         | 76 - 125           | 0 - 13       |
| Chlorobenzene                      | 90         | 93          | 3         | 75 - 130           | 0 - 13       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 1,1-Dichloroethene                  | 76         | 63          | 19        | 61 - 145           | 0 - 14       |
| Trichloroethene                     | 92         | 73          | 23        | 71 - 120           | 0 - 14       |
| Benzene                             | 92         | 76          | 20        | 76 - 127           | 0 - 11       |
| Toluene                             | 96         | 73          | 28        | 76 - 125           | 0 - 13       |
| Chlorobenzene                       | 93         | 83          | 12        | 75 - 130           | 0 - 13       |

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Aqueous

Batch # 35808

Method : EPA 8260

## % Recovery Objectives

|    |                       |          |
|----|-----------------------|----------|
| S1 | 1,2-Dichloroethane-d4 | 76 - 119 |
| S2 | Toluene-d8            | 88 - 110 |
| S3 | Ethylbenzene-d10      | 75 - 115 |
| S4 | 4-Bromofluorobenzene  | 86 - 120 |

| Sample              | File  | S1  | S2  | S3 | S4  | S5 | S6 |
|---------------------|-------|-----|-----|----|-----|----|----|
| 35808LCS            | B2498 | 98  | 105 | 93 | 95  |    |    |
| 35808LCSD           | B2499 | 100 | 100 | 92 | 97  |    |    |
| 35808BLK            | B2500 | 96  | 101 | 93 | 97  |    |    |
| 90779-1             | B2501 | 107 | 104 | 89 | 95  |    |    |
| 90779-2             | B2502 | 102 | 98  | 90 | 92  |    |    |
| 90779-3             | B2503 | 107 | 99  | 94 | 96  |    |    |
| 90779-4             | B2504 | 107 | 103 | 94 | 96  |    |    |
| 90798-1             | B2505 | 104 | 100 | 97 | 104 |    |    |
| 90798-2             | B2506 | 105 | 100 | 95 | 105 |    |    |
| 90798-2DUP          | B2507 | 111 | 100 | 91 | 98  |    |    |
| ^^Note: AKA 90798-6 |       |     |     |    |     |    |    |
| 90798-2MS           | B2508 | 110 | 103 | 93 | 101 |    |    |
| ^^Note: AKA 90798-7 |       |     |     |    |     |    |    |
| 90798-2MSD          | B2509 | 111 | 97  | 94 | 100 |    |    |
| ^^Note: AKA 90798-8 |       |     |     |    |     |    |    |
| 90798-3             | B2510 | 116 | 107 | 95 | 104 |    |    |
| 90798-4             | B2511 | 112 | 98  | 91 | 96  |    |    |
| 90798-5             | B2512 | 126 | 103 | 97 | 99  |    |    |
| 90798-9             | B2513 | 115 | 99  | 94 | 101 |    |    |
| 90798-10            | B2514 | 108 | 103 | 95 | 97  |    |    |
| 90798-5DUP          | B2532 | 112 | 97  | 95 | 102 |    |    |
| 90937-21            | B2543 | 94  | 105 | 94 | 96  |    |    |
| 90937-22            | B2544 | 99  | 105 | 92 | 97  |    |    |
| 90937-23            | B2545 | 100 | 105 | 93 | 98  |    |    |
| 91041-1             | B2558 | 111 | 103 | 91 | 99  |    |    |
| 91041-2             | B2559 | 107 | 101 | 96 | 101 |    |    |
| 35808BLK2           | A0625 | 114 | 100 | 99 | 97  |    |    |
| 91075-3             | A0630 | 114 | 104 | 95 | 94  |    |    |
| 91075-4             | A0631 | 106 | 96  | 92 | 98  |    |    |
| 91075-5             | A0632 | 100 | 89  | 95 | 94  |    |    |
| 91075-6             | A0633 | 111 | 107 | 97 | 99  |    |    |

Q.C. Information for Batch # 35808

Printed: 01/30/98 15:14:33

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Blank Results Information  
Volatile Organics Method : EPA 8260

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| Analyte              | Blank<br>Result | Detection<br>Limit |
|----------------------|-----------------|--------------------|
| Benzene              | BDL             | 0.4                |
| Carbon tetrachloride | BDL             | 2.1                |
| Chloroform           | BDL             | 0.3                |
| Chlorobenzene        | BDL             | 0.4                |
| 1,2-Dichloroethane   | BDL             | 0.6                |
| 1,1-Dichloroethene   | BDL             | 1.2                |
| Methyl ethyl ketone  | BDL             | 1                  |
| Tetrachloroethene    | BDL             | 1.4                |
| Trichloroethene      | BDL             | 1                  |
| Vinyl chloride       | BDL             | 1.1                |

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Sample Batch Information  
Volatile Organics Method : EPA 8260

| Sample ID  | Preparation |      |    | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-------------|------|----|----------------------|----------|------|-----|------|
|            | Date        | Time | By |                      | Date     | Time | By  |      |
| 35808LCS   | /           | /    |    |                      | 01/25/98 | 1324 | RFA | VOA2 |
| 35808LCSD  | /           | /    |    |                      | 01/25/98 | 1349 | RFA | VOA2 |
| 35808BLK   | /           | /    |    |                      | 01/25/98 | 1413 | RFA | VOA2 |
| 90779-1    | /           | /    |    |                      | 01/25/98 | 1438 | RFA | VOA2 |
| 90779-2    | /           | /    |    |                      | 01/25/98 | 1502 | RFA | VOA2 |
| 90779-3    | /           | /    |    |                      | 01/25/98 | 1526 | RFA | VOA2 |
| 90779-4    | /           | /    |    |                      | 01/25/98 | 1550 | RFA | VOA2 |
| 90798-1    | /           | /    |    |                      | 01/25/98 | 1615 | RFA | VOA2 |
| 90798-2    | /           | /    |    |                      | 01/25/98 | 1639 | RFA | VOA2 |
| 90798-2DUP | /           | /    |    |                      | 01/25/98 | 1704 | RFA | VOA2 |
| 90798-2MS  | /           | /    |    |                      | 01/25/98 | 1729 | RFA | VOA2 |
| 90798-2MSD | /           | /    |    |                      | 01/25/98 | 1753 | RFA | VOA2 |
| 90798-3    | /           | /    |    |                      | 01/25/98 | 1817 | RFA | VOA2 |
| 90798-4    | /           | /    |    |                      | 01/25/98 | 1842 | RFA | VOA2 |
| 90798-5    | /           | /    |    |                      | 01/25/98 | 1906 | RFA | VOA2 |
| 90798-9    | /           | /    |    |                      | 01/25/98 | 1930 | RFA | VOA2 |
| 90798-10   | /           | /    |    |                      | 01/25/98 | 1955 | RFA | VOA2 |
| 90798-5DUP | /           | /    |    |                      | 01/26/98 | 1444 | RFA | VOA2 |
| 90937-21   | /           | /    |    |                      | 01/26/98 | 1711 | LLP | VOA2 |
| 90937-22   | /           | /    |    |                      | 01/26/98 | 1735 | LLP | VOA2 |
| 90937-23   | /           | /    |    |                      | 01/26/98 | 1800 | LLP | VOA2 |
| 91041-1    | /           | /    |    |                      | 01/27/98 | 0108 | LLP | VOA2 |
| 91041-2    | /           | /    |    |                      | 01/27/98 | 0132 | LLP | VOA2 |
| 35808BLK2  | /           | /    |    |                      | 01/28/98 | 1628 | LLP | VOA1 |
| 91075-3    | /           | /    |    |                      | 01/28/98 | 1918 | LLP | VOA1 |
| 91075-4    | /           | /    |    |                      | 01/28/98 | 1946 | LLP | VOA1 |
| 91075-5    | /           | /    |    |                      | 01/28/98 | 2014 | LLP | VOA1 |
| 91075-6    | /           | /    |    |                      | 01/28/98 | 2042 | LLP | VOA1 |

Analytical Services Inc. Batch QC  
For Report Number :90937  
Volatile Organics

Matrix : TCLP

Batch # 35815

Method : EPA 8260

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Benzene                            | 101        | 110         | 9         | 90 - 115           | 0 - 13       |
| Carbon tetrachloride               | 109        | 115         | 5         | 55 - 115           | 0 - 15       |
| Chlorobenzene                      | 100        | 109         | 8         | 87 - 109           | 0 - 10       |
| Chloroform                         | 101        | 111         | 9         | 55 - 115           | 0 - 15       |
| 1,2-Dichloroethane                 | 101        | 110         | 8         | 90 - 115           | 0 - 13       |
| 1,1-Dichloroethene                 | 106        | 106         | 1         | 55 - 111           | 0 - 15       |
| MEK (2-Butanone)                   | 63         | 60          | 5         | 55 - 115           | 0 - 15       |
| Tetrachloroethene                  | 95         | 105         | 11        | 55 - 115           | 0 - 15       |
| Trichloroethene                    | 102        | 109         | 7         | 78 - 110           | 0 - 11       |
| Vinyl chloride                     | 114        | 111         | 2         | 55 - 115           | 0 - 15       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Benzene                             | 93         | 111         | 18        | 90 - 115           | 0 - 13       |
| Carbon tetrachloride                | 87         | 110         | 23        | 55 - 115           | 0 - 15       |
| Chlorobenzene                       | 88         | 102         | 14        | 87 - 109           | 0 - 10       |
| Chloroform                          | 92         | 109         | 17        | 55 - 115           | 0 - 15       |
| 1,2-Dichloroethane                  | 94         | 107         | 14        | 90 - 115           | 0 - 13       |
| 1,1-Dichloroethene                  | 89         | 120         | 30        | 55 - 111           | 0 - 15       |
| MEK (2-Butanone)                    | 66         | 74          | 12        | 55 - 115           | 0 - 15       |
| Tetrachloroethene                   | 79         | 92          | 15        | 55 - 115           | 0 - 15       |
| Trichloroethene                     | 86         | 102         | 17        | 78 - 110           | 0 - 11       |
| Vinyl chloride                      | 93         | 112         | 19        | 55 - 115           | 0 - 15       |

Analytical Services Inc. Batch QC  
Surrogate Recovery  
Volatile Organics

Matrix : TCLP

Batch # 35815

Method : EPA 8260

## % Recovery Objectives

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|    |                       |          |
|----|-----------------------|----------|
| S1 | 1,2-Dichloroethane-d4 | 76 - 119 |
| S2 | Toluene-d8            | 88 - 110 |
| S3 | Ethylbenzene-d10      | 75 - 115 |
| S4 | 4-Bromofluorobenzene  | 86 - 115 |

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| Sample      | File  | S1  | S2  | S3 | S4 | S5 | S6 |
|-------------|-------|-----|-----|----|----|----|----|
| 35815LCS    | C1040 | 98  | 102 | 99 | 99 |    |    |
| 35815LCSD   | C1041 | 99  | 104 | 99 | 99 |    |    |
| 35815BLK    | C1054 | 107 | 100 | 93 | 95 |    |    |
| 90937-4     | C1046 | 99  | 102 | 97 | 97 |    |    |
| 90937-5     | C1047 | 100 | 102 | 98 | 97 |    |    |
| 90937-6     | C1048 | 99  | 102 | 98 | 98 |    |    |
| 90937-7     | C1049 | 99  | 102 | 98 | 97 |    |    |
| 90937-8     | C1050 | 99  | 102 | 99 | 97 |    |    |
| 90937-9     | C1051 | 103 | 102 | 97 | 97 |    |    |
| 90937-10    | C1052 | 100 | 102 | 96 | 95 |    |    |
| 90937-11    | C1053 | 100 | 103 | 97 | 97 |    |    |
| 90937-12    | C1055 | 121 | 102 | 90 | 98 |    |    |
| 90937-13    | C1056 | 110 | 103 | 94 | 97 |    |    |
| 90937-14    | C1057 | 108 | 103 | 96 | 99 |    |    |
| 90937-15    | C1058 | 108 | 102 | 95 | 97 |    |    |
| 90937-16    | C1059 | 110 | 103 | 95 | 98 |    |    |
| 90937-17    | C1060 | 106 | 103 | 95 | 96 |    |    |
| 90937-18    | C1061 | 102 | 102 | 97 | 97 |    |    |
| 90937-19    | C1062 | 113 | 103 | 94 | 97 |    |    |
| 90937-20    | C1063 | 104 | 102 | 96 | 97 |    |    |
| 90937-12DUP | C1066 | 106 | 102 | 96 | 97 |    |    |
| 90937-8MS   | C1064 | 104 | 102 | 97 | 98 |    |    |
| 90937-8MSD  | C1065 | 106 | 101 | 96 | 96 |    |    |

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Q.C. Information for Batch # 35815

Printed: 01/30/98 15:14:34

Blank Results Information  
Volatile Organics Method : EPA 8260

| Analyte |                      | Blank Result | Detection Limit |
|---------|----------------------|--------------|-----------------|
| D018    | Benzene              | BDL          | 0.02            |
| D019    | Carbon tetrachloride | BDL          | 0.02            |
| D021    | Chlorobenzene        | BDL          | 0.02            |
| D022    | Chloroform           | BDL          | 0.02            |
| D028    | 1,2-Dichloroethane   | BDL          | 0.02            |
| D029    | 1,1-Dichloroethene   | BDL          | 0.02            |
| D035    | Methyl ethyl ketone  | BDL          | 0.5             |
| D039    | Tetrachloroethene    | BDL          | 0.02            |
| D040    | Trichloroethene      | BDL          | 0.02            |
| D043    | Vinyl chloride       | BDL          | 0.02            |

Q.C. Information for Batch # 35815

Printed: 01/30/98 15:14:34

Sample Batch Information  
Volatile Organics      Method : EPA 8260

| Sample ID   | Preparation |      |    | Preparation<br>Notes | Analysis |      |     | Inst |
|-------------|-------------|------|----|----------------------|----------|------|-----|------|
|             | Date        | Time | By |                      | Date     | Time | By  |      |
| 35815LCS    | /           | /    |    |                      | 01/26/98 | 0727 | RFA | VOA3 |
| 35815LCSD   | /           | /    |    |                      | 01/26/98 | 0753 | RFA | VOA3 |
| 35815BLK    | /           | /    |    |                      | 01/26/98 | 1334 | RFA | VOA3 |
| 90937-4     | /           | /    |    |                      | 01/26/98 | 1004 | RFA | VOA3 |
| 90937-5     | /           | /    |    |                      | 01/26/98 | 1029 | RFA | VOA3 |
| 90937-6     | /           | /    |    |                      | 01/26/98 | 1055 | RFA | VOA3 |
| 90937-7     | /           | /    |    |                      | 01/26/98 | 1121 | RFA | VOA3 |
| 90937-8     | /           | /    |    |                      | 01/26/98 | 1148 | RFA | VOA3 |
| 90937-9     | /           | /    |    |                      | 01/26/98 | 1214 | RFA | VOA3 |
| 90937-10    | /           | /    |    |                      | 01/26/98 | 1241 | RFA | VOA3 |
| 90937-11    | /           | /    |    |                      | 01/26/98 | 1307 | RFA | VOA3 |
| 90937-12    | /           | /    |    |                      | 01/26/98 | 1401 | RFA | VOA3 |
| 90937-13    | /           | /    |    |                      | 01/26/98 | 1427 | RFA | VOA3 |
| 90937-14    | /           | /    |    |                      | 01/26/98 | 1453 | RFA | VOA3 |
| 90937-15    | /           | /    |    |                      | 01/26/98 | 1520 | RFA | VOA3 |
| 90937-16    | /           | /    |    |                      | 01/26/98 | 1547 | RFA | VOA3 |
| 90937-17    | /           | /    |    |                      | 01/26/98 | 1613 | RFA | VOA3 |
| 90937-18    | /           | /    |    |                      | 01/26/98 | 1640 | RFA | VOA3 |
| 90937-19    | /           | /    |    |                      | 01/26/98 | 1707 | RFA | VOA3 |
| 90937-20    | /           | /    |    |                      | 01/26/98 | 1734 | RFA | VOA3 |
| 90937-12DUP | /           | /    |    |                      | 01/26/98 | 2000 | RFA | VOA3 |
| 90937-8MS   | /           | /    |    |                      | 01/26/98 | 1801 | RFA | VOA3 |
| 90937-8MSD  | /           | /    |    |                      | 01/26/98 | 1827 | RFA | VOA3 |

Analytical Services Inc. Batch QC  
For Report Number :90937

## QC Batch General Information

| Batch Number                             | Analyte   | Analysis Method | Matrix   | Blank Result | Prep. Method |
|------------------------------------------|-----------|-----------------|----------|--------------|--------------|
| 34882                                    | Hg        | EPA 7470        | TCLP     | <            | 0.0002       |
| 35390                                    | Ag        | EPA 6010        | TCLP     | <            | 0.0100       |
| 35390                                    | As        | EPA 6010        | TCLP     | <            | 0.0300       |
| 35390                                    | Ba        | EPA 6010        | TCLP     | <            | 0.3000       |
| ^^Note : DL ADJUSTED                     |           |                 |          |              |              |
| 35390                                    | Cd        | EPA 6010        | TCLP     | <            | 0.0100       |
| 35390                                    | Cr        | EPA 6010        | TCLP     | <            | 0.0100       |
| 35390                                    | Pb        | EPA 6010        | TCLP     | <            | 0.0300       |
| 35390                                    | Se        | EPA 6010        | TCLP     | <            | 0.0400       |
| 35396                                    | Ag        | EPA 6010        | Aqueous  | <            | 0.0100       |
| ^^Note : BATCH PASSES ON LCS/LCSD/MS/MSD |           |                 |          |              |              |
| 35396                                    | As        | EPA 6010        | Aqueous  | <            | 0.0100       |
| 35396                                    | Ba        | EPA 6010        | Aqueous  | <            | 0.0100       |
| 35396                                    | Cd        | EPA 6010        | Aqueous  | <            | 0.0050       |
| 35396                                    | Cr        | EPA 6010        | Aqueous  | <            | 0.0050       |
| 35396                                    | Pb        | EPA 6010        | Aqueous  | <            | 0.0050       |
| 35396                                    | Se        | EPA 6010        | Aqueous  | <            | 0.0050       |
| 35666                                    | Ign       | EPA 1010        | Aq/Solid |              | 0.0000       |
| 35667                                    | Ign       | EPA 1010        | Aq/Solid |              | 0.0000       |
| 35669                                    | pH        | EPA 9045        | Soil     |              | 5.8100       |
| 35670                                    | pH        | EPA 9040        | Aqueous  |              | 0.0000       |
| 35670                                    | pH        | EPA 9045        | Soil     |              | 5.7600       |
| 35710                                    | React. CN | EPA 7.3.3.2     | Aq/Soil  | <            | 1.0000       |
| 35711                                    | React. CN | EPA 7.3.3.2     | Aq/Soil  | <            | 1.0000       |
| 35716                                    | React S2  | EPA 7.3.4.2     | Aq/Soil  | <            | 5.0000       |
| 35717                                    | React S2  | EPA 7.3.4.2     | Aq/Soil  | <            | 5.0000       |
| 35727                                    | Hg        | EPA 7470        | Aqueous  | <            | 0.0002       |

## Lab Control Information

| Batch Number | Analyte | Method   | LC %Rec | LCD %Rec | LC RPD | %Recovery Range | RPD Range |
|--------------|---------|----------|---------|----------|--------|-----------------|-----------|
| 34882        | Hg      | EPA 7470 | 89      | 89       | 0      | 76 - 124        | 0 - 20    |
| 35390        | Ag      | EPA 6010 | 97      | 86       | 12     | 76 - 124        | 0 - 20    |
| 35390        | As      | EPA 6010 | 100     | 100      | 0      | 76 - 124        | 0 - 20    |
| 35390        | Ba      | EPA 6010 | 97      | 97       | 0      | 76 - 124        | 0 - 20    |
| 35390        | Cd      | EPA 6010 | 120     | 110      | 9      | 76 - 124        | 0 - 20    |
| 35390        | Cr      | EPA 6010 | 100     | 98       | 2      | 76 - 124        | 0 - 20    |
| 35390        | Pb      | EPA 6010 | 100     | 100      | 0      | 76 - 124        | 0 - 20    |
| 35390        | Se      | EPA 6010 | 100     | 100      | 0      | 76 - 124        | 0 - 20    |
| 35396        | Ag      | EPA 6010 | 100     | 95       | 5      | 76 - 124        | 0 - 20    |
| 35396        | As      | EPA 6010 | 93      | 90       | 3      | 76 - 124        | 0 - 20    |

Analytical Services Inc. Batch QC  
For Report Number :90937

## Lab Control Information

| Batch<br>Number | Analyte   | Method      | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-----------------|-----------|-------------|------------|-------------|-----------|--------------------|--------------|
| 35396           | Ba        | EPA 6010    | 92         | 89          | 3         | 76 - 124           | 0 - 20       |
| 35396           | Cd        | EPA 6010    | 88         | 86          | 2         | 76 - 124           | 0 - 20       |
| 35396           | Cr        | EPA 6010    | 93         | 90          | 3         | 76 - 124           | 0 - 20       |
| 35396           | Pb        | EPA 6010    | 90         | 88          | 2         | 76 - 124           | 0 - 20       |
| 35396           | Se        | EPA 6010    | 85         | 83          | 2         | 76 - 124           | 0 - 20       |
| 35669           | pH        | EPA 9045    | 101        | 102         | 1         | 80 - 120           | 0 - 10       |
| 35670           | pH        | EPA 9040    | 101        | 101         | 0         | 80 - 120           | 0 - 20       |
| 5670            | pH        | EPA 9045    | 101        | 101         | 0         | 80 - 120           | 0 - 20       |
| 5710            | React. CN | EPA 7.3.3.2 | 109        | 111         | 2         | 75 - 125           | 0 - 30       |
| 35711           | React. CN | EPA 7.3.3.2 | 109        | 111         | 2         | 75 - 125           | 0 - 30       |
| 35716           | React S2  | EPA 7.3.4.2 | 95         | 90          | 5         | 60 - 140           | 0 - 40       |
| 5717            | React S2  | EPA 7.3.4.2 | 90         | 95          | 5         | 60 - 140           | 0 - 40       |
| 35727           | Hg        | EPA 7470    | 91         | 93          | 2         | 76 - 124           | 0 - 20       |

## Matrix Spike Information

| Batch<br>Number | Analyte | Method   | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-----------------|---------|----------|------------|-------------|-----------|--------------------|--------------|
| 34882           | Hg      | EPA 7470 | 79         | 77          | 3         | 76 - 124           | 0 - 20       |
| 35390           | Ag      | EPA 6010 | 110        | 120         | 9         | 76 - 124           | 0 - 20       |
| 35390           | As      | EPA 6010 | 95         | 96          | 1         | 76 - 124           | 0 - 20       |
| 35390           | Ba      | EPA 6010 | 90         | 91          | 1         | 76 - 124           | 0 - 20       |
| 35390           | Cd      | EPA 6010 | 99         | 100         | 1         | 76 - 124           | 0 - 20       |
| 35390           | Cr      | EPA 6010 | 88         | 90          | 2         | 76 - 124           | 0 - 20       |
| 35390           | Pb      | EPA 6010 | 82         | 85          | 4         | 76 - 124           | 0 - 20       |
| 35390           | Se      | EPA 6010 | 100        | 99          | 1         | 76 - 124           | 0 - 20       |
| 35396           | Ag      | EPA 6010 | 93         | 98          | 5         | 76 - 124           | 0 - 20       |
| 35396           | As      | EPA 6010 | 87         | 91          | 4         | 76 - 124           | 0 - 20       |
| 35396           | Ba      | EPA 6010 | 87         | 91          | 4         | 76 - 124           | 0 - 20       |
| 35396           | Cd      | EPA 6010 | 84         | 87          | 4         | 76 - 124           | 0 - 20       |
| 35396           | Cr      | EPA 6010 | 88         | 92          | 4         | 76 - 124           | 0 - 20       |
| 35396           | Pb      | EPA 6010 | 86         | 89          | 3         | 76 - 124           | 0 - 20       |
| 35396           | Se      | EPA 6010 | 80         | 82          | 2         | 76 - 124           | 0 - 20       |
| 35727           | Hg      | EPA 7470 | 69         | 60          | 14        | 76 - 124           | 0 - 20       |

Analytical Services Inc. Batch QC  
For Report Number :90937

## Post Digestion Spike Information

| Batch<br>Number | Analyte | Method   | PDS<br>%Rec | %Recovery<br>Range |
|-----------------|---------|----------|-------------|--------------------|
| 35390           | Ag      | EPA 6010 | 100         | 76 - 124           |
| 35390           | As      | EPA 6010 | 90          | 76 - 124           |
| 35390           | Ba      | EPA 6010 | 85          | 76 - 124           |
| 35390           | Cd      | EPA 6010 | 96          | 76 - 124           |
| 35390           | Cr      | EPA 6010 | 85          | 76 - 124           |
| 35390           | Pb      | EPA 6010 | 81          | 76 - 124           |
| 35390           | Se      | EPA 6010 | 92          | 76 - 124           |
| 35396           | Ag      | EPA 6010 | 42          | 76 - 124           |
| 35396           | As      | EPA 6010 | 88          | 76 - 124           |
| 35396           | Ba      | EPA 6010 | 91          | 76 - 124           |
| 35396           | Cd      | EPA 6010 | 88          | 76 - 124           |
| 35396           | Cr      | EPA 6010 | 92          | 76 - 124           |
| 35396           | Pb      | EPA 6010 | 89          | 76 - 124           |
| 35396           | Se      | EPA 6010 | 83          | 76 - 124           |

## Unspiked Sample Duplicate Information

| Batch<br>Number | Analyte   | Method      | Sample 1<br>RPD | Sample 2<br>RPD | RPD<br>Range |
|-----------------|-----------|-------------|-----------------|-----------------|--------------|
| 35669           | pH        | EPA 9045    | 1               | 3               | 0 - 10       |
| 35670           | pH        | EPA 9040    | 0               | 0               | 0 - 20       |
| 35670           | pH        | EPA 9045    | 0               | 0               | 0 - 20       |
| 35710           | React. CN | EPA 7.3.3.2 | 0               | 0               | 0 - 30       |
| 35711           | React. CN | EPA 7.3.3.2 | 0               |                 | 0 - 30       |
| 35716           | React S2  | EPA 7.3.4.2 | 0               | 0               | 0 - 40       |
| 35717           | React S2  | EPA 7.3.4.2 | 0               |                 | 0 - 40       |



Q.C. Information for Batch # 34882

For Report Number :90937

Sample Batch Information  
Analysis : Hg

| Sample ID  | Tag | Preparation |      |     | Preparation | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|-------------|----------|------|-----|------|
|            |     | Date        | Time | By  | Notes       | Date     | Time | By  |      |
| 34882BLANK | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1412 | FBS | HG1  |
| 34882LCS   | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1414 | FBS | HG1  |
| 34882LCSD  | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1416 | FBS | HG1  |
| 90937-1MS  | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1419 | FBS | HG1  |
| 90937-1MSD | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1421 | FBS | HG1  |
| 90937-1DUP | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1423 | FBS | HG1  |
| 90937-4    | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1432 | FBS | HG1  |
| 90937-5    | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1440 | FBS | HG1  |
| 90937-6    | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1442 | FBS | HG1  |
| 90937-7    | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1444 | FBS | HG1  |
| 90937-8    | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1446 | FBS | HG1  |
| 90937-9    | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1449 | FBS | HG1  |
| 90937-2    | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1428 | FBS | HG1  |
| 90937-3    | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1430 | FBS | HG1  |
| 90937-10   | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1451 | FBS | HG1  |
| 90937-1    | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1426 | FBS | HG1  |
| 90937-11   | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1453 | FBS | HG1  |
| 90937-12   | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1459 | FBS | HG1  |
| 90937-13   | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1458 | FBS | HG1  |
| 90937-14   | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1500 | FBS | HG1  |
| 90937-15   | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1507 | FBS | HG1  |
| 90937-16   | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1510 | FBS | HG1  |
| 90937-17   | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1512 | FBS | HG1  |
| 90937-18   | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1514 | FBS | HG1  |
| 90937-19   | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1517 | FBS | HG1  |
| 90937-20   | HG  | 01/21/98    | 0745 | FBS |             | 01/21/98 | 1521 | FBS | HG1  |

Q.C. Information for Batch # 35390

For Report Number :90937

Sample Batch Information  
Analysis : Ag, As, Ba, Cd, Cr, Pb, Se

| Sample ID   | Preparation |          |          | Preparation<br>Notes | Analysis |      |     | Inst |
|-------------|-------------|----------|----------|----------------------|----------|------|-----|------|
|             | Tag         | Date     | Time By  |                      | Date     | Time | By  |      |
| 90937-1     |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1306 | MCW | ICP1 |
| 90937-10    |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1354 | MCW | ICP1 |
| 90937-2     |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1310 | MCW | ICP1 |
| 90937-3     |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1323 | MCW | ICP1 |
| 90937-4     |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1328 | MCW | ICP1 |
| 90937-5     |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1332 | MCW | ICP1 |
| 90937-6     |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1336 | MCW | ICP1 |
| 90937-7     |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1341 | MCW | ICP1 |
| 90937-8     |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1345 | MCW | ICP1 |
| 90937-9     |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1349 | MCW | ICP1 |
| 35390BLANK  |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1231 | MCW | ICP1 |
| 35390LCS    |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1235 | MCW | ICP1 |
| 35390LCSD   |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1240 | MCW | ICP1 |
| 90937-18MS  |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1244 | MCW | ICP1 |
| 90937-18MSD |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1249 | MCW | ICP1 |
| 90937-18PDS |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1253 | MCW | ICP1 |
| 90937-18DUP |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1257 | MCW | ICP1 |
| 90937-11    |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1358 | MCW | ICP1 |
| 90937-12    |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1402 | MCW | ICP1 |
| 90937-13    |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1429 | MCW | ICP1 |
| 90937-14    |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1433 | MCW | ICP1 |
| 90937-15    |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1437 | MCW | ICP1 |
| 90937-16    |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1442 | MCW | ICP1 |
| 90937-17    |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1446 | MCW | ICP1 |
| 90937-18    |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1302 | MCW | ICP1 |
| 90937-19    |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1450 | MCW | ICP1 |
| 90937-20    |             | 01/22/98 | 0855 KSP | 36                   | 01/22/98 | 1455 | MCW | ICP1 |

Sample Batch Information  
Analysis : Ag, As, Ba, Cd, Cr, Pb, Se

| Sample ID   | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst  |
|-------------|-----|-------------|------|-----|----------------------|----------|------|-----|-------|
|             |     | Date        | Time | By  |                      | Date     | Time | By  |       |
| 90937-21    |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1519 | MAB | ICP2A |
| 90937-22    |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1522 | MAB | ICP2A |
| 35396BLANK  |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1457 | MAB | ICP2A |
| 35396LCS    |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1500 | MAB | ICP2A |
| 35396LCSD   |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1503 | MAB | ICP2A |
| 90937-21MS  |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1506 | MAB | ICP2A |
| 90937-21MSD |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1509 | MAB | ICP2A |
| 90937-22PDS |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1513 | MAB | ICP2A |
| 90937-22DUP |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1516 | MAB | ICP2A |
| 90985       |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1525 | MAB | ICP2A |
| 91068-1     |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1534 | MAB | ICP2A |
| 91068-10    |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1537 | MAB | ICP2A |
| 91068-11    |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1541 | MAB | ICP2A |
| 91068-12    |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1544 | MAB | ICP2A |
| 91068-13    |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1547 | MAB | ICP2A |
| 91068-2     |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1550 | MAB | ICP2A |
| 91068-3     |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1553 | MAB | ICP2A |
| 91068-4     |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1556 | MAB | ICP2A |
| 91068-5     |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1559 | MAB | ICP2A |
| 91068-6     |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1602 | MAB | ICP2A |
| 91068-7     |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1612 | MAB | ICP2A |
| 91068-8     |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1615 | MAB | ICP2A |
| 91068-9     |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1618 | MAB | ICP2A |
| 91031-2     |     | 01/23/98    | 0915 | DCM | TRACE                | 01/23/98 | 1621 | MAB | ICP2A |
| 90918-7RR   |     | 01/23/98    | 1100 | DCM | TRACE                | 01/23/98 | 1624 | MAB | ICP2A |
| 90918-6RR   |     | 01/23/98    | 1100 | DCM | TRACE                | 01/23/98 | 1627 | MAB | ICP2A |
| 90918-5RR   |     | 01/23/98    | 1100 | DCM | TRACE                | 01/23/98 | 1630 | MAB | ICP2A |

Q.C. Information for Batch # 35666

For Report Number :90937

Sample Batch Information  
Analysis : Ign

| Sample ID   | Tag | Preparation<br>Date | Preparation<br>Time By | Preparation<br>Notes | Analysis<br>Date | Analysis<br>Time By | Inst |
|-------------|-----|---------------------|------------------------|----------------------|------------------|---------------------|------|
| 90935       |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-1     |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-2     |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-3     |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-4     |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-5     |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-6     |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-7     |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-8     |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-9     |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-10    |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-11    |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-12    |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-13    |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-14    |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-15    |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-16    |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-17    |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-18    |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-19    |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90937-19DUP |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |
| 90935DUP    |     | /                   | /                      |                      | 01/20/98         | 1245 nl             |      |

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Q.C. Information for Batch # 35667

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For Report Number :90937

Sample Batch Information  
Analysis : Ign

| Sample ID   | Tag | Preparation<br>Date | Preparation<br>Time By | Preparation<br>Notes | Analysis<br>Date | Analysis<br>Time By | Ins |
|-------------|-----|---------------------|------------------------|----------------------|------------------|---------------------|-----|
| 90937-20    |     | /                   | /                      |                      | 01/20/98         | 1500 NL             |     |
| 90937-20DUP |     | /                   | /                      |                      | 01/20/98         | 1500 NL             |     |

Q.C. Information for Batch # 35669

For Report Number :90937

Sample Batch Information  
Analysis : pH

| Sample ID   | Tag | Preparation |         | Preparation<br>Notes | Analysis |      |    | Inst |
|-------------|-----|-------------|---------|----------------------|----------|------|----|------|
|             |     | Date        | Time By |                      | Date     | Time | By |      |
| 35669CALCHK |     | /           | /       |                      | 01/20/98 | 1400 | JN | 410A |
| 35669LCS    |     | /           | /       |                      | 01/20/98 | 1400 | JN | 410A |
| 35669LCSD   |     | /           | /       |                      | 01/20/98 | 1400 | JN | 410A |
| 35669BLK    |     | /           | /       |                      | 01/20/98 | 1400 | JN | 410A |
| 90935       |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-1     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-1DUP  |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-2     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-3     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-4     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-5     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-6     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-7     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-8     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-9     |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-10    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-11    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-11DUP |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-12    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-13    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-14    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-15    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-16    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-17    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-18    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |
| 90937-19    |     | /           | /       |                      | 01/20/98 | 1430 | JN | 410A |

Sample Batch Information  
Analysis : pH, pH

| Sample ID   | Tag | Preparation |         | Preparation<br>Notes | Analysis |      |    | Inst |
|-------------|-----|-------------|---------|----------------------|----------|------|----|------|
|             |     | Date        | Time By |                      | Date     | Time | By |      |
| 35670CALCHK |     | /           | /       |                      | 01/20/98 | 1500 | JN | 410A |
| 35670LCS    |     | /           | /       |                      | 01/20/98 | 1500 | JN | 410A |
| 35670LCSD   |     | /           | /       |                      | 01/20/98 | 1500 | JN | 410A |
| 35670BLK    |     | /           | /       |                      | 01/20/98 | 1500 | JN | 410A |
| 90937-20    |     | /           | /       |                      | 01/20/98 | 1500 | JN | 410A |
| 90982       |     | /           | /       |                      | 01/20/98 | 1530 | JN | 410A |
| 90982DUP    |     | /           | /       |                      | 01/20/98 | 1530 | JN | 410A |
| 90980-1     |     | /           | /       |                      | 01/20/98 | 1530 | JN | 410A |
| 90980-2     |     | /           | /       |                      | 01/20/98 | 1530 | JN | 410A |
| 90980-3     |     | /           | /       |                      | 01/20/98 | 1530 | JN | 410A |
| 90937-21    |     | /           | /       |                      | 01/20/98 | 1630 | JN | 410A |
| 90937-22    |     | /           | /       |                      | 01/20/98 | 1630 | JN | 410A |
| 90973-1     |     | /           | /       |                      | 01/20/98 | 1630 | JN | 410A |
| 90973-2     |     | /           | /       |                      | 01/20/98 | 1630 | JN | 410A |
| 90973-3     |     | /           | /       |                      | 01/20/98 | 1630 | JN | 410A |
| 90973-4     |     | /           | /       |                      | 01/20/98 | 1630 | JN | 410A |
| 90975-1     |     | /           | /       |                      | 01/20/98 | 1700 | JN | 410A |
| 90975-2     |     | /           | /       |                      | 01/20/98 | 1700 | JN | 410A |
| 90968-2     |     | /           | /       |                      | 01/20/98 | 1700 | JN | 410A |
| 90971       |     | /           | /       |                      | 01/20/98 | 1700 | JN | 410A |
| 90963       |     | /           | /       |                      | 01/20/98 | 1700 | JN | 410A |
| 90959       |     | /           | /       |                      | 01/20/98 | 1700 | JN | 410A |
| 90984-5     |     | /           | /       |                      | 01/20/98 | 1700 | JN | 410A |
| 90984-5DUP  |     | /           | /       |                      | 01/20/98 | 1700 | JN | 410A |
| 90987       |     | /           | /       |                      | 01/20/98 | 1700 | JN | 410A |

Q.C. Information for Batch # 35710

For Report Number :90937

Sample Batch Information  
Analysis : React. CN

| Sample ID   | Tag | Preparation<br>Date | Preparation<br>Time By | Preparation<br>Notes | Analysis<br>Date | Analysis<br>Time | Analysis<br>By | Inst  |
|-------------|-----|---------------------|------------------------|----------------------|------------------|------------------|----------------|-------|
| 35710BLK    |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 35710LCS    |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 35710LCSD   |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 35710CAL5   |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-1     |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-1DUP  |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-2     |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-3     |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-4     |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-5     |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-6     |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-7     |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-8     |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-9     |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-10    |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-11    |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-11DUP |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-12    |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-13    |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-14    |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-15    |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-16    |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-17    |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-18    |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-19    |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |
| 90937-20    |     | /                   | /                      |                      | 01/22/98         | 1250             | ARS            | GENE5 |



Q.C. Information for Batch # 35711

For Report Number :90937

Sample Batch Information  
Analysis : React. CN

| Sample ID   | Tag | Preparation |         | Preparation | Analysis |          |  | Inst |
|-------------|-----|-------------|---------|-------------|----------|----------|--|------|
|             |     | Date        | Time By | Notes       | Date     | Time By  |  |      |
| 35711BLK    |     | /           | /       |             | 01/22/98 | 1255 ARS |  | GENE |
| 35711LCS    |     | /           | /       |             | 01/22/98 | 1255 ARS |  | GENE |
| 35711LCSD   |     | /           | /       |             | 01/22/98 | 1255 ARS |  | GENE |
| 35711CAL5   |     | /           | /       |             | 01/22/98 | 1255 ARS |  | GENE |
| 90937-21    |     | /           | /       |             | 01/22/98 | 1255 ARS |  | GENE |
| 90937-22    |     | /           | /       |             | 01/22/98 | 1255 ARS |  | GENE |
| 90937-22DUP |     | /           | /       |             | 01/22/98 | 1255 ARS |  | GENE |
| 90935       |     | /           | /       |             | 01/22/98 | 1255 ARS |  | GENE |

Q.C. Information for Batch # 35716

For Report Number :90937

Sample Batch Information  
Analysis : React S2

| Sample ID   | Tag | Preparation |      |    | Preparation<br>Notes | Analysis |      |    | Inst |
|-------------|-----|-------------|------|----|----------------------|----------|------|----|------|
|             |     | Date        | Time | By |                      | Date     | Time | By |      |
| 35716BLK    |     | 01/21/98    | 0900 | JN | 7.5mL                | 01/21/98 | 1800 | JN |      |
| 35716LCS    |     | 01/21/98    | 0900 | JN |                      | 01/21/98 | 1800 | JN |      |
| 35716LCSD   |     | 01/21/98    | 0900 | JN |                      | 01/21/98 | 1800 | JN |      |
| 90937-1     |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-2     |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-3     |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-4     |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-5     |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-6     |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-7     |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-8     |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-9     |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-10    |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-11    |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-12    |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-13    |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-14    |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-15    |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-16    |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-17    |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-18    |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-19    |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-20    |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-1DUP  |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |
| 90937-11DUP |     | 01/21/98    | 0900 | JN | 7.5g                 | 01/21/98 | 1800 | JN |      |

Q.C. Information for Batch # 35717

For Report Number :90937

## Sample Batch Information

Analysis : React S2

| Sample ID   | Tag | Preparation |      |    | Preparation | Analysis |      |    | Inst |
|-------------|-----|-------------|------|----|-------------|----------|------|----|------|
|             |     | Date        | Time | By | Notes       | Date     | Time | By |      |
| 35717BLK    |     | 01/21/98    | 0900 | JN | 7.5mL       | 01/21/98 | 1800 | JN |      |
| 35717LCS    |     | 01/21/98    | 0900 | JN |             | 01/21/98 | 1800 | JN |      |
| 35717LCSD   |     | 01/21/98    | 0900 | JN |             | 01/21/98 | 1800 | JN |      |
| 90935       |     | 01/21/98    | 0900 | JN | 7.5g        | 01/21/98 | 1800 | JN |      |
| 90937-21    |     | 01/21/98    | 0900 | JN | 7.5mL       | 01/21/98 | 1800 | JN |      |
| 90937-22    |     | 01/21/98    | 0900 | JN | 7.5mL       | 01/21/98 | 1800 | JN |      |
| 90937-22DUP |     | 01/21/98    | 0900 | JN | 7.5mL       | 01/21/98 | 1800 | JN |      |

Q.C. Information for Batch # 35727

For Report Number :90937

Sample Batch Information  
Analysis : Hg

| Sample ID   | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|-------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|             |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 35727BLANK  | HG  | 01/23/98    | 0900 | FBS |                      | 01/23/98 | 1332 | FBS | HG1  |
| 35727LCS    | HG  | 01/23/98    | 0900 | FBS |                      | 01/23/98 | 1337 | FBS | HG1  |
| 35727LCSD   | HG  | 01/23/98    | 0900 | FBS |                      | 01/23/98 | 1339 | FBS | HG1  |
| 90955MS     | HG  | 01/23/98    | 0900 | FBS |                      | 01/23/98 | 1341 | FBS | HG1  |
| 90955MSD    | HG  | 01/23/98    | 0900 | FBS |                      | 01/23/98 | 1344 | FBS | HG1  |
| 90937-21DUP | HG  | 01/23/98    | 0900 | FBS |                      | 01/23/98 | 1346 | FBS | HG1  |
| 90937-21    | HG  | 01/23/98    | 0900 | FBS |                      | 01/23/98 | 1351 | FBS | HG1  |
| 90937-22    | HG  | 01/23/98    | 0900 | FBS |                      | 01/23/98 | 1353 | FBS | HG1  |
| 90955       | HG  | 01/23/98    | 0900 | FBS |                      | 01/23/98 | 1348 | FBS | HG1  |

WV0# 90937

478 304



**OHM Remediation Services Corp**  
Subsidiary of OHM Corporation  
U.S. Route 224 East • Findlay, Ohio 45840 • (719) 423-3526

**CHAIN-OF-CUSTODY RECORD**  
5445 Turnpike Pkwy Suite 400  
Norcross, GA 30092  
(719) 423-3526

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OHM's LAB COORDINATOR  
**Donna Field**

LAB COORDINATOR'S PHONE  
770/326-2571

PROJECT NAME  
DMT Dura Field

PROJECT LOCATION  
Memphis, TN

PROJECT CONTACT  
Steve Offner

PROJECT PHONE NUMBER  
770/326-2571

CITY, STATE AND ZIP CODE  
Memphis, TN

PROJECT ADDRESS  
Defense Depot

PROJECT MANAGER  
John Lone

PHONE  
305/622-2811

LAB COORDINATOR'S FAX  
20022

PROJECT #  
770/453-7716

CLIENT  
USACE

PROJECT MANAGER'S FAX  
305/624-7367

LABORATORY SERVICE ID  
SHAR

LABORATORY PHONE  
770/734-4200

LABORATORY FAX  
770/734-4201

LABORATORY ADDRESS  
Norcross, GA

CITY, STATE AND ZIP CODE  
Tennessee Area Office

MAIL REPORT (COMPANY NAME)  
OHM Remediation Services Corp

RECIPIENT NAME

ADDRESS

CITY, STATE AND ZIP CODE

| Item | Sample Identifier | Matrix |      |       | Time | Preserved | # of Cont | QC Level | TAT | Analyses | Comments               |
|------|-------------------|--------|------|-------|------|-----------|-----------|----------|-----|----------|------------------------|
|      |                   | Date   | Soil | Water |      |           |           |          |     |          |                        |
| 1    | SB-001            | 11/14  | Soil | 0855  | 0    | 1         | 2         | X        | X   | 1        | See OHM P.O            |
| 2    | SB-002            | 11/14  | Soil | 0915  | 0    | 1         | 7         | X        | X   | 2        | For QA/QC              |
| 3    | SB-003            | 11/14  | Soil | 0951  | 0    | 1         | 7         | X        | X   | 3        | Requirements of        |
| 4    | SB-004            | 11/14  | Soil | 1010  | 0    | 1         | 7         | X        | X   | 4        | DO'S                   |
| 5    | SB-005            | 11/14  | Soil | 1035  | 0    | 1         | 7         | X        | X   | 5        | Date 11/14/98 per cont |
| 6    | SB-010            | 11/14  | Soil | 1100  | 0    | 1         | 7         | X        | X   |          | Composite per cont     |
| 7    | SB-011            | 11/14  | Soil | 1133  | 0    | 1         | 7         | X        | X   | 6        |                        |
| 8    | SB-012            | 11/14  | Soil | 1155  | 0    | 1         | 7         | X        | X   | 7        |                        |
| 9    | SB-016            | 11/14  | Soil | 1340  | 0    | 1         | 7         | X        | X   | 8        |                        |
| 10   | SB-017            | 11/14  | Soil | 1405  | 0    | 1         | 7         | X        | X   | 9        |                        |

SAMPLES COLLECTED BY  
**Donna Field**

RECEIVED BY  
**Steve Offner**

COURIER AND AIR BILL NUMBER  
**FedEx 366242404**

DATE  
**11/14/98**

TIME  
**1700**

SAMPLE CONDITION UPON RECEIPT  
**As recd 11/19/98 0910**

COOLER TEMPERATURE UPON RECEIPT  
**Red ex 3662424426**

**393**

**404**

Distribution: White - Laboratory (To be returned with Analytical Report), Goldenrod - Project File, Yellow - Project Data Manager



| OHM Remediation Services Corp<br>Subsidiary of OHM Corporation<br>US-Route 224 East - Findlay, Ohio 45840 - 419-523-3536          |                   |        |                                                 |         |         | CHAIN-OF-CUSTODY RECORD<br>5445 Triangle Plwy Suite 400 Norcross, GA 30092<br>419-523-3536 |   |                     |                                            |                                                                |   | LABORATORY COPY<br>206419<br>FORM 0019 REV 2.97 |   |   |                                                       |                |   |   |    |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------------|--------|-------------------------------------------------|---------|---------|--------------------------------------------------------------------------------------------|---|---------------------|--------------------------------------------|----------------------------------------------------------------|---|-------------------------------------------------|---|---|-------------------------------------------------------|----------------|---|---|----|
| OHM LAB COORDINATOR                                                                                                               |                   |        | LAB COORDINATOR S PHONE                         |         |         | LAB COORDINATOR S FAX                                                                      |   |                     | LABORATORY SERVICE FID                     |                                                                |   | LABORATORY CONTACT                              |   |   | MAIL REPORT (COMPANY NAME)                            |                |   |   |    |
| PROJECT NAME<br><b>Durham Field</b>                                                                                               |                   |        | PROJECT LOCATION<br><b>Memphis, TN.</b>         |         |         | PROJECT NUMBER<br><b>20022</b>                                                             |   |                     | LABORATORY PHONE<br><b>770-734-1200</b>    |                                                                |   | LABORATORY FAX<br><b>770-734-1201</b>           |   |   | REFINANT NAME<br><b>OHM Remediation Service, Corp</b> |                |   |   |    |
| PROJECT CONTACT<br><b>Steve Offner</b>                                                                                            |                   |        | PROJECT PHONE NUMBER<br><b>770-326-2571</b>     |         |         | PROJECT FAX<br><b>770-453-7716</b>                                                         |   |                     | LABORATORY ADDRESS<br><b>Norcross, GA.</b> |                                                                |   | ADDRESS                                         |   |   |                                                       |                |   |   |    |
| PROJECT ADDRESS<br><b>Defense Depot</b>                                                                                           |                   |        | CITY, STATE AND ZIP CODE<br><b>Memphis, TN.</b> |         |         | CLIENT<br><b>USACE</b>                                                                     |   |                     | CITY, STATE AND ZIP CODE                   |                                                                |   | CITY, STATE AND ZIP CODE                        |   |   |                                                       |                |   |   |    |
| PROJECT MANAGER<br><b>John Lone</b>                                                                                               |                   |        | PROJECT MANAGER S PHONE<br><b>305-622-2811</b>  |         |         | PROJECT MANAGER S FAX<br><b>305-624-7367</b>                                               |   |                     | ANALYSES                                   |                                                                |   |                                                 |   |   |                                                       |                |   |   |    |
| Item                                                                                                                              | Sample Identifier | Matrix |                                                 | Date    |         | Time                                                                                       |   | # of Cont Preserved | TAT                                        | QC Level                                                       | X | X                                               | X | X | X                                                     | Comments       |   |   |    |
|                                                                                                                                   |                   | Soil   | Solid                                           | 1/14/98 | 1/14/98 | 1415                                                                                       | 0 |                     |                                            |                                                                |   |                                                 |   |   |                                                       |                | 1 | 7 | 10 |
| 1                                                                                                                                 | SB-018            | Soil   | Solid                                           | 1/14/98 | 1415    | 0                                                                                          | 1 |                     | 7                                          | X                                                              | X | X                                               | X | X | X                                                     | -DEF OHM P.O.  |   |   |    |
| 2                                                                                                                                 | SB-019            | Soil   | Solid                                           | 1/14    | 1430    | 0                                                                                          | 1 |                     | 7                                          | X                                                              | X | X                                               | X | X | X                                                     | For QA/QC      |   |   |    |
| 3                                                                                                                                 | SB-020            | Soil   | Solid                                           | 1/14    | 1450    | 0                                                                                          | 1 |                     | 7                                          | X                                                              | X | X                                               | X | X | X                                                     | Requirements & |   |   |    |
| 4                                                                                                                                 | SB-021            | Soil   | Solid                                           | 1/14    | 1507    | 0                                                                                          | 1 |                     | 7                                          | X                                                              | X | X                                               | X | X | X                                                     | DOQ's.         |   |   |    |
| 5                                                                                                                                 | SB-022            | Soil   | Solid                                           | 1/14    | 1528    | 0                                                                                          | 1 |                     | 7                                          | X                                                              | X | X                                               | X | X | X                                                     |                |   |   |    |
| 6                                                                                                                                 | SB-023            | Soil   | Solid                                           | 1/14    | 1550    | 0                                                                                          | 1 |                     | 7                                          | X                                                              | X | X                                               | X | X | X                                                     |                |   |   |    |
| 7                                                                                                                                 | SB-024            | Soil   | Solid                                           | 1/14    | 1608    | 0                                                                                          | 1 |                     | 7                                          | X                                                              | X | X                                               | X | X | X                                                     |                |   |   |    |
| 8                                                                                                                                 | SB-025            | Soil   | Solid                                           | 1/14    | 1620    | 0                                                                                          | 1 |                     | 7                                          | X                                                              | X | X                                               | X | X | X                                                     |                |   |   |    |
| 9                                                                                                                                 | SB-026            | Soil   | Solid                                           | 1/14    | 1635    | 0                                                                                          | 1 |                     | 7                                          | X                                                              | X | X                                               | X | X | X                                                     |                |   |   |    |
| 10                                                                                                                                | SB-028            | Soil   | Solid                                           | 1/14    | 1640    | 0                                                                                          | 1 |                     | 7                                          | X                                                              | X | X                                               | X | X | X                                                     |                |   |   |    |
| SAMPLES COLLECTED BY<br><b>[Signature]</b>                                                                                        |                   |        |                                                 |         |         |                                                                                            |   |                     |                                            | COOKER TEMPERATURE UPON RECEIPT                                |   |                                                 |   |   |                                                       |                |   |   |    |
| RECEIVED BY<br><b>Feder</b>                                                                                                       |                   |        |                                                 |         |         |                                                                                            |   |                     |                                            | DATE/TIME<br><b>1/14/98 1900</b>                               |   |                                                 |   |   |                                                       |                |   |   |    |
| COURIER AND AIR BILL NUMBER<br><b>Feder</b>                                                                                       |                   |        |                                                 |         |         |                                                                                            |   |                     |                                            | SAMPLE'S CONDITION UPON RECEIPT<br><b>Shred - 1/14/98 0910</b> |   |                                                 |   |   |                                                       |                |   |   |    |
| Distribution. White - Laboratory (To be returned with Analytical Report), Goldenrod - Project File, Yellow - Project Data Manager |                   |        |                                                 |         |         |                                                                                            |   |                     |                                            |                                                                |   |                                                 |   |   |                                                       |                |   |   |    |

WO# 90937

| OHM Remediation Services Corp           |                   |        |         |      |           |           |          |       |          | CHAIN-OF-CUSTODY RECORD                |                                       |  |  |  |  |  |  |  |  | LABORATORY COPY                 |  |  |  |  |  |  |  |  |  |
|-----------------------------------------|-------------------|--------|---------|------|-----------|-----------|----------|-------|----------|----------------------------------------|---------------------------------------|--|--|--|--|--|--|--|--|---------------------------------|--|--|--|--|--|--|--|--|--|
| Subsidiary of OHM Corporation           |                   |        |         |      |           |           |          |       |          | 5415 Triangl <sup>e</sup> Hwy Ste. 400 |                                       |  |  |  |  |  |  |  |  | 3 of 3                          |  |  |  |  |  |  |  |  |  |
| U.S. Route 224 East Findlay, Ohio 45840 |                   |        |         |      |           |           |          |       |          | 7197 423-3326                          |                                       |  |  |  |  |  |  |  |  | Norview St., GA. 30092          |  |  |  |  |  |  |  |  |  |
| OHM LAB COORDINATOR                     |                   |        |         |      |           |           |          |       |          | LAB COORDINATOR'S PHONE                |                                       |  |  |  |  |  |  |  |  | LAB COORDINATOR'S FAX           |  |  |  |  |  |  |  |  |  |
| PROJECT NAME                            |                   |        |         |      |           |           |          |       |          | PROJECT LOCATION                       |                                       |  |  |  |  |  |  |  |  | PROJECT NUMBER                  |  |  |  |  |  |  |  |  |  |
| PROJECT CONTACT                         |                   |        |         |      |           |           |          |       |          | PROJECT PHONE NUMBER                   |                                       |  |  |  |  |  |  |  |  | PROJECT FAX                     |  |  |  |  |  |  |  |  |  |
| PROJECT ADDRESS                         |                   |        |         |      |           |           |          |       |          | CITY, STATE AND ZIP CODE               |                                       |  |  |  |  |  |  |  |  | LABORATORY PHONE                |  |  |  |  |  |  |  |  |  |
| PROJECT MANAGER                         |                   |        |         |      |           |           |          |       |          | PROJECT MANAGER'S PHONE                |                                       |  |  |  |  |  |  |  |  | LABORATORY FAX                  |  |  |  |  |  |  |  |  |  |
| LABORATORY ADDRESS                      |                   |        |         |      |           |           |          |       |          | LABORATORY ADDRESS                     |                                       |  |  |  |  |  |  |  |  | LABORATORY FAX                  |  |  |  |  |  |  |  |  |  |
| CITY, STATE AND ZIP CODE                |                   |        |         |      |           |           |          |       |          | CITY, STATE AND ZIP CODE               |                                       |  |  |  |  |  |  |  |  | CITY, STATE AND ZIP CODE        |  |  |  |  |  |  |  |  |  |
| MAIL REPORT (COMPANY NAME)              |                   |        |         |      |           |           |          |       |          | LABORATORY CONTACT                     |                                       |  |  |  |  |  |  |  |  | MAIL REPORT (COMPANY NAME)      |  |  |  |  |  |  |  |  |  |
| RECIPIENT NAME                          |                   |        |         |      |           |           |          |       |          | LABORATORY FAX                         |                                       |  |  |  |  |  |  |  |  | RECIPIENT NAME                  |  |  |  |  |  |  |  |  |  |
| ADDRESS                                 |                   |        |         |      |           |           |          |       |          | LABORATORY ADDRESS                     |                                       |  |  |  |  |  |  |  |  | ADDRESS                         |  |  |  |  |  |  |  |  |  |
| CITY, STATE AND ZIP CODE                |                   |        |         |      |           |           |          |       |          | LABORATORY CITY, STATE AND ZIP CODE    |                                       |  |  |  |  |  |  |  |  | CITY, STATE AND ZIP CODE        |  |  |  |  |  |  |  |  |  |
| Item                                    | Sample Identifier | Matrix | Date    | Time | Preserved | # of Cont | QC Level | T.A.T | Analyses | Comments                               |                                       |  |  |  |  |  |  |  |  |                                 |  |  |  |  |  |  |  |  |  |
| 1                                       | SB-029            | Soil   | 1/14/98 | 1620 | 1         |           |          | 7     | X        | X                                      | See other P.O.                        |  |  |  |  |  |  |  |  |                                 |  |  |  |  |  |  |  |  |  |
| 2                                       | SB-026 EQB        | Water  | 1/14/98 | 1645 | 10        |           |          | 7     | X        | X                                      | for DTQC                              |  |  |  |  |  |  |  |  |                                 |  |  |  |  |  |  |  |  |  |
| 3                                       | SB-018 EQB        | Water  | 1/14/98 | 1645 | 11        |           |          | 7     | X        | X                                      | Measurements & 322                    |  |  |  |  |  |  |  |  |                                 |  |  |  |  |  |  |  |  |  |
| 4                                       | Water Blank       | Water  | 1/14/98 | 1645 |           |           |          | 7     | X        | X                                      | Equipment Blank is for total analysis |  |  |  |  |  |  |  |  |                                 |  |  |  |  |  |  |  |  |  |
| 5                                       |                   |        |         |      |           |           |          |       |          |                                        | for TSP List                          |  |  |  |  |  |  |  |  |                                 |  |  |  |  |  |  |  |  |  |
| 6                                       |                   |        |         |      |           |           |          |       |          |                                        | analysis.                             |  |  |  |  |  |  |  |  |                                 |  |  |  |  |  |  |  |  |  |
| 7                                       |                   |        |         |      |           |           |          |       |          |                                        |                                       |  |  |  |  |  |  |  |  |                                 |  |  |  |  |  |  |  |  |  |
| 8                                       |                   |        |         |      |           |           |          |       |          |                                        |                                       |  |  |  |  |  |  |  |  |                                 |  |  |  |  |  |  |  |  |  |
| 9                                       |                   |        |         |      |           |           |          |       |          |                                        |                                       |  |  |  |  |  |  |  |  |                                 |  |  |  |  |  |  |  |  |  |
| 10                                      |                   |        |         |      |           |           |          |       |          |                                        |                                       |  |  |  |  |  |  |  |  |                                 |  |  |  |  |  |  |  |  |  |
| SAMPLES COLLECTED BY                    |                   |        |         |      |           |           |          |       |          | COURIER AND AIR BILL NUMBER            |                                       |  |  |  |  |  |  |  |  | COOLER TEMPERATURE UPON RECEIPT |  |  |  |  |  |  |  |  |  |
| RELINQUISHED BY                         |                   |        |         |      |           |           |          |       |          | RECEIVED BY                            |                                       |  |  |  |  |  |  |  |  | SAMPLE'S CONDITION UPON RECEIPT |  |  |  |  |  |  |  |  |  |
| Date                                    |                   |        |         |      |           |           |          |       |          | Date                                   |                                       |  |  |  |  |  |  |  |  | Date                            |  |  |  |  |  |  |  |  |  |
| Signature                               |                   |        |         |      |           |           |          |       |          | Signature                              |                                       |  |  |  |  |  |  |  |  | Signature                       |  |  |  |  |  |  |  |  |  |
| Title                                   |                   |        |         |      |           |           |          |       |          | Title                                  |                                       |  |  |  |  |  |  |  |  | Title                           |  |  |  |  |  |  |  |  |  |

**TAB**

*Appendix C*

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**OHM Remediation  
Services Corp.**  
A Subsidiary of OHM Corporation

## TECHNICAL MEMORANDUM

5445 Triangle Parkway, Suite 400, Norcross, Georgia

OHM Project No 20022

**To:** John W. Rollyson, P.E., Area Engineer  
USACE/Tennessee Area Office

**From:** Stephen Offner, P.G., OHM/Norcross

**PC:** Shawn Phillips, P.E., Defense Depot/Memphis  
Dana Conkin, USACE/Tennessee Area Office  
John Lore, OHM/Miami  
Angelo Liberatore, OHM/Norcross

**Re:** Technical Memorandum No. 04  
Analytical Results of Glass Vials for Characterization  
Dunn Field, Defense Depot, Memphis, Tennessee  
Contract No. DACA45-96-D-0014  
Delivery Order No. 0007

**Date:** April 17, 1998

On February 16, 1998, representatives of OHM Remediation Services Corp. (OHM) collected a sample of crushed glass vials (designated DDMT-DF-GV) from the northwest portion of Dunn Field for analytical characterization. Numerous glass vials (and contents) were collected from the northwest portion of Dunn Field, and were crushed into soil collected from the area where the metal canisters and glass vials were found buried. Samples of the soil with the crushed vials and associated contents were then collected into the applicable sample containers. This sampling event was conducted in level B personnel protection.

The samples were analyzed for: CWM degradation compounds (Methods LL03, LW18, LT03 and TT9); explosives (Method 8330); TCL organics (Methods 8260B and 8270C); TAL inorganics (Methods 6010, 7060, 7471, 7740 and 7841); chlorinated pesticides and herbicides (Methods 8081 and 8151); PCBs (Method 8082); total cyanide (Method 9010); full TCLP organic and inorganic list; and reactivity, corrosivity, and ignitability. The samples were analyzed by Analytical Services, Inc., in Norcross, GA, and GP Environmental Services, Inc., in Gaithersburg, MD.

Based on the preliminary analytical data, the excavated soil with crushed metal canisters/glass vials can be disposed at a RCRA subtitle D landfill as non-hazardous waste. No chemical warfare agent compounds, explosive residuals, pesticides, herbicides, or PCBs were detected in the sample. Trace total metals and organics were detected; however, the concentrations of the detected compounds were below USEPA Region 3 risk based concentrations for residential scenario. A summary of the analytical results are included in *Attachment A* and the laboratory analytical reports are included in *Attachment B*.

**ATTACHMENT A**

**Summary of Analytical Results for Soil/Glass Vials Disposal Characterization  
Dunn Field, Defense Depot  
Memphis, Tennessee**

478 310

| Soil Boring No./Field No.                           |            |       | DDMT-DF-GV | Region 3      |
|-----------------------------------------------------|------------|-------|------------|---------------|
| Laboratory ID No                                    |            |       | 91936-1    | RBCs          |
| Date Sample Collected                               |            |       | 24-Feb-98  | (Residential) |
| LABORATORY ANALYSES                                 |            |       |            |               |
|                                                     | Dect. Lmts | Units |            |               |
| <b>Target Analyte List - Metals</b>                 |            |       |            |               |
| Aluminum (EPA 6010)                                 | 10         | mg/kg | 6000       | 78000         |
| Arsenic (EPA 7060)                                  | 3          | mg/kg | 7 5        | 23            |
| Barium (EPA 6010)                                   | 1          | mg/kg | 120        | 5500          |
| Calcium (EPA 6010)                                  | 5          | mg/kg | 1800       | NS            |
| Chromium (EPA 6010)                                 | 1          | mg/kg | 5 5        | 390           |
| Cobalt (EPA 6010)                                   | 4          | mg/kg | 4 3        | 4700          |
| Copper (EPA 6010)                                   | 2          | mg/kg | 22         | 3100          |
| Cyanide (EPA 9010)                                  | 0 2        | mg/kg | 0 2        | 1600          |
| Iron (EPA 6010)                                     | 10         | mg/kg | 19000      | 23000         |
| Lead (EPA 6010)                                     | 5          | mg/kg | 150        | 400           |
| Magnesium (EPA 6010)                                | 5          | mg/kg | 1600       | NS            |
| Manganese (EPA 6010)                                | 4          | mg/kg | 500        | 1800          |
| Nickel (EPA 6010)                                   | 2          | mg/kg | 13         | 1600          |
| Potassium (EPA 6010)                                | 20         | mg/kg | 390        | NS            |
| Sodium (EPA 6010)                                   | 5          | mg/kg | 540        | NS            |
| Vanadium (EPA 6010)                                 | 2          | mg/kg | 15         | 550           |
| Zinc (EPA 6010)                                     | 2          | mg/kg | 62         | 23000         |
| <b>Target Compound List - Volatile Organics</b>     |            |       |            |               |
| Total Xylenes (EPA 8260)                            | 0 002      | mg/kg | 0 008      | 160000        |
| <b>Target Compound List - Semivolatile Organics</b> |            |       |            |               |
| Bis(2-Ethylhexyl)phthalate (EPA 8270)               | 0 43       | mg/kg | 0 047J     | 46            |
| <b>Chlorinated Pesticides</b>                       |            |       |            |               |
| All Parameters (EPA 8081)                           |            | mg/kg | BDL        |               |
| <b>PCBs</b>                                         |            |       |            |               |
| All Parameters (EPA 8082)                           | 0 033      | mg/kg | BDL        |               |
| <b>Chlorinated Herbicides</b>                       |            |       |            |               |
| All Parameters (EPA 8082)                           |            | mg/kg | BDL        |               |
| <b>Chemical Warfare Agent Degradation Analyses</b>  |            |       |            |               |
| Dimethyldisulfide (Method LL03)                     | 0 1        | mg/kg | BDL        |               |
| 1,4-Oxathiane (Method LL03)                         | 0 2        | mg/kg | BDL        |               |
| 1,4-Dithiane (Method LL03)                          | 0 1        | mg/kg | BDL        |               |
| p-Chlorophenylmethylsulfide (Method LL03)           | 0 2        | mg/kg | BDL        |               |
| p-Chlorophenylmethylsulfoxide (Method LL03)         | 0 2        | mg/kg | BDL        |               |
| p-Chlorophenylmethylsulfone (Method LL03)           | 0 2        | mg/kg | BDL        |               |
| Benzothiazole (Method LL03)                         | 0 2        | mg/kg | BDL        |               |
| Thiodiglycol (Method LW18)                          | 0 5        | mg/kg | BDL        |               |
| Isopropylmethylphosphonic acid (Method LT03)        | 1 6        | mg/kg | BDL        |               |
| Methyl phosphonic acid (Method LT03)                | 1 6        | mg/kg | BDL        |               |
| Diisopropylmethylphosphonate (Method TT9)           | 0 0064     | mg/kg | BDL        |               |
| <b>Explosive Residuals</b>                          |            |       |            |               |
| 1,3,5-Trinitrobenzene (EPA 8330)                    | 0 25       | mg/kg | BDL        |               |
| 1,3-Dinitrobenzene (EPA 8330)                       | 0 25       | mg/kg | BDL        |               |
| 2,4,6-Trinitrotoluene (EPA 8330)                    | 0 25       | mg/kg | BDL        |               |
| 2,4-Dinitrotoluene (EPA 8330)                       | 0 25       | mg/kg | BDL        |               |
| 2,6-Dinitrotoluene (EPA 8330)                       | 0 25       | mg/kg | BDL        |               |
| 2-Amino-4,6-dinitrotoluene (EPA 8330)               | 0 25       | mg/kg | BDL        |               |
| 2-Nitrotoluene (EPA 8330)                           | 0 5        | mg/kg | BDL        |               |
| 3-Nitrotoluene (EPA 8330)                           | 0 5        | mg/kg | BDL        |               |
| 4-Amino-2,6-dinitrotoluene (EPA 8330)               | 0 25       | mg/kg | BDL        |               |
| 4-Nitrotoluene (EPA 8330)                           | 0 5        | mg/kg | BDL        |               |
| HMX (EPA 8330)                                      | 0 5        | mg/kg | BDL        |               |
| Nitrobenzene (EPA 8330)                             | 0 25       | mg/kg | BDL        |               |
| RDX (EPA 8330)                                      | 0 5        | mg/kg | BDL        |               |
| Tetryl (EPA 8330)                                   | 0 5        | mg/kg | BDL        |               |

mg/L = milligrams per liter

mg/kg = milligrams per kilogram

NS = no standard

BDL = below detection limit

RBC = risk based concentrations residential scenario

**Summary of Analytical Results for Soil/Glass Vials Disposal Characterization**  
**Dunn Field, Defense Depot**  
**Memphis, Tennessee**

| Soil Boring No./Field No.                        |            |           | DDMT-DF-GV | 40 CFR 261 |
|--------------------------------------------------|------------|-----------|------------|------------|
| Laboratory ID No.                                |            |           | 91936-1    | Regulatory |
| Date Sample Collected                            |            |           | 24-Feb-98  | Limit      |
| LABORATORY ANALYSES                              | EPA HW No. | Units     |            |            |
| Ignitability (EPA 1010)                          | D001       | °F        | >212       | <140       |
| pH (EPA 9045)                                    | D002       | std units | 7.22       | NS         |
| Reactive Cyanide (EPA 7 3 3 2)                   | D003       | mg/kg     | <1         | 250*       |
| Reactive Sulfide (EPA 7 3 4 2)                   | D003       | mg/kg     | <5         | 500*       |
| <b>TCLP NON-VOLATILE EXTRACTION (EPA 1311)</b>   |            |           |            |            |
| Arsenic (EPA 6010)                               | D004       | mg/L      | <2 5       | 5 00       |
| Barium (EPA 6010)                                | D005       | mg/L      | 1.2        | 100 00     |
| Cadmium (EPA 6010)                               | D006       | mg/L      | <0 01      | 1 00       |
| Chlordane (EPA 8081)                             | D020       | mg/L      | <0 01      | 0 03       |
| Chromium (EPA 6010)                              | D007       | mg/L      | <0 01      | 5 00       |
| Cresol, total (EPA 8270)                         | D026       | mg/L      | <0 05      | 200 00     |
| 2,4-D (EPA 8151)                                 | D016       | mg/L      | <0 05      | 10 00      |
| 1,4-Dichlorobenzene (EPA 8270)                   | D027       | mg/L      | <0 05      | 7 50       |
| 2,4-Dinitrotoluene (EPA 8270)                    | D030       | mg/L      | <0 05      | 0 13       |
| Endrin (EPA 8081)                                | D012       | mg/L      | <0 001     | 0 02       |
| Heptachlor (EPA 8081)                            | D031       | mg/L      | <0 001     | 0 008      |
| Heptachlor Epoxide (EPA 8081)                    | D031       | mg/L      | <0 001     | 0 008      |
| Hexachlorobenzene (EPA 8270)                     | D032       | mg/L      | <0 05      | 0 13       |
| Hexachlorobutadiene (EPA 8270)                   | D033       | mg/L      | <0 05      | 0 50       |
| Hexachloroethane (EPA 8270)                      | D034       | mg/L      | <0 05      | 3 00       |
| Lead (EPA 6010)                                  | D008       | mg/L      | 0.8        | 5 00       |
| Lindane (EPA 8081)                               | D013       | mg/L      | <0 01      | 0 40       |
| Mercury (EPA 7470)                               | D009       | mg/L      | <0 005     | 0 20       |
| Methoxychlor (EPA 8081)                          | D014       | mg/L      | <0 5       | 10 00      |
| Nitrobenzene (EPA 8270)                          | D036       | mg/L      | <0 05      | 2 00       |
| Pentachlorophenol (EPA 8270)                     | D037       | mg/L      | <0 05      | 100 00     |
| Selenium (EPA 6010)                              | D010       | mg/L      | <0 5       | 1 00       |
| Silver (EPA 6010)                                | D011       | mg/L      | <0 01      | 5 00       |
| Toxaphene (EPA 8081)                             | D015       | mg/L      | <0 05      | 0 50       |
| 2,4,5-Trichlorophenol (EPA 8270)                 | D041       | mg/L      | <0 05      | 400 00     |
| 2,4,6-Trichlorophenol (EPA 8270)                 | D042       | mg/L      | <0 05      | 2 00       |
| 2,4,5-TP Silvex (EPA 8151)                       | D017       | mg/L      | <0 1       | 1 00       |
| Pyridine (EPA 8270)                              | D038       | mg/L      | <0 05      | 5 00       |
| <b>TCLP ZERO HEADSPACE EXTRACTION (EPA 1311)</b> |            |           |            |            |
| Benzene (EPA 8260)                               | D018       | mg/L      | <0 02      | 0 50       |
| Carbon Tetrachloride (EPA 8260)                  | D019       | mg/L      | <0 02      | 0 50       |
| Chlorobenzene (EPA 8260)                         | D021       | mg/L      | <0 02      | 100 00     |
| Chloroform (EPA 8260)                            | D022       | mg/L      | <0 02      | 6 00       |
| 1,2-Dichloroethane (EPA 8260)                    | D028       | mg/L      | <0 02      | 0 50       |
| 1,1-Dichloroethene (EPA 8260)                    | D029       | mg/L      | <0 02      | 0 70       |
| Methyl Ethyl Ketone (EPA 8260)                   | D035       | mg/L      | <0 5       | 200 00     |
| Tetrachloroethene (EPA 8260)                     | D039       | mg/L      | 0.02       | 0 70       |
| Trichloroethene (EPA 8260)                       | D040       | mg/L      | <0 02      | 0 50       |
| Vinyl Chloride (EPA 8260)                        | D043       | mg/L      | <0 02      | 0 20       |

mg/L = milligrams per liter

mg/kg = milligrams per kilogram

HW = hazardous waste

NS = no standard due to sample being solid matrix

Regulatory levels as defined in 40 CFR Part 261 21, 261 22, 261 23 &amp; 261 24

TCLP = toxicity characteristic leaching procedure

SB = soil boring

bls = below land surface

\* = as defined in SW-846 7 3 3 2 and 7 3 4 2

**ATTACHMENT B**

\_\_\_\_\_

GP Work Order # 9802105

SAMPLE ANALYSIS REPORT

Prepared For:

OHM CORPORATION  
200 HORIZON CENTER BLVD.  
TRENTON, NJ 08691-1904

DDMT, MEMPHIS, TN

Prepared By:

GP Environmental Services, Inc.  
202 Perry Parkway  
Gaithersburg, MD 20877

February 25, 1998



Marty Sadoughi, Laboratory Director



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Project: DDMT, MEMPHIS, TN

GP ENVIRONMENTAL SERVICES  
ANALYTICAL RESULTS

Page 1

Project: DDMT, MEMPHIS, TN

OHM CORPORATION  
200 HORIZON CENTER BLVD.  
TRENTON, NJ 08691-1904  
Atten: CHRISTINE HILL

GP ENVIRONMENTAL SERVICES  
202 Perry Parkway  
Gaithersburg, MD 20877

Atten: Client Services  
Phone: (301) 926-6802

Certified by: \_\_\_\_\_



SAMPLE IDENTIFICATION

| <u>GP ID</u> | <u>Client ID</u> |
|--------------|------------------|
| 9802105-01A  | DDMT-DF-GV       |
| 9802105-01B  |                  |
| 9802105-01C  |                  |
| 9802105-01D  |                  |
| 9802105-01E  |                  |

Project: DDMT, MEMPHIS, TN

GP ENVIRONMENTAL SERVICES  
ORGANIC ANALYSIS RESULTS

Page 2

GP ID: 9802105-01D  
Client ID: DDMT-DF-GV  
Collected: 02/16/98  
Dilution: 1Matrix: SOIL  
Method: SW846 8270  
Units: ug/KgAnalyst: MN  
Analyzed: 02/23/98  
Prepared: 02/20/98

## SEMIVOLATILE TARGET COMPOUNDS

| Parameter                     | Result | Det.Lim. | Qualifier |
|-------------------------------|--------|----------|-----------|
| 1,2,4-Trichlorobenzene        | BQL    | 430      |           |
| 1,2-Dichlorobenzene           | BQL    | 430      |           |
| 1,3-Dichlorobenzene           | BQL    | 430      |           |
| 1,4-Dichlorobenzene           | BQL    | 430      |           |
| 2,2'-oxybis-(1-chloropropane) | BQL    | 430      |           |
| 2,4,5-Trichlorophenol         | BQL    | 2100     |           |
| 2,4,6-Trichlorophenol         | BQL    | 430      |           |
| 2,4-Dichlorophenol            | BQL    | 430      |           |
| 2,4-Dimethylphenol            | BQL    | 430      |           |
| 2,4-Dinitrophenol             | BQL    | 2100     |           |
| 2,4-Dinitrotoluene            | BQL    | 430      |           |
| 2,6-Dinitrotoluene            | BQL    | 430      |           |
| 2-Chloronaphthalene           | BQL    | 430      |           |
| 2-Chlorophenol                | BQL    | 430      |           |
| 2-Methylnaphthalene           | BQL    | 430      |           |
| 2-Methylphenol                | BQL    | 430      |           |
| 2-Nitroaniline                | BQL    | 2100     |           |
| 2-Nitrophenol                 | BQL    | 430      |           |
| 3,3'-Dichlorobenzidine        | BQL    | 850      |           |
| 3-Nitroaniline                | BQL    | 2100     |           |
| 4,6-Dinitro-2-methylphenol    | BQL    | 2100     |           |
| 4-Bromophenyl-phenylether     | BQL    | 430      |           |
| 4-Chloro-3-methylphenol       | BQL    | 430      |           |
| 4-Chloroaniline               | BQL    | 430      |           |
| 4-Chlorophenyl phenyl ether   | BQL    | 430      |           |
| 4-Methylphenol                | BQL    | 430      |           |
| 4-Nitroaniline                | BQL    | 2100     |           |
| 4-Nitrophenol                 | BQL    | 2100     |           |
| Acenaphthene                  | BQL    | 430      |           |
| Acenaphthylene                | BQL    | 430      |           |
| Acetophenone                  | BQL    | 430      |           |
| Anthracene                    | BQL    | 430      |           |
| Benzo[a]anthracene            | BQL    | 430      |           |



GP ENVIRONMENTAL SERVICES  
ORGANIC ANALYSIS RESULTSGP ID: 9802105-01D  
Client ID: DDMT-DF-GV  
Collected: 02/16/98  
Dilution: 1Matrix: SOIL  
Method: SW846 8270  
Units: ug/KgAnalyst: MN  
Analyzed: 02/23/98  
Prepared: 02/20/98

## SEMIVOLATILE TARGET COMPOUNDS

| Parameter                   | Result | Det.Lim. | Qualifier |
|-----------------------------|--------|----------|-----------|
| Benzo[a]pyrene              | BQL    | 430      |           |
| Benzo[b]fluoranthene        | BQL    | 430      |           |
| Benzo[g,h,i]perylene        | BQL    | 430      |           |
| Benzo[k]fluoranthene        | BQL    | 430      |           |
| bis(2-Chloroethoxy) methane | BQL    | 430      |           |
| bis(2-Chloroethyl) ether    | BQL    | 430      |           |
| bis(2-Ethylhexyl)phthalate  | 47.0   | 430      | J         |
| Butyl benzyl phthalate      | BQL    | 430      |           |
| Carbazole                   | BQL    | 430      |           |
| Chrysene                    | BQL    | 430      |           |
| di-n-Butylphthalate         | BQL    | 430      |           |
| di-n-Octylphthalate         | BQL    | 430      |           |
| Dibenzofuran                | BQL    | 430      |           |
| Dibenz[a,h]anthracene       | BQL    | 430      |           |
| Diethylphthalate            | BQL    | 430      |           |
| Dimethyl phthalate          | BQL    | 430      |           |
| Fluoranthene                | BQL    | 430      |           |
| Fluorene                    | BQL    | 430      |           |
| Hexachlorobenzene           | BQL    | 430      |           |
| Hexachlorobutadiene         | BQL    | 430      |           |
| Hexachlorocyclopentadiene   | BQL    | 430      |           |
| Hexachloroethane            | BQL    | 430      |           |
| Indeno[1,2,3-cd]pyrene      | BQL    | 430      |           |
| Isophorone                  | BQL    | 430      |           |
| Malononitrile               | BQL    | 430      |           |
| N-Nitroso-di-n-propylamine  | BQL    | 430      |           |
| N-nitrosodiphenylamine      | BQL    | 430      |           |
| Naphthalene                 | BQL    | 430      |           |
| Nitrobenzene                | BQL    | 430      |           |
| Pentachlorophenol           | BQL    | 2100     |           |
| Phenanthrene                | BQL    | 430      |           |
| Phenol                      | BQL    | 430      |           |
| Pyrene                      | BQL    | 430      |           |

Project: DDMT, MEMPHIS, TN

GP ENVIRONMENTAL SERVICES  
ORGANIC ANALYSIS RESULTS

Page 4

GP ID: 9802105-01B  
Client ID: DDMT-DF-GV  
Collected: 02/16/98  
Dilution: 1Matrix: SOIL  
Method: LL03 GC-FPD  
Units: ug/KgAnalyst: ABC  
Analyzed: 02/22/98  
Prepared: 02/18/98

## GC TARGET COMPOUNDS

| Parameter                     | Result | Det.Lim. | Qualifier |
|-------------------------------|--------|----------|-----------|
| Dimethyldisulfide             | BQL    | 100      |           |
| 1,4-Oxathiane                 | BQL    | 200      |           |
| 1,4-Dithiane                  | BQL    | 100      |           |
| p-Chlorophenylmethylsulfide   | BQL    | 200      |           |
| Benzothiazole                 | BQL    | 200      |           |
| p-Chlorophenylmethylsulfoxide | BQL    | 200      |           |
| p-Chlorophenylmethylsulfone   | BQL    | 200      |           |

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Project: DDMT, MEMPHIS, TN

GP ENVIRONMENTAL SERVICES  
ORGANIC ANALYSIS RESULTS

Page 5

GP ID: 9802105-01B  
Client ID: DDMT-DF-GV  
Collected: 02/16/98  
Dilution: 1

Matrix: SOIL  
Method: TT9 GC-FPD  
Units: ug/Kg

Analyst: ABC  
Analyzed: 02/25/98  
Prepared: 02/18/98

GC TARGET COMPOUNDS

| Parameter                    | Result | Det.Lim. | Qualifier |
|------------------------------|--------|----------|-----------|
| Diisopropylmethylphosphonate | BQL    | 6.4      |           |
| Dimethylmethylphosphonate    | BQL    | 77.0     |           |

Project: DDMT, MEMPHIS, TN

GP ENVIRONMENTAL SERVICES  
ORGANIC ANALYSIS RESULTS

Page 6

GP ID: 9802105-01  
Client ID: DDMT-DF-GVMatrix: SOIL  
Collected: 02/16/98

| Parameter    | Method | Result | Det.Lim. | Units | Dil. | Prepared | Analyzed By |
|--------------|--------|--------|----------|-------|------|----------|-------------|
| Thiodiglycol | LW18   | BQL    | 500      | ug/Kg | 1    | 02/19/98 | 02/19/98 CN |

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Project: DDMT, MEMPHIS, TN

GP ENVIRONMENTAL SERVICES  
ORGANIC ANALYSIS RESULTS

Page 7

GP ID: 9802105-01B  
Client ID: DDMT-DF-GV  
Collected: 02/16/98  
Dilution: 1

Matrix: SOIL  
Method: LT03  
Units: mg/Kg

Analyst: VHM  
Analyzed: 02/20/98  
Prepared: 02/18/98

LIQUID CHROMATOGRAPHY TARGET COMPOUNDS

| Parameter                      | Result | Det.Lim. | Qualifier |
|--------------------------------|--------|----------|-----------|
| Isopropylmethylphosphonic acid | BQL    | 1.60     |           |
| methyl phosphonic acid         | BQL    | 1.60     |           |

Project: DDMT, MEMPHIS, TN

GP ENVIRONMENTAL SERVICES  
ORGANIC ANALYSIS RESULTS

Page 8

GP ID: 9802105-01C  
Client ID: DDMT-DF-GV  
Collected: 02/16/98  
Dilution: 1Matrix: SOIL  
Method: SW-846 8330  
Units: ug/KgAnalyst: LF  
Analyzed: 02/24/98  
Prepared: 02/19/98

## LIQUID CHROMATOGRAPHY TARGET COMPOUNDS

| Parameter                  | Result | Det.Lim. | Qualifier |
|----------------------------|--------|----------|-----------|
| 1,3,5-Trinitrobenzene      | BQL    | 250      |           |
| 1,3-Dinitrobenzene         | BQL    | 250      |           |
| 2,4,6-Trinitrotoluene      | BQL    | 250      |           |
| 2,4-Dinitrotoluene         | BQL    | 250      |           |
| 2,6-Dinitrotoluene         | BQL    | 250      |           |
| 2-Amino-4,6-dinitrotoluene | BQL    | 250      |           |
| 2-Nitrotoluene             | BQL    | 500      |           |
| 3-Nitrotoluene             | BQL    | 500      |           |
| 4-Amino-2,6-dinitrotoluene | BQL    | 250      |           |
| 4-Nitrotoluene             | BQL    | 500      |           |
| HMX                        | BQL    | 500      |           |
| Nitrobenzene               | BQL    | 250      |           |
| RDX                        | BQL    | 500      |           |
| Tetryl                     | BQL    | 500      |           |

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Project: DDMT, MEMPHIS, TN

GP ENVIRONMENTAL SERVICES  
WET CHEMISTRY ANALYSIS RESULTS

Page 9

GP ID: 9802105-01  
Client ID: DDMT-DF-GV

Matrix: SOIL  
Collected: 02/16/98

| Parameter      | Method      | Result | Det.Lim. | Units | Dil. | Prepared | Analyzed By |
|----------------|-------------|--------|----------|-------|------|----------|-------------|
| Percent Solids | MCAWW 160.3 | 77.9   |          | %     |      |          | 02/20/98 JH |

**Possible notes and definitions for this report:**

- BQL** = Below Quantitation Limit
- J** = Value is less than the reporting limits but greater than zero
- P** = Indicates that there is greater than 25% difference for detected pesticide/Aroclor results between the two GC columns
- B** = Indicates that the compound was found in the associated blank
- E** = Indicates that the concentration exceeded the calibration range of the instrument
- U** = Indicates that the compound was analyzed for but not detected, number indicates the reporting limit
- D** = Indicates that the compound was found in an analysis at a secondary dilution factor
- \*** = Value obtained from a 1:5 dilution
- +** = Value obtained from a 1:10 dilution
- #** = Value obtained from a 1:20 dilution
- =** = Value obtained from a 1:25 dilution
- ^** = Value obtained from a 1:50 dilution
- ~** = Value obtained from a 1:100 dilution
- !** = Value obtained from a 1:250 dilution
- @** = Value obtained from a 1:125 dilution (medium level)
- \$** = Value obtained from a 1:500 dilution
- &** = Value obtained from a 1:1000 dilution
- N** = Flashpoint not observed; heated to specified limit
- R** = Flammable at room temperature
- TNTC** = Too numerous to count
- B.P.** = Detection limit taken from boiling point
- F.F.** = Sample gave off flammable fumes





**OHM R mediation Services Corp**  
 Subdivisor of OHM Corporation  
 U.S. Route 224 East • Findlay, Ohio 44640 • (419) 425-5524

**CHAIN-OF-CUSTODY RECORD**

LABORATORY COPY  
**206669**  
 FORM 0019 REV 2-97

*5445 Triangle Pkwy, Ste 400*  
*Norcross GA 30092*

|                                                  |  |                                                |  |                                              |  |                                                    |  |                                                    |  |                                                    |  |
|--------------------------------------------------|--|------------------------------------------------|--|----------------------------------------------|--|----------------------------------------------------|--|----------------------------------------------------|--|----------------------------------------------------|--|
| OHM LAB COORDINATOR<br><i>Elena Rodriguez</i>    |  | LAB COORDINATOR'S PHONE<br><i>770-729-3900</i> |  | LAB COORDINATOR'S FAX<br><i>770-453-7716</i> |  | LABORATORY SERVICE ID                              |  | LABORATORY CONTACT                                 |  | MAIL REPORT (COMPANY NAME)                         |  |
| PROJECT NAME<br><i>Defense Depot</i>             |  | PROJECT LOCATION<br><i>DDMT, Memphis, TN</i>   |  | PROJECT NUMBER<br><i>20022</i>               |  | LABORATORY PHONE<br><i>301-926-6602</i>            |  | LABORATORY FAX                                     |  | RECIPIENT NAME<br><i>Ken Ives</i>                  |  |
| PROJECT CONTACT<br><i>Steve Offner</i>           |  | PROJECT PHONE NUMBER<br><i>901-743-1117</i>    |  | PROJECT FAX<br><i>901-743-1048</i>           |  | LABORATORY ADDRESS<br><i>202 Perry Pkwy</i>        |  | LABORATORY ADDRESS                                 |  | ADDRESS<br><i>GP Environmental Services</i>        |  |
| PROJECT ADDRESS<br><i>Memphis TN</i>             |  | CITY STATE AND ZIP CODE<br><i>Memphis TN</i>   |  | CLIENT<br><i>USACE</i>                       |  | CITY STATE AND ZIP CODE<br><i>60100 Perry Pkwy</i> |  | CITY STATE AND ZIP CODE<br><i>60100 Perry Pkwy</i> |  | CITY STATE AND ZIP CODE<br><i>60100 Perry Pkwy</i> |  |
| PROJECT MANAGER<br><i>Steve Offner/John Love</i> |  | PROJECT MANAGER'S PHONE<br><i>770-326-2571</i> |  | PROJECT MANAGER'S FAX<br><i>770-453-7716</i> |  | CITY STATE AND ZIP CODE<br><i>60100 Perry Pkwy</i> |  | CITY STATE AND ZIP CODE<br><i>60100 Perry Pkwy</i> |  | CITY STATE AND ZIP CODE<br><i>60100 Perry Pkwy</i> |  |

| Item | Sample Identifier | Matrix |       |     | Date    | Time  | Preserved | # of Cont | OHM Min | T.A.T | Analyses | Comments |                                                   |
|------|-------------------|--------|-------|-----|---------|-------|-----------|-----------|---------|-------|----------|----------|---------------------------------------------------|
|      |                   | Soil   | Water | Air |         |       |           |           |         |       |          |          |                                                   |
| 1    | DDMT-DF-GV        | Soil   |       |     | 7/16/98 | 14:00 | 5         | 5         | OHM     | 7     | X        | X        | Samples contain broken glass from unknown         |
| 2    |                   |        |       |     |         |       |           |           |         |       |          |          | glass vials exhausted from test pit.              |
| 3    |                   |        |       |     |         |       |           |           |         |       |          |          | Contents of glass vials are not known.            |
| 4    |                   |        |       |     |         |       |           |           |         |       |          |          | (See attached for complete breakdown of analyses) |
| 5    |                   |        |       |     |         |       |           |           |         |       |          |          |                                                   |
| 6    |                   |        |       |     |         |       |           |           |         |       |          |          |                                                   |
| 7    |                   |        |       |     |         |       |           |           |         |       |          |          |                                                   |
| 8    |                   |        |       |     |         |       |           |           |         |       |          |          |                                                   |
| 9    |                   |        |       |     |         |       |           |           |         |       |          |          |                                                   |
| 10   |                   |        |       |     |         |       |           |           |         |       |          |          |                                                   |

**SAMPLES COLLECTED BY**  
*Steve Offner*

**RELINQUISHED BY**  
*Steve Offner*

**COURIER AND AIR BILL NUMBER**  
*STP-111*

**DATE**  
*7/16/98*

**TIME**  
*1500*

**COOLER TEMPERATURE UPON RECEIPT**  
*21/4/98*

**SAMPLE'S CONDITION UPON RECEIPT**  
*21/4/98*

**Distribution:** White - Laboratory (To be returned with Analytical Report); Goldenrod - Project File; Yellow - Project Data Manager

**SAMPLE RECEIPT CHECKLIST**

W.O. No. 97-01-105 Carrier Name DEER  
 Client Name N/A Prepared (Logged In) By G 12/17/98  
 Date Received 2/17/98 Project DEER Initials DE Date  
 Time Received 9:02 am Site \_\_\_\_\_  
 Received By Loves VOA Holding Blank ID. No. \_\_\_\_\_

|                                                                  |                                       |                                    |                                                     |
|------------------------------------------------------------------|---------------------------------------|------------------------------------|-----------------------------------------------------|
| Airbill/Manifest Present?                                        | YES NO                                | Trip Blanks Received?              | YES NO                                              |
| No. <u>6130752834</u>                                            | <input checked="" type="checkbox"/> — | No. of Sets _____                  | — <u>N/A</u>                                        |
| Shipping Container in Good Condition?                            | <input checked="" type="checkbox"/> — | VOA Vials Have Zero Headspace?     | — <u>N/A</u>                                        |
| Custody Seals Present on Shipping Container?                     | <input checked="" type="checkbox"/> — | Preservatives Added to Sample?     | — <u>N/A</u>                                        |
| Condition: Good <input checked="" type="checkbox"/> Broken _____ |                                       | pH Check Required?                 | — <u>N/A</u>                                        |
| Chain-of-Custody Present?                                        | <input checked="" type="checkbox"/> — | Performed By? _____                |                                                     |
| Chain-of-Custody Agrees with Sample Labels?                      | <input checked="" type="checkbox"/> — | Ice Present in Shipping Container? | <input checked="" type="checkbox"/> ( <u>used</u> ) |
| Chain-of-Custody Signed?                                         | <input checked="" type="checkbox"/> — | Container# _____ Temperature _____ |                                                     |
| Packing Present in Shipping Container?                           | <input checked="" type="checkbox"/> — | <u>41</u> <u>4.0</u>               |                                                     |
| Type of Packing <u>BUBBLE WRAP</u>                               |                                       | _____                              |                                                     |
| Custody Seals on Sample Bottles?                                 | — <input checked="" type="checkbox"/> | _____                              |                                                     |
| Condition: Good _____ Broken _____                               |                                       | _____                              |                                                     |
| Total Number of Sample Bottles <u>5</u>                          |                                       | _____                              |                                                     |
| Total Number of Samples <u>1</u>                                 |                                       | _____                              |                                                     |
| Samples Intact?                                                  | <input checked="" type="checkbox"/> — | Project Manager Contacted?         |                                                     |
| Sufficient Sample Volume for Indicated Test?                     | <input checked="" type="checkbox"/> — | Name: <u>Loves</u>                 |                                                     |
|                                                                  |                                       | Date Contacted: <u>2/27/98</u>     |                                                     |

Any **NQ** response must be detailed in the comments section below. If items are not applicable to particular samples or contracts, they should be marked **N/A**.

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Checklist Completed by G  
 Date 2/17/98

***SEMIVOLATILE  
QC***

***GP Environmental Services***

**CASE NARRATIVE**  
**SEMI-VOLATILE**

Client : OHM  
Work Order : 98-02-105  
SDG : N/A  
Date : 03/18/98

1. One soil sample was received on 02/17/98 extracted and analyzed for regular semivolatile organic compounds, malononitrile and acetophenone using modified method 8270.

MP  
03/18/98  
MP 3/18/98

478 328

2D  
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: GP\_ENVIRONMENTAL Contract: OHM  
Lab Code: GPES Case No.: N/A SAS No.: N/A SDG No.: N/A  
Level: (low/med) LOW

|    | EPA<br>SAMPLE NO. | S1<br>(2FP) # | S2<br>(PHL) # | S3<br>(NBZ) # | S4<br>(FBP) # | S5<br>(TBP) # | S6<br>(TPH) # | TOT<br>OUT |
|----|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|------------|
| 01 | DDMTDFGV          | 84            | 91            | 77            | 74            | 112           | 120           | 0          |
| 02 | SBLKA             | 79            | 87            | 84            | 89            | 89            | 120           | 0          |

|    |                              |           |
|----|------------------------------|-----------|
|    |                              | QC LIMITS |
| S1 | (2FP) = 2-Fluorophenol       | (25-121)  |
| S2 | (PHL) = Phenol-d5            | (24-113)  |
| S3 | (NBZ) = Nitrobenzene-d5      | (23-120)  |
| S4 | (FBP) = 2-Fluorobiphenyl     | (30-115)  |
| S5 | (TBP) = 2,4,6-Tribromophenol | (19-122)  |
| S6 | (TPH) = Terphenyl-d14        | (18-137)  |

# Column to be used to flag recovery values

\* Values outside of contract required QC limits

D Surrogate diluted out

4B  
SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO 478 329

SBLKA

Lab Name: GP\_ENVIRONMENTAL Contract: OHM  
Lab Code GPES Case No N/A SAS No. N/A SDG No. N/A  
Lab File ID: D09876.D Lab Sample ID: SBLK-048MS  
Instrument ID HP D Date Extracted: 02/20/98  
Matrix: (soil/water) SOIL Date Analyzed: 02/23/98  
Level (low/med) LOW Time Analyzed 17:55

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

| EPA<br>SAMPLE NO. | LAB<br>SAMPLE ID | LAB<br>FILE ID | DATE<br>ANALYZED |
|-------------------|------------------|----------------|------------------|
| 01: DDMTDFGV      | 9802105-01D      | D09874.D       | 02/23/98         |

COMMENTS

478 330

5B-8270

**SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK  
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)**

Lab Name: GP\_ENVIRONMENTAL Contract: OHM  
 Lab Code: GPES Case No.: N/A SAS No.: N/A SDG No.: N/A  
 Lab File ID: D09749.D DFTPP Injection Date: 02/18/98  
 Instrument ID: HP#D DFTPP Injection Time: 12:10

| m/e | ION ABUNDANCE CRITERIA             | % RELATIVE ABUNDANCE |
|-----|------------------------------------|----------------------|
| 51  | 30.0 - 60.0% of mass 198           | 49.1                 |
| 68  | Less than 2.0% of mass 69          | 0.0 ( 0.0 )1         |
| 69  | Mass 69 Relative abundance         | 59.8                 |
| 70  | Less than 2.0% of mass 69          | 0.3 ( 0.5 )1         |
| 127 | 40.0 - 60.0% of mass 198           | 48.2                 |
| 197 | Less than 1.0% of mass 198         | 0.0                  |
| 198 | Base Peak, 100% relative abundance | 100.0                |
| 199 | 5.0 to 9.0% of mass 198            | 7.6                  |
| 275 | 10.0 - 30.0% of mass 198           | 23.6                 |
| 365 | Greater than 1.0% of mass 198      | 2.2                  |
| 441 | Present, but less than mass 443    | 7.7                  |
| 442 | 40.0 - 110.0% of mass 198          | 43.8                 |
| 443 | 17.0 - 23.0% of mass 442           | 9.7 ( 22.1 )2        |

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS

|    | EPA<br>SAMPLE NO | LAB<br>SAMPLE ID | LAB<br>FILE ID | DATE<br>ANALYZED | TIME<br>ANALYZED |
|----|------------------|------------------|----------------|------------------|------------------|
| 01 | SSTD050          | SSTD050          | D09750.D       | 02/18/98         | 12:28            |
| 02 | SSTD010          | SSTD010          | D09751.D       | 02/18/98         | 13:30            |
| 03 | SSTD020          | SSTD020          | D09752.D       | 02/18/98         | 14:14            |
| 04 | SSTD080          | SSTD080          | D09753.D       | 02/18/98         | 14:58            |
| 05 | SSTD120          | SSTD120          | D09754.D       | 02/18/98         | 15:42            |
| 06 | SSTD160          | SSTD160          | D09755.D       | 02/18/98         | 16:25            |

5B-8270  
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK  
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

478 331

Lab Name: GP\_ENVIRONMENTAL Contract OHM  
Lab Code GPES Case No. N/A SAS No.: N/A SDG No.: N/A  
Lab File ID. D09866.D DFTPP Injection Date: 02/23/98  
Instrument ID HP D DFTPP Injection Time: 10:54

| m/e | ION ABUNDANCE CRITERIA             | % RELATIVE ABUNDANCE |
|-----|------------------------------------|----------------------|
| 51  | 30.0 - 60.0% of mass 198           | 40.3                 |
| 68  | Less than 2.0% of mass 69          | 0.0 ( 0.0)1          |
| 69  | Mass 69 Relative abundance         | 49.1                 |
| 70  | Less than 2.0% of mass 69          | 0.3 ( 0.5)1          |
| 127 | 40.0 - 60.0% of mass 198           | 41.7                 |
| 197 | Less than 1.0% of mass 198         | 0.0                  |
| 198 | Base Peak, 100% relative abundance | 100.0                |
| 199 | 5.0 to 9.0% of mass 198            | 7.2                  |
| 275 | 10.0 - 30.0% of mass 198           | 21.1                 |
| 365 | Greater than 1.0% of mass 198      | 1.9                  |
| 441 | Present, but less than mass 443    | 6.3                  |
| 442 | 40.0 - 110.0% of mass 198          | 40.6                 |
| 443 | 17.0 - 23.0% of mass 442           | 8.0 ( 19.6)2         |

1-Value is % mass 69

2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS

|    | EPA<br>SAMPLE NO. | LAB<br>SAMPLE ID | LAB<br>FILE ID | DATE<br>ANALYZED | TIME<br>ANALYZED |
|----|-------------------|------------------|----------------|------------------|------------------|
| 01 | SSTD050           | SSTD050          | D09867.D       | 02/23/98         | 11:17            |
| 02 | SSTD050MA         | SSTD050MA        | D09868.D       | 02/23/98         | 12:04            |
| 03 | SSTD020MA         | SSTD020MA        | D09869.D       | 02/23/98         | 12:44            |
| 04 | SSTD080MA         | SSTD080MA        | D09870.D       | 02/23/98         | 13:23            |
| 05 | SSTD120MA         | SSTD120MA        | D09871.D       | 02/23/98         | 14:03            |
| 06 | SSTD160MA         | SSTD160MA        | D09872.D       | 02/23/98         | 14:42            |
| 07 | DDMTDFGV          | 9802105-01D      | D09874.D       | 02/23/98         | 16:29            |
| 08 | SBLKA             | SBLK-048         | D09876.D       | 02/23/98         | 17:55            |



478 332

## Response Factor Report Instrumen

Method : C:\HPCHEM\1\METHODS\ME8270D.M  
 Title : SW-846 Method 8270  
 Last Update : Tue Feb 17 16:27:33 1998  
 Response via : Initial Calibration

## Calibration Files

50 =D09750.D 160 =D09755.D 20 =D09752.D  
 80 =D09753.D 120 =D09754.D 10 =D09751.D

| Compound |                       | 50             | 160   | 20    | 80    | 120   | 10    | Avg   | %RSD  |
|----------|-----------------------|----------------|-------|-------|-------|-------|-------|-------|-------|
| -----    |                       |                |       |       |       |       |       |       |       |
| 1) I     | 1,4-Dichlorobenzene-d | -----ISTD----- |       |       |       |       |       |       |       |
| 2) T     | N-Nitrosodimethylam   | 0.956          | 0.872 | 0.987 | 0.974 | 0.901 | 1.010 | 0.950 | 5.57  |
| 3) S     | 2-Fluorophenol        | 1.234          | 0.925 | 1.250 | 1.162 | 1.016 | 1.331 | 1.153 | 13.36 |
| 4) T     | bis(2-Chloroethyl)e   | 1.391          | 1.007 | 1.384 | 1.283 | 1.135 | 1.442 | 1.274 | 13.34 |
| 5) S     | Phenol-d5             | 1.563          | 1.199 | 1.537 | 1.473 | 1.337 | 1.573 | 1.447 | 10.33 |
| 6) MC    | Phenol                | 1.703          | 1.097 | 1.599 | 1.514 | 1.320 | 1.681 | 1.486 | 15.85 |
| 7) M     | 2-Chlorophenol        | 1.352          | 0.881 | 1.365 | 1.187 | 1.027 | 1.479 | 1.215 | 18.72 |
| 8) T     | 1,3-Dichlorobenzene   | 1.674          | 1.143 | 1.590 | 1.486 | 1.294 | 1.712 | 1.483 | 15.13 |
| 9) MC    | 1,4-Dichlorobenzene   | 1.712          | 1.116 | 1.605 | 1.458 | 1.229 | 1.734 | 1.476 | 17.41 |
| 10) T    | 1,2-Dichlorobenzene   | 1.568          | 0.970 | 1.533 | 1.339 | 1.141 | 1.635 | 1.364 | 19.37 |
| 11) T    | Benzyl alcohol        | 0.638          | 0.615 | 0.629 | 0.591 | 0.598 | 0.699 | 0.629 | 6.21  |
| 12) T    | 2,2'-oxybis(1-chlor   | 1.608          | 1.603 | 1.577 | 1.687 | 1.662 | 1.076 | 1.535 | 14.89 |
| 13) T    | 2-Methylphenol        | 1.185          | 0.894 | 1.178 | 1.057 | 0.982 | 1.226 | 1.087 | 12.07 |
| 14) T    | Hexachloroethane      | 0.775          | 0.522 | 0.744 | 0.668 | 0.575 | 0.778 | 0.677 | 16.03 |
| 15) MP   | N-Nitroso-di-n-prop   | 1.153          | 0.950 | 1.128 | 1.080 | 0.996 | 1.136 | 1.074 | 7.73  |
| 16) T    | 4-Methylphenol        | 1.237          | 0.933 | 1.178 | 1.073 | 0.971 | 1.293 | 1.114 | 13.07 |
|          |                       |                |       |       |       |       |       |       |       |
| 17) I    | Naphthalene-d8        | -----ISTD----- |       |       |       |       |       |       |       |
| 18) S    | Nitrobenzene-d5       | 0.490          | 0.421 | 0.464 | 0.470 | 0.450 | 0.475 | 0.462 | 5.19  |
| 19) T    | Nitrobenzene          | 0.492          | 0.415 | 0.469 | 0.471 | 0.449 | 0.501 | 0.466 | 6.64  |
| 20) T    | Isophorone            | 0.887          | 0.796 | 0.853 | 0.892 | 0.863 | 0.906 | 0.866 | 4.57  |
| 21) TC   | 2-Nitrophenol         | 0.260          | 0.222 | 0.239 | 0.250 | 0.242 | 0.251 | 0.244 | 5.39  |
| 22) T    | 2,4-Dimethylphenol    | 0.470          | 0.401 | 0.422 | 0.475 | 0.463 | 0.458 | 0.448 | 6.62  |
| 23) T    | Benzoic Acid          | 0.336          | 0.330 | 0.351 | 0.356 | 0.367 | 0.332 | 0.345 | 4.28  |
| 24) T    | bis(2-Chloroethoxy)   | 0.504          | 0.434 | 0.492 | 0.486 | 0.469 | 0.516 | 0.483 | 6.03  |
| 25) TC   | 2,4-Dichlorophenol    | 0.372          | 0.315 | 0.353 | 0.353 | 0.337 | 0.373 | 0.350 | 6.28  |
| 26) M    | 1,2,4-Trichlorobenz   | 0.407          | 0.338 | 0.382 | 0.371 | 0.357 | 0.435 | 0.382 | 9.17  |
| 27) T    | Naphthalene           | 1.139          | 0.850 | 1.068 | 1.038 | 0.945 | 1.178 | 1.036 | 11.78 |
| 28) T    | 4-Chloroaniline       | 0.434          | 0.328 | 0.441 | 0.410 | 0.370 | 0.479 | 0.410 | 13.14 |
| 29) TC   | Hexachlorobutadiene   | 0.286          | 0.223 | 0.270 | 0.246 | 0.228 | 0.303 | 0.259 | 12.46 |
| 30) MC   | 4-Chloro-3-methylph   | 0.409          | 0.332 | 0.390 | 0.363 | 0.345 | 0.411 | 0.375 | 8.86  |
| 31) T    | 2-Methylnaphthalene   | 0.746          | 0.597 | 0.728 | 0.696 | 0.635 | 0.772 | 0.696 | 9.73  |
|          |                       |                |       |       |       |       |       |       |       |
| 32) I    | Acenaphthene-d10      | -----ISTD----- |       |       |       |       |       |       |       |
| 33) TP   | Hexachlorocyclopent   | 0.549          | 0.411 | 0.415 | 0.424 | 0.420 | 0.423 | 0.440 | 12.21 |
| 34) TC   | 2,4,6-Trichlorophen   | 0.491          | 0.439 | 0.433 | 0.431 | 0.421 | 0.440 | 0.442 | 5.54  |
| 35) T    | 2,4,5-Trichlorophen   | 0.489          | 0.340 | 0.441 | 0.395 | 0.379 | 0.451 | 0.416 | 13.05 |
| 36) S    | 2-Fluorobiphenyl      | 1.445          | 1.145 | 1.347 | 1.238 | 1.197 | 1.454 | 1.305 | 10.00 |
| 37) T    | 2-Chloronaphthalene   | 1.280          | 1.010 | 1.185 | 1.148 | 1.063 | 1.246 | 1.155 | 9.04  |
| 38) T    | 2-Nitroaniline        | 0.510          | 0.420 | 0.473 | 0.471 | 0.458 | 0.452 | 0.464 | 6.33  |
| 39) T    | Acenaphthylene        | 2.031          | 1.451 | 1.969 | 1.717 | 1.579 | 2.050 | 1.800 | 14.09 |
| 40) T    | Dimethylphthalate     | 1.539          | 1.188 | 1.510 | 1.393 | 1.274 | 1.585 | 1.415 | 11.19 |

## Response Factor Report Instrumen

478 333

Method : C:\HPCHEM\1\METHODS\ME8270D.M  
 Title : SW-846 Method 8270  
 Last Update : Tue Feb 17 16:27:33 1998  
 Response via : Initial Calibration

## Calibration Files

50 =D09750.D 160 =D09755.D 20 =D09752.D  
 80 =D09753.D 120 =D09754.D 10 =D09751.D

|        | Compound            | 50             | 160   | 20    | 80    | 120   | 10    | Avg    | %RSD  |
|--------|---------------------|----------------|-------|-------|-------|-------|-------|--------|-------|
| 41) T  | 2,6-Dinitrotoluene  | 0.385          | 0.271 | 0.354 | 0.353 | 0.332 | 0.354 | 0.342  | 11.32 |
| 42) MC | Acenaphthene        | 1.326          | 1.004 | 1.246 | 1.179 | 1.077 | 1.323 | 1.193  | 11.05 |
| 43) T  | 3-Nitroaniline      | 0.290          | 0.152 | 0.323 | 0.240 | 0.182 | 0.330 | 0.253  | 29.42 |
| 44) TP | 2,4-Dinitrophenol   | 0.231          | 0.216 | 0.198 | 0.242 | 0.225 | 0.173 | 0.214  | 11.71 |
| 45) T  | Dibenzofuran        | 1.716          | 1.370 | 1.627 | 1.594 | 1.478 | 1.735 | 1.587  | 8.87  |
| 46) M  | 2,4-Dinitrotoluene  | 0.519          | 0.420 | 0.516 | 0.501 | 0.453 | 0.536 | 0.491  | 9.08  |
| 47) MP | 4-Nitrophenol       | 0.282          | 0.205 | 0.268 | 0.260 | 0.223 | 0.242 | 0.247  | 11.82 |
| 48) T  | Fluorene            | 1.355          | 1.027 | 1.324 | 1.252 | 1.139 | 1.362 | 1.243  | 10.84 |
| 49) T  | 4-Chlorophenyl-phen | 0.650          | 0.463 | 0.655 | 0.594 | 0.523 | 0.687 | 0.595  | 14.58 |
| 50) T  | Diethylphthalate    | 1.652          | 1.064 | 1.708 | 1.474 | 1.240 | 1.805 | 1.491  | 19.38 |
| 51) T  | 4-Nitroaniline      | 0.281          | 0.212 | 0.289 | 0.281 | 0.214 | 0.288 | 0.261  | 14.29 |
| 52) S  | 2,4,6-Tribromopheno | 0.290          | 0.227 | 0.272 | 0.266 | 0.243 | 0.288 | 0.265  | 9.50  |
| 53) I  | Phenanthrene-d10    | -----ISTD----- |       |       |       |       |       |        |       |
| 54) T  | 4,6-Dinitro-2-methy | 0.190          | 0.166 | 0.159 | 0.172 | 0.151 | 0.163 | 0.167  | 7.96  |
| 55) TC | n-Nitrosodiphenylam | 0.580          | 0.381 | 0.526 | 0.508 | 0.485 | 0.572 | 0.509  | 14.26 |
| 56) T  | 4-Bromophenyl-pheny | 0.237          | 0.197 | 0.220 | 0.207 | 0.204 | 0.240 | 0.218  | 8.26  |
| 57) T  | Hexachlorobenzene   | 0.320          | 0.263 | 0.309 | 0.278 | 0.268 | 0.339 | 0.296  | 10.39 |
| 58) T  | Benzidine           | 0.006          | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.006# | 2.92  |
| 59) MC | Pentachlorophenol   | 0.201          | 0.170 | 0.170 | 0.171 | 0.172 | 0.183 | 0.178  | 6.97  |
| 60) T  | Phenanthrene        | 1.083          | 0.909 | 0.982 | 0.995 | 0.961 | 1.112 | 1.007  | 7.59  |
| 61) T  | Anthracene          | 1.078          | 0.870 | 1.002 | 0.978 | 0.927 | 1.102 | 0.993  | 8.88  |
| 62) T  | Carbazole           | 0.907          | 0.763 | 0.860 | 0.837 | 0.800 | 0.935 | 0.850  | 7.60  |
| 63) T  | Di-n-butylphthalate | 1.539          | 1.190 | 1.459 | 1.370 | 1.297 | 1.549 | 1.401  | 10.12 |
| 64) TC | Fluoranthene        | 1.095          | 0.882 | 1.030 | 0.956 | 0.928 | 1.099 | 0.998  | 9.05  |
| 65) I  | Chrysene-d12        | -----ISTD----- |       |       |       |       |       |        |       |
| 66) M  | Pyrene              | 1.689          | 1.513 | 1.685 | 1.698 | 1.602 | 1.792 | 1.663  | 5.72  |
| 67) S  | Terphenyl-d14       | 1.174          | 1.023 | 1.164 | 1.175 | 1.094 | 1.220 | 1.142  | 6.21  |
| 68) T  | Butylbenzylphthalat | 0.996          | 0.819 | 0.953 | 0.928 | 0.866 | 0.971 | 0.922  | 7.32  |
| 69) T  | 3,3'-Dichlorobenzid | 0.322          | 0.238 | 0.341 | 0.289 | 0.260 | 0.345 | 0.299  | 14.77 |
| 70) T  | Benzo[a]anthracene  | 1.283          | 1.134 | 1.221 | 1.173 | 1.160 | 1.295 | 1.211  | 5.53  |
| 71) T  | Chrysene            | 1.213          | 0.975 | 1.133 | 1.092 | 1.053 | 1.266 | 1.122  | 9.49  |
| 72) T  | bis(2-Ethylhexyl)ph | 1.282          | 1.072 | 1.233 | 1.211 | 1.169 | 1.267 | 1.206  | 6.39  |
| 73) I  | Perylene-d12        | -----ISTD----- |       |       |       |       |       |        |       |
| 74) TC | Di-n-octylphthalate | 2.824          | 2.238 | 2.451 | 2.639 | 2.424 | 2.416 | 2.499  | 8.17  |
| 75) T  | Benzo[b]fluoranthen | 1.472          | 1.308 | 1.401 | 1.366 | 1.306 | 1.470 | 1.387  | 5.36  |
| 76) T  | Benzo[k]fluoranthen | 1.375          | 1.022 | 1.270 | 1.243 | 1.141 | 1.299 | 1.225  | 10.24 |
| 77) TC | Benzo[a]pyrene      | 1.181          | 1.012 | 1.152 | 1.136 | 1.058 | 1.136 | 1.113  | 5.75  |
| 78) T  | Indeno[1,2,3-cd]pyr | 1.141          | 1.104 | 1.203 | 1.096 | 1.082 | 1.140 | 1.128  | 3.90  |
| 79) T  | Dibenz[a,h]anthrace | 0.943          | 0.924 | 0.994 | 0.932 | 0.913 | 0.936 | 0.940  | 3.01  |
| 80) T  | Benzo[g,h,i]perylen | 0.928          | 0.911 | 0.972 | 0.889 | 0.877 | 0.922 | 0.916  | 3.62  |

(# ) = Out of Range

ME8270D.M

Wed Feb 18 17:24:19 1998

65HPGCMS

Page 2

008

Data File : J:\GCMSDATA\D\FEB2398\D09867.D  
 Acq On : 23 Feb 98 11:17  
 Sample : SST050  
 Misc : SST050 HP#D MN

Vial: 2  
 Operator: MN  
 Inst : Instrumen  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\ME8270D.M  
 Title : SW-846 Method 8270  
 Last Update : Wed Feb 18 17:29:54 1998  
 Response via : Single Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min  
 Max. RRF Dev : 25% Max. Rel. Area : 150%

|       | Compound                    | AvgRF | CCRF  | %Dev  | Area% | Dev (min) |
|-------|-----------------------------|-------|-------|-------|-------|-----------|
| 1 I   | 1,4-Dichlorobenzene-d4      | 1.000 | 1.000 | 0.0   | 89    | 0.01      |
| 2 T   | N-Nitrosodimethylamine      | 0.950 | 1.029 | -8.3  | 96    | -0.04     |
| 3 S   | 2-Fluorophenol              | 1.153 | 1.221 | -5.9  | 88    | 0.00      |
| 4 T   | bis(2-Chloroethyl)ether     | 1.274 | 1.226 | 3.8   | 78    | 0.00      |
| 5 S   | Phenol-d5                   | 1.447 | 1.477 | -2.1  | 84    | 0.00      |
| 6 MC  | Phenol                      | 1.486 | 1.548 | -4.2  | 81    | 0.00      |
| 7 M   | 2-Chlorophenol              | 1.215 | 1.232 | -1.4  | 81    | 0.00      |
| 8 T   | 1,3-Dichlorobenzene         | 1.483 | 1.591 | -7.3  | 85    | 0.00      |
| 9 MC  | 1,4-Dichlorobenzene         | 1.476 | 1.596 | -8.1  | 83    | 0.00      |
| 10 T  | 1,2-Dichlorobenzene         | 1.364 | 1.484 | -8.8  | 84    | 0.01      |
| 11 T  | Benzyl alcohol              | 0.629 | 0.672 | -6.8  | 94    | 0.00      |
| 12 T  | 2,2'-oxybis(1-chloropropane | 1.535 | 1.780 | -16.0 | 99    | 0.00      |
| 13 T  | 2-Methylphenol              | 1.087 | 1.095 | -0.7  | 82    | 0.00      |
| 14 T  | Hexachloroethane            | 0.677 | 0.697 | -3.0  | 80    | 0.00      |
| 15 MP | N-Nitroso-di-n-propylamine  | 1.074 | 0.925 | 13.9  | 71    | -0.02     |
| 16 T  | 4-Methylphenol              | 1.114 | 1.081 | 3.0   | 78    | 0.00      |
| 17 I  | Naphthalene-d8              | 1.000 | 1.000 | 0.0   | 80    | 0.00      |
| 18 S  | Nitrobenzene-d5             | 0.462 | 0.478 | -3.5  | 78    | 0.00      |
| 19 T  | Nitrobenzene                | 0.466 | 0.474 | -1.7  | 77    | 0.00      |
| 20 T  | Isophorone                  | 0.866 | 0.770 | 11.1  | 69    | 0.00      |
| 21 TC | 2-Nitrophenol               | 0.244 | 0.266 | -9.0  | 82    | 0.00      |
| 22 T  | 2,4-Dimethylphenol          | 0.448 | 0.444 | 0.9   | 75    | 0.00      |
| 23 T  | Benzoic Acid                | 0.345 | 0.286 | 17.1  | 68    | -0.02     |
| 24 T  | bis(2-Chloroethoxy)methane  | 0.483 | 0.464 | 3.9   | 73    | 0.00      |
| 25 TC | 2,4-Dichlorophenol          | 0.350 | 0.371 | -6.0  | 80    | 0.00      |
| 26 M  | 1,2,4-Trichlorobenzene      | 0.382 | 0.427 | -11.8 | 83    | 0.00      |
| 27 T  | Naphthalene                 | 1.036 | 1.091 | -5.3  | 76    | 0.00      |
| 28 T  | 4-Chloroaniline             | 0.410 | 0.402 | 2.0   | 74    | 0.00      |
| 29 TC | Hexachlorobutadiene         | 0.259 | 0.302 | -16.6 | 84    | 0.00      |
| 30 MC | 4-Chloro-3-methylphenol     | 0.375 | 0.382 | -1.9  | 74    | 0.01      |
| 31 T  | 2-Methylnaphthalene         | 0.696 | 0.725 | -4.2  | 77    | 0.01      |
| 32 I  | Acenaphthene-d10            | 1.000 | 1.000 | 0.0   | 77    | 0.00      |
| 33 TP | Hexachlorocyclopentadiene   | 0.440 | 0.455 | -3.4  | 64    | 0.00      |
| 34 TC | 2,4,6-Trichlorophenol       | 0.442 | 0.486 | -10.0 | 76    | 0.01      |
| 35 T  | 2,4,5-Trichlorophenol       | 0.416 | 0.504 | -21.2 | 79    | 0.02      |
| 36 S  | 2-Fluorobiphenyl            | 1.305 | 1.430 | -9.6  | 76    | 0.00      |
| 37 T  | 2-Chloronaphthalene         | 1.155 | 1.280 | -10.8 | 77    | 0.01      |
| 38 T  | 2-Nitroaniline              | 0.464 | 0.479 | -3.2  | 73    | 0.00      |
| 39 T  | Acenaphthylene              | 1.800 | 1.798 | 0.1   | 68    | 0.00      |

(#) = Out of Range

D09867.D ME8270D.M

Mon Feb 23 12:05:51 1998

65HPGCMS

Page 1

009

## Evaluate Continuing Calibration Report

478 335

Data File : J:\GCMSDATA\D\FEB2398\D09867.D  
 Acq On : 23 Feb 98 11:17  
 Sample : SSTD050  
 Misc : SSTD050 HP#D MN

Vial: 2  
 Operator: MN  
 Inst : Instrumen  
 Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\ME8270D.M  
 Title : SW-846 Method 8270  
 Last Update : Wed Feb 18 17:29:54 1998  
 Response via : Single Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min  
 Max. RRF Dev : 25% Max. Rel. Area : 150%

|       | Compound                   | AvgRF | CCRF   | %Dev   | Area% | Dev (min) |
|-------|----------------------------|-------|--------|--------|-------|-----------|
| 40 T  | Dimethylphthalate          | 1.415 | 1.350  | 4.6    | 68    | 0.00      |
| 41 T  | 2,6-Dinitrotoluene         | 0.342 | 0.361  | -5.6   | 72    | 0.00      |
| 42 MC | Acenaphthene               | 1.193 | 1.251  | -4.9   | 73    | 0.00      |
| 43 T  | 3-Nitroaniline             | 0.253 | 0.272  | -7.5   | 72    | 0.00      |
| 44 TP | 2,4-Dinitrophenol          | 0.214 | 0.214  | 0.0    | 71    | 0.00      |
| 45 T  | Dibenzofuran               | 1.587 | 1.721  | -8.4   | 77    | 0.01      |
| 46 M  | 2,4-Dinitrotoluene         | 0.491 | 0.481  | 2.0    | 71    | 0.00      |
| 47 MP | 4-Nitrophenol              | 0.247 | 0.184  | 25.5#  | 50    | 0.00      |
| 48 T  | Fluorene                   | 1.243 | 1.298  | -4.4   | 74    | 0.00      |
| 49 T  | 4-Chlorophenyl-phenylether | 0.595 | 0.688  | -15.6  | 82    | 0.00      |
| 50 T  | Diethylphthalate           | 1.491 | 1.427  | 4.3    | 67    | 0.00      |
| 51 T  | 4-Nitroaniline             | 0.261 | 0.287  | -10.0  | 79    | 0.00      |
| 52 S  | 2,4,6-Tribromophenol       | 0.265 | 0.255  | 3.8    | 68    | 0.01      |
| 53 I  | Phenanthrene-d10           | 1.000 | 1.000  | 0.0    | 70    | 0.01      |
| 54 T  | 4,6-Dinitro-2-methylphenol | 0.167 | 0.183  | -9.6   | 67    | 0.00      |
| 55 TC | n-Nitrosodiphenylamine     | 0.509 | 0.624  | -22.6# | 75    | 0.00      |
| 56 T  | 4-Bromophenyl-phenylether  | 0.218 | 0.265  | -21.6  | 78    | 0.01      |
| 57 T  | Hexachlorobenzene          | 0.296 | 0.337  | -13.9  | 73    | 0.01      |
| 58 T  | Benzidine                  | 0.006 | 0.007# | -16.7  | 87    | 0.01      |
| 59 MC | Pentachlorophenol          | 0.178 | 0.178  | 0.0    | 62    | 0.01      |
| 60 T  | Phenanthrene               | 1.007 | 1.124  | -11.6  | 72    | 0.01      |
| 61 T  | Anthracene                 | 0.993 | 1.051  | -5.8   | 68    | 0.00      |
| 62 T  | Carbazole                  | 0.850 | 0.901  | -6.0   | 69    | 0.00      |
| 63 T  | Di-n-butylphthalate        | 1.401 | 1.406  | -0.4   | 64    | 0.01      |
| 64 TC | Fluoranthene               | 0.998 | 0.952  | 4.6    | 61    | 0.01      |
| 65 I  | Chrysene-d12               | 1.000 | 1.000  | 0.0    | 47#   | 0.01      |
| 66 M  | Pyrene                     | 1.663 | 2.051  | -23.3  | 58    | 0.01      |
| 67 S  | Terphenyl-d14              | 1.142 | 1.480  | -29.6# | 60    | 0.01      |
| 68 T  | Butylbenzylphthalate       | 0.922 | 1.045  | -13.3  | 50#   | 0.01      |
| 69 T  | 3,3'-Dichlorobenzidine     | 0.299 | 0.367  | -22.7  | 54    | 0.00      |
| 70 T  | Benzo[a]anthracene         | 1.211 | 1.306  | -7.8   | 48#   | 0.01      |
| 71 T  | Chrysene                   | 1.122 | 1.218  | -8.6   | 48#   | 0.01      |
| 72 T  | bis(2-Ethylhexyl)phthalate | 1.206 | 1.352  | -12.1  | 50#   | 0.01      |
| 73 I  | Perylene-d12               | 1.000 | 1.000  | 0.0    | 45#   | 0.01      |
| 74 TC | Di-n-octylphthalate        | 2.499 | 2.810  | -12.4  | 45#   | 0.01      |
| 75 T  | Benzo[b]fluoranthene       | 1.387 | 1.526  | -10.0  | 47#   | 0.01      |
| 6 T   | Benzo[k]fluoranthene       | 1.225 | 1.344  | -9.7   | 44#   | 0.02      |
| 7 TC  | Benzo[a]pyrene             | 1.113 | 1.210  | -8.7   | 46#   | 0.02      |

(#) = Out of Range

D09867.D ME8270D.M

Mon Feb 23 12:06:01 1998

65HPGCMS

Page 2

010

Data File : J:\GCMSDATA\D\FEB2398\D09867.D  
Acq On : 23 Feb 98 11:17  
Sample : SSTD050  
Misc : SSTD050 HP#D MN

Vial: 2  
Operator: MN  
Inst : Instrumen  
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\ME8270D.M  
Title : SW-846 Method 8270  
Last Update : Wed Feb 18 17:29:54 1998  
Response via : Single Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min  
Max. RRF Dev : 25% Max. Rel. Area : 150%

|      | Compound               | AvgRF | CCRF  | %Dev  | Area% | Dev(min) |
|------|------------------------|-------|-------|-------|-------|----------|
| 78 T | Indeno[1,2,3-cd]pyrene | 1.128 | 1.251 | -10.9 | 49#   | 0.03     |
| 79 T | Dibenz[a,h]anthracene  | 0.940 | 1.036 | -10.2 | 50#   | 0.03     |
| 80 T | Benzo[g,h,i]perylene   | 0.916 | 1.029 | -12.3 | 50    | 0.04     |

# Response Factor Report Instrumen

Method : C:\HPCHEM\1\METHODS\MALOACET.M  
 Title : SW-846 Method 8270  
 Last Update : Mon Feb 23 13:32:58 1998  
 Response via : Initial Calibration

478 337

## Calibration Files

50 =D09868.D 160 =D09872.D 20 =D09869.D  
 80 =D09870.D 120 =D09871.D

| Compound                   | 50             | 160   | 20    | 80    | 120   | Avg   | %RSD  |
|----------------------------|----------------|-------|-------|-------|-------|-------|-------|
| 1) I 1,4-Dichlorobenzene-d | -----ISTD----- |       |       |       |       |       |       |
| 2) T Malononitrile         | 1.602          | 1.474 | 1.622 | 1.597 | 1.226 | 1.504 | 11.03 |
| 3) T Acetophenone          | 1.585          | 1.423 | 1.740 | 1.555 | 1.384 | 1.537 | 9.20  |
| 4) I Naphthalene-d8        | -----ISTD----- |       |       |       |       |       |       |
| 5) I Acenaphthene-d10      | -----ISTD----- |       |       |       |       |       |       |
| 6) I Phenanthrene-d10      | -----ISTD----- |       |       |       |       |       |       |
| 7) I Chrysene-d12          | -----ISTD----- |       |       |       |       |       |       |
| 8) I Perylene-d12          | -----ISTD----- |       |       |       |       |       |       |

## SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: GP\_ENVIRONMENTAL Contract: OHM  
 Lab Code: GPES Case No.: N/A SAS No.: N/A SDG No.: N/A  
 Lab File ID (Standard): D09867.D Date Analyzed: 02/23/98  
 Instrument ID: HP D Time Analyzed: 11:17

|                   | IS1(DCB)<br>AREA # | RT # | IS2(NPT)<br>AREA # | RT #  | IS3(ANT)<br>AREA # | RT #  |
|-------------------|--------------------|------|--------------------|-------|--------------------|-------|
| 12 HOUR STD       | 828155             | 9.33 | 2507350            | 12.48 | 1325781            | 16.91 |
| UPPER LIMIT       | 1656310            | 9.83 | 5014700            | 12.98 | 2651562            | 17.41 |
| LOWER LIMIT       | 414078             | 8.83 | 1253675            | 11.98 | 662891             | 16.41 |
| EPA SAMPLE<br>NO. |                    |      |                    |       |                    |       |
| 01 DDMTDFGV       | 889782             | 9.34 | 3092357            | 12.48 | 1993173            | 16.92 |
| 02 SBLKA          | 1094318            | 9.34 | 3649547            | 12.49 | 2259056            | 16.93 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4  
 IS2 (NPT) = Naphthalene-d8  
 IS3 (ANT) = Acenaphthene-d10  
 IS4 (PHN) = Phenanthrene-d10  
 IS5 (CRY) = Chrysene-d12  
 IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area  
 AREA LOWER LIMIT = - 50% of internal standard area  
 RT UPPER LIMIT = +0.50 minutes of internal standard RT  
 RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column to be used to flag values outside QC limit with an asterisk  
 \* Values outside of contract required QC limits

8C

## SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: GP\_ENVIRONMENTAL Contract: OHM  
 Lab Code: GPES Case No.: N/A SAS No.: N/A SDG No.: N/A  
 Lab File ID (Standard): D09867.D Date Analyzed: 02/23/98  
 Instrument ID: HP D Time Analyzed: 11:17

|               | IS4(PHN) |       | IS5(CRY) |       | IS6(PRY) |       |
|---------------|----------|-------|----------|-------|----------|-------|
|               | AREA #   | RT #  | AREA #   | RT #  | AREA #   | RT #  |
| 12 HOUR STD   | 1982575  | 20.58 | 891944   | 27.25 | 580431   | 30.57 |
| UPPER LIMIT   | 3965150  | 21.08 | 1783888  | 27.75 | 1160862  | 31.07 |
| LOWER LIMIT   | 991288   | 20.08 | 445972   | 26.75 | 290216   | 30.07 |
| EPA SAMPLE NO |          |       |          |       |          |       |
| 01 DDMTDFGV   | 3327915  | 20.60 | 1245208  | 27.27 | 790580   | 30.60 |
| 02 SBLKA      | 3762303  | 20.60 | 1586348  | 27.27 | 1051892  | 30.60 |

IS1 (DCB) = 1,4-Dichlorobenzene-d4  
 IS2 (NPT) = Naphthalene-d8  
 IS3 (ANT) = Acenaphthene-d10  
 IS4 (PHN) = Phenanthrene-d10  
 IS5 (CRY) = Chrysene-d12  
 IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area

AREA LOWER LIMIT = - 50% of internal standard area

RT UPPER LIMIT = +0.50 minutes of internal standard RT

RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column to be used to flag values outside QC limit with an asterisk.

\* Values outside of contract required QC limits



1B  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

|              |
|--------------|
| <b>SBLKA</b> |
|--------------|

Lab Name: GP\_ENVIRONMENTAL Contract: OHM

Lab Code: GPES Case No.: N/A SAS No.: N/A SDG No.: N/A

Matrix: (soil/water) SOIL Lab Sample ID: SBLK-048

Sample wt/vol. 30 (g/ml) G Lab File ID: D09876 D

Level: (low/med) LOW Date Received: \_\_\_\_\_

% Moisture: 0 decanted (Y/N) N Date Extracted: 02/20/98

Concentrated Extract Volume 1000 (uL) Date Analyzed: 02/23/98

Injection Volume: 1.0 (uL) Dilution Factor: 1 0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

| CAS NO.    | COMPOUND                     | CONCENTRATION UNITS |       | Q |
|------------|------------------------------|---------------------|-------|---|
|            |                              | (ug/L or ug/Kg)     | UG/KG |   |
| 00109-77-3 | Malononitrile                | 670                 |       | U |
| 111-44-4   | bis(2-Chloroethyl)ether      | 330                 |       | U |
| 108-95-2   | Phenol                       | 330                 |       | U |
| 95-57-8    | 2-Chlorophenol               | 330                 |       | U |
| 541-73-1   | 1,3-Dichlorobenzene          | 330                 |       | U |
| 106-46-7   | 1,4-Dichlorobenzene          | 330                 |       | U |
| 95-50-1    | 1,2-Dichlorobenzene          | 330                 |       | U |
| 108-60-1   | 2,2'-oxybis(1-chloropropane) | 330                 |       | U |
| 95-48-7    | 2-Methylphenol               | 330                 |       | U |
| 00098-86-2 | Acetophenone                 | 670                 |       | U |
| 67-72-1    | Hexachloroethane             | 330                 |       | U |
| 621-64-7   | N-Nitroso-di-n-propylamine   | 330                 |       | U |
| 106-44-5   | 4-Methylphenol               | 330                 |       | U |
| 98-95-3    | Nitrobenzene                 | 330                 |       | U |
| 78-59-1    | Isophorone                   | 330                 |       | U |
| 88-75-5    | 2-Nitrophenol                | 330                 |       | U |
| 105-67-9   | 2,4-Dimethylphenol           | 330                 |       | U |
| 111-91-1   | bis(2-Chloroethoxy)methane   | 330                 |       | U |
| 120-83-2   | 2,4-Dichlorophenol           | 330                 |       | U |
| 120-82-1   | 1,2,4-Trichlorobenzene       | 330                 |       | U |
| 91-20-3    | Naphthalene                  | 330                 |       | U |
| 106-47-8   | 4-Chloroaniline              | 330                 |       | U |
| 87-68-3    | Hexachlorobutadiene          | 330                 |       | U |
| 59-50-7    | 4-Chloro-3-methylphenol      | 330                 |       | U |
| 91-57-6    | 2-Methylnaphthalene          | 330                 |       | U |
| 77-47-4    | Hexachlorocyclopentadiene    | 330                 |       | U |
| 88-06-2    | 2,4,6-Trichlorophenol        | 330                 |       | U |
| 95-95-4    | 2,4,5-Trichlorophenol        | 1700                |       | U |
| 91-58-7    | 2-Chloronaphthalene          | 330                 |       | U |
| 88-74-4    | 2-Nitroaniline               | 1700                |       | U |
| 208-96-8   | Acenaphthylene               | 330                 |       | U |
| 131-11-3   | Dimethylphthalate            | 330                 |       | U |
| 606-20-2   | 2,6-Dinitrotoluene           | 330                 |       | U |
| 83-32-9    | Acenaphthene                 | 330                 |       | U |
| 99-09-2    | 3-Nitroaniline               | 1700                |       | U |
| 51-28-5    | 2,4-Dinitrophenol            | 1700                |       | U |
| 132-64-9   | Dibenzofuran                 | 330                 |       | U |

1C  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKA

Lab Name GP\_ENVIRONMENTAL Contract OHM

Lab Code: GPES Case No.: N/A SAS No: N/A SDG No. N/A

Matrix. (soil/water) SOIL Lab Sample ID SBLK-048

Sample wt/vol 30 (g/ml) G Lab File ID. D09876 D

Level (low/med) LOW Date Received: \_\_\_\_\_

% Moisture: 0 decanted (Y/N) N Date Extracted. 02/20/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 02/23/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

| CAS NO.   | COMPOUND                   | CONCENTRATION UNITS |       |
|-----------|----------------------------|---------------------|-------|
|           |                            | (ug/L or ug/Kg)     | UG/KG |
| 121-14-2  | 2,4-Dinitrotoluene         | 330                 | U     |
| 100-02-7  | 4-Nitrophenol              | 1700                | U     |
| 86-73-7   | Fluorene                   | 330                 | U     |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 330                 | U     |
| 84-66-2   | Diethylphthalate           | 330                 | U     |
| 100-01-6  | 4-Nitroaniline             | 1700                | U     |
| 534-52-1  | 4,6-Dinitro-2-methylphenol | 1700                | U     |
| 86-30-6   | n-Nitrosodiphenylamine     | 330                 | U     |
| 101-55-3  | 4-Bromophenyl-phenylether  | 330                 | U     |
| 118-74-1  | Hexachlorobenzene          | 330                 | U     |
| 87-86-5   | Pentachlorophenol          | 1700                | U     |
| 85-01-8   | Phenanthrene               | 330                 | U     |
| 120-12-7  | Anthracene                 | 330                 | U     |
| 86-74-8   | Carbazole                  | 330                 | U     |
| 84-74-2   | Di-n-butylphthalate        | 330                 | U     |
| 206-44-0  | Fluoranthene               | 330                 | U     |
| 129-00-0  | Pyrene                     | 330                 | U     |
| 85-68-7   | Butylbenzylphthalate       | 330                 | U     |
| 91-94-1   | 3,3'-Dichlorobenzidine     | 670                 | U     |
| 56-55-3   | Benzo[a]anthracene         | 330                 | U     |
| 218-01-9  | Chrysene                   | 330                 | U     |
| 117-81-7  | bis(2-Ethylhexyl)phthalate | 330                 | U     |
| 117-84-0  | Di-n-octylphthalate        | 330                 | U     |
| 205-99-2  | Benzo[b]fluoranthene       | 330                 | U     |
| 207-08-9  | Benzo[k]fluoranthene       | 330                 | U     |
| 50-32-8   | Benzo[a]pyrene             | 330                 | U     |
| 193-39-5  | Indeno[1,2,3-cd]pyrene     | 330                 | U     |
| 53-70-3   | Dibenz[a,h]anthracene      | 330                 | U     |
| 191-24-2  | Benzo[g,h,i]perylene       | 330                 | U     |

***DIMP/DMMP***  
***QC***

***GP Environmental Service, Inc.***

**CASE NARRATIVE****DIMP/DMMP ANALYSES**

Client : OHM CORPORATION

Work Order # : 9802105

DATE : March 2, 1998

SDG : N/A

1. One soil sample was received on February 17, 1998. This sample was extracted and analyzed for ORGANOPHOSPHORUS compounds using modified USATHAMA TT9 methodologies.
2. MS/MSD analyses were performed on this sample.

*KAC*  
3/2/98

(47) 3/6/98

478 344

2TT09

## SOIL ORGANOPHOSPHOROUS SURROGATE RECOVERY

Lab Name: GP ENVIRONMENTAL Contract: OHMLab Code. GPES Case No. N/A SAS No: N/A SDG No. N/ALevel. (low/med) LOW

|    | EPA<br>SAMPLE NO. | S1<br># |
|----|-------------------|---------|
| 01 | DDMT-DF-GV        | 96      |
| 02 | LL-LCS            | 95      |
| 03 | HL1-LCS           | 95      |
| 04 | HL2-LCS           | 102     |
| 05 | OPBLK-A           | 100     |
| 06 | DDMT-DF-GV MS     | 95      |
| 07 | DDMT-DF-GV MSD    | 98      |

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|  |
|  |

S1

= TRIPROPYLPHOSPHAT

QC LIMITS  
(48-146)

# Column to be used to flag recovery values

\* Values outside of contract required QC limits

D Surrogate diluted out

3TT9

## SOIL ORGANOPHOSPHOROUS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: GP ENVIRONMENTAL Contract: OHM  
 Lab Code: GPES Case No.: N/A SAS No.: N/A SDG No.: N/A  
 Matrix Spike - EPA Sample No.: DDMT-DF-GV Level. (low/med) LOW

| COMPOUND | SPIKE<br>ADDED<br>(ug/Kg) | SAMPLE<br>CONCENTRATION<br>(ug/Kg) | MS<br>CONCENTRATION<br>(ug/Kg) | MS<br>%<br>REC # | QC<br>LIMITS<br>REC |
|----------|---------------------------|------------------------------------|--------------------------------|------------------|---------------------|
| DMMP     | 260                       | 0.0                                | 220                            | 85               | 48 - 161            |
| DIMP     | 260                       | 0.0                                | 270                            | 104              | 30 - 136            |

| COMPOUND | SPIKE<br>ADDED<br>(ug/Kg) | MSD<br>CONCENTRATION<br>(ug/Kg) | MSD<br>%<br>REC # | %<br>RPD # | QC LIMITS |          |
|----------|---------------------------|---------------------------------|-------------------|------------|-----------|----------|
|          |                           |                                 |                   |            | RPD       | REC.     |
| DMMP     | 260                       | 250                             | 96                | 12         | 25        | 48 - 161 |
| DIMP     | 260                       | 290                             | 112               | 7          | 25        | 30 - 136 |

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD 0 out of 2 outside limits

Spike Recovery. 0 out of 4 outside limits

COMMENTS:

478 346

4T8/TT9  
ORGANOPHOSPHOROUS METHOD BLANK SUMMARY

EPA SAMPLE NO

OPBLK-A

Lab Name: GP ENVIRONMENTAL Contract OHM  
Lab Code: GPES Case No.: N/A SAS No.: N/A SDG No.: N/A  
Lab File ID: N08226 D Lab Sample ID: OPBLK-743  
Instrument ID: GC/FPD Date Extracted: 02/18/98  
Matrix. (soil/water) SOIL Date Analyzed: 02/25/98  
Level: (low/med) LOW Time Analyzed: 10.37

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

|    | EPA<br>SAMPLE NO | LAB<br>SAMPLE ID | LAB<br>FILE ID | DATE<br>ANALYZED |
|----|------------------|------------------|----------------|------------------|
| 01 | LL-LCS           | OPBLK-743 LL     | N08223.D       | 02/25/98         |
| 02 | HL1-LCS          | OPBLK-743 HL-1   | N08224.D       | 02/25/98         |
| 03 | HL2-LCS          | OPBLK-743 HL-2   | N08225.D       | 02/25/98         |
| 04 | DDMT-DF-GV MS    | 9802105-01B MS   | N08227 D       | 02/25/98         |
| 05 | DDMT-DF-GV MSD   | 9802105-01B MSD  | N08228 D       | 02/25/98         |

COMMENTS.  

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# Response Factor Report GC/FPD

478 347

Method : I:\GCLCDATA\GCFPD\FEB14\CSM.M.  
 File : TT9 SEVEN POINT CALIBRATION  
 Last Update : Fri Aug 23 12:14:33 1996  
 Response via : Initial Calibration

## Calibration Files

TT91 =N00015.D TT92 =N00016.D TT93 =N00017.D  
 TT94 =N00018.D TT95 =N00019.D TT96 =N00020.D

| Compound |                    | TT91  | TT92  | TT93  | TT94  | TT95  | TT96  | Avg   | %RS  |
|----------|--------------------|-------|-------|-------|-------|-------|-------|-------|------|
| ) T      | DMMP               | 105.2 | 75.9  | 59.8  | 91.7  | 109.6 | 96.3  | 91.0  | 19.2 |
| ) T      | DIMP               | 121.4 | 158.8 | 168.8 | 172.7 | 196.8 | 179.6 | 168.3 | 14.1 |
| ) S      | TRIPROPYLPHOSPHATE | 222.4 | 200.9 | 202.2 | 203.3 | 227.1 | 203.7 | 208.1 | 5.6  |



478 348

## Response Factor Report GC/FPD

Method : I:\GCLCDATA\GCFPD\FEB2598\TT9.M  
Title : TT9 THREE POINT CALIBRATION  
Last Update : Wed Feb 25 09:23:32 1998  
Response via : Initial Calibration

## Calibration Files

TT91 =N08219.D TT95 =N08220.D TT97 =N08221.D  
=

|      | Compound              | TT91  | TT95  | TT97  | Avg   | %RSD |
|------|-----------------------|-------|-------|-------|-------|------|
| 1) M | DMMP                  | 21.7  | 19.8  | 22.9  | 21.5  | 7.19 |
| 2) M | DIMP                  | 455.8 | 517.6 | 518.2 | 497.2 | 7.21 |
| 3) S | TRIPROPYLPHOSPHATE (S | 348.6 | 326.0 | 331.3 | 335.3 | 3.53 |

# Evaluate Continuing Calibration Report

478 349

Data File : I:\GCLCDATA\GCFPD\FEB2598\N08229.D  
Acq On : 25 Feb 98 11:31 AM  
Sample : TT9-5 60 PPB  
Misc :

Vial: 12  
Operator: ABC  
Inst : GC/FPD  
Multiplr: 1.00

Method : I:\GCLCDATA\GCFPD\FEB2598\TT9.M  
Title : TT9 THREE POINT CALIBRATION  
Last Update : Wed Feb 25 09:23:32 1998  
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min  
Max. RRF Dev : 25% Max. Rel. Area : 150%

|     | Compound                  | AvgRF   | CCRF    | %Dev  | Area% | Dev(min) |
|-----|---------------------------|---------|---------|-------|-------|----------|
| 1 M | DMMP                      | 21.457  | 20.017  | 6.7   | 101   | 0.03     |
| 2 M | DIMP                      | 497.216 | 549.650 | -10.5 | 106   | 0.00     |
| 3 S | TRIPROPYLPHOSPHATE (SURR) | 335.302 | 332.967 | 0.7   | 102   | 0.00     |

(#) = Out of Range

SPCC's out = 0 CCC's out = 0

N08229.D TT9.M

Mon Mar 02 14:44:42 1998

W21\_GC

Page 1

024

478 350

1B  
ORGANOPHOSPHOROUS ANALYSIS DATA SHEET

EPA SAMPLE NO.

OPBLK-A

Lab Name: GP ENVIRONMENTAL Contract: OHM  
Lab Code: GPES Case No.: N/A SAS No.: N/A SDG No.: N/A  
Matrix: (soil/water) SOIL Lab Sample ID OPBLK-743  
Sample wt/vol: 10 (g/ml) G Lab File ID. N08226 D  
Level: (low/med) LOW Date Received. \_\_\_\_\_  
% Moisture: 0 decanted:(Y/N) N Date Extracted: 02/18/98  
Concentrated Extract Volume: 20000 (uL) Date Analyzed. 02/25/98  
Injection Volume: 2.0 (uL) Dilution Factor. 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CAS NO. COMPOUND CONCENTRATION UNITS  
(ug/L or ug/Kg) UG/KG Q

|           |      |      |   |
|-----------|------|------|---|
| 756-79-6  | DMMP | 60 0 | U |
| 1445-75-6 | DIMP | 5 0  | U |

***ORGANOSULFUR  
QC***

**CASE NARRATIVE**

**ORGANOSULFUR ANALYSES**

Client : **OHM CORPORATION**

W.O. # : **9802105**

DATE : **March 2, 1998**

SDG : **N/A**

1. One soil sample was received on February 17, 1998. This sample was extracted and analyzed for ORGANOSULFUR compounds using modified **USATHAMA LL03** methodologies.
2. MS and MSD analyses were performed in this sample.

*XOC*  
*3/2/98*

*(RV) 3/6/98*

2LL03  
SOIL ORGANOSULFUR SURROGATE RECOVERY

478 353

Lab Name: GP Environmental Services Contract: OHM  
Lab Code: GPS Case No.: N/A SAS No.: N/A SDG No. N/A  
Level: (low/med) LOW

|    | EPA<br>SAMPLE NO. | S1<br># |
|----|-------------------|---------|
| 01 | OSBLK-A           | 89      |
| 02 | LL-LCS            | 87      |
| 03 | HL1-LCS           | 88      |
| 04 | HL2-LCS           | 92      |
| 05 | DDMT-DF-GV        | 85      |
| 06 | DDMT-DF-GV MS     | 88      |
| 07 | DDMT-DF-GV MSD    | 87      |

|  |
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|  |
|  |

S1

= 2-Bromothioanisol

QC LIMITS  
(50-126)

# Column to be used to flag recovery values  
\* Values outside of contract required QC limits  
D Surrogate diluted out

3LL03

## SOIL ORGANOSULFUR MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: GP Environmental Services Contract OHM  
 Lab Code: GPS Case No.: N/A SAS No.: N/A SDG No.: N/A  
 Matrix Spike - EPA Sample No.: DDMT-DF-GV Level (low/med) LOW

| COMPOUND                      | SPIKE<br>ADDED<br>(ug/Kg) | SAMPLE<br>CONCENTRATION<br>(ug/Kg) | MS<br>CONCENTRATION<br>(ug/Kg) | MS<br>%<br>REC # | QC<br>LIMITS<br>REC |
|-------------------------------|---------------------------|------------------------------------|--------------------------------|------------------|---------------------|
| Dimethyldisulfide             | 510                       | 0 0                                | 450                            | 88               | 36 - 152            |
| 1,4-Oxathiane                 | 1000                      | 0 0                                | 1000                           | 100              | 46 - 131            |
| 1,4-Dithiane                  | 1000                      | 0 0                                | 920                            | 92               | 54 - 125            |
| Benzothiazole                 | 2100                      | 0.0                                | 1900                           | 90               | 67 - 126            |
| p-chlorophenylmethylsulfide   | 2100                      | 0.0                                | 1800                           | 86               | 69 - 123            |
| p-chlorophenylmethylsulfoxide | 2100                      | 0 0                                | 2200                           | 105              | 60 - 119            |
| p-chlorophenylmethylsulfone   | 2100                      | 0.0                                | 1900                           | 90               | 68 - 119            |

| COMPOUND                      | SPIKE<br>ADDED<br>(ug/Kg) | MSD<br>CONCENTRATION<br>(ug/Kg) | MSD<br>%<br>REC # | %<br>RPD # | QC LIMITS |          |
|-------------------------------|---------------------------|---------------------------------|-------------------|------------|-----------|----------|
|                               |                           |                                 |                   |            | RPD       | REC      |
| Dimethyldisulfide             | 510                       | 440                             | 86                | 2          | 25        | 36 - 152 |
| 1,4-Oxathiane                 | 1000                      | 1000                            | 100               | 0          | 25        | 46 - 131 |
| 1,4-Dithiane                  | 1000                      | 910                             | 91                | 1          | 25        | 54 - 125 |
| Benzothiazole                 | 2100                      | 1900                            | 90                | 0          | 25        | 67 - 126 |
| p-chlorophenylmethylsulfide   | 2100                      | 1800                            | 86                | 0          | 25        | 69 - 123 |
| p-chlorophenylmethylsulfoxide | 2100                      | 2100                            | 100               | 5          | 25        | 60 - 119 |
| p-chlorophenylmethylsulfone   | 2100                      | 1900                            | 90                | 0          | 25        | 68 - 119 |

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD. 0 out of 7 outside limits

Spike Recovery. 0 out of 14 outside limits

COMMENTS.

4UL04/LL03  
ORGANOSULFUR METHOD BLANK SUMMARY

EPA SAMPLE NO

OSBLK-A

Lab Name: GP Environmental Services Contract: OHM  
Lab Code: GPS Case No: N/A SAS No: N/A SDG No: N/A  
Lab File ID: N08109.D Lab Sample ID: OSBLK-742  
Instrument ID: GC\_FPD Date Extracted: 02/18/98  
Matrix: (soil/water) SOIL Date Analyzed: 02/22/98  
Level: (low/med) LOW Time Analyzed: 22:28

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

| EPA<br>SAMPLE NO. | LAB<br>SAMPLE ID | LAB<br>FILE ID | DATE<br>ANALYZED |
|-------------------|------------------|----------------|------------------|
| 01 LL-LCS         | OSBLK-742 LL     | N08110.D       | 02/22/98         |
| 02 HL1-LCS        | OSBLK-742 HL-1   | N08111.D       | 02/22/98         |
| 03 HL2-LCS        | OSBLK-742 HL-2   | N08112.D       | 02/22/98         |
| 04 DDMT-DF-GV     | 9802105-01B      | N08113.D       | 02/22/98         |
| 05 DDMT-DF-GV MS  | 9802105-01B MS   | N08114.D       | 02/23/98         |
| 06 DDMT-DF-GV MSD | 9802105-01B MSD  | N08115.D       | 02/23/98         |

COMMENTS.  

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**ORGANOSULFUR CONTINUING CHECK STANDARD**

DATA FILE=N08107

DATE OF ANALYSIS:—

22-Feb-98

LLO3-4 (Level =4)

| COMPOUNDS:                   | True Value<br>PPB | CC CONC.<br>PPB | (+/- 25%)<br>% DIFFERNCE | % RECOVERY OF<br>C.C. COMPOUND |
|------------------------------|-------------------|-----------------|--------------------------|--------------------------------|
| Dimethyldisulfide            | 200               | 241.044         | 20.522                   | 121                            |
| 1,4-Oxathiane                | 400               | 459.114         | 14.779                   | 115                            |
| 1,4-Dithiane                 | 200               | 225.143         | 12.572                   | 113                            |
| Benzothiozole                | 400               | 450.934         | 12.734                   | 113                            |
| 2-Bromothioanazole (SURR)    | 600               | 680.822         | 13.470                   | 113                            |
| p-chlorophenylmethylsulfide  | 400               | 464.999         | 16.250                   | 116                            |
| p-chlorophenylmethysulfoxide | 400               | 459.722         | 14.931                   | 115                            |
| p-chlorophenylmethysulfone   | 400               | 457.964         | 14.491                   | 114                            |

**ORGANOSULFUR CONTINUING CHECK STANDARD**

DATA FILE=N08116

DATE OF ANALYSIS.-----

23-Feb-98

LLO3-4 (Level =4)

| COMPOUNDS.                   | True Value<br>PPB | CC CONC.<br>PPB | (+/- 25%)<br>% DIFFERNCE | % RECOVERY OF<br>C.C. COMPOUND |
|------------------------------|-------------------|-----------------|--------------------------|--------------------------------|
| Dimethyldisulfide            | 200               | 231.526         | 15.763                   | 116                            |
| 1,4-Oxathiane                | 400               | 456.825         | 14.206                   | 114                            |
| 1,4-Dithiane                 | 200               | 223.094         | 11.547                   | 112                            |
| Benzothiozole                | 400               | 461.290         | 15.323                   | 115                            |
| 2-Bromothioanazole (SURR)    | 600               | 687.671         | 14.612                   | 115                            |
| p-chlorophenylmethylsulfide  | 400               | 463.869         | 15.967                   | 116                            |
| p-chlorophenylmethysulfoxide | 400               | 470.632         | 17.658                   | 118                            |
| p-chlorophenylmethysulfone   | 400               | 456.193         | 14.048                   | 114                            |

C.C. CHECK

**GP Environmental Services****RETENTION TIME WINDOW FOR ORGANOSULFUR ANALYSIS**

Date : January 27, 1998  
Date Analyzed : January 12 and 13, 1998  
Instrument : GC/FPD

| COMPOUNDS                     | RT1  | RT2  | RT3  | STD DEV | RETENTION<br>TIME WINDOW |
|-------------------------------|------|------|------|---------|--------------------------|
| Dimethylsulfide               | 1.80 | 1.80 | 1.80 | 0.00    | 0.00                     |
| 1,4-Oxathiane                 | 3.34 | 3.34 | 3.34 | 0.00    | 0.00                     |
| 1,4-Dithiane                  | 5.01 | 5.01 | 5.01 | 0.00    | 0.00                     |
| Benzothiazole                 | 6.19 | 6.19 | 6.19 | 0.00    | 0.00                     |
| P-chlorophenylmethylsulfide   | 6.47 | 6.47 | 6.47 | 0.00    | 0.00                     |
| P-chlorophenylmethylsulfoxide | 7.82 | 7.82 | 7.82 | 0.00    | 0.00                     |
| P-chlorophenylmethylsulfone   | 7.92 | 7.92 | 7.92 | 0.00    | 0.00                     |

**COMMENTS:**

Since the calculated retention time window is equal to zero, an advisory retention time of +/- 0.05 min is used for peak identification.

1B  
ORGANOSULFUR ANALYSIS DATA SHEET

EPA SAMPLE NO

478 359

OSBLK-A

Lab Name: GP Environmental Services Contract OHM

Lab Code: GPS Case No.: N/A SAS No.: N/A SDG No.: N/A

Matrix: (soil/water) SOIL Lab Sample ID: OSBLK-742

Sample wt/vol. 10 (g/ml) G Lab File ID: N08109.D

Level: (low/med) LOW Date Received: \_\_\_\_\_

% Moisture: 0 decanted.(Y/N) N Date Extracted: 02/18/98

Concentrated Extract Volume 20000 (uL) Date Analyzed: 02/22/98

Injection Volume: 2.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH. \_\_\_\_\_

CONCENTRATION UNITS:

CAS NO                      COMPOUND                      (ug/L or ug/Kg)    UG/KG                      Q

|            |                               |       |   |
|------------|-------------------------------|-------|---|
| 624-92-0   | Dimethyldisulfide             | 100 0 | U |
| 15890-15-1 | 1,4-Oxathiane                 | 200 0 | U |
| 505-29-3   | 1,4-Dithiane                  | 100 0 | U |
| 95-16-9    | Benzothiazole                 | 200.0 | U |
| 123-09-1   | p-chlorophenylmethylsulfide   | 200.0 | U |
| 934-73-6   | p-chlorophenylmethylsulfoxide | 200.0 | U |
| 98-57-7    | p-chlorophenylmethylsulfone   | 200 0 | U |

***EXPLOSIVES  
DATA***

***GP Environmental Services***

**CASE NARRATIVE****EXPLOSIVES**

Client : OHM  
W.O.No. : 9802105  
SDG # : N/A  
Date : 2/25/98

1. One soil sample was received on Feb. 17, 1998. Sample was extracted and analyzed for explosive compounds using 8330 methodologies.
2. Manual integration was performed on some data files as integration provided by the software was inappropriate for some analytes.

L-7 2/25/98  
(7.2) 2/25/98

478 362

2EX  
SOIL EXPLOSIVES SURROGATE RECOVERYLab Name: GP ENVIRONMENTAL SERVICES Contract. OHMLab Code: GPES Case No. N/A SAS No: N/A SDG No: N/ALevel. (low/med) LOW

|     | EPA<br>SAMPLE NO | S1<br># |
|-----|------------------|---------|
| 01: | NBLKA            | 103     |
| 02: | DDMT-DF-GV       | 89      |

S1 = 4-NITROANILINE

QC LIMITS  
(75-139)

# Column to be used to flag recovery values

\* Values outside of contract required QC limits

D Surrogate diluted out

4EX  
EXPLOSIVES METHOD BLANK SUMMARY

EPA SAMPLE NO

478 363

NBLKA

Lab Name GP ENVIRONMENTAL SERVICES Contract OHM  
Lab Code: GPES Case No : N/A SAS No. N/A SDG No : N/A  
Lab File ID: Q5153.D Lab Sample ID NBLK-1433  
Instrument ID: HPLC3 Date Extracted 02/19/98  
Matrix. (soil/water) SOIL Date Analyzed 02/24/98  
Level: (low/med) LOW Time Analyzed. 18.37

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

| EPA<br>SAMPLE NO | LAB<br>SAMPLE ID | LAB<br>FILE ID | DATE<br>ANALYZED |
|------------------|------------------|----------------|------------------|
| 01DDMT-DF-GV     | 9802105-01C      | Q5154.D        | 02/24/98         |

COMMENTS

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Method : J:\LCDATA\HPLC3\METHODS\8330.M  
 Title :  
 Last Update : Fri Oct 24 08:46:54 1997  
 Response via : Initial Calibration

## Calibration Files

LEV1 =Q3016.D      LEV2 =Q3017.D      LEV3 =Q3018.D  
 LEV4 =Q3019.D      LEV5 =Q3020.D      LEV6 =Q3021.D

|       | Compound            | LEV1  | LEV2  | LEV3  | LEV4  | LEV5  | LEV6  | Avg   |    | %RSD |
|-------|---------------------|-------|-------|-------|-------|-------|-------|-------|----|------|
| 1) T  | HMX                 | 8.849 | 8.737 | 9.338 | 9.216 | 9.538 | 9.900 | 9.263 | E4 | 4.67 |
| 2) S  | 4-Nitroaniline      | 1.020 | 0.953 | 1.024 | 1.013 | 1.033 | 1.026 | 1.012 | E5 | 2.91 |
| 3) T  | 1,3,5-Trinitrobenze | 3.077 | 2.552 | 2.726 | 2.683 | 2.786 | 2.814 | 2.773 | E5 | 6.32 |
| 4) T  | Tetryl              | 1.691 | 1.837 | 1.982 | 1.945 | 2.008 | 2.170 | 1.939 | E5 | 8.39 |
| 5) T  | 2,4,6-Trinitrotolue | 2.923 | 2.298 | 2.736 | 2.706 | 2.792 | 2.747 | 2.700 | E5 | 7.82 |
| 6) T  | 4-Amino-2,6-Dinitro | 1.563 | 1.577 | 1.895 | 1.864 | 1.928 | 1.892 | 1.786 | E5 | 9.46 |
| 7) T  | 2,6-Dinitrotoluene  | 1.501 | 1.864 | 1.912 | 1.885 | 1.942 | 1.912 | 1.836 | E5 | 9.05 |
| 8) T  | 4-Nitrotoluene      | 1.144 | 1.223 | 1.357 | 1.339 | 1.379 | 1.384 | 1.304 | E5 | 7.53 |
| 9) M  | RDX                 | 1.102 | 1.150 | 1.258 | 1.249 | 1.276 | 1.258 | 1.215 | E5 | 5.86 |
| 10) M | 1,3-Dinitrobenzene  | 3.602 | 3.697 | 3.968 | 3.919 | 3.989 | 4.173 | 3.891 | E5 | 5.35 |
| 11) M | Nitrobenzene        | 2.687 | 2.359 | 2.567 | 2.543 | 2.595 | 2.760 | 2.585 | E5 | 5.31 |
| 12) M | 2-Amino-4,6-Dinitro | 2.700 | 2.469 | 2.638 | 2.603 | 2.654 | 2.746 | 2.635 | E5 | 3.61 |
| 13) M | 2,4-Dinitrotoluene  | 2.864 | 3.300 | 3.554 | 3.526 | 3.594 | 3.604 | 3.407 | E5 | 8.46 |
| 14) M | 2-Nitrotoluene      | 1.615 | 1.549 | 1.676 | 1.651 | 1.680 | 1.668 | 1.640 | E5 | 3.08 |
| 15) M | 3-Nitrotoluene      | 1.648 | 1.622 | 1.769 | 1.743 | 1.787 | 1.787 | 1.726 | E5 | 4.22 |

(#) = Out of Range

8330.M

Fri Oct 24 08:49:49 1997 35YUE

Method : J:\LCDATA\HPLC3\METHODS\8330.M  
Title :  
Last Update : Tue Feb 24 19:16:36 1998  
Response via : Initial Calibration

Continuing Calibration File: Q5150.D

Min. RRF : 0.000 Min. Rel. Area : 50%  
Max. RRF Dev : 15% Max. Rel. Area : 150%

|      | Compound                   | AvgRF   | CCRF    |    | %Dev  | Area% |
|------|----------------------------|---------|---------|----|-------|-------|
| 1 T  | HMX                        | 92.629  | 104.654 | E3 | -13.0 | 112   |
| 2 S  | 4-Nitroaniline             | 101.150 | 99.323  | E3 | 1.8   | 97    |
| 3 T  | 1,3,5-Trinitrobenzene      | 277.284 | 289.411 | E3 | -4.4  | 106   |
| 4 T  | Tetryl                     | 193.871 | 213.690 | E3 | -10.2 | 108   |
| 5 T  | 2,4,6-Trinitrotoluene      | 270.038 | 304.521 | E3 | -12.8 | 111   |
| 6 T  | 4-Amino-2,6-Dinitrotoluene | 178.648 | 194.705 | E3 | -9.0  | 103   |
| 7 T  | 2,6-Dinitrotoluene         | 183.604 | 193.657 | E3 | -5.5  | 101   |
| 8 T  | 4-Nitrotoluene             | 130.435 | 138.341 | E3 | -6.1  | 102   |
| 9 M  | RDX                        | 121.543 | 127.333 | E3 | -4.8  | 101   |
| 10 M | 1,3-Dinitrobenzene         | 389.135 | 391.436 | E3 | -0.6  | 99    |
| 11 M | Nitrobenzene               | 258.505 | 269.214 | E3 | -4.1  | 105   |
| 12 M | 2-Amino-4,6-Dinitrotoluene | 263.507 | 267.256 | E3 | -1.4  | 101   |
| 13 M | 2,4-Dinitrotoluene         | 340.721 | 374.359 | E3 | -9.9  | 105   |
| 14 M | 2-Nitrotoluene             | 163.973 | 172.546 | E3 | -5.2  | 103   |
| 15 M | 3-Nitrotoluene             | 172.587 | 185.270 | E3 | -7.3  | 105   |

478 366

1B  
EXPLOSIVES ANALYSIS DATA SHEET

EPA SAMPLE NO

|       |
|-------|
| NBLKA |
|-------|

Lab Name: GP ENVIRONMENTAL SERVICES Contract OHM

Lab Code: GPES Case No.: N/A SAS No N/A SDG No.: N/A

Matrix: (soil/water) SOIL Lab Sample ID: NBLK-1433

Sample wt/vol 2 (g/ml) G Lab File ID Q5153.D

Level: (low/med) LOW Date Received: \_\_\_\_\_

% Moisture: 0 decanted (Y/N) N Date Extracted 02/19/98

Concentrated Extract Volume. 20000 (uL) Date Analyzed 02/24/98

Injection Volume: 100 (uL) Dilution Factor. 1 0

GPC Cleanup (Y/N) N pH: \_\_\_\_\_

## CONCENTRATION UNITS.

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

|             |                           |       |   |
|-------------|---------------------------|-------|---|
| 2691-41-0   | HMX                       | 500.0 | U |
| 99-35-4     | 1,3,5-TRINITROBENZENE     | 250.0 | U |
| 479-45-8    | TETRYL                    | 500 0 | U |
| 118-96-7    | 2,4,6-TRINITROTOLUENE     | 250.0 | U |
| 1946-51-0   | 4-AMINO-2,6-DINITROTOLUEN | 250.0 | U |
| 606-20-2    | 2,6-DINITROTOLUENE        | 250 0 | U |
| 99-99-0     | 4-NITROTOLUENE            | 500 0 | U |
| 121-82-4    | RDX                       | 500.0 | U |
| 99-65-0     | 1,3-DINITROBENZENE        | 250 0 | U |
| 98-95-3     | NITROBENZENE              | 250.0 | U |
| 355-72-78-2 | 2-AMINO-4,6-DINITROTOLUEN | 250.0 | U |
| 121-14-2    | 2,4-DINITROTOLUENE        | 250.0 | U |
| 88-72-2     | 2-NITROTOLUENE            | 500 0 | U |
| 99-08-1     | 3-NITROTOLUENE            | 500 0 | U |

**THIODIGLYCOL**  
**QC**

**CASE NARRATIVE****THIODIGLYCOL**

Client : MD ENV SERVICES  
W.O.No. : 9802105  
SDG # : N/A  
Date : 2/24/98

1. A batch of 1 soil sample was received on Feb. 17, 1998. Sample was extracted and analyzed for Thiodiglycol using LW18 methodologies.
2. MS/MSD analyses were shared with work order 9802085.
3. Manual integration was performed on some data files as integration provided by the software was inappropriate for some analytes.

L7 2/25/98 48 2/25/98

4EX  
EXPLOSIVES METHOD BLANK SUMMARY

EPA SAMPLE NO

478 369

NBLKA

Lab Name: GP ENVIRONMENTAL SERVICES, Contract MD\_ENV\_S  
Lab Code: GP\_ENV Case No.: N/A SAS No. N/A SDG No.: N/A  
Lab File ID: P05762 D Lab Sample ID TDBLK-016  
Instrument ID HPLC 4 Date Extracted: 02/18/98  
Matrix: (soil/water) SOIL Date Analyzed: 02/19/98  
Level (low/med) LOW Time Analyzed: 20.04

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| EPA<br>SAMPLE NO. | LAB<br>SAMPLE ID | LAB<br>FILE ID | DATE<br>ANALYZED |
|-------------------|------------------|----------------|------------------|
| 01 DDMT-DF-GV     | 9802105-01A      | P05768.D       | 02/19/98         |

COMMENTS:

478 370

3EX

SOIL EXPLOSIVES MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name. GP ENVIRONMENTAL SERVICES, Contract. MD\_ENV\_SERVI

Lab Code: GP\_ENV Case No.: N/A SAS No.: N/A SDG No.: N/A

Matrix Spike - EPA Sample No.: SL021298-01-DJM Level (low/med) LOW

| COMPOUND     | SPIKE<br>ADDED<br>(ug/Kg) | SAMPLE<br>CONCENTRATION<br>(ug/Kg) | MS<br>CONCENTRATION<br>(ug/Kg) | MS<br>%<br>REC # | QC<br>LIMITS<br>REC. |
|--------------|---------------------------|------------------------------------|--------------------------------|------------------|----------------------|
| THIODIGLYCOL | 50000                     | 0 0                                | 45000                          | 90               | 38 - 116             |

| COMPOUND     | SPIKE<br>ADDED<br>(ug/Kg) | MSD<br>CONCENTRATION<br>(ug/Kg) | MSD<br>%<br>REC # | %<br>RPD # | QC LIMITS<br>RPD | REC.     |
|--------------|---------------------------|---------------------------------|-------------------|------------|------------------|----------|
| THIODIGLYCOL | 50000                     | 46000                           | 92                | 2          | 25               | 38 - 116 |

# Column to be used to flag recovery and RPD values with an asterisk

\* Values outside of QC limits

RPD: 0 out of 1 outside limits

Spike Recovery 0 out of 2 outside limits

COMMENTS:

## Response Factor Report HPLC2

478 371

Method : C:\THIO.M  
Title : THIO- SEVEN POINT CALIBRATION  
Last Update : Thu Nov 13 14:59:40 1997  
Response via : Initial Calibration

## Calibration Files

LEV1 =P04506.D      LEV2 =P04507.D      LEV3 =P04508.D  
LEV4 =P04509.D      LEV5 =P04510.D      LEV6 =P04511.D

|      | Compound          | LEV1  | LEV2  | LEV3  | LEV4  | LEV5  | LEV6  | Avg      | %RS |
|------|-------------------|-------|-------|-------|-------|-------|-------|----------|-----|
| 1) T | CHLOROACETIC ACID | 2.979 | 2.825 | 3.035 | 3.289 | 3.248 | 3.381 | 3.131 E6 | 6.2 |
| 2) T | THIODIGLYCOL      | 2.416 | 2.233 | 2.343 | 2.400 | 2.359 | 2.523 | 2.378 E7 | 3.6 |



Method : J:\LCDATA\HPLC4\METHODS\THIO.M  
Title : THIO- SEVEN POINT CALIBRATION  
Last Update : Tue Feb 24 17:49:21 1998  
Response via : Initial Calibration

Continuing Calibration File: P05758.D

Min. RRF : 0.000 Min. Rel. Area : 50%  
Max. RRF Dev : 25% Max. Rel. Area : 150%

|     | Compound     | AvgRF  | CCRF      | %Dev | Area% |
|-----|--------------|--------|-----------|------|-------|
| 1 T | THIODIGLYCOL | 23.775 | 22.391 E6 | 5.8  | 95    |

Method : J:\LCDATA\HPLC4\METHODS\THIO.M  
Title : THIO- SEVEN POINT CALIBRATION  
Last Update : Tue Feb 24 17:49:21 1998  
Response via : Initial Calibration

Continuing Calibration File: P05769.D

Min. RRF : 0.000 Min. Rel. Area : 50%  
Max. RRF Dev : 25% Max. Rel. Area : 150%

|     | Compound     | AvgRF  | CCRF      | %Dev | Area% |
|-----|--------------|--------|-----------|------|-------|
| 1 T | THIODIGLYCOL | 23.775 | 20.635 E6 | 13.2 | 87    |

478 374

1B  
EXPLOSIVES ANALYSIS DATA SHEET

EPA SAMPLE NO

NBLKA

Lab Name GP ENVIRONMENTAL SERVICES, Contract: MD\_ENV\_S  
Lab Code: GP\_ENV Case No.: N/A SAS No.: N/A SDG No.: N/A  
Matrix: (soil/water) SOIL Lab Sample ID TDBLK-016  
Sample wt/vol: 10 (g/ml) G Lab File ID. P05762.D  
Level: (low/med) LOW Date Received: \_\_\_\_\_  
% Moisture: 0 decanted:(Y/N) N Date Extracted: 02/18/98  
Concentrated Extract Volume: 25000 (uL) Date Analyzed. 02/19/98  
Injection Volume 50.0 (uL) Dilution Factor 1 0  
GPC Cleanup (Y/N) N pH: \_\_\_\_\_

| CAS NO.  | COMPOUND     | CONCENTRATION UNITS. |       | Q |
|----------|--------------|----------------------|-------|---|
|          |              | (ug/L or ug/Kg)      | UG/KG |   |
| 111-48-8 | THIODIGLYCOL | 500.0                | U     |   |

# ADDENDUM

***IMPA / MPA***  
***QC***

***GP Environmental Services***

**GP ENVIRONMENTAL SERVICES****IC CASE NARRATIVE**

CLIENT: OHM Corporation

GP Work Orders: 98-02-105

DATE: March 23, 1998

The following data package is comprised of one water sample received at GP Environmental Services on February 17, 1998. The sample was analyzed for IMPA and MPA using USATHAMA method UT03.

Matrix spike and matrix spike duplicate analyses were performed on this sample.

All QA/QC criteria were met.

Q 3-23-98  
A. J. J. J.  
3-23-98

478 378

GP Environmental Services, Inc.  
USATHAMA UT03/AAA9 Method Spike / Spike Duplicate Data Sheet

Analyte: Isopropylmethylphosphonic acid

Analysis Date: 02/19/1998 Analyst: VHM

| Seq Lab ID     | Sample Conc. | Method Spike |             |            | Spike Duplicate |             |            |       |
|----------------|--------------|--------------|-------------|------------|-----------------|-------------|------------|-------|
|                |              | Conc. found  | Conc. added | % Recovery | Conc. found     | Conc. added | % Recovery | % RPD |
| 11 9802105-01B | 0.202        | 38.3         | 32.0924     | 119        | 39.3            | 32.0924     | 122        | 2.47  |

\* - outside of advisory quality control limits.

Number of percent recoveries outside of criteria 0  
Number of relative percent deviations outside of criteria 0

Reviewed By: C

GP Environmental Services, Inc.  
USATHAMA UT03/AAA9 Method Spike / Spike Duplicate Data Sheet

Analyte: Methylphosphonic Acid

Analysis Date: 02/19/1998 Analyst: VHM

| Seq Lab ID     | Sample Conc. | Method Spike |             |            | Spike Duplicate |             |            |       |
|----------------|--------------|--------------|-------------|------------|-----------------|-------------|------------|-------|
|                |              | Conc. found  | Conc. added | % Recovery | Conc. found     | Conc. added | % Recovery | % RPD |
| 11 9802105-01B | -1.66        | 26.1         | 32.0924     | 81.4       | 26.1            | 32.0924     | 81.4       | 0.047 |

\* - outside of advisory quality control limits.

Number of percent recoveries outside of criteria 0  
Number of relative percent deviations outside of criteria 0

Reviewed By: 



478 380

GP Environmental Services, Inc.  
USATHAMA UT03/AAA9 LCS Data Sheet

Analyte: Isopropylmethylphosphonic acid

Analysis Date: 02/19/1998 Analyst: VHM

| <u>Seq</u> | <u>Lab ID</u>      | <u>Lab Control Standard</u>          |
|------------|--------------------|--------------------------------------|
|            | <u>Conc. found</u> | <u>Conc. added</u> <u>% Recovery</u> |
| 10         | ICBLK-017(MS)      | 1170 1000.0000 117                   |

\* - outside of quality control limits.

Number of percent recoveries outside of criteria 0  
Number of relative percent deviations outside of criteria 0

Reviewed By: (Signature)

GP Environmental Services, Inc.  
USATHAMA UTO3/AAA9 LCS Data SheetAnalyte: Methylphosphonic AcidAnalysis Date: 02/19/1998Analyst: VHM

| <u>Seq Lab ID</u>  | <u>Lab Control Standard</u>   |
|--------------------|-------------------------------|
| <u>Conc. found</u> | <u>Conc. added % Recovery</u> |

|                         |             |                  |            |
|-------------------------|-------------|------------------|------------|
| <u>10 ICBLK-017(MS)</u> | <u>1210</u> | <u>1000.0000</u> | <u>121</u> |
|-------------------------|-------------|------------------|------------|

\* - outside of quality control limits.

Number of percent recoveries outside of criteria 0Number of relative percent deviations outside of criteria 0Reviewed By: 

478 382

**RUN SUMMARY SHEET**  
**Isopropylmethylphosphonic acid**

DATA FILE: LT3F1998

INSTRUMENT FILE:

INSTRUMENT: IC1

ANALYZED: 02/19/1998

| Seq | Lab ID        | Client ID    | Rep1    | Rep2 | Raw Conc. | Result | IDL  | Units | %Recovery | %RPD | %RSD |
|-----|---------------|--------------|---------|------|-----------|--------|------|-------|-----------|------|------|
| 1   | Standard 1    | S0           | 0       |      | 6.30      | 6.30   | 50.0 | ug/L  |           |      |      |
| 2   | Standard 2    | S3000        | 6552089 |      | 3030      | 3030   | 50.0 | ug/L  |           |      |      |
| 3   | Standard 3    | S1000        | 1937588 |      | 899       | 899    | 50.0 | ug/L  |           |      |      |
| 4   | Standard 4    | S500         | 1108618 |      | 517       | 517    | 50.0 | ug/L  |           |      |      |
| 5   | Standard 5    | S100         | 205039  |      | 101       | 101    | 50.0 | ug/L  |           |      |      |
| 6   | Standard 6    | S50          | 206444  |      | 101       | 101    | 50.0 | ug/L  |           |      |      |
| 7   | WC0133        | ICV          | 2149732 |      | 997       | 997    | 50.0 | ug/L  | 99.7      |      |      |
| 8   | BLANK         | ICB          | 0       |      | 6.30      | 6.30   | 50.0 | ug/L  |           |      |      |
| 9   | ICBLK-017     | PBS          | 0       |      | 6.30      | 6.30   | 50.0 | ug/L  |           |      |      |
| 10  | ICBLK-017(MS) | LCSS         | 2533668 |      | 1170      | 1170   | 50.0 | ug/L  | 117       |      |      |
| 11  | 9802105-01B   | DDMT-DF-GV   | 0       |      | 6.30      | 0.202  | 1.60 | mg/Kg |           |      |      |
| 12  | 9802105-01BS  | DDMT-DF-GVS  | 2579211 |      | 1190      | 38.3   | 1.60 | mg/Kg | 119       |      |      |
| 13  | 9802105-01BSD | DDMT-DF-GVSD | 2644183 |      | 1220      | 39.3   | 1.60 | mg/Kg | 122       | 2.47 |      |
| 14  | WC0133        | CCV          | 2314147 |      | 1070      | 1070   | 50.0 | ug/L  | 107       |      |      |
| 15  | BLANK         | CCB          | 0       |      | 6.30      | 6.30   | 50.0 | ug/L  |           |      |      |

Analyst / Date

Lab Supervisor / Date

057

RUN SUMMARY SHEET  
Methylphosphonic Acid

DATA FILE: LT3F1998

INSTRUMENT FILE:

INSTRUMENT: IC1

ANALYZED: 02/19/1998

| Seq | Lab ID        | Client ID    | Rep1     | Rep2 | Raw Conc. | Result | IDL  | Units | %Recovery | %RPD  | %RSD |
|-----|---------------|--------------|----------|------|-----------|--------|------|-------|-----------|-------|------|
| 1   | Standard 1    | S0           | 0        |      | -51.8     | -51.8  | 50.0 | ug/L  |           |       |      |
| 2   | Standard 2    | S3000        | 11093573 |      | 2980      | 2980   | 50.0 | ug/L  |           |       |      |
| 3   | Standard 3    | S1000        | 3979170  |      | 1040      | 1040   | 50.0 | ug/L  |           |       |      |
| 4   | Standard 4    | S500         | 2170519  |      | 541       | 541    | 50.0 | ug/L  |           |       |      |
| 5   | Standard 5    | S100         | 601878   |      | 113       | 113    | 50.0 | ug/L  |           |       |      |
| 6   | Standard 6    | S50          | 312177   |      | 33.5      | 33.5   | 50.0 | ug/L  |           |       |      |
| 7   | WC0133        | ICV          | 3885275  |      | 1010      | 1010   | 50.0 | ug/L  | 101       |       |      |
| 8   | BLANK         | ICB          | 0        |      | -51.8     | -51.8  | 50.0 | ug/L  |           |       |      |
| 9   | ICBLK-017     | PBS          | 0        |      | -51.8     | -51.8  | 50.0 | ug/L  |           |       |      |
| 10  | ICBLK-017(MS) | LCSS         | 4617508  |      | 1210      | 1210   | 50.0 | ug/L  | 121       |       |      |
| 11  | 9802105-01B   | DDMT-DF-GV   | 0        |      | -51.8     | -1.66  | 1.60 | mg/Kg |           |       |      |
| 12  | 9802105-01BS  | DDMT-DF-GVS  | 3167365  |      | 814       | 26.1   | 1.60 | mg/Kg | 81.4      |       |      |
| 13  | 9802105-01BSD | DDMT-DF-GVSD | 3168759  |      | 814       | 26.1   | 1.60 | mg/Kg | 81.4      | 0.047 |      |
| 14  | WC0133        | CCV          | 3814026  |      | 990       | 990    | 50.0 | ug/L  | 99.0      |       |      |
| 15  | BLANK         | CCB          | 0        |      | -51.8     | -51.8  | 50.0 | ug/L  |           |       |      |

Analyst / Date

Lab Supervisor / Date

478 384

Page 1

Calibration Report  
USATHAMA UTO3/AAA9

DATA FILE: LT3F1998  
INSTRUMENT FILE:

ANALYST: VHM  
INSTRUMENT: IC1

METHOD FILE: IMPA  
ANALYZED: 02/19/1998

| Analyte                        | Corr.  | Slope  | Intrcpt. |
|--------------------------------|--------|--------|----------|
| Fluoroacetic Acid              | 1.0000 | 1.0000 | 0.0000   |
| Isopropylmethylphosphonic Acid | 0.9990 | 0.0005 | 6.2998   |
| Methylphosphonic Acid          | 0.9995 | 0.0003 | -51.7750 |

  
Analyst / Date

\_\_\_\_\_  
Lab Supervisor / Date

059

**GP ENVIRONMENTAL SERVICES, Inc.**

# ION CHROMATOGRAPHY EXTRACTION LOG

**SOIL WATER**

Approval. DRH 2/18/98

**Notebook: GP-E-016**

Page No.: 01.

Date Received: 02.17.98

Analysis Due Date: 02.23.98

Analysis Method. LT03

**Extraction Chemist:**

Date: 02-18-98

Filtration Chemist: AG

Date: 02.18.98

| Work Order | Project | Lab ID                    | Client ID                  | Sample Volume<br><u>gram/mL</u> | I. S.<br>mL | Spike<br>mL | Final<br>Vol.<br>mL |
|------------|---------|---------------------------|----------------------------|---------------------------------|-------------|-------------|---------------------|
| 9802105    | OHM     | ICB-L-017                 | —                          | —                               | 0.02        | —           | 50.0                |
|            |         | ICB-L-017 <sup>(ms)</sup> | —                          | —                               |             | 0.5         |                     |
|            |         | 01B(ms)                   | DDMT-DF-GV <sup>(ms)</sup> | 2.0                             |             | ↓           |                     |
|            |         | 01B(ms)                   | DDMT-DF-GV <sup>(ms)</sup> | 2.0                             | ↓           | ↓           |                     |
|            |         | 01B                       | DDMT-DF-GV                 | 2.0                             | ↓           | —           | ↓                   |
| MS 0211898 |         |                           |                            |                                 |             |             |                     |

Internal Standard Lot 1275, 100ppm

Matrix Spike Lot WC0089.100

Comments.

**ANALYTICAL SERVICES, INC.**

ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

27 February, 1998

## Case Narrative Report 91936

The samples were collected on 16 February, 1998 and received by ASI 17 February, 1998. As indicated on the Chain of Custody, custody seals were not present on the sample containers. All other conditions for proper sample receipt were met. The samples were logged into the LIMS as report 91936 for the following analyses as per client request: Aqueous samples - VOA (EPA 8260); Solid samples - TCLP HERB (EPA 1311/8151), TCLP BNA (EPA 1311/8270C), TCLP PEST (EPA 1311/8081), TCLP VOA (EPA 1311/8260B), TCLP Mercury (EPA 1311/7470) and TCLP Metals (EPA 1311/6010A), pH (EPA 9045), Reactive Sulfide (EPA 7.3.4.2), Reactive CN (EPA 7.3.3.2), CN (EPA 9010), Ignitability (EPA 1010), HERB (EPA 8151), PEST (EPA 8081), PCB (EPA 8082), VOA (EPA 8260), Mercury (EPA 7471), Arsenic (EPA 7060), Selenium (EPA 7740), Thallium (EPA 7841), and Metals (EPA 6010). Holding times for sample preparation and analysis were met with the exception of pH which should be analyzed in the field.

VOA analysis (EPA 8260) for aqueous samples gave high surrogate recoveries for Toluene-d8 for Samples #91837-1MS and 91837-1MSD due to a matrix effect. All other spike and surrogate recoveries were acceptable.

TCLP analysis for HERB (EPA 1311/8151) met all data quality objectives. TCLP analysis for BNA (EPA 1311/8270C) gave low surrogate recoveries for 2-Fluorophenol, Phenol-d5 and 2,4,6-Tribromophenol for Samples #91936-1 and 91936-1RR due to the TCLP matrix. Sample #91936-1 was re-extracted. All other BNA spike and surrogate recoveries were acceptable. TCLP analysis for PEST (EPA 1311/8081) met all data quality objectives. TCLP analysis for VOA (EPA 1311/8260B) gave low MS/MSD recoveries for Benzene, Chlorobenzene and 1,2-Dichloroethane, a low MS recovery for Trichloroethene, high surrogate recoveries for Toluene-d8 for Samples #91902-2MS and 91936-1, and a low surrogate recovery for 4-Bromofluorobenzene for Sample #91936-1 due to the matrix. All other VOA spike and surrogate recoveries were acceptable. TCLP analysis for Mercury (EPA 1311/7470) met all data quality objectives. TCLP analysis for Metals (EPA 1311/6010A) gave low MS recoveries for Ba, Cd, Cr and Pb, and a low MSD recovery for Cr. The batch passes on LCS/LCSD.

pH analysis (EPA 9045) for solid samples met all data quality objectives.

Reactive Sulfide analysis (EPA 7.3.4.2) for solid samples met all data quality objectives.

Reactive CN analysis (EPA 7.3.3.2) for solid samples met all data quality objectives.

CN analysis (EPA 9010) for solid samples gave a low LCS, MSD and a high MSRPD. The batch passes on the LCSD and MS.

Ignitability analysis (EPA 1010) for solid samples met all data quality objectives.

HERB analysis (EPA 8151) for solid samples gave a high surrogate recovery for DCAA for Sample #91540-1MS due to a matrix effect. All other spike and surrogate recoveries were acceptable.

PEST analysis (EPA 8081) for solid samples gave a high MSRPD for Heptachlor due to a matrix effect. All other spike and surrogate recoveries were acceptable.

PCB analysis (EPA 8082) for solid samples gave a low MS/MSD recovery for PCB 1016 due to a dilution, and low surrogate recoveries for Tetrachloro-m-xylene and Decachlorobiphenyl for Samples #91818-4MS and 91818-4MSD due to the dilution factors of five (for Sample #91818-4MS) and ten (for Sample #91818-4MSD) at which the samples were analyzed. All other spike and surrogate recoveries were acceptable.

VOA analysis (EPA 8260) for solid samples gave a high MS for Toluene and high MSD for Trichloroethene, Toluene and Chlorobenzene due to the matrix effect. All other spike and surrogate recoveries were acceptable.

Mercury analysis (EPA 7471) for solid samples met all data quality objectives.

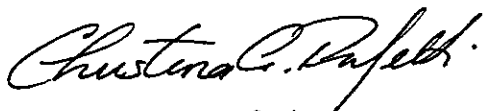
Arsenic analysis (EPA 7060) for solid samples met all data quality objectives.

Selenium analysis (EPA 7740) for solid samples met all data quality objectives.

Thallium analysis (EPA 7841) for solid samples gave a low MS/MSD and PDS.

The batch passes on LCS/LCSD.

Metals analysis (EPA 6010) for solid samples gave high MS recoveries for Al and Fe, a low MS recovery for Mn, a high MSD recovery for Al, low MSD recoveries for Fe, Mn and Sb, a high PDS recovery for Fe, low PDS for Al, and high PDS for Fe and Pb. The batch passes on LCS/LCSD.



Christina A. Perfetti  
Quality Assurance



**ASI****ANALYTICAL SERVICES, INC.****ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

February 27, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 91936-1**Sample Description**Soil, DDMT\Dunn Field Memphis TN, Project #20022, DDMT-DF-GV, 02/16/98,  
14:00, received 02/17/98**RESULTS**

|                                             | <u>Result</u> | <u>Detection Limit</u> |
|---------------------------------------------|---------------|------------------------|
| Total Cyanide (CN) (mg/kg) (EPA 9010).....  | 0.2           | 0.2                    |
| Ignitability (°F) (EPA 1010).....           | >212          | 70                     |
| pH (laboratory) (EPA 9045).....             | 7.22          | -                      |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... | BDL           | 1                      |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... | BDL           | 5                      |

**Target Analyte List - Metals**

| <u>Metals</u>                        | <u>(mg/kg)</u> | <u>(mg/kg)</u> |
|--------------------------------------|----------------|----------------|
| Total Aluminum (Al) (EPA 6010).....  | 6000           | 10             |
| Total Antimony (Sb) (EPA 6010).....  | BDL            | 5.0            |
| Total Arsenic (As) (EPA 7060).....   | 7.5            | 3.0            |
| Total Barium (Ba) (EPA 6010).....    | 120            | 1.0            |
| Total Beryllium (Be) (EPA 6010)..... | BDL            | 1.0            |
| Total Cadmium (Cd) (EPA 6010).....   | BDL            | 1.0            |
| Total Calcium (Ca) (EPA 6010).....   | 1800           | 5.0            |
| Total Chromium (Cr) (EPA 6010).....  | 5.5            | 1.0            |
| Total Cobalt (Co) (EPA 6010).....    | 4.3            | 4.0            |
| Total Copper (Cu) (EPA 6010).....    | 22             | 2.0            |
| Total Iron (Fe) (EPA 6010).....      | 19000          | 10             |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 6

February 27, 1998  
Report No. 91936-1

Soil, DDMT\Dunn Field Memphis TN, Project #20022, DDMT-DF-GV, 02/16/98,  
14:00, received 02/17/98

### RESULTS

| <u>Metals</u>                        | <u>Result</u><br><u>(mg/kg)</u> | <u>Detection</u><br><u>Limit</u><br><u>(mg/kg)</u> |
|--------------------------------------|---------------------------------|----------------------------------------------------|
| Total Lead (Pb) (EPA 6010).....      | 150                             | 5.0                                                |
| Total Magnesium (Mg) (EPA 6010)..... | 1600                            | <del>5.0</del>                                     |
| Total Manganese (Mn) (EPA 6010)..... | 500                             | 4.0                                                |
| Total Mercury (Hg) (EPA 7471).....   | BDL                             | 0.25                                               |
| Total Nickel (Ni) (EPA 6010).....    | 13                              | 2.0                                                |
| Total Potassium (K) (EPA 6010).....  | 390                             | 20                                                 |
| Total Selenium (Se) (EPA 7740).....  | BDL                             | 4.0                                                |
| Total Silver (Ag) (EPA 6010).....    | BDL                             | 1.0                                                |
| Total Sodium (Na) (EPA 6010).....    | 540                             | 5.0                                                |
| Total Thallium (Tl) (EPA 7841).....  | BDL                             | 5.0                                                |
| Total Vanadium (V) (EPA 6010).....   | 15                              | 2.0                                                |
| Total Zinc (Zn) (EPA 6010).....      | 62                              | 2.0                                                |
| <u>Volatile Organics (EPA 8260)</u>  | <u>(ug/kg)</u>                  | <u>(ug/kg)</u>                                     |
| Acetone.....                         | BDL                             | 100                                                |
| Acrolein.....                        | BDL                             | 50                                                 |
| Acrylonitrile.....                   | BDL                             | 50                                                 |
| Benzene.....                         | BDL                             | 5                                                  |
| Bromobenzene.....                    | BDL                             | 10                                                 |
| Bromochloromethane.....              | BDL                             | 10                                                 |
| Bromodichloromethane.....            | BDL                             | 5                                                  |
| Bromoform.....                       | BDL                             | 5                                                  |
| Bromomethane.....                    | BDL                             | 10                                                 |
| 2-Butanone.....                      | BDL                             | 100                                                |
| n-Butylbenzene.....                  | BDL                             | 10                                                 |
| sec-Butylbenzene.....                | BDL                             | 10                                                 |
| tert-Butylbenzene.....               | BDL                             | 10                                                 |
| Carbon disulfide.....                | BDL                             | 5                                                  |
| Carbon tetrachloride.....            | BDL                             | 5                                                  |
| Chlorobenzene.....                   | BDL                             | 10                                                 |
| Chloroethane.....                    | BDL                             | 5                                                  |
| Chloroform.....                      | BDL                             | 5                                                  |
| Chloromethane.....                   | BDL                             | 10                                                 |
| 2-Chlorotoluene.....                 | BDL                             | 10                                                 |
| 4-Chlorotoluene.....                 | BDL                             | 10                                                 |
| 2-Chloroethylvinyl ether.....        | BDL                             | 10                                                 |
| Dibromochloromethane.....            | BDL                             | 5                                                  |

---

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 3 of 6

February 27, 1998  
Report No. 91936-1

Soil, DDMT\Dunn Field Memphis TN, Project #20022, DDMT-DF-GV, 02/16/98,  
14:00, received 02/17/98

### RESULTS

| <u>Volatile Organics (EPA 8260)</u> | <u>Result</u><br><u>(ug/kg)</u> | <u>Detection</u><br><u>Limit</u><br><u>(ug/kg)</u> |
|-------------------------------------|---------------------------------|----------------------------------------------------|
| 1,2-Dibromo-3-chloropropane.....    | BDL                             | 10                                                 |
| 1,2-Dibromoethane.....              | BDL                             | 10                                                 |
| Dibromomethane.....                 | BDL                             | 10                                                 |
| 1,2-Dichlorobenzene.....            | BDL                             | 10                                                 |
| 1,3-Dichlorobenzene.....            | BDL                             | 10                                                 |
| 1,4-Dichlorobenzene.....            | BDL                             | 10                                                 |
| Dichlorodifluoromethane.....        | BDL                             | 10                                                 |
| 1,1-Dichloroethane.....             | BDL                             | 5                                                  |
| 1,2-Dichloroethane.....             | BDL                             | 5                                                  |
| 1,1-Dichloroethene.....             | BDL                             | 5                                                  |
| cis-1,2-Dichloroethene.....         | BDL                             | 5                                                  |
| trans-1,2-Dichloroethene.....       | BDL                             | 5                                                  |
| 1,2-Dichloropropane.....            | BDL                             | 5                                                  |
| 1,3-Dichloropropane.....            | BDL                             | 5                                                  |
| 2,2-Dichloropropane.....            | BDL                             | 5                                                  |
| 1,1-Dichloropropene.....            | BDL                             | 5                                                  |
| cis-1,3-Dichloropropene.....        | BDL                             | 5                                                  |
| trans-1,3-Dichloropropene.....      | BDL                             | 5                                                  |
| Ethylbenzene.....                   | BDL                             | 5                                                  |
| Hexachlorobutadiene.....            | BDL                             | 10                                                 |
| 2-Hexanone.....                     | BDL                             | 50                                                 |
| Isopropylbenzene.....               | BDL                             | 10                                                 |
| p-Isopropyltoluene.....             | BDL                             | 10                                                 |
| Methylene chloride.....             | BDL                             | 10                                                 |
| 4-Methyl-2-pentanone.....           | BDL                             | 50                                                 |
| Naphthalene.....                    | BDL                             | 10                                                 |
| n-Propylbenzene.....                | BDL                             | 10                                                 |
| Styrene.....                        | BDL                             | 5                                                  |
| 1,1,1,2-Tetrachloroethane.....      | BDL                             | 5                                                  |
| 1,1,2,2-Tetrachloroethane.....      | BDL                             | 5                                                  |
| Tetrachloroethene.....              | BDL                             | 5                                                  |
| Toluene.....                        | BDL                             | 5                                                  |
| 1,2,3-Trichlorobenzene.....         | BDL                             | 10                                                 |
| 1,2,4-Trichlorobenzene.....         | BDL                             | 10                                                 |
| 1,1,1-Trichloroethane.....          | BDL                             | 5                                                  |
| 1,1,2-Trichloroethane.....          | BDL                             | 5                                                  |
| Trichloroethene.....                | BDL                             | 5                                                  |
| Trichlorofluoromethane.....         | BDL                             | 10                                                 |

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BDL - Below Detection Limit

OHM Remediation Services Corp.  
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February 27, 1998  
Report No. 91936-1

Soil, DDMT\Dunn Field Memphis TN, Project #20022, DDMT-DF-GV, 02/16/98,  
14:00, received 02/17/98

### RESULTS

| <u>Volatile Organics (EPA 8260)</u> | <u>Result</u><br><u>(ug/kg)</u> | <u>Detection</u><br><u>Limit</u><br><u>(ug/kg)</u> |
|-------------------------------------|---------------------------------|----------------------------------------------------|
| 1,2,3-Trichloropropane.....         | BDL                             | 10                                                 |
| 1,2,4-Trimethylbenzene.....         | BDL                             | 10                                                 |
| 1,3,5-Trimethylbenzene.....         | BDL                             | 10                                                 |
| Vinyl acetate.....                  | BDL                             | 10                                                 |
| Vinyl chloride.....                 | BDL                             | 10                                                 |
| m+p-Xylene.....                     | 8                               | 5                                                  |
| o-Xylene.....                       | BDL                             | 5                                                  |
| Xylenes (total).....                | 8                               | 5                                                  |
| <u>Pesticides (EPA 8081)</u>        | <u>(ug/kg)</u>                  | <u>(ug/kg)</u>                                     |
| Aldrin.....                         | BDL                             | 3.3                                                |
| BHC-alpha.....                      | BDL                             | 3.3                                                |
| BHC-beta.....                       | BDL                             | 3.3                                                |
| BHC-delta.....                      | BDL                             | 3.3                                                |
| BHC-gamma (Lindane).....            | BDL                             | 3.3                                                |
| Chlordane.....                      | BDL                             | 17                                                 |
| 4,4'-DDD.....                       | BDL                             | 6.6                                                |
| 4,4'-DDE.....                       | BDL                             | 6.6                                                |
| 4,4'-DDT.....                       | BDL                             | 6.6                                                |
| Dieldrin.....                       | BDL                             | 3.3                                                |
| Endosulfan I.....                   | BDL                             | 17                                                 |
| Endosulfan II.....                  | BDL                             | 17                                                 |
| Endosulfan sulfate.....             | BDL                             | 17                                                 |
| Endrin.....                         | BDL                             | 6.6                                                |
| Endrin aldehyde.....                | BDL                             | 6.6                                                |
| Heptachlor.....                     | BDL                             | 3.3                                                |
| Heptachlor epoxide.....             | BDL                             | 3.3                                                |
| Methoxychlor.....                   | BDL                             | 9.9                                                |
| Toxaphene.....                      | BDL                             | 66                                                 |

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BDL - Below Detection Limit

OHM Remediation Services Corp.  
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February 27, 1998  
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Soil, DDMT\Dunn Field Memphis TN, Project #20022, DDMT-DF-GV, 02/16/98,  
14:00, received 02/17/98

### RESULTS

| <u>PCB's (EPA 8082)</u> | <u>Result<br/>(ug/kg)</u> | <u>Detection<br/>Limit<br/>(ug/kg)</u> |
|-------------------------|---------------------------|----------------------------------------|
| PCB 1016.....           | BDL                       | 33                                     |
| PCB 1221.....           | BDL                       | 33                                     |
| PCB 1232.....           | BDL                       | 33                                     |
| PCB 1242.....           | BDL                       | 33                                     |
| PCB 1248.....           | BDL                       | 33                                     |
| PCB 1254.....           | BDL                       | 33                                     |
| PCB 1260.....           | BDL                       | 33                                     |

| <u>Chlorinated Herbicides (EPA 8151)</u> | <u>(ug/kg)</u> | <u>(ug/kg)</u> |
|------------------------------------------|----------------|----------------|
| 2,4-D.....                               | BDL            | 170            |
| 2,4-DB.....                              | BDL            | 17             |
| 2,4,5-T.....                             | BDL            | 1.30           |
| 2,4,5-TP (Silvex).....                   | BDL            | 330            |
| Dalapon.....                             | BDL            | 83             |
| Dicamba.....                             | BDL            | 26             |
| Dichloroprop.....                        | BDL            | 17             |
| Dinoseb.....                             | BDL            | 130            |
| MCPA.....                                | BDL            | 1700           |
| MCPP.....                                | BDL            | 2300           |

### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| <u>EPA HW<br/>Number</u> | <u>Parameter</u>         | <u>Result<br/>(mg/l)</u> | <u>Detection<br/>Limit<br/>(mg/l)</u> | <u>Regulatory<br/>Limit<br/>(mg/l)</u> |
|--------------------------|--------------------------|--------------------------|---------------------------------------|----------------------------------------|
| D004                     | Arsenic (As).....        | BDL                      | 2.5                                   | 5.0                                    |
| D005                     | Barium (Ba).....         | 1.2                      | 0.1                                   | 100.0                                  |
| D006                     | Cadmium (Cd).....        | BDL                      | 0.01                                  | 1.0                                    |
| D020                     | Chlordane.....           | BDL                      | 0.01                                  | 0.03                                   |
| D007                     | Chromium (Cr).....       | BDL                      | 0.01                                  | 5.0                                    |
| D026                     | Total Cresol.....        | BDL                      | 0.05                                  | 200.0                                  |
| D016                     | 2,4-D.....               | BDL                      | 0.05                                  | 10.0                                   |
| D027                     | 1,4-Dichlorobenzene..... | BDL                      | 0.05                                  | 7.5                                    |
| D030                     | 2,4-Dinitrotoluene.....  | BDL                      | 0.05                                  | 0.13                                   |
| D012                     | Endrin.....              | BDL                      | 0.001                                 | 0.02                                   |
| D031                     | Heptachlor.....          | BDL                      | 0.001                                 | 0.008                                  |
| D031                     | Heptachlor epoxide.....  | BDL                      | 0.001                                 | 0.008                                  |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
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February 27, 1998  
Report No. 91936-1

Soil, DDMT\Dunn Field Memphis TN, Project #20022, DDMT-DF-GV, 02/16/98,  
14:00, received 02/17/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D032             | Hexachlorobenzene.....     | BDL              | 0.05                         | 0.13                          |
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | 0.8              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.02             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore  
Mr. Steve Offner

Respectfully submitted,

*Shari Harper*  
Project Manager

*Kristina C. Puffer*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

February 27, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 91936-2**Sample Description**Water, DDMT\Dunn Field Memphis TN, Project #20022, Trip Blank, received  
02/17/98**RESULTS**

| <u>Volatile Organics (EPA 8260)</u> | <u>Result<br/>(ug/l)</u> | <u>Detection<br/>Limit<br/>(ug/l)</u> |
|-------------------------------------|--------------------------|---------------------------------------|
| Acetone.....                        | BDL                      | 100                                   |
| Acrolein.....                       | BDL                      | 50                                    |
| Acrylonitrile.....                  | BDL                      | 50                                    |
| Benzene.....                        | BDL                      | 2                                     |
| Bromobenzene.....                   | BDL                      | 10                                    |
| Bromochloromethane.....             | BDL                      | 10                                    |
| Bromodichloromethane.....           | BDL                      | 10                                    |
| Bromoform.....                      | BDL                      | 10                                    |
| Bromomethane.....                   | BDL                      | 10                                    |
| 2-Butanone.....                     | BDL                      | 100                                   |
| n-Butylbenzene.....                 | BDL                      | 10                                    |
| sec-Butylbenzene.....               | BDL                      | 10                                    |
| tert-Butylbenzene.....              | BDL                      | 10                                    |
| Carbon disulfide.....               | BDL                      | 10                                    |
| Carbon tetrachloride.....           | BDL                      | 2                                     |
| Chlorobenzene.....                  | BDL                      | 10                                    |
| Chloroethane.....                   | BDL                      | 5                                     |
| Chloroform.....                     | BDL                      | 2                                     |
| Chloromethane.....                  | BDL                      | 10                                    |
| 2-Chlorotoluene.....                | BDL                      | 10                                    |
| 4-Chlorotoluene.....                | BDL                      | 10                                    |
| 2-Chloroethylvinyl ether.....       | BDL                      | 10                                    |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
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February 27, 1998  
Report No. 91936-2

Water, DDMT\Dunn Field Memphis TN, Project #20022, Trip Blank, received  
02/17/98

### RESULTS

| <u>Volatile Organics (EPA 8260)</u> | <u>Result</u><br><u>(ug/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(ug/l)</u> |
|-------------------------------------|--------------------------------|---------------------------------------------------|
| Dibromochloromethane.....           | BDL                            | 10                                                |
| 1,2-Dibromo-3-chloropropane.....    | BDL                            | 10                                                |
| 1,2-Dibromoethane.....              | BDL                            | 10                                                |
| Dibromomethane.....                 | BDL                            | 10                                                |
| 1,2-Dichlorobenzene.....            | BDL                            | 10                                                |
| 1,3-Dichlorobenzene.....            | BDL                            | 10                                                |
| 1,4-Dichlorobenzene.....            | BDL                            | 10                                                |
| Dichlorodifluoromethane.....        | BDL                            | 10                                                |
| 1,1-Dichloroethane.....             | BDL                            | 2                                                 |
| 1,2-Dichloroethane.....             | BDL                            | 2                                                 |
| 1,1-Dichloroethene.....             | BDL                            | 2                                                 |
| cis-1,2-Dichloroethene.....         | BDL                            | 2                                                 |
| trans-1,2-Dichloroethene.....       | BDL                            | 2                                                 |
| 1,2-Dichloropropane.....            | BDL                            | 2                                                 |
| 1,3-Dichloropropane.....            | BDL                            | 2                                                 |
| 2,2-Dichloropropane.....            | BDL                            | 2                                                 |
| 1,1-Dichloropropene.....            | BDL                            | 2                                                 |
| cis-1,3-Dichloropropene.....        | BDL                            | 2                                                 |
| trans-1,3-Dichloropropene.....      | BDL                            | 2                                                 |
| Ethylbenzene.....                   | BDL                            | 2                                                 |
| Hexachlorobutadiene.....            | BDL                            | 10                                                |
| 2-Hexanone.....                     | BDL                            | 10                                                |
| Isopropylbenzene.....               | BDL                            | 10                                                |
| p-Isopropyltoluene.....             | BDL                            | 10                                                |
| Methylene chloride.....             | BDL                            | 5                                                 |
| 4-Methyl-2-pentanone.....           | BDL                            | 10                                                |
| Naphthalene.....                    | BDL                            | 10                                                |
| n-Propylbenzene.....                | BDL                            | 10                                                |
| Styrene.....                        | BDL                            | 5                                                 |
| 1,1,1,2-Tetrachloroethane.....      | BDL                            | 2                                                 |
| 1,1,2,2-Tetrachloroethane.....      | BDL                            | 2                                                 |
| Tetrachloroethene.....              | BDL                            | 2                                                 |
| Toluene.....                        | BDL                            | 2                                                 |
| 1,2,3-Trichlorobenzene.....         | BDL                            | 10                                                |
| 1,2,4-Trichlorobenzene.....         | BDL                            | 10                                                |
| 1,1,1-Trichloroethane.....          | BDL                            | 2                                                 |
| 1,1,2-Trichloroethane.....          | BDL                            | 2                                                 |
| Trichloroethene.....                | BDL                            | 2                                                 |

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BDL - Below Detection Limit



OHM Remediation Services Corp.  
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February 27, 1998  
Report No: 91936-2

Water, DDMT\Dunn Field Memphis TN, Project #20022, Trip Blank, received  
02/17/98

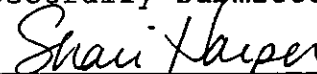
### RESULTS

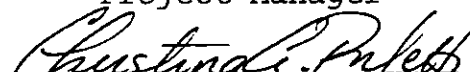
| <u>Volatile Organics (EPA 8260)</u> | <u>Result</u><br><u>(ug/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(ug/l)</u> |
|-------------------------------------|--------------------------------|---------------------------------------------------|
| Trichlorofluoromethane.....         | BDL                            | 10                                                |
| 1,2,3-Trichloropropane.....         | BDL                            | 10                                                |
| 1,2,4-Trimethylbenzene.....         | BDL                            | 10                                                |
| 1,3,5-Trimethylbenzene.....         | BDL                            | 10                                                |
| Vinyl acetate.....                  | BDL                            | 10                                                |
| Vinyl chloride.....                 | BDL                            | 10                                                |
| m+p-Xylene.....                     | BDL                            | 5                                                 |
| o-Xylene.....                       | BDL                            | 5                                                 |
| Xylenes (total).....                | BDL                            | 5                                                 |

BDL - Below Detection Limit

cc: Mr. John Lore  
Mr. Steve Offner

Respectfully submitted,

  
Project Manager

  
Quality Assurance

Analytical Services Inc. Batch QC  
For Report Number :91936  
Chlorinated Herbicides

Matrix : Soil/Sediment

Batch # 36222

Method : EPA 8151

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                              | 66         | 61          | 8         | 13 - 130           | 0 - 34       |
| 2,4,5-TP (Silvex)                  | 61         | 49          | 22        | 13 - 169           | 0 - 56       |
| 2,4,5-T                            | 61         | 59          | 3         | 13 - 169           | 0 - 56       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                               | 86         | 72          | 18        | 13 - 130           | 0 - 34       |
| 2,4,5-TP (Silvex)                   | 36         | 45          | 22        | 13 - 169           | 0 - 56       |
| 2,4,5-T                             | 68         | 63          | 8         | 13 - 169           | 0 - 56       |

Matrix : Soil/Sediment      Batch # 36222      Method : EPA 8151

## % Recovery Objectives

|            |            | S1  | DCAA |    | 13 - 130 |    |    |
|------------|------------|-----|------|----|----------|----|----|
| Sample     | File       | S1  | S2   | S3 | S4       | S5 | S6 |
| 36222BLK   | 020998011F | 38  |      |    |          |    |    |
| 36222LCS   | 020998012R | 21  |      |    |          |    |    |
| 36222LCSD  | 020998013R | 18  |      |    |          |    |    |
| 91540-1    | 020998014F | 148 |      |    |          |    |    |
| 91540-1MS  | 020998015F | 148 |      |    |          |    |    |
| 91540-1MSD | 020998016F | 39  |      |    |          |    |    |
| 91713      | 021298092F | 70  |      |    |          |    |    |
| 91713DUP   | 021298093F | 78  |      |    |          |    |    |
| 91807-1    | 021998003F | 40  |      |    |          |    |    |
| 91807-2    | 021998004F | 28  |      |    |          |    |    |
| 91860      | 021998005F | 64  |      |    |          |    |    |
| 91936-1    | 022298023F | 25  |      |    |          |    |    |
| 91934      | 022298024F | 21  |      |    |          |    |    |

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Q.C. Information for Batch # 36222

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Printed: 02/25/98 07:48:44

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Blank Results Information  
Chlorinated Herbicides Method : EPA 8151

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| Analyte      | Blank<br>Result | Detection<br>Limit |
|--------------|-----------------|--------------------|
| 2,4-D        | BDL             | 170                |
| 2,4-DB       | BDL             | 17                 |
| 2,4,5-T      | BDL             | 1.30               |
| 2,4,5-TP     | BDL             | 330                |
| Dalapon      | BDL             | 83                 |
| Dicamba      | BDL             | 26                 |
| Dichloroprop | BDL             | 17                 |
| Dinoseb      | BDL             | 130                |
| MCPA         | BDL             | 1700               |
| MCPP         | BDL             | 2300               |

Q.C. Information for Batch # 36222

Printed: 02/25/98 07:48:44

Sample Batch Information  
Chlorinated Herbicides Method : EPA 8151

| Sample ID  | Preparation |      |    | Preparation<br>Notes | Analysis |      |     | Inst # |
|------------|-------------|------|----|----------------------|----------|------|-----|--------|
|            | Date        | Time | By |                      | Date     | Time | By  |        |
| 36222BLK   | 02/09/98    | 0900 | DH |                      | 02/10/98 | 1554 | JQZ | GC-1   |
| 36222LCS   | 02/09/98    | 0900 | DH |                      | 02/10/98 | 1554 | JQZ | GC-3   |
| 36222LCSD  | 02/09/98    | 0900 | DH |                      | 02/10/98 | 1622 | JQZ | GC-3   |
| 91540-1    | 02/09/98    | 0900 | DH |                      | 02/10/98 | 1755 | JQZ | GC-3   |
| 91540-1MS  | 02/09/98    | 0900 | DH |                      | 02/10/98 | 1755 | JQZ | GC-3   |
| 91540-1MSD | 02/09/98    | 0900 | DH |                      | 02/10/98 | 1823 | JQZ | GC-3   |
| 91713      | 02/11/98    | 1400 | DH |                      | 02/12/98 | 1418 | JQZ | GC-1   |
| 91713DUP   | 02/11/98    | 1400 | DH |                      | 02/12/98 | 1515 | JQZ | GC-1   |
| 91807-1    | 02/16/98    | 1400 | TB |                      | 02/19/98 | 1154 | JQZ | GC-1   |
| 91807-2    | 02/16/98    | 1400 | TB |                      | 02/19/98 | 1222 | JQZ | GC-1   |
| 91860      | 02/16/98    | 1400 | TB |                      | 02/19/98 | 1251 | JQZ | GC-1   |
| 91936-1    | 02/20/98    | 0330 | DH |                      | 02/21/98 | 0044 | JQZ | GC-1   |
| 91934      | 02/20/98    | 0330 | DH |                      | 02/21/98 | 0044 | JQZ | GC-1   |

Analytical Services Inc. Batch QC  
 For Report Number :91936  
 Organochlorine Pesticides

Matrix : Soil/Sediment

Batch # 36231

Method : EPA 8081

| Lab Control Information<br>Analyte                               | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                                              | 91         | 92          | 1         | 10 - 150           | 0 - 50       |
| ^^Note : NO SAMPLE FOR MA\MSD AT THE TIME WHEN WE OPEN THE BATCH |            |             |           |                    |              |
| Heptachlor                                                       | 100        | 98          | 2         | 10 - 192           | 0 - 37       |
| Aldrin                                                           | 100        | 99          | 1         | 10 - 166           | 0 - 40       |
| Dieldrin                                                         | 99         | 97          | 2         | 29 - 136           | 0 - 40       |
| Endrin                                                           | 74         | 93          | 23        | 10 - 150           | 0 - 50       |
| 4,4'-DDT                                                         | 92         | 89          | 4         | 10 - 203           | 0 - 62       |
| Matrix Spike Information<br>Analyte                              | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
| BHC-gamma (Lindane)                                              | 50         | 74          | 37        | 10 - 150           | 0 - 50       |
| ^^Note : NO SAMPLE FOR MA\MSD AT THE TIME WHEN WE OPEN THE BATCH |            |             |           |                    |              |
| Heptachlor                                                       | 44         | 69          | 45        | 10 - 192           | 0 - 37       |
| Aldrin                                                           | 61         | 89          | 37        | 10 - 166           | 0 - 40       |
| Dieldrin                                                         | 54         | 77          | 35        | 29 - 136           | 0 - 40       |
| Endrin                                                           | 54         | 78          | 37        | 10 - 150           | 0 - 50       |
| 4,4'-DDT                                                         | 13         | 14          | 6         | 10 - 203           | 0 - 62       |

Analytical Services Inc. Batch QC  
Surrogate Recovery  
Organochlorine Pesticides

Matrix : Soil/Sediment Batch # 36231

Method : EPA 8081

## % Recovery Objectives

|    |                      |          |
|----|----------------------|----------|
| S1 | Dibutylchlorendate   | 11 - 130 |
| S2 | Tetrachloro-m-xylene | 13 - 104 |
| S3 | Decachlorobiphenyl   | 8 - 135  |

| Sample      | File           | S1  | S2  | S3  | S4 | S5 | S6 |
|-------------|----------------|-----|-----|-----|----|----|----|
| 36231BLK    | 020998016F0201 | 96  | 98  | 114 |    |    |    |
| 36231LCS    | 020998017F0201 | 93  | 80  | 120 |    |    |    |
| 36231LCSD   | 020998018F0201 | 100 | 94  | 118 |    |    |    |
| 91540-1     | 020998019F0201 | 86  | 76  | 94  |    |    |    |
| 36231LCSRR  | 021898068F     | 98  | 100 | 125 |    |    |    |
| 36231BLKRR  | 021898072F     | 89  | 96  | 131 |    |    |    |
| 36231LCSRRR | 021898069F     | 95  | 100 | 127 |    |    |    |
| 91756       | 022098066F     | 25  | 33  | 58  |    |    |    |
| 91936-1     | 022098086F     | 68  | 83  | 90  |    |    |    |
| 91936-1MS   | 022098087F     | 57  | 56  | 75  |    |    |    |
| 91936-1MSD  | 022098088F     | 72  | 82  | 104 |    |    |    |

Blank Results Information  
Organochlorine Pesticides Method : EPA 8081

| Analyte            | Blank Result | Detection Limit |
|--------------------|--------------|-----------------|
| Aldrin             | BDL          | 3.3             |
| BHC-alpha          | BDL          | 3.3             |
| BHC-beta           | BDL          | 3.3             |
| BHC-delta          | BDL          | 3.3             |
| BHC-gamma          | BDL          | 3.3             |
| Chlordane          | BDL          | 17              |
| 4,4'-DDD           | BDL          | 6.6             |
| 4,4'-DDE           | BDL          | 6.6             |
| 4,4'-DDT           | BDL          | 6.6             |
| Dieldrin           | BDL          | 3.3             |
| Endosulfan I       | BDL          | 17              |
| Endosulfan II      | BDL          | 17              |
| Endosulfan sulfate | BDL          | 17              |
| Endrin             | BDL          | 6.6             |
| Endrin aldehyde    | BDL          | 6.6             |
| Heptachlor         | BDL          | 3.3             |
| Heptachlor epoxide | BDL          | 3.3             |
| Methoxychlor       | BDL          | 9.9             |
| Toxaphene          | BDL          | 66              |



Q.C. Information for Batch # 36231

Printed: 02/25/98 07:48:45

Sample Batch Information  
Organochlorine Pesticides Method : EPA 8081

| Sample ID   | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst # |
|-------------|-------------|------|-----|----------------------|----------|------|-----|--------|
|             | Date        | Time | By  |                      | Date     | Time | By  |        |
| 36231BLK    | 02/10/98    | 0930 | KLF |                      | 02/12/98 | 0522 | JQZ | GC-3   |
| 36231LCS    | 02/10/98    | 0930 | KLF |                      | 02/12/98 | 0551 | JQZ | GC-3   |
| 36231LCSD   | 02/10/98    | 0930 | KLF |                      | 02/12/98 | 0620 | JQZ | GC-3   |
| 91540-1     | 02/10/98    | 0930 | KLF |                      | 02/12/98 | 0649 | JQZ | GC-3   |
| 91756       | 02/16/98    | 0930 | KLF |                      | 02/20/98 | 1212 | JQZ | GC-3   |
| 91936-1     | 02/18/98    | 1400 | KLF |                      | 02/21/98 | 2012 | JQZ | GC-3   |
| 91936-1MS   | 02/18/98    | 1400 | KLF |                      | 02/21/98 | 2036 | JQZ | GC-3   |
| 91936-1MSD  | 02/18/98    | 1400 | KLF |                      | 02/21/98 | 2100 | JQZ | GC-3   |
| 36231BLKRR  | 02/19/98    | 1400 | KLF |                      | 02/19/98 | 1646 | JQZ | GC-3   |
| 36231LCSRR  | 02/19/98    | 1400 | KLF |                      | 02/12/98 | 1511 | JQZ | GC-3   |
| 36231LCSDRR | 02/19/98    | 1400 | KLF |                      | 02/19/98 | 1535 | JQZ | GC-3   |

Analytical Services Inc. Batch QC  
For Report Number :91936  
PCB's

Matrix : Solid

Batch # 36258

Method : EPA 8082

| Lab Control Information<br>Analyte  | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range            |
|-------------------------------------|------------|-------------|-----------|--------------------|-------------------------|
| PCB 1016                            | 51         | 51          | 0         | 50 - 150           | 0 - 50                  |
| PCB 1260                            | 56         | 51          | 9         | 50 - 150           | 0 - 50                  |
| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | <del>RPD</del><br>Range |
| PCB 1016                            | 12         | 15          | 22        | 50 - 150           | 0 - 50                  |
| PCB 1260                            | 100        | 64          | 44        | 50 - 150           | 0 - 50                  |

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 PCB's

Matrix : Solid

Batch # 36258

Method : EPA 8082

## % Recovery Objectives

|    |                      |          |
|----|----------------------|----------|
| S1 | Tetrachloro-m-xylene | 50 - 150 |
| S2 | Decachlorobiphenyl   | 50 - 150 |

| Sample       | File       | S1  | S2  | S3 | S4 | S5 | S6 |
|--------------|------------|-----|-----|----|----|----|----|
| 36258BLK     | 021798051F | 65  | 75  |    |    |    |    |
| 36258LCS     | 021798052F | 54  | 57  |    |    |    |    |
| 36258LCSD    | 021798053F | 59  | 61  |    |    |    |    |
| 91532-4      | 021798054F | 73  | 80  |    |    |    |    |
| 91532-7      | 021798055F | 56  | 68  |    |    |    |    |
| 91532-7DUP   | 021798056F | 64  | 80  |    |    |    |    |
| 91532-8      | 021798057F | 62  | 65  |    |    |    |    |
| 91795-1      | 022098040F | 130 | 139 |    |    |    |    |
| 91795-2      | 022098041F | 121 | 143 |    |    |    |    |
| 91795-3      | 022098042F | 101 | 112 |    |    |    |    |
| 91818-1      | 022098043F | 81  | 92  |    |    |    |    |
| 91818-2 D    | 022098044F | 7   | 9   |    |    |    |    |
| ^^Note: 5X   |            |     |     |    |    |    |    |
| 91818-3      | 022098045F | 120 | 134 |    |    |    |    |
| 91818-4      | 022098046F | 114 | 135 |    |    |    |    |
| 91818-4MS D  | 022098047F | 9   | 15  |    |    |    |    |
| ^^Note: 5X   |            |     |     |    |    |    |    |
| 91818-4MSD D | 022098048F | 4   | 11  |    |    |    |    |
| ^^Note: 10X  |            |     |     |    |    |    |    |
| 91965-2      | 022098094F | 91  | 56  |    |    |    |    |
| 91936-1      | 022398026F | 96  | 94  |    |    |    |    |

Blank Results Information  
PCB's      Method : EPA 8082

| Analyte  | Blank<br>Result | Detection<br>Limit |
|----------|-----------------|--------------------|
| PCB 1016 | BDL             | 33                 |
| PCB 1221 | BDL             | 33                 |
| PCB 1232 | BDL             | 33                 |
| PCB 1242 | BDL             | 33                 |
| PCB 1248 | BDL             | 33                 |
| PCB 1254 | BDL             | 33                 |
| PCB 1260 | BDL             | 33                 |

Sample Batch Information  
PCB's Method : EPA 8082

| Sample ID    | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst # |
|--------------|-------------|------|-----|----------------------|----------|------|-----|--------|
|              | Date        | Time | By  |                      | Date     | Time | By  |        |
| 36258BLK     | 02/11/98    | 1000 | KLF | PCB                  | 02/17/98 | 1516 | JQZ | GC-3   |
| 36258LCS     | 02/11/98    | 1000 | KLF | PCB                  | 02/17/98 | 1552 | JQZ | GC-3   |
| 36258LCSD    | 02/11/98    | 1000 | KLF | PCB                  | 02/17/98 | 1616 | JQZ | GC-3   |
| 91532-4      | 02/11/98    | 1000 | KLF | PCB                  | 02/17/98 | 1641 | JQZ | GC-3   |
| 91532-7      | 02/11/98    | 1000 | KLF | PCB                  | 02/17/98 | 1705 | JQZ | GC-3   |
| 91532-7DUP   | 02/11/98    | 1000 | KLF | PCB                  | 02/17/98 | 1729 | JQZ | GC-3   |
| 91532-8      | 02/11/98    | 1000 | KLF | PCB                  | 02/17/98 | 1753 | JQZ | GC-3   |
| 91795-1      | 02/16/98    | 0930 | KLF | PCB                  | 02/21/98 | 0149 | JQZ | GC-3   |
| 91795-2      | 02/16/98    | 0930 | KLF | PCB                  | 02/21/98 | 0213 | JQZ | GC-3   |
| 91795-3      | 02/16/98    | 0930 | KLF | PCB                  | 02/21/98 | 0237 | JQZ | GC-3   |
| 91818-1      | 02/16/98    | 0930 | KLF | PCB                  | 02/21/98 | 0301 | JQZ | GC-3   |
| 91818-2      | 02/16/98    | 0930 | KLF | PCB                  | /        | /    |     |        |
| 91818-3      | 02/16/98    | 0930 | KLF | PCB                  | 02/21/98 | 0349 | JQZ | GC-3   |
| 91818-4      | 02/16/98    | 0930 | KLF | PCB                  | 02/21/98 | 0413 | JQZ | GC-3   |
| 91818-4MS    | 02/16/98    | 0930 | KLF | PCB                  | /        | /    |     |        |
| 91818-4MSD   | 02/16/98    | 0930 | KLF | PCB                  | /        | /    |     |        |
| 91936-1      | 02/18/98    | 1430 | KLF | PCB                  | 02/23/98 | 0354 | JQZ | GC-3   |
| 91965-2      | 02/20/98    | 1000 | KLF | PCB                  | 02/22/98 | 2259 | JQZ | GC-3   |
| 91818-2 D    | /           | /    |     |                      | 02/21/98 | 0325 | JQZ | GC-3   |
| 91818-4MS D  | /           | /    |     |                      | 02/21/98 | 0437 | JQZ | GC-3   |
| 91818-4MSD D | /           | /    |     |                      | 02/21/98 | 0500 | JQZ | GC-3   |
| 92138        | 02/24/98    | 0930 | KLF |                      | /        | /    |     |        |

Analytical Services Inc. Batch QC  
For Report Number :91936  
Chlorinated Herbicides

Matrix : TCLP

Batch # 36305

Method : EPA 8151

| Lab Control Information<br>Analyte  | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                               | 71         | 83          | 16        | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 82         | 90          | 9         | 40 - 140           | 0 - 40       |
| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
| 2,4-D                               | 95         | 120         | 23        | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 68         | 82          | 19        | 40 - 140           | 0 - 40       |

Matrix : TCLP

Method : EPA 8151

S1

DCAA

18 - 163

| Sample     | File       | S1  | S2 | S3 | S4 | S5 | S6 |
|------------|------------|-----|----|----|----|----|----|
| 36305BLK   | 021298018F | 74  |    |    |    |    |    |
| 36305LCS   | 021298019F | 78  |    |    |    |    |    |
| 36305LCSD  | 021298020F | 96  |    |    |    |    |    |
| 91734-1    | 021298021F | 97  |    |    |    |    |    |
| 91734-2    | 021298022F | 109 |    |    |    |    |    |
| 91734-3    | 021298023F | 112 |    |    |    |    |    |
| 91734-4    | 021298024F | 76  |    |    |    |    |    |
| 91734-5    | 021298025F | 88  |    |    |    |    |    |
| 91734-6    | 021298026F | 114 |    |    |    |    |    |
| 91734-6DUP | 021298027F | 110 |    |    |    |    |    |
| 91734-1MS  | 021298030F | 87  |    |    |    |    |    |
| 91734-1MSD | 021298031F | 96  |    |    |    |    |    |
| 91976-1    | 021998010F | 96  |    |    |    |    |    |
| 91976-2    | 021998011F | 98  |    |    |    |    |    |
| 91936-1    | 022098019F | 89  |    |    |    |    |    |
| 91902-1    | 022098020F | 82  |    |    |    |    |    |
| 91902-2    | 022098021F | 74  |    |    |    |    |    |

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Blank Results Information  
Chlorinated Herbicides      Method : EPA 8151

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| Analyte |                 | Blank<br>Result | Detection<br>Limit |
|---------|-----------------|-----------------|--------------------|
| D016    | 2,4-D           | BDL             | 0.05               |
| D017    | 2,4,5-TP Silvex | BDL             | 0.1                |

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Q.C. Information for Batch # 36305

Printed: 02/25/98 07:48:47

Sample Batch Information  
Chlorinated Herbicides Method : EPA 8151

| Sample ID  | Preparation<br>Date | Time | By | Preparation<br>Notes | Analysis<br>Date | Time | By  | Inst # |
|------------|---------------------|------|----|----------------------|------------------|------|-----|--------|
| 36305BLK   | 02/13/98            | 1030 | DH |                      | 02/13/98         | 2033 | JQZ | GC-1   |
| 36305LCS   | 02/13/98            | 1030 | DH |                      | 02/13/98         | 2101 | JQZ | GC-1   |
| 36305LCSD  | 02/13/98            | 1030 | DH |                      | 02/13/98         | 1543 | JQZ | GC-1   |
| 91734-1    | 02/13/98            | 1030 | DH |                      | 02/13/98         | 2156 | JQZ | GC-1   |
| 91734-1MS  | 02/13/98            | 1030 | DH |                      | 02/14/98         | 0209 | JQZ | GC-1   |
| 91734-1MSD | 02/13/98            | 1030 | DH |                      | 02/14/98         | 0238 | JQZ | GC-1   |
| 91734-2    | 02/13/98            | 1030 | DH |                      | 02/13/98         | 2157 | JQZ | GC-1   |
| 91734-3    | 02/13/98            | 1030 | DH |                      | 02/13/98         | 2253 | JQZ | GC-1   |
| 91734-4    | 02/13/98            | 1030 | DH |                      | 02/13/98         | 2321 | JQZ | GC-1   |
| 91734-5    | 02/13/98            | 1030 | DH |                      | 02/13/98         | 2349 | JQZ | GC-1   |
| 91734-6    | 02/13/98            | 1030 | DH |                      | 02/14/98         | 0017 | JQZ | GC-1   |
| 91734-6DUP | 02/13/98            | 1030 | DH |                      | 02/14/98         | 0045 | JQZ | GC-1   |
| 91976-1    | 02/18/98            | 1615 | DH |                      | 02/19/98         | 1431 | JQZ | GC-1   |
| 91976-2    | 02/18/98            | 1615 | DH |                      | 02/19/98         | 1500 | JQZ | GC-1   |
| 91902-1    | 02/19/98            | 1150 | DH |                      | 02/20/98         | 2320 | JQZ | GC-1   |
| 91902-2    | 02/19/98            | 1150 | DH |                      | 02/20/98         | 2348 | JQZ | GC-1   |
| 91936-1    | 02/19/98            | 1150 | DH |                      | 02/20/98         | 2251 | JQZ | GC-1   |

Analytical Services Inc. Batch QC  
For Report Number :91936  
Base Neutrals / Acids

Matrix : TCLP

Batch # 36306

Method : EPA 8270

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| o-Cresol                           | 37         | 44          | 17        | 10 - 150           | 0 - 50       |
| m-Cresol + p-Cresol                | 33         | 39          | 18        | 10 - 150           | 0 - 50       |
| 1,4-Dichlorobenzene                | 57         | 48          | 17        | 36 - 97            | 0 - 28       |
| 2,4-Dinitrotoluene                 | 49         | 60          | 20        | 24 - 96            | 0 - 38       |
| Hexachlorobenzene                  | 59         | 73          | 21        | 10 - 152           | 0 - 40       |
| Hexachlorobutadiene                | 41         | 46          | 11        | 24 - 116           | 0 - 40       |
| Hexachloroethane                   | 59         | 43          | 33        | 40 - 113           | 0 - 40       |
| Nitrobenzene                       | 46         | 65          | 35        | 35 - 180           | 0 - 40       |
| Pentachlorophenol                  | 29         | 36          | 22        | 9 - 103            | 0 - 50       |
| Pyridine                           | 24         | 34          | 36        | 10 - 110           | 0 - 90       |
| 2,4,5-Trichlorophenol              | 41         | 57          | 32        | 10 - 150           | 0 - 50       |
| 2,4,6-Trichlorophenol              | 39         | 56          | 36        | 37 - 144           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| o-Cresol                            | 37         | 33          | 10        | 10 - 150           | 0 - 50       |
| m-Cresol + p-Cresol                 | 32         | 30          | 7         | 10 - 150           | 0 - 50       |
| 1,4-Dichlorobenzene                 | 48         | 40          | 20        | 36 - 97            | 0 - 28       |
| 2,4-Dinitrotoluene                  | 58         | 51          | 12        | 24 - 96            | 0 - 38       |
| Hexachlorobenzene                   | 73         | 59          | 21        | 10 - 152           | 0 - 40       |
| Hexachlorobutadiene                 | 43         | 37          | 15        | 24 - 116           | 0 - 40       |
| Hexachloroethane                    | 42         | 54          | 25        | 40 - 113           | 0 - 40       |
| Nitrobenzene                        | 65         | 55          | 17        | 35 - 180           | 0 - 40       |
| Pentachlorophenol                   | 11         | 15          | 31        | 9 - 103            | 0 - 50       |
| Pyridine                            | 31         | 30          | 2         | 10 - 110           | 0 - 90       |
| 2,4,5-Trichlorophenol               | 32         | 44          | 31        | 10 - 150           | 0 - 50       |
| 2,4,6-Trichlorophenol               | 41         | 41          | 1         | 37 - 144           | 0 - 40       |

Matrix : TCLP

Batch # 36306

Method : EPA 8270

## % Recovery Objectives

|    |                      |    |   |     |
|----|----------------------|----|---|-----|
| S1 | 2-Fluorophenol       | 21 | - | 100 |
| S2 | Phenol-d5            | 10 | - | 94  |
| S3 | Nitrobenzene-d5      | 35 | - | 114 |
| S4 | 2-Fluorobiphenyl     | 43 | - | 116 |
| S5 | 2,4,6-Tribromophenol | 10 | - | 123 |
| S6 | Terphenyl-d14        | 33 | - | 141 |

| Sample                     | File  | S1 | S2 | S3 | S4  | S5  | S6  |
|----------------------------|-------|----|----|----|-----|-----|-----|
| 36306BLK                   | B3934 | 23 | 12 | 40 | 45  | 37  | 68  |
| 36306LCS                   | B3935 | 22 | 13 | 49 | 51  | 56  | 81  |
| 36306LCSD                  | B3936 | 30 | 18 | 68 | 68  | 76  | 98  |
| 91734-1                    | B3943 | 31 | 17 | 66 | 65  | 71  | 93  |
| 91734-1MS                  | B3944 | 22 | 13 | 67 | 69  | 44  | 76  |
| 91734-1MSD                 | B3945 | 22 | 14 | 61 | 60  | 57  | 72  |
| 91734-2                    | B3946 | 21 | 11 | 50 | 53  | 45  | 56  |
| 91734-3                    | B3947 | 13 | 11 | 55 | 56  | 21  | 87  |
| 91808                      | B3957 | 64 | 21 | 94 | 70  | 22  | 78  |
| 91734-4                    | B3958 | 5  | 6  | 46 | 45  | 7   | 47  |
| ^^Note: RE-EXTRACT         |       |    |    |    |     |     |     |
| 91734-5                    | B3959 | 30 | 17 | 72 | 75  | 91  | 94  |
| 91734-5DUP                 | B3960 | 29 | 17 | 74 | 75  | 76  | 84  |
| 91734-6                    | B3961 | 22 | 10 | 43 | 44  | 53  | 81  |
| 91751-1                    | B3967 | 32 | 23 | 67 | 83  | 75  | 103 |
| ^^Note: 1:10               |       |    |    |    |     |     |     |
| 91751-2                    | B3968 | 36 | 29 | 61 | 149 | 115 | 106 |
| ^^Note: 1:50 MATRIX EFFECT |       |    |    |    |     |     |     |
| 91734-4RR                  | B3995 | 5  | 2  | 66 | 72  | 14  | 123 |
| ^^Note: MATRIX EFFECT      |       |    |    |    |     |     |     |
| 91976-1                    | A7992 | 27 | 39 | 87 | 99  | 67  | 99  |
| 91976-2                    | A7993 | 22 | 35 | 80 | 97  | 39  | 102 |
| 91936-1                    | A8046 | 9  | 5  | 87 | 99  | 2   | 99  |
| ^^Note: REEXTRACT          |       |    |    |    |     |     |     |
| 91945                      | A8047 | 23 | 19 | 37 | 45  | 26  | 44  |
| 91945D                     | A8068 | 25 | 29 | 54 | 79  | 34  | 64  |
| ^^Note: 1:10               |       |    |    |    |     |     |     |
| 91936-1RR                  | A8090 | 1  |    | 82 | 89  | 4   | 88  |
| ^^Note: MATRIX EFFECT      |       |    |    |    |     |     |     |

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Blank Results Information  
Base Neutrals / Acids      Method : EPA 8270

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| Analyte                    | Blank<br>Result | Detection<br>Limit |
|----------------------------|-----------------|--------------------|
| D026 Total Cresol          | BDL             | 0.05               |
| D027 1,4-Dichlorobenzene   | BDL             | 0.05               |
| D030 2,4-Dinitrotoluene    | BDL             | 0.05               |
| D032 Hexachlorobenzene     | BDL             | 0.05               |
| D033 Hexachlorobutadiene   | BDL             | 0.05               |
| D034 Hexachloroethane      | BDL             | 0.05               |
| D036 Nitrobenzene          | BDL             | 0.05               |
| D037 Pentachlorophenol     | BDL             | 0.05               |
| D041 2,4,5-Trichlorophenol | BDL             | 0.05               |
| D042 2,4,6-Trichlorophenol | BDL             | 0.05               |
| D038 Pyridine              | BDL             | 0.05               |

Sample Batch Information  
Base Neutrals / Acids      Method : EPA 8270

| Sample ID  | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst # |
|------------|-------------|------|-------|----------------------|----------|------|-----|--------|
|            | Date        | Time | By    |                      | Date     | Time | By  |        |
| 36306BLK   | 02/13/98    | 0900 | JW/CM |                      | 02/15/98 | 1457 | TAS | 5971   |
| 36306LCS   | 02/13/98    | 0900 | JW/CM |                      | 02/15/98 | 1532 | TAS | 5971   |
| 36306LCSD  | 02/13/98    | 0900 | JW/CM |                      | 02/15/98 | 1607 | TAS | 5971   |
| 91734-1    | 02/13/98    | 0900 | JW/CM |                      | 02/15/98 | 2011 | TAS | 5971   |
| 91734-1MS  | 02/13/98    | 0900 | JW/CM |                      | 02/15/98 | 2046 | TAS | 5971   |
| 91734-1MSD | 02/13/98    | 0900 | JW/CM |                      | 02/15/98 | 2120 | TAS | 5971   |
| 91734-2    | 02/13/98    | 0900 | JW/CM |                      | 02/15/98 | 2155 | TAS | 5971   |
| 91734-3    | 02/13/98    | 0900 | JW/CM |                      | 02/15/98 | 2230 | TAS | 5971   |
| 91734-4    | 02/13/98    | 0900 | JW/CM |                      | 02/16/98 | 0430 | TAS | 5971   |
| 91734-5    | 02/13/98    | 0900 | JW/CM |                      | 02/16/98 | 0505 | TAS | 5971   |
| 91734-5DUP | 02/13/98    | 0900 | JW/CM |                      | 02/16/98 | 0539 | TAS | 5971   |
| 91734-6    | 02/13/98    | 0900 | JW/CM |                      | 02/16/98 | 0614 | TAS | 5971   |
| 91751-1    | 02/13/98    | 0900 | JW/CM |                      | 02/16/98 | 0942 | TAS | 5971   |
| 91751-2    | 02/13/98    | 0900 | JW/CM |                      | 02/16/98 | 1017 | TAS | 5971   |
| 91808      | 02/13/98    | 0900 | JW/CM |                      | 02/16/98 | 0355 | TAS | 5971   |
| 91734-4RR  | 02/16/98    | 1400 | JW/CM |                      | 02/17/98 | 0212 | TAS | 5971   |
| 91976-1    | 02/18/98    | 1500 | JW    |                      | 02/19/98 | 0936 | TAS | 5970   |
| 91976-2    | 02/18/98    | 1500 | JW    |                      | 02/19/98 | 1009 | TAS | 5970   |
| 91936-1    | 02/20/98    | 1400 | JW/CM |                      | 02/21/98 | 1518 | TAS | 5970   |
| 91945      | 02/20/98    | 1400 | JW/CM |                      | 02/21/98 | 1551 | TAS | 5970   |
| 91936-1RR  | 02/23/98    | 1500 | JW    |                      | 02/24/98 | 1007 | TAS | 5970   |
| 91945D     | / /         |      |       |                      | 02/23/98 | 1521 | TAS | 5970   |
| 92177-1    | 02/24/98    | 1200 | TB    |                      | / /      |      |     |        |
| 92177-2    | 02/24/98    | 1200 | TB    |                      | / /      |      |     |        |

Analytical Services Inc. Batch QC  
 For Report Number :91936  
 Organochlorine Pesticides

Matrix : TCLP

Batch # 36371

Method : EPA 8081

| Lab Control Information<br>Analyte  | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                 | 96         | 100         | 5         | 32 - 127           | 0 - 40       |
| Heptachlor                          | 95         | 99          | 4         | 34 - 111           | 0 - 40       |
| Toxaphene                           | 82         | 88          | 7         | 25 - 160           | 0 - 40       |
| Heptachlor epoxide                  | 100        | 105         | 4         | 25 - 160           | 0 - 40       |
| Endrin                              | 76         | 79          | 4         | 30 - 147           | 0 - 40       |
| Chlordane                           | 96         | 102         | 7         | 25 - 160           | 0 - 40       |
| Methoxychlor                        | 100        | 100         | 0         | 25 - 160           | 0 - 40       |
| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
| BHC-gamma (Lindane)                 | 96         | 102         | 6         | 32 - 127           | 0 - 40       |
| Heptachlor                          | 84         | 90          | 7         | 34 - 111           | 0 - 40       |
| Toxaphene                           | 97         | 98          | 1         | 25 - 160           | 0 - 40       |
| Heptachlor epoxide                  | 94         | 104         | 10        | 25 - 160           | 0 - 40       |
| Endrin                              | 77         | 81          | 6         | 30 - 147           | 0 - 40       |
| Chlordane                           | 108        | 138         | 24        | 25 - 160           | 0 - 40       |
| Methoxychlor                        | 89         | 93          | 4         | 25 - 160           | 0 - 40       |

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Organochlorine Pesticides

Matrix : TCLP

Batch # 36371

Method : EPA 8081

## % Recovery Objectives

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|    |                      |          |
|----|----------------------|----------|
| S1 | Dibutylchlorendate   | 34 - 151 |
| S2 | Tetrachloro-m-xylene | 40 - 111 |
| S3 | Decachlorobiphenyl   | 24 - 153 |

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| Sample     | File       | S1  | S2  | S3  | S4 | S5 | S6 |
|------------|------------|-----|-----|-----|----|----|----|
| <hr/>      |            |     |     |     |    |    |    |
| 36371BLK   | 021398014F | 95  | 70  | 84  |    |    |    |
| 36371LCS   | 021398015F | 106 | 71  | 90  |    |    |    |
| 36371LCSD  | 021398016F | 108 | 81  | 109 |    |    |    |
| 91734-1    | 021398017F | 86  | 58  | 94  |    |    |    |
| 91734-2    | 021398018F | 99  | 75  | 111 |    |    |    |
| 91734-3    | 021398019F | 101 | 76  | 106 |    |    |    |
| 91734-4    | 021398020F | 108 | 74  | 111 |    |    |    |
| 91734-5    | 021398021F | 99  | 85  | 99  |    |    |    |
| 01734-6    | 021398022F | 111 | 60  | 96  |    |    |    |
| 91734-6DUP | 021398023F | 118 | 94  | 111 |    |    |    |
| 91734-2MS  | 021398039F | 131 | 80  | 123 |    |    |    |
| 91734-2MSD | 021398040F | 137 | 91  | 132 |    |    |    |
| 91976-1    | 021898066F | 120 | 97  | 104 |    |    |    |
| 91976-2    | 021898067F | 108 | 97  | 78  |    |    |    |
| 91902-3    | 022098034F | 140 | 105 | 112 |    |    |    |
| 91902-4    | 022098035F | 150 | 111 | 116 |    |    |    |
| 91902-1    | 022098081F | 126 | 92  | 95  |    |    |    |
| 91902-2    | 022098082F | 97  | 74  | 76  |    |    |    |
| 91936-1    | 022098083F | 88  | 78  | 32  |    |    |    |

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Blank Results Information  
Organochlorine Pesticides      Method : EPA 8081

| Analyte |                    | Blank<br>Result | Detection<br>Limit |
|---------|--------------------|-----------------|--------------------|
| D020    | Chlordane          | BDL             | 0.01               |
| D012    | Endrin             | BDL             | 0.001              |
| D031    | Heptachlor         | BDL             | 0.001              |
| D031    | Heptachlor epoxide | BDL             | 0.001              |
| D013    | Lindane            | BDL             | 0.01               |
| D014    | Methoxychlor       | BDL             | 0.5                |
| D015    | Toxaphene          | BDL             | 0.05               |



Sample Batch Information  
Organochlorine Pesticides      Method : EPA 8081

| Sample ID  | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst # |
|------------|-------------|------|-------|----------------------|----------|------|-----|--------|
|            | Date        | Time | By    |                      | Date     | Time | By  |        |
| 36371BLK   | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0032 | JQZ | GC-3   |
| 36371LCS   | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0101 | JQZ | GC-3   |
| 36371LCSD  | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0130 | JQZ | GC-3   |
| 91734-1    | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0159 | JQZ | GC-3   |
| 91734-2    | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0228 | JQZ | GC-3   |
| 91734-2MS  | 02/13/98    | 1400 | JW/CM |                      | 02/16/98 | 1639 | JQZ | GC-3   |
| 91734-2MSD | 02/13/98    | 1400 | JW/CM |                      | 02/16/98 | 1703 | JQZ | GC-3   |
| 91734-3    | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0257 | JQZ | GC-3   |
| 91734-4    | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0326 | JQZ | GC-3   |
| 91734-5    | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0355 | JQZ | GC-3   |
| 91734-6    | 02/13/98    | 1400 | JW/CM |                      | /        | /    |     |        |
| 91734-6DUP | 02/13/98    | 1400 | JW/CM |                      | 02/16/98 | 0935 | JQZ | GC-3   |
| 91976-1    | 02/18/98    | 1500 | JW    |                      | 02/19/98 | 1423 | JQZ | GC-3   |
| 91976-2    | 02/18/98    | 1500 | JW    |                      | 02/19/98 | 1447 | JQZ | GC-3   |
| 91902-1    | 02/19/98    | 1700 | JW/CM |                      | 02/21/98 | 1812 | JQZ | GC-3   |
| 91902-2    | 02/19/98    | 1700 | JW/CM |                      | 02/21/98 | 1836 | JQZ | GC-3   |
| 91936-1    | 02/19/98    | 1700 | JW/CM |                      | 02/21/98 | 1900 | JQZ | GC-3   |
| 92177-1    | 02/24/98    | 1200 | TB    |                      | /        | /    |     |        |
| 92177-2    | 02/24/98    | 1200 | TB    |                      | /        | /    |     |        |

Analytical Services Inc. Batch QC  
 For Report Number :91936  
 Volatile Organics

Matrix : Aqueous

Batch # 36497

Method : EPA 8260

| Lab Control Information<br>Analyte  | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 1,1-Dichloroethene                  | 88         | 91          | 3         | 61 - 145           | 0 - 14       |
| Trichloroethene                     | 101        | 105         | 4         | 71 - 120           | 0 - 14       |
| Benzene                             | 106        | 107         | 1         | 76 - 127           | 0 - 11       |
| Toluene                             | 101        | 100         | 1         | 76 - 125           | 0 - 13       |
| Chlorobenzene                       | 102        | 102         | 1         | 75 - 130           | 0 - 13       |
| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
| 1,1-Dichloroethene                  | 85         | 79          | 8         | 61 - 145           | 0 - 14       |
| Trichloroethene                     | 97         | 87          | 10        | 71 - 120           | 0 - 14       |
| Benzene                             | 102        | 94          | 9         | 76 - 127           | 0 - 11       |
| Toluene                             | 95         | 94          | 1         | 76 - 125           | 0 - 13       |
| Chlorobenzene                       | 93         | 87          | 7         | 75 - 130           | 0 - 13       |

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Aqueous

Batch # 36497

Method : EPA 8260

## % Recovery Objectives

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|    |                       |          |
|----|-----------------------|----------|
| S1 | 1,2-Dichloroethane-d4 | 76 - 119 |
| S2 | Toluene-d8            | 88 - 110 |
| S3 | Ethylbenzene-d10      | 75 - 115 |
| S4 | 4-Bromofluorobenzene  | 86 - 120 |

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| Sample     | File  | S1  | S2  | S3  | S4  | S5 | S6 |
|------------|-------|-----|-----|-----|-----|----|----|
| 36497LCS   | A0999 | 103 | 99  | 101 | 100 |    |    |
| 36497LCSD  | A1000 | 99  | 98  | 100 | 99  |    |    |
| 36497BLK   | A0996 | 99  | 102 | 97  | 102 |    |    |
| 91837-1    | A1148 | 116 | 109 | 99  | 78  |    |    |
| 91837-2    | A1149 | 116 | 102 | 99  | 115 |    |    |
| 91837-3    | A1150 | 120 | 77  | 100 | 114 |    |    |
| 91837-4    | A1151 | 120 | 75  | 102 | 115 |    |    |
| 91837-7    | A1152 | 112 | 110 | 100 | 113 |    |    |
| 91837-8    | A1153 | 131 | 111 | 106 | 114 |    |    |
| 91837-1MS  | A1157 | 119 | 113 | 109 | 101 |    |    |
| 91837-1MSD | A1158 | 112 | 116 | 106 | 109 |    |    |
| 91837-1DUP | B3372 | 90  | 99  | 89  | 100 |    |    |
| 91837-3DUP | B3373 | 89  | 101 | 93  | 101 |    |    |
| 91837-4DUP | B3374 | 90  | 96  | 91  | 101 |    |    |
| 91837-8DUP | B3375 | 94  | 101 | 89  | 103 |    |    |
| 91894-1    | B3378 | 90  | 104 | 91  | 101 |    |    |
| 91894-2    | B3379 | 98  | 100 | 93  | 102 |    |    |
| 91894-3    | B3380 | 94  | 99  | 88  | 97  |    |    |
| 91894-4    | B3381 | 97  | 100 | 90  | 99  |    |    |
| 91894-5    | B3382 | 108 | 100 | 89  | 108 |    |    |
| 91894-6    | B3383 | 96  | 97  | 93  | 109 |    |    |
| 91894-7    | B3384 | 105 | 100 | 91  | 108 |    |    |
| 91905      | A1163 | 110 | 107 | 100 | 109 |    |    |
| 91902-3    | A1180 | 102 | 108 | 105 | 110 |    |    |
| 91902-4    | A1181 | 101 | 99  | 105 | 113 |    |    |
| 91902-5    | A1182 | 105 | 96  | 103 | 109 |    |    |
| 91936-2    | A1183 | 104 | 98  | 104 | 103 |    |    |

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Blank Results Information  
Volatile Organics      Method : EPA 8260

| Analyte                     | Blank Result | Detection Limit |
|-----------------------------|--------------|-----------------|
| Acetone                     | BDL          | 100             |
| Acrolein                    | BDL          | 50              |
| Acrylonitrile               | BDL          | 50              |
| Benzene                     | BDL          | 2               |
| Bromobenzene                | BDL          | 10              |
| Bromochloromethane          | BDL          | 10              |
| Bromodichloromethane        | BDL          | 10              |
| Bromoform                   | BDL          | 10              |
| Bromomethane                | BDL          | 10              |
| 2-Butanone                  | BDL          | 100             |
| n-Butylbenzene              | BDL          | 10              |
| sec-Butylbenzene            | BDL          | 10              |
| tert-Butylbenzene           | BDL          | 10              |
| Carbon disulfide            | BDL          | 10              |
| Carbon tetrachloride        | BDL          | 2               |
| Chlorobenzene               | BDL          | 10              |
| Chloroethane                | BDL          | 5               |
| Chloroform                  | BDL          | 2               |
| Chloromethane               | BDL          | 10              |
| 2-Chlorotoluene             | BDL          | 10              |
| 4-Chlorotoluene             | BDL          | 10              |
| 2-Chloroethylvinyl ether    | BDL          | 10              |
| Dibromochloromethane        | BDL          | 10              |
| 1,2-Dibromo-3-chloropropane | BDL          | 10              |
| 1,2-Dibromoethane           | BDL          | 10              |
| Dibromomethane              | BDL          | 10              |
| 1,2-Dichlorobenzene         | BDL          | 10              |
| 1,3-Dichlorobenzene         | BDL          | 10              |
| 1,4-Dichlorobenzene         | BDL          | 10              |
| Dichlorodifluoromethane     | BDL          | 10              |
| 1,1-Dichloroethane          | BDL          | 2               |
| 1,2-Dichloroethane          | BDL          | 2               |
| 1,1-Dichloroethene          | BDL          | 2               |
| cis-1,2-Dichloroethene      | BDL          | 2               |
| trans-1,2-Dichloroethene    | BDL          | 2               |
| 1,2-Dichloropropane         | BDL          | 2               |
| 1,3-Dichloropropane         | BDL          | 2               |
| 2,2-Dichloropropane         | BDL          | 2               |
| 1,1-Dichloropropene         | BDL          | 2               |
| cis-1,3-Dichloropropene     | BDL          | 2               |
| trans-1,3-Dichloropropene   | BDL          | 2               |
| Ethylbenzene                | BDL          | 2               |
| Hexachlorobutadiene         | BDL          | 10              |
| 2-Hexanone                  | BDL          | 10              |
| Isopropylbenzene            | BDL          | 10              |
| p-Isopropyltoluene          | BDL          | 10              |
| Methylene chloride          | BDL          | 5               |
| 4-Methyl-2-pentanone        | BDL          | 10              |
| Naphthalene                 | BDL          | 10              |

Blank Results Information  
Volatile Organics Method : EPA 8260

| Analyte                   | Blank Result | Detection Limit |
|---------------------------|--------------|-----------------|
| n-Propylbenzene           | BDL          | 10              |
| Styrene                   | BDL          | 5               |
| 1,1,1,2-Tetrachloroethane | BDL          | 2               |
| 1,1,2,2-Tetrachloroethane | BDL          | 2               |
| Tetrachloroethene         | BDL          | 2               |
| Toluene                   | BDL          | 2               |
| 1,2,3-Trichlorobenzene    | BDL          | 10              |
| 1,2,4-Trichlorobenzene    | BDL          | 10              |
| 1,1,1-Trichloroethane     | BDL          | 2               |
| 1,1,2-Trichloroethane     | BDL          | 2               |
| Trichloroethene           | BDL          | 2               |
| Trichlorofluoromethane    | BDL          | 10              |
| 1,2,3-Trichloropropane    | BDL          | 10              |
| 1,2,4-Trimethylbenzene    | BDL          | 10              |
| 1,3,5-Trimethylbenzene    | BDL          | 10              |
| Vinyl acetate             | BDL          | 10              |
| Vinyl chloride            | BDL          | 10              |
| m+p-Xylene                | BDL          | 5               |
| o-Xylene                  | BDL          | 5               |
| Xylenes                   | BDL          | 5               |

Q.C. Information for Batch # 36497

Printed: 02/25/98 07:48:50

Sample Batch Information  
Volatile Organics      Method : EPA 8260

| Sample ID  | Preparation |         | Preparation<br>Notes | Analysis |      |         | Inst # |
|------------|-------------|---------|----------------------|----------|------|---------|--------|
|            | Date        | Time By |                      | Date     | Time | By      |        |
| 36497LCS   | /           | /       |                      | 02/14/98 | 1502 | LLP     | VOA1   |
| 36497LCSD  | /           | /       |                      | 02/14/98 | 1530 | LLP     | VOA1   |
| 36497BLK   | /           | /       |                      | 02/14/98 | 1340 | LLP     | VOA1   |
| 91837-1    | /           | /       |                      | 02/19/98 | 1403 | LLP     | VOA1   |
| 91837-2    | /           | /       |                      | 02/19/98 | 1431 | LLP     | VOA1   |
| 91837-3    | /           | /       |                      | 02/19/98 | 1458 | LLP     | VOA1   |
| 91837-4    | /           | /       |                      | 02/19/98 | 1526 | LLP     | VOA1   |
| 91837-7    | /           | /       |                      | 02/19/98 | 1553 | LLP     | VOA1   |
| 91837-8    | /           | /       |                      | 02/19/98 | 1649 | LLP     | VOA1   |
| 91837-1MS  | /           | /       |                      | 02/19/98 | 1839 | LLP     | VOA1   |
| 91837-1MSD | /           | /       |                      | 02/19/98 | 1906 | LLP     | VOA1   |
| 91837-1DUP | /           | /       |                      | 02/20/98 | 1828 | RFA     | VOA2   |
| 91837-3DUP | /           | /       |                      | 02/20/98 | 1852 | RFA     | VOA2   |
| 91837-4DUP | /           | /       |                      | 02/20/98 | 1916 | RFA     | VOA2   |
| 91837-8DUP | /           | /       |                      | 02/20/98 | 1941 | RFA     | VOA2   |
| 91894-1    | /           | /       |                      | 02/20/98 | 2054 | LLP894- | VOA2   |
| 91894-2    | /           | /       |                      | 02/20/98 | 2118 | LLP894- | VOA2   |
| 91894-3    | /           | /       |                      | 02/20/98 | 2142 | LLP     | VOA2   |
| 91894-4    | /           | /       |                      | 02/20/98 | 2206 | LLP     | VOA2   |
| 91894-5    | /           | /       |                      | 02/20/98 | 2230 | LLP     | VOA2   |
| 91894-6    | /           | /       |                      | 02/20/98 | 2254 | LLP     | VOA2   |
| 91894-7    | /           | /       |                      | 02/20/98 | 2318 | LLP     | VOA2   |
| 91905      | /           | /       |                      | 02/19/98 | 2055 | LLP     | VOA1   |
| 91902-3    | /           | /       |                      | 02/20/98 | 1350 | LLP     | VOA1   |
| 91902-4    | /           | /       |                      | 02/20/98 | 1417 | LLP     | VOA1   |
| 91902-5    | /           | /       |                      | 02/20/98 | 1444 | LLP     | VOA1   |
| 91936-2    | /           | /       |                      | 02/20/98 | 1512 | LLP     | VOA1   |

Analytical Services Inc. Batch QC  
For Report Number :91936  
Volatile Organics

Matrix : TCLP

Batch # 36510

Method : EPA 8260

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Benzene                            | 95         | 106         | 11        | 90 - 115           | 0 - 13       |
| Carbon tetrachloride               | 91         | 106         | 15        | 55 - 115           | 0 - 15       |
| Chlorobenzene                      | 96         | 100         | 4         | 87 - 109           | 0 - 10       |
| Chloroform                         | 92         | 99          | 7         | 55 - 115           | 0 - 15       |
| 1,2-Dichloroethane                 | 96         | 105         | 9         | 90 - 115           | 0 - 13       |
| 1,1-Dichloroethene                 | 73         | 80          | 9         | 55 - 111           | 0 - 15       |
| MEK (2-Butanone)                   | 62         | 56          | 10        | 55 - 115           | 0 - 15       |
| Tetrachloroethene                  | 85         | 96          | 12        | 55 - 115           | 0 - 15       |
| Trichloroethene                    | 85         | 94          | 10        | 78 - 110           | 0 - 11       |
| Vinyl chloride                     | 68         | 78          | 14        | 55 - 115           | 0 - 15       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Benzene                             | 86         | 88          | 2         | 90 - 115           | 0 - 13       |
| Carbon tetrachloride                | 81         | 84          | 4         | 55 - 115           | 0 - 15       |
| Chlorobenzene                       | 80         | 81          | 1         | 87 - 109           | 0 - 10       |
| Chloroform                          | 80         | 81          | 1         | 55 - 115           | 0 - 15       |
| 1,2-Dichloroethane                  | 84         | 85          | 1         | 90 - 115           | 0 - 13       |
| 1,1-Dichloroethene                  | 72         | 73          | 1         | 55 - 111           | 0 - 15       |
| MEK (2-Butanone)                    | 86         | 86          | 0         | 55 - 115           | 0 - 15       |
| Tetrachloroethene                   | 75         | 75          | 0         | 55 - 115           | 0 - 15       |
| Trichloroethene                     | 76         | 80          | 5         | 78 - 110           | 0 - 11       |
| Vinyl chloride                      | 67         | 70          | 4         | 55 - 115           | 0 - 15       |

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : TCLP

Batch # 36510

Method : EPA 8260

## % Recovery Objectives

|    |                       |          |
|----|-----------------------|----------|
| S1 | 1,2-Dichloroethane-d4 | 76 - 119 |
| S2 | Toluene-d8            | 88 - 110 |
| S3 | Ethylbenzene-d10      | 75 - 115 |
| S4 | 4-Bromofluorobenzene  | 86 - 115 |

| Sample        | File  | S1  | S2  | S3  | S4  | S5 | S6 |
|---------------|-------|-----|-----|-----|-----|----|----|
| 36510LCS      | A1172 | 116 | 109 | 112 | 115 |    |    |
| 36510LCSD     | A1173 | 103 | 112 | 111 | 112 |    |    |
| 36510BLK      | A1174 | 118 | 115 | 107 | 108 |    |    |
| 91902-2MS     | A1177 | 106 | 98  | 109 | 110 |    |    |
| 91902-2MSD    | A1178 | 117 | 113 | 106 | 105 |    |    |
| 91936-1       | A1179 | 105 | 114 | 105 | 78  |    |    |
| 91902-1       | A1175 | 103 | 98  | 105 | 111 |    |    |
| 91902-2       | A1176 | 102 | 96  | 105 | 108 |    |    |
| 91945         | A1184 | 104 | 99  | 104 | 115 |    |    |
| 91945D        | A1232 | 106 | 98  | 95  | 99  |    |    |
| ^^Note: DF=50 |       |     |     |     |     |    |    |
| 91936-1DUP    | A1271 | 106 | 96  | 98  | 97  |    |    |



Q.C. Information for Batch # 36510

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Blank Results Information  
Volatile Organics Method : EPA 8260

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| Analyte |                      | Blank<br>Result | Detection<br>Limit |
|---------|----------------------|-----------------|--------------------|
| D018    | Benzene              | BDL             | 0.02               |
| D019    | Carbon tetrachloride | BDL             | 0.02               |
| D021    | Chlorobenzene        | BDL             | 0.02               |
| D022    | Chloroform           | BDL             | 0.02               |
| D028    | 1,2-Dichloroethane   | BDL             | 0.02               |
| D029    | 1,1-Dichloroethene   | BDL             | 0.02               |
| D035    | Methyl ethyl ketone  | BDL             | 0.5                |
| D039    | Tetrachloroethene    | BDL             | 0.02               |
| D040    | Trichloroethene      | BDL             | 0.02               |
| D043    | Vinyl chloride       | BDL             | 0.02               |

Q.C. Information for Batch # 36510

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Sample Batch Information  
Volatile Organics Method : EPA 8260

| Sample ID  | Preparation |      |    | Preparation<br>Notes | Analysis |      |     | Inst # |
|------------|-------------|------|----|----------------------|----------|------|-----|--------|
|            | Date        | Time | By |                      | Date     | Time | By  |        |
| 36510LCS   | /           | /    |    |                      | 02/20/98 | 1012 | RFA | VOA1   |
| 36510LCSD  | /           | /    |    |                      | 02/20/98 | 1039 | RFA | VOA1   |
| 36510BLK   | /           | /    |    |                      | 02/20/98 | 1106 | RFA | VOA1   |
| 91902-2MS  | /           | /    |    |                      | 02/20/98 | 1228 | RFA | VOA1   |
| 91902-2MSD | /           | /    |    |                      | 02/20/98 | 1255 | RFA | VOA1   |
| 91936-1    | /           | /    |    |                      | 02/20/98 | 1322 | RFA | VOA1   |
| 91902-1    | /           | /    |    |                      | 02/20/98 | 1133 | RFA | VOA1   |
| 91902-2    | /           | /    |    |                      | 02/20/98 | 1201 | RFA | VOA1   |
| 91945      | /           | /    |    |                      | 02/20/98 | 1539 | RFA | VOA1   |
| 91945D     | /           | /    |    |                      | 02/23/98 | 1237 | RFA | VOA1   |
| 91936-1DUP | /           | /    |    |                      | 02/24/98 | 1532 | RFA | VOA1   |

Analytical Services Inc. Batch QC  
For Report Number :91936  
Volatile Organics

Matrix : Soil/Sediment

Batch # 36580

Method : EPA 8260

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 1,1-Dichloroethene                 | 133        | 115         | 14        | 61 - 145           | 0 - 14       |
| Trichloroethene                    | 114        | 111         | 3         | 71 - 120           | 0 - 14       |
| Benzene                            | 119        | 114         | 5         | 76 - 127           | 0 - 11       |
| Toluene                            | 125        | 109         | 13        | 76 - 125           | 0 - 13       |
| Chlorobenzene                      | 118        | 114         | 4         | 75 - 130           | 0 - 13       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 1,1-Dichloroethene                  | 117        | 116         | 1         | 61 - 145           | 0 - 14       |
| Trichloroethene                     | 117        | 121         | 4         | 71 - 120           | 0 - 14       |
| Benzene                             | 125        | 125         | 0         | 76 - 127           | 0 - 11       |
| Toluene                             | 130        | 132         | 1         | 76 - 125           | 0 - 13       |
| Chlorobenzene                       | 124        | 132         | 6         | 75 - 130           | 0 - 13       |

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Soil/Sediment Batch # 36580

Method : EPA 8260

% Recovery Objectives

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|    |                       |          |
|----|-----------------------|----------|
| S1 | 1,2-Dichloroethane-d4 | 70 - 121 |
| S2 | Toluene-d8            | 81 - 117 |
| S3 | Ethylbenzene-d10      | 79 - 115 |
| S4 | 4-Bromofluorobenzene  | 74 - 121 |

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| Sample     | File  | S1  | S2  | S3  | S4  | S5 | S6 |
|------------|-------|-----|-----|-----|-----|----|----|
| <hr/>      |       |     |     |     |     |    |    |
| 36580LCS   | B3426 | 97  | 102 | 98  | 91  |    |    |
| 36580LCSD  | B3427 | 91  | 100 | 101 | 97  |    |    |
| 36580BLK   | B3428 | 95  | 100 | 100 | 95  |    |    |
| 91936-1    | B3429 | 103 | 99  | 97  | 99  |    |    |
| 91936-1MS  | B3430 | 105 | 97  | 95  | 92  |    |    |
| 91936-1MSD | B3431 | 99  | 97  | 102 | 97  |    |    |
| 92015-6    | B3358 | 94  | 100 | 103 | 100 |    |    |
| 92015-7    | B3359 | 94  | 102 | 96  | 93  |    |    |
| 92015-11   | B3360 | 97  | 106 | 103 | 102 |    |    |
| 92015-12   | B3361 | 96  | 102 | 100 | 98  |    |    |
| 92015-13   | B3362 | 97  | 100 | 102 | 103 |    |    |
| 91978-1    | A1242 | 103 | 94  | 100 | 99  |    |    |

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Blank Results Information  
Volatile Organics Method : EPA 8260

| Analyte                     | Blank Result | Detection Limit |
|-----------------------------|--------------|-----------------|
| Acetone                     | BDL          | 100             |
| Acrolein                    | BDL          | 50              |
| Acrylonitrile               | BDL          | 50              |
| Benzene                     | BDL          | 5               |
| Bromobenzene                | BDL          | 10              |
| Bromochloromethane          | BDL          | 10              |
| Bromodichloromethane        | BDL          | 5               |
| Bromoform                   | BDL          | 5               |
| Bromomethane                | BDL          | 10              |
| 2-Butanone                  | BDL          | 100             |
| n-Butylbenzene              | BDL          | 10              |
| sec-Butylbenzene            | BDL          | 10              |
| tert-Butylbenzene           | BDL          | 10              |
| Carbon disulfide            | BDL          | 5               |
| Carbon tetrachloride        | BDL          | 5               |
| Chlorobenzene               | BDL          | 10              |
| Chloroethane                | BDL          | 5               |
| Chloroform                  | BDL          | 5               |
| Chloromethane               | BDL          | 10              |
| 2-Chlorotoluene             | BDL          | 10              |
| 4-Chlorotoluene             | BDL          | 10              |
| 2-Chloroethylvinyl ether    | BDL          | 10              |
| Dibromochloromethane        | BDL          | 5               |
| 1,2-Dibromo-3-chloropropane | BDL          | 10              |
| 1,2-Dibromoethane           | BDL          | 10              |
| Dibromomethane              | BDL          | 10              |
| 1,2-Dichlorobenzene         | BDL          | 10              |
| 1,3-Dichlorobenzene         | BDL          | 10              |
| 1,4-Dichlorobenzene         | BDL          | 10              |
| Dichlorodifluoromethane     | BDL          | 10              |
| 1,1-Dichloroethane          | BDL          | 5               |
| 1,2-Dichloroethane          | BDL          | 5               |
| 1,1-Dichloroethene          | BDL          | 5               |
| cis-1,2-Dichloroethene      | BDL          | 5               |
| trans-1,2-Dichloroethene    | BDL          | 5               |
| 1,2-Dichloropropane         | BDL          | 5               |
| 1,3-Dichloropropane         | BDL          | 5               |
| 2,2-Dichloropropane         | BDL          | 5               |
| 1,1-Dichloropropene         | BDL          | 5               |
| cis-1,3-Dichloropropene     | BDL          | 5               |
| trans-1,3-Dichloropropene   | BDL          | 5               |
| Ethylbenzene                | BDL          | 5               |
| Hexachlorobutadiene         | BDL          | 10              |
| 2-Hexanone                  | BDL          | 50              |
| Isopropylbenzene            | BDL          | 10              |
| p-Isopropyltoluene          | BDL          | 10              |
| Methylene chloride          | BDL          | 10              |
| 4-Methyl-2-pentanone        | BDL          | 50              |
| Naphthalene                 | BDL          | 10              |

Blank Results Information  
Volatile Organics Method : EPA 8260

| Analyte                   | Blank Result | Detection Limit |
|---------------------------|--------------|-----------------|
| n-Propylbenzene           | BDL          | 10              |
| Styrene                   | BDL          | 5               |
| 1,1,1,2-Tetrachloroethane | BDL          | 5               |
| 1,1,2,2-Tetrachloroethane | BDL          | 5               |
| Tetrachloroethene         | BDL          | 5               |
| Toluene                   | BDL          | 5               |
| 1,2,3-Trichlorobenzene    | BDL          | 10              |
| 1,2,4-Trichlorobenzene    | BDL          | 10              |
| 1,1,1-Trichloroethane     | BDL          | 5               |
| 1,1,2-Trichloroethane     | BDL          | 5               |
| Trichloroethene           | BDL          | 5               |
| Trichlorofluoromethane    | BDL          | 10              |
| 1,2,3-Trichloropropane    | BDL          | 10              |
| 1,2,4-Trimethylbenzene    | BDL          | 10              |
| 1,3,5-Trimethylbenzene    | BDL          | 10              |
| Vinyl acetate             | BDL          | 10              |
| Vinyl chloride            | BDL          | 10              |
| m+p-Xylene                | BDL          | 5               |
| o-Xylene                  | BDL          | 5               |
| Xylenes                   | BDL          | 5               |

Sample Batch Information  
Volatile Organics      Method : EPA 8260

| Sample ID  | Preparation |      |    | Preparation<br>Notes | Analysis |      |     | Inst # |
|------------|-------------|------|----|----------------------|----------|------|-----|--------|
|            | Date        | Time | By |                      | Date     | Time | By  |        |
| 36580LCS   | /           | /    |    |                      | 02/24/98 | 1139 | TLW | VOA2   |
| 36580LCSD  | /           | /    |    |                      | 02/24/98 | 1203 | TLW | VOA2   |
| 36580BLK   | /           | /    |    |                      | 02/24/98 | 1228 | TLW | VOA2   |
| 91936-1    | /           | /    |    |                      | 02/24/98 | 1252 | TLW | VOA2   |
| 91936-1MS  | /           | /    |    |                      | 02/24/98 | 1317 | TLW | VOA2   |
| 91936-1MSD | /           | /    |    |                      | 02/24/98 | 1342 | TLW | VOA2   |
| 92015-6    | /           | /    |    |                      | 02/20/98 | 1140 | TLW | VOA2   |
| 92015-7    | /           | /    |    |                      | 02/20/98 | 1205 | TLW | VOA2   |
| 92015-11   | /           | /    |    |                      | 02/20/98 | 1230 | TLW | VOA2   |
| 92015-12   | /           | /    |    |                      | 02/20/98 | 1254 | TLW | VOA2   |
| 92015-13   | /           | /    |    |                      | 02/20/98 | 1319 | TLW | VOA2   |
| 91978-1    | /           | /    |    |                      | 02/23/98 | 1655 | RFA | VOA1   |

## OC Batch General Information

| Batch Number                              | Analyte | Analysis Method | Matrix | Blank Result | Prep. Method |
|-------------------------------------------|---------|-----------------|--------|--------------|--------------|
| 36107                                     | Hg      | EPA 7471        | Soil   | <            | 0.0002       |
| 36110                                     | Hg      | EPA 7470        | TCLP   | <            | 0.0002       |
| 36178                                     | Ag      | EPA 6010        | Soil   | <            | 0.0100       |
| 36178                                     | Al      | EPA 6010        | Soil   | <            | 0.1000       |
| ^^Note : BATCH PASSES ON LCS/LCSD         |         |                 |        |              |              |
| 36178                                     | Ba      | EPA 6010        | Soil   | <            | 0.0100       |
| 36178                                     | Be      | EPA 6010        | Soil   | <            | 0.0010       |
| 36178                                     | Ca      | EPA 6010        | Soil   | <            | 0.1700       |
| 36178                                     | Cd      | EPA 6010        | Soil   | <            | 0.0050       |
| 36178                                     | Co      | EPA 6010        | Soil   | <            | 0.0100       |
| 36178                                     | Cr      | EPA 6010        | Soil   | <            | 0.0050       |
| 36178                                     | Cu      | EPA 6010        | Soil   | <            | 0.0100       |
| 36178                                     | Fe      | EPA 6010        | Soil   | <            | 0.0400       |
| ^^Note : BATCH PASSES ON LCS/LCSD         |         |                 |        |              |              |
| 36178                                     | K       | EPA 6010        | Soil   | <            | 0.2400       |
| 36178                                     | Mg      | EPA 6010        | Soil   | <            | 0.0100       |
| 36178                                     | Mn      | EPA 6010        | Soil   | <            | 0.0100       |
| ^^Note : BATCH PASSES ON LCS/LCSD/PDS     |         |                 |        |              |              |
| 36178                                     | Na      | EPA 6010        | Soil   | <            | 0.0300       |
| 36178                                     | Ni      | EPA 6010        | Soil   | <            | 0.0100       |
| 36178                                     | Pb      | EPA 6010        | Soil   | <            | 0.0050       |
| ^^Note : BATCH PASSES ON LCS/LCSD/MS/MSD  |         |                 |        |              |              |
| 36178                                     | Sb      | EPA 6010        | Soil   | <            | 0.0060       |
| ^^Note : BATCH PASSES ON LCS/LCSD/MS/PDS  |         |                 |        |              |              |
| 36178                                     | V       | EPA 6010        | Soil   | <            | 0.0100       |
| 36178                                     | Zn      | EPA 6010        | Soil   | <            | 0.0200       |
| 36185                                     | As      | EPA 7060        | Soil   | <            | 0.0100       |
| 36185                                     | Se      | EPA 7740        | Soil   | <            | 0.0100       |
| 36185                                     | Tl      | EPA 7841        | Soil   | <            | 0.0100       |
| ^^Note : QC PASSES ON LCS,LCSD            |         |                 |        |              |              |
| 36191                                     | Ag      | EPA 6010        | TCLP   | <            | 0.0100       |
| 36191                                     | As      | EPA 6010        | TCLP   | <            | 0.0100       |
| 36191                                     | Ba      | EPA 6010        | TCLP   | <            | 0.0700       |
| ^^Note : BATCH PASSES ON LCS/LCSD/MSD/PDS |         |                 |        |              |              |
| 36191                                     | Cd      | EPA 6010        | TCLP   | <            | 0.0050       |
| ^^Note : BATCH PASSES ON LCS/LCSD/MSD/PDS |         |                 |        |              |              |
| 36191                                     | Cr      | EPA 6010        | TCLP   | <            | 0.0050       |
| ^^Note : BATCH PASSES ON LCS/LCSD/PDS     |         |                 |        |              |              |



Analytical Services Inc. Batch QC  
For Report Number :91936

## QC Batch General Information

| Batch Number                                               | Analyte   | Analysis Method | Matrix   | Blank Result | Prep. Method |
|------------------------------------------------------------|-----------|-----------------|----------|--------------|--------------|
| 36191                                                      | Pb        | EPA 6010        | TCLP     | < 0.0300     |              |
| ^^Note : BATCH PASSES ON LCS/LCSD/MSD/PDS                  |           |                 |          |              |              |
| 36191                                                      | Se        | EPA 6010        | TCLP     | < 0.0100     |              |
| 36383                                                      | React S2  | EPA 7.3.4.2     | Aq/Soil  | < 5.0000     |              |
| 36393                                                      | React. CN | EPA 7.3.3.2     | Aq/Soil  | < 1.0000     |              |
| 36456                                                      | CN        | EPA 9010        | Aq/Solid | < 0.0200     |              |
| ^^Note : BATCH PASSES ON LCS/LCSD/MS/CALCHKS AND SAMP.DUPS |           |                 |          |              |              |
| 36482                                                      | Ign       | EPA 1010        | Aq/Solid | 0.0000       |              |

## Lab Control Information

| Batch Number | Analyte | Method   | LC %Rec | LCD %Rec | LC RPD | %Recovery Range | RPD Range |
|--------------|---------|----------|---------|----------|--------|-----------------|-----------|
| 36107        | Hg      | EPA 7471 | 94      | 95       | 1      | 76 - 124        | 0 - 30    |
| 36110        | Hg      | EPA 7470 | 95      | 96       | 1      | 76 - 124        | 0 - 20    |
| 36178        | Ag      | EPA 6010 | 92      | 92       | 0      | 76 - 124        | 0 - 30    |
| 36178        | Al      | EPA 6010 | 85      | 85       | 0      | 76 - 124        | 0 - 30    |
| 36178        | Ba      | EPA 6010 | 100     | 100      | 0      | 76 - 124        | 0 - 30    |
| 36178        | Be      | EPA 6010 | 97      | 99       | 2      | 76 - 124        | 0 - 30    |
| 36178        | Ca      | EPA 6010 | 97      | 99       | 2      | 76 - 124        | 0 - 30    |
| 36178        | Cd      | EPA 6010 | 91      | 92       | 1      | 76 - 124        | 0 - 30    |
| 36178        | Co      | EPA 6010 | 94      | 96       | 2      | 76 - 124        | 0 - 30    |
| 36178        | Cr      | EPA 6010 | 92      | 93       | 1      | 76 - 124        | 0 - 30    |
| 36178        | Cu      | EPA 6010 | 93      | 95       | 2      | 76 - 124        | 0 - 30    |
| 36178        | Fe      | EPA 6010 | 96      | 97       | 1      | 76 - 124        | 0 - 30    |
| 36178        | K       | EPA 6010 | 100     | 100      | 0      | 76 - 124        | 0 - 30    |
| 36178        | Mg      | EPA 6010 | 93      | 94       | 1      | 76 - 124        | 0 - 30    |
| 36178        | Mn      | EPA 6010 | 97      | 98       | 1      | 76 - 124        | 0 - 30    |
| 36178        | Na      | EPA 6010 | 110     | 100      | 10     | 76 - 124        | 0 - 30    |
| 36178        | Ni      | EPA 6010 | 93      | 94       | 1      | 76 - 124        | 0 - 30    |
| 36178        | Pb      | EPA 6010 | 94      | 95       | 1      | 76 - 124        | 0 - 30    |
| 36178        | Sb      | EPA 6010 | 110     | 110      | 0      | 76 - 124        | 0 - 30    |
| 36178        | V       | EPA 6010 | 94      | 95       | 1      | 76 - 124        | 0 - 30    |
| 36178        | Zn      | EPA 6010 | 89      | 90       | 1      | 76 - 124        | 0 - 30    |
| 36185        | As      | EPA 7060 | 109     | 105      | 4      | 76 - 124        | 0 - 30    |
| 36185        | Se      | EPA 7740 | 101     | 99       | 2      | 76 - 124        | 0 - 30    |
| 36185        | Tl      | EPA 7841 | 83      | 80       | 4      | 76 - 124        | 0 - 30    |
| 36191        | Ag      | EPA 6010 | 80      | 79       | 1      | 76 - 124        | 0 - 20    |
| 36191        | As      | EPA 6010 | 93      | 93       | 0      | 76 - 124        | 0 - 20    |
| 36191        | Ba      | EPA 6010 | 92      | 92       | 0      | 76 - 124        | 0 - 20    |
| 36191        | Cd      | EPA 6010 | 93      | 92       | 1      | 76 - 124        | 0 - 20    |
| 36191        | Cr      | EPA 6010 | 87      | 87       | 0      | 76 - 124        | 0 - 20    |

Analytical Services Inc. Batch QC  
For Report Number :91936

## Lab Control Information

| Batch<br>Number | Analyte   | Method      | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-----------------|-----------|-------------|------------|-------------|-----------|--------------------|--------------|
| 36191           | Pb        | EPA 6010    | 96         | 96          | 0         | 76 - 124           | 0 - 20       |
| 36191           | Se        | EPA 6010    | 98         | 97          | 1         | 76 - 124           | 0 - 20       |
| 36383           | React S2  | EPA 7.3.4.2 | 104        | 96          | 8         | 60 - 140           | 0 - 40       |
| 36393           | React. CN | EPA 7.3.3.2 | 98         | 98          | 0         | 75 - 125           | 0 - 30       |
| 36456           | CN        | EPA 9010    | 80         | 88          | 10        | 85 - 115           | 0 - 30       |

## Matrix Spike Information

| Batch<br>Number | Analyte | Method   | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-----------------|---------|----------|------------|-------------|-----------|--------------------|--------------|
| 36107           | Hg      | EPA 7471 | 110        | 109         | 1         | 76 - 124           | 0 - 30       |
| 36110           | Hg      | EPA 7470 | 90         | 90          | 0         | 76 - 124           | 0 - 20       |
| 36178           | Ag      | EPA 6010 | 84         | 80          | 5         | 76 - 124           | 0 - 30       |
| 36178           | Al      | EPA 6010 | 300        | 250         | 18        | 76 - 124           | 0 - 30       |
| 36178           | Ba      | EPA 6010 | 93         | 87          | 7         | 76 - 124           | 0 - 30       |
| 36178           | Be      | EPA 6010 | 89         | 83          | 7         | 76 - 124           | 0 - 30       |
| 36178           | Ca      | EPA 6010 | 92         | 91          | 1         | 76 - 124           | 0 - 30       |
| 36178           | Cd      | EPA 6010 | 82         | 78          | 5         | 76 - 124           | 0 - 30       |
| 36178           | Co      | EPA 6010 | 86         | 81          | 6         | 76 - 124           | 0 - 30       |
| 36178           | Cr      | EPA 6010 | 85         | 81          | 5         | 76 - 124           | 0 - 30       |
| 36178           | Cu      | EPA 6010 | 88         | 82          | 7         | 76 - 124           | 0 - 30       |
| 36178           | Fe      | EPA 6010 | 999        | 35          | 186       | 76 - 124           | 0 - 30       |
| 36178           | K       | EPA 6010 | 100        | 100         | 0         | 76 - 124           | 0 - 30       |
| 36178           | Mg      | EPA 6010 | 88         | 84          | 5         | 76 - 124           | 0 - 30       |
| 36178           | Mn      | EPA 6010 | 72         | 63          | 13        | 76 - 124           | 0 - 30       |
| 36178           | Na      | EPA 6010 | 97         | 98          | 1         | 76 - 124           | 0 - 30       |
| 36178           | Ni      | EPA 6010 | 86         | 80          | 7         | 76 - 124           | 0 - 30       |
| 36178           | Pb      | EPA 6010 | 88         | 81          | 8         | 76 - 124           | 0 - 30       |
| 36178           | Sb      | EPA 6010 | 76         | 71          | 7         | 76 - 124           | 0 - 30       |
| 36178           | V       | EPA 6010 | 87         | 81          | 7         | 76 - 124           | 0 - 30       |
| 36178           | Zn      | EPA 6010 | 96         | 79          | 19        | 76 - 124           | 0 - 30       |
| 36185           | As      | EPA 7060 | 124        | 103         | 19        | 76 - 124           | 0 - 30       |
| 36185           | Se      | EPA 7740 | 100        | 86          | 15        | 76 - 124           | 0 - 30       |
| 36185           | Tl      | EPA 7841 | 74         | 63          | 16        | 76 - 124           | 0 - 30       |
| 36191           | Ag      | EPA 6010 | 77         | 81          | 5         | 76 - 124           | 0 - 20       |
| 36191           | As      | EPA 6010 | 77         | 82          | 6         | 76 - 124           | 0 - 20       |
| 36191           | Ba      | EPA 6010 | 75         | 79          | 5         | 76 - 124           | 0 - 20       |
| 36191           | Cd      | EPA 6010 | 74         | 79          | 7         | 76 - 124           | 0 - 20       |
| 36191           | Cr      | EPA 6010 | 71         | 75          | 5         | 76 - 124           | 0 - 20       |
| 36191           | Pb      | EPA 6010 | 74         | 79          | 7         | 76 - 124           | 0 - 20       |
| 36191           | Se      | EPA 6010 | 78         | 83          | 6         | 76 - 124           | 0 - 20       |
| 36456           | CN      | EPA 9010 | 87         | 19          | 128       | 75 - 125           | 0 - 30       |

Analytical Services Inc. Batch QC  
For Report Number :91936

## Post Digestion Spike Information

| Batch<br>Number | Analyte | Method   | PDS<br>%Rec | %Recovery<br>Range |
|-----------------|---------|----------|-------------|--------------------|
| 36178           | Ag      | EPA 6010 | 100         | 76 - 124           |
| 36178           | Al      | EPA 6010 | 12          | 76 - 124           |
| 36178           | Ba      | EPA 6010 | 95          | 76 - 124           |
| 36178           | Be      | EPA 6010 | 84          | 76 - 124           |
| 36178           | Ca      | EPA 6010 | 80          | 76 - 124           |
| 36178           | Cd      | EPA 6010 | 80          | 76 - 124           |
| 36178           | Co      | EPA 6010 | 85          | 76 - 124           |
| 36178           | Cr      | EPA 6010 | 88          | 76 - 124           |
| 36178           | Cu      | EPA 6010 | 120         | 76 - 124           |
| 36178           | Fe      | EPA 6010 | 999         | 76 - 124           |
| 36178           | K       | EPA 6010 | 96          | 76 - 124           |
| 36178           | Mg      | EPA 6010 | 76          | 76 - 124           |
| 36178           | Mn      | EPA 6010 | 120         | 76 - 124           |
| 36178           | Na      | EPA 6010 | 92          | 76 - 124           |
| 36178           | Ni      | EPA 6010 | 89          | 76 - 124           |
| 36178           | Pb      | EPA 6010 | 220         | 76 - 124           |
| 36178           | Sb      | EPA 6010 | 88          | 76 - 124           |
| 36178           | V       | EPA 6010 | 82          | 76 - 124           |
| 36178           | Zn      | EPA 6010 | 100         | 76 - 124           |
| 36185           | As      | EPA 7060 | 118         | 76 - 124           |
| 36185           | Se      | EPA 7740 | 91          | 76 - 124           |
| 36185           | Tl      | EPA 7841 | 72          | 76 - 124           |
| 36191           | Ag      | EPA 6010 | 95          | 76 - 124           |
| 36191           | As      | EPA 6010 | 97          | 76 - 124           |
| 36191           | Ba      | EPA 6010 | 96          | 76 - 124           |
| 36191           | Cd      | EPA 6010 | 93          | 76 - 124           |
| 36191           | Cr      | EPA 6010 | 89          | 76 - 124           |
| 36191           | Pb      | EPA 6010 | 96          | 76 - 124           |
| 36191           | Se      | EPA 6010 | 97          | 76 - 124           |

## Unspiked Sample Duplicate Information

| Batch<br>Number | Analyte   | Method      | Sample 1<br>RPD | Sample 2<br>RPD | RPD<br>Range |
|-----------------|-----------|-------------|-----------------|-----------------|--------------|
| 36383           | React S2  | EPA 7.3.4.2 | 0               | 0               | 0 - 40       |
| 36393           | React. CN | EPA 7.3.3.2 | 0               |                 | 0 - 30       |
| 36456           | CN        | EPA 9010    | 29              | 0               | 0 - 30       |

Sample Batch Information  
Analysis : Hg

| Sample ID  | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|            |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 36107BLANK | HG  | 02/20/98    | 1045 | FBS |                      | 02/23/98 | 1018 | FBS | HG1  |
| 36107LCS   | HG  | 02/20/98    | 1045 | FBS |                      | 02/23/98 | 1020 | FBS | HG1  |
| 36107LCSD  | HG  | 02/20/98    | 1045 | FBS |                      | 02/23/98 | 1022 | FBS | HG1  |
| 92065-1MS  | HG  | 02/20/98    | 1045 | FBS |                      | 02/23/98 | 1025 | FBS | HG1  |
| 92065-1MSD | HG  | 02/20/98    | 1045 | FBS |                      | 02/23/98 | 1027 | FBS | HG1  |
| 92065-2DUP | HG  | 02/20/98    | 1045 | FBS |                      | 02/23/98 | 1029 | FBS | HG1  |
| 91609-3    | HG  | 02/20/98    | 1045 | FBS |                      | 02/23/98 | 1057 | FBS | HG1  |
| 91936-1    | HG  | 02/20/98    | 1045 | FBS |                      | 02/23/98 | 1109 | FBS | HG1  |
| 91953-1    | HG  | 02/20/98    | 1045 | FBS |                      | 02/23/98 | 1116 | FBS | HG1  |
| 91953-2    | HG  | 02/20/98    | 1045 | FBS |                      | 02/23/98 | 1123 | FBS | HG1  |
| 91953-3    | HG  | 02/20/98    | 1045 | FBS |                      | 02/23/98 | 1135 | FBS | HG1  |
| 91965-2    | HG  | 02/20/98    | 1045 | FBS |                      | 02/23/98 | 1141 | FBS | HG1  |
| 92002      | HG  | 02/20/98    | 1045 | FBS |                      | 02/23/98 | 1148 | FBS | HG1  |
| 92046      | HG  | 02/20/98    | 1045 | FBS |                      | 02/23/98 | 1200 | FBS | HG1  |
| 92065-1    | HG  | 02/20/98    | 1045 | FBS |                      | 02/23/98 | 1031 | FBS | HG1  |
| 92065-2    | HG  | 02/20/98    | 1045 | FBS |                      | 02/23/98 | 1043 | FBS | HG1  |
| 92065-3    | HG  | 02/20/98    | 1045 | FBS |                      | 02/23/98 | 1050 | FBS | HG1  |

Q.C. Information for Batch # 36110

For Report Number :91936

## Sample Batch Information

Analysis : Hg

| Sample ID  | Tag | Preparation |      |     | Preparation | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|-------------|----------|------|-----|------|
|            |     | Date        | Time | By  | Notes       | Date     | Time | By  |      |
| 36110BLANK | HG  | 02/23/98    | 0825 | FBS |             | 02/23/98 | 1243 | FBS | HG1  |
| 36110LCS   | HG  | 02/23/98    | 0825 | FBS |             | 02/23/98 | 1245 | FBS | HG1  |
| 36110LCSD  | HG  | 02/23/98    | 0825 | FBS |             | 02/23/98 | 1247 | FBS | HG1  |
| 91936-1MS  | HG  | 02/23/98    | 0825 | FBS |             | 02/23/98 | 1249 | FBS | HG1  |
| 91936-1MSD | HG  | 02/23/98    | 0825 | FBS |             | 02/23/98 | 1252 | FBS | HG1  |
| 91945DUP   | HG  | 02/23/98    | 0825 | FBS |             | 02/23/98 | 1254 | FBS | HG1  |
| 91936-1    | HG  | 02/23/98    | 0825 | FBS |             | 02/23/98 | 1256 | FBS | HG1  |
| 91945      | HG  | 02/23/98    | 0825 | FBS |             | 02/23/98 | 1259 | FBS | HG1  |

Q.C. Information for Batch # 36178

For Report Number :91936

## Sample Batch Information

Analysis : Ag, Al, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, Pb  
Sb V Zn

| Sample ID  | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|            |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 36178BLANK |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1301 | MCW | ICP2 |
| 36178LCS   |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1304 | MCW | ICP2 |
| 36178LCSD  |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1307 | MCW | ICP2 |
| 91936-1MS  |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1311 | MCW | ICP2 |
| 91936-1MSD |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1314 | MCW | ICP2 |
| 91936-1PDS |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1317 | MCW | ICP2 |
| 91936-1DUP |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1320 | MCW | ICP2 |
| 91759-4    |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1400 | MCW | ICP2 |
| 91759-3    |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1357 | MCW | ICP2 |
| 91759-2    |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1353 | MCW | ICP2 |
| 91759-1    |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1350 | MCW | ICP2 |
| 91757-4    |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1347 | MCW | ICP2 |
| 91755      |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1327 | MCW | ICP2 |
| 91757-1    |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1330 | MCW | ICP2 |
| 91757-2    |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1340 | MCW | ICP2 |
| 91757-3    |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1344 | MCW | ICP2 |
| SBLK       |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1403 | MCW | ICP2 |
| HPS        |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1407 | MCW | ICP2 |
| HPS        |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1410 | MCW | ICP2 |
| 91936-1    |     | 02/18/98    | 0845 | DCM | 36                   | 02/18/98 | 1324 | MCW | ICP2 |

Q.C. Information for Batch # 36185

For Report Number :91936

## Sample Batch Information

Analysis : As, Se, Tl

| Sample ID  | Tag | Preparation |      |     | Preparation Notes | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|-------------------|----------|------|-----|------|
|            |     | Date        | Time | By  |                   | Date     | Time | By  |      |
| 36185BLANK | As  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1158 | MLR | AA1  |
| 36185LCS   | As  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1158 | MLR | AA1  |
| 36185LCSD  | As  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1158 | MLR | AA1  |
| 91936-1MS  | As  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1158 | MLR | AA1  |
| 91936-1MSD | As  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1158 | MLR | AA1  |
| 91936-1PDS | As  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1158 | MLR | AA1  |
| 91936-1DUP | As  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1158 | MLR | AA1  |
| 91936-1    | As  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1158 | MLR | AA1  |
| 91953-1    | As  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1158 | MLR | AA1  |
| 91953-2    | As  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1158 | MLR | AA1  |
| 91953-3    | As  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1158 | MLR | AA1  |
| 91965-2    | As  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1158 | MLR | AA1  |
| 92002      | As  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1158 | MLR | AA1  |
| SBLK       | As  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1158 | MLR | AA1  |
| HPS        | As  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1158 | MLR | AA1  |
| HPS        | As  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1158 | MLR | AA1  |
| 36185BLANK | Se  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 0945 | MLR | AA1  |
| 36185LCS   | Se  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 0945 | MLR | AA1  |
| 36185LCSD  | Se  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 0945 | MLR | AA1  |
| 91936-1MS  | Se  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 0945 | MLR | AA1  |
| 91936-1MSD | Se  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 0945 | MLR | AA1  |
| 91936-1PDS | Se  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 0945 | MLR | AA1  |
| 91936-1DUP | Se  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 0945 | MLR | AA1  |
| 91936-1    | Se  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 0945 | MLR | AA1  |
| 91953-1    | Se  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 0945 | MLR | AA1  |
| 91953-2    | Se  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 0945 | MLR | AA1  |
| 91953-3    | Se  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 0945 | MLR | AA1  |
| 91965-2    | Se  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 0945 | MLR | AA1  |
| 92002      | Se  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 0945 | MLR | AA1  |
| SBLK       | Se  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 0945 | MLR | AA1  |
| HPS        | Se  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 0945 | MLR | AA1  |
| HPS        | Se  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 0945 | MLR | AA1  |
| 36185BLANK | Tl  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1526 | MLR | AA1  |
| 36185LCS   | Tl  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1526 | MLR | AA1  |
| 36185LCSD  | Tl  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1526 | MLR | AA1  |
| 91936-1MS  | Tl  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1526 | MLR | AA1  |
| 91936-1MSD | Tl  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1526 | MLR | AA1  |
| 91936-1PDS | Tl  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1526 | MLR | AA1  |
| 91936-1DUP | Tl  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1526 | MLR | AA1  |
| 91936-1    | Tl  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1526 | MLR | AA1  |
| 91953-1    | Tl  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1526 | MLR | AA1  |
| 91953-2    | Tl  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1526 | MLR | AA1  |
| 91953-3    | Tl  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1526 | MLR | AA1  |
| 91965-2    | Tl  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1526 | MLR | AA1  |
| 92002      | Tl  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1526 | MLR | AA1  |
| SBLK       | Tl  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1526 | MLR | AA1  |
| HPS        | Tl  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1526 | MLR | AA1  |
| HPS        | Tl  | 02/19/98    | 0920 | DCM | GFAA              | 02/20/98 | 1526 | MLR | AA1  |

Q.C. Information for Batch # 36191

For Report Number :91936

Sample Batch Information  
Analysis : Ag, As, Ba, Cd, Cr, Pb, Se

| Sample ID  | Tag | Preparation |      |     | Preparation | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|-------------|----------|------|-----|------|
|            |     | Date        | Time | By  | Notes       | Date     | Time | By  |      |
| 36191BLANK |     | 02/20/98    | 0920 | DCM | TCLP        | 02/20/98 | 1648 | MAB | ICP2 |
| 36191LCS   |     | 02/20/98    | 0920 | DCM | TCLP        | 02/20/98 | 1652 | MAB | ICP2 |
| 36191LCSD  |     | 02/20/98    | 0920 | DCM | TCLP        | 02/20/98 | 1656 | MAB | ICP2 |
| 91936-1MS  |     | 02/20/98    | 0920 | DCM | TCLP        | 02/20/98 | 1659 | MAB | ICP2 |
| 91936-1MSD |     | 02/20/98    | 0920 | DCM | TCLP        | 02/20/98 | 1703 | MAB | ICP2 |
| 91864PDS   |     | 02/20/98    | 0920 | DCM | TCLP        | 02/20/98 | 1707 | MAB | ICP2 |
| 91864DUP   |     | 02/20/98    | 0920 | DCM | TCLP        | 02/20/98 | 1710 | MAB | ICP2 |
| 91936-1    |     | 02/20/98    | 0920 | DCM | TCLP        | 02/20/98 | 1714 | MAB | ICP2 |
| 91945      |     | 02/20/98    | 0920 | DCM | TCLP        | 02/20/98 | 1718 | MAB | ICP2 |
| LCD1       |     | 02/20/98    | 0920 | DCM | TCLP        | 02/20/98 | 1721 | MAB | ICP2 |
| LCD1       |     | 02/20/98    | 0920 | DCM | TCLP        | 02/20/98 | 1732 | MAB | ICP2 |
| 91864QC    |     | 02/20/98    | 0920 | DCM | TCLP        | 02/20/98 | 1736 | MAB | ICP2 |



Q.C. Information for Batch # 36383

For Report Number :91936

Sample Batch Information  
Analysis : React S2

| Sample ID  | Tag | Preparation |      |    | Preparation<br>Notes | Analysis |      |    | Inst |
|------------|-----|-------------|------|----|----------------------|----------|------|----|------|
|            |     | Date        | Time | By |                      | Date     | Time | By |      |
| 36383BLK   |     | 02/13/98    | 1300 | JN |                      | 02/13/98 | 1430 | JN |      |
| 36383LCS   |     | 02/13/98    | 1300 | JN |                      | 02/13/98 | 1430 | JN |      |
| 36383LCSD  |     | 02/13/98    | 1300 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-1    |     | 02/13/98    | 1000 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-2    |     | 02/13/98    | 1000 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-3    |     | 02/13/98    | 1000 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-4    |     | 02/13/98    | 1000 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-5    |     | 02/13/98    | 1100 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-6    |     | 02/13/98    | 1100 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-7    |     | 02/13/98    | 1100 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91808      |     | 02/13/98    | 1100 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91864      |     | 02/19/98    | 0959 | JN |                      | 02/20/98 | 1600 | JN |      |
| 91734-1DUP |     | 02/19/98    | 1100 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91902-1    |     | 02/19/98    | 0959 | JN |                      | 02/23/98 | 1400 | JN |      |
| 91902-2    |     | 02/19/98    | 0959 | JN |                      | 02/23/98 | 1400 | JN |      |
| 91936-1    |     | 02/19/98    | 0959 | JN |                      | 02/23/98 | 1400 | JN |      |
| 91902-3    |     | 02/20/98    | 1459 | JN |                      | 02/23/98 | 1400 | JN |      |
| 91902-4    |     | 02/20/98    | 1459 | JN |                      | 02/23/98 | 1400 | JN |      |
| 91902-4DUP |     | 02/20/98    | 1459 | JN |                      | 02/23/98 | 1400 | JN |      |

Q.C. Information for Batch # 36393

For Report Number :91936

Sample Batch Information  
Analysis : React. CN

| Sample ID  | Tag | Preparation |         | Preparation<br>Notes | Analysis |      |     | Inst  |
|------------|-----|-------------|---------|----------------------|----------|------|-----|-------|
|            |     | Date        | Time By |                      | Date     | Time | By  |       |
| 36393BLK   |     | /           | /       |                      | 02/16/98 | 1245 | ARS | GENE5 |
| 36393LCS   |     | /           | /       |                      | 02/16/98 | 1245 | ARS | GENE5 |
| 36393LCSD  |     | /           | /       |                      | 02/16/98 | 1245 | ARS | GENE5 |
| 36393CAL5  |     | /           | /       |                      | 02/16/98 | 1245 | ARS | GENE5 |
| 91734-1    |     | /           | /       |                      | 02/16/98 | 1245 | ARS | GENE5 |
| 91734-1DUP |     | /           | /       |                      | 02/16/98 | 1245 | ARS | GENE5 |
| 91734-2    |     | /           | /       |                      | 02/16/98 | 1245 | ARS | GENE5 |
| 91734-3    |     | /           | /       |                      | 02/16/98 | 1245 | ARS | GENE5 |
| 91734-4    |     | /           | /       |                      | 02/16/98 | 1245 | ARS | GENE5 |
| 91734-5    |     | /           | /       |                      | 02/16/98 | 1245 | ARS | GENE5 |
| 91734-6    |     | /           | /       |                      | 02/16/98 | 1245 | ARS | GENE5 |
| 91734-7    |     | /           | /       |                      | 02/16/98 | 1245 | ARS | GENE5 |
| 91808      |     | /           | /       |                      | 02/16/98 | 1245 | ARS | GENE5 |
| 91864      |     | /           | /       |                      | 02/20/98 | 1510 | ARS | GENE5 |
| 91902-1    |     | /           | /       |                      | 02/20/98 | 1510 | ARS | GENE5 |
| 91902-2    |     | /           | /       |                      | 02/20/98 | 1510 | ARS | GENE5 |
| 91936-1    |     | /           | /       |                      | 02/20/98 | 1510 | ARS | GENE5 |
| 91202-3    |     | /           | /       |                      | 02/23/98 | 1710 | ARS | GENE5 |
| 91202-4    |     | /           | /       |                      | 02/23/98 | 1710 | ARS | GENE5 |
| 91202-4DUP |     | /           | /       |                      | 02/23/98 | 1710 | ARS | GE    |

Q.C. Information for Batch # 36456

For Report Number :91936

Sample Batch Information  
Analysis : CN

| Sample ID  | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst  |
|------------|-----|-------------|------|-----|----------------------|----------|------|-----|-------|
|            |     | Date        | Time | By  |                      | Date     | Time | By  |       |
| 36456BLK   |     | 02/19/98    | 1040 | ARS | MIDI-DIST            | 02/19/98 | 1300 | ARS | GENE5 |
| 36456LCS   |     | 02/19/98    | 1040 | ARS | MIDI-DIST            | 02/19/98 | 1300 | ARS | GENE5 |
| 36456LCSD  |     | 02/19/98    | 1040 | ARS | REPORTED             | 02/19/98 | 1300 | ARS | GENE5 |
| 91824-1MS  |     | 02/19/98    | 1040 | ARS | MIDI-DIST            | 02/19/98 | 1300 | ARS | GENE5 |
| 91824-1MSD |     | 02/19/98    | 1040 | ARS | MIDI-DIST            | 02/19/98 | 1300 | ARS | GENE5 |
| 91800-9    |     | 02/19/98    | 1040 | ARS | MIDI-DIST            | 02/19/98 | 1300 | ARS | GENE5 |
| 91859-2    |     | 02/19/98    | 1040 | ARS | MIDI-DIST            | 02/19/98 | 1300 | ARS | GENE5 |
| 91824-1    |     | 02/19/98    | 1040 | ARS | MIDI-DIST            | 02/19/98 | 1300 | ARS | GENE5 |
| 91845      |     | 02/19/98    | 1040 | ARS | MIDI-DIST            | 02/19/98 | 1300 | ARS | GENE5 |
| 91886-2    |     | 02/19/98    | 1040 | ARS | MIDI-DIST            | 02/19/98 | 1300 | ARS | GENE5 |
| 91886-3    |     | 02/19/98    | 1240 | ARS | MIDI-DIST            | 02/19/98 | 1240 | ARS | GENE5 |
| 36456CAL5  |     | 02/19/98    | 1240 | ARS | MIDI-DIST            | 02/19/98 | 1240 | ARS | GENE5 |
| 36456CAL15 |     | 02/19/98    | 1240 | ARS | MIDI-DIST            | 02/19/98 | 1240 | ARS | GENE5 |
| 91886-4    |     | 02/19/98    | 1240 | ARS | MIDI-DIST            | 02/19/98 | 1240 | ARS | GENE5 |
| 91886-5    |     | 02/19/98    | 1240 | ARS | MIDI-DIST            | 02/19/98 | 1240 | ARS | GENE5 |
| 91886-6    |     | 02/19/98    | 1240 | ARS | MIDI-DIST            | 02/19/98 | 1240 | ARS | GENE5 |
| 91905-1    |     | 02/19/98    | 1240 | ARS | MIDI-DIST            | 02/19/98 | 1240 | ARS | GENE5 |
| 91883      |     | 02/19/98    | 1240 | ARS | MIDI-DIST            | 02/19/98 | 1240 | ARS | GENE5 |
| 91936-1    |     | 02/19/98    | 1240 | ARS | MIDI-DIST            | 02/19/98 | 1240 | ARS | GENE5 |
| 91946      |     | 02/19/98    | 1240 | ARS | MIDI-DIST            | 02/19/98 | 1240 | ARS | GENE5 |
| 91964-1    |     | 02/19/98    | 1500 | ARS | MIDI-DIST            | 02/19/98 | 1650 | ARS | GENE5 |
| 91964-2    |     | 02/19/98    | 1500 | ARS | MIDI-DIST            | 02/19/98 | 1650 | ARS | GENE5 |
| 91964-3    |     | 02/19/98    | 1500 | ARS | MIDI-DIST            | 02/19/98 | 1650 | ARS | GENE5 |
| 91964-4    |     | 02/19/98    | 1500 | ARS | MIDI-DIST            | 02/19/98 | 1650 | ARS | GENE5 |
| 91973      |     | 02/19/98    | 1500 | ARS | MIDI-DIST            | 02/19/98 | 1650 | ARS | GENE5 |
| 91996      |     | 02/19/98    | 1500 | ARS | MIDI-DIST            | 02/19/98 | 1650 | ARS | GENE5 |
| 91996DUP   |     | 02/19/98    | 1500 | ARS | MIDI-DIST            | 02/19/98 | 1650 | ARS | GENE5 |
| 91941      |     | 02/19/98    | 1500 | ARS | MIDI-DIST            | 02/19/98 | 1650 | ARS | GENE5 |
| 91941DUP   |     | 02/19/98    | 1500 | ARS | MIDI-DIST            | 02/19/98 | 1650 | ARS | GENE5 |
| 36456LCSD  |     | 02/19/98    | 1500 | ARS | REPORTED             | 02/19/98 | 1650 | ARS | GENE5 |

Sample Batch Information  
Analysis : Ign

| Sample ID  | Tag | Preparation |         | Preparation<br>Notes | Analysis |      |    | Inst |
|------------|-----|-------------|---------|----------------------|----------|------|----|------|
|            |     | Date        | Time By |                      | Date     | Time | By |      |
| 91609-1    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-2    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-3    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-4    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-5    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-6    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-7    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-8    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-9    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-10   |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-12   |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-13   |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91999      |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91902-1    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91902-2    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91902-1DUP |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91902-2DUP |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91936-1    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 36482LCS   |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 36482LCSD  |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |

Q.C. Information for Batch # 36500

For Report Number :91936

Sample Batch Information  
Analysis :

| Sample ID   | Tag | Preparation<br>Date | Preparation<br>Time By | Preparation<br>Notes | Analysis<br>Date | Analysis<br>Time By | Inst |
|-------------|-----|---------------------|------------------------|----------------------|------------------|---------------------|------|
| 91936-1     |     | /                   | /                      |                      | 02/18/98         | 1800 JN             | 410A |
| 91936-1DUP  |     | /                   | /                      |                      | 02/18/98         | 1800 JN             | 410A |
| 91952       |     | /                   | /                      |                      | 02/18/98         | 1800 JN             | 410A |
| 91991-2     |     | /                   | /                      |                      | 02/18/98         | 1800 JN             | 410A |
| 91991-3     |     | /                   | /                      |                      | 02/18/98         | 1800 JN             | 410A |
| 91967       |     | /                   | /                      |                      | 02/18/98         | 1800 JN             | 410A |
| 91958       |     | /                   | /                      |                      | 02/18/98         | 1800 JN             | 410A |
| 91999       |     | /                   | /                      |                      | 02/18/98         | 1800 JN             | 410A |
| 92007-2     |     | /                   | /                      |                      | 02/18/98         | 1800 JN             | 410A |
| 92006       |     | /                   | /                      |                      | 02/18/98         | 1800 JN             | 410A |
| 92004-2     |     | /                   | /                      |                      | 02/18/98         | 1800 JN             | 410A |
| 36500CALCHK |     | /                   | /                      |                      | 02/18/98         | 1800 JN             | 410A |
| 36500LCS    |     | /                   | /                      |                      | 02/18/98         | 1800 JN             | 410A |
| 36500LCSD   |     | /                   | /                      |                      | 02/18/98         | 1800 JN             | 410A |


**OHM Remediation  
Services Corp**

 Subsidiary of OHM Corporation  
 U.S. Route 224 East • Findlay, Ohio 45840 • (419) 423-3526
**CHAIN-OF-CUSTODY RECORD**

LABORATORY COPY

206670

WO# 91936

FORM 0019 REV 2-97

| OHM'S LAB COORDINATOR |                   | LAB COORDINATOR'S PHONE     |         | LAB COORDINATOR'S FAX |           | LABORATORY SERVICE ID    |          | LABORATORY CONTACT              |             | MAIL REPORT (COMPANY NAME)      |  |
|-----------------------|-------------------|-----------------------------|---------|-----------------------|-----------|--------------------------|----------|---------------------------------|-------------|---------------------------------|--|
| PROJECT NAME          |                   | PROJECT LOCATION            |         | PROJECT NUMBER        |           | LABORATORY PHONE         |          | LABORATORY FAX                  |             | RECIPIENT NAME                  |  |
| PROJECT ADDRESS       |                   | PROJECT PHONE NUMBER        |         | PROJECT FAX           |           | LABORATORY ADDRESS       |          | LABORATORY FAX                  |             | ADDRESS                         |  |
| PROJECT MANAGER       |                   | CITY, STATE AND ZIP CODE    |         | CLIENT                |           | CITY, STATE AND ZIP CODE |          | LABORATORY ADDRESS              |             | CITY, STATE AND ZIP CODE        |  |
| Elena Rodriguez       |                   | 770-729-3900                |         | 770-453-7716          |           | 770-731-1200             |          | 110 Technology Park             |             | Shari Harper                    |  |
| DDMT                  |                   | Memphis TN                  |         | 20022                 |           | 770-731-1200             |          | 110 Technology Park             |             | Analytical Services Inc         |  |
| Steve Oliver          |                   | 901-743-1117                |         | 401-743-1048          |           | 770-731-1200             |          | 110 Technology Park             |             | Analytical Services Inc         |  |
| Dana Field            |                   | Memphis TN                  |         | USACE                 |           | 770-731-1200             |          | 110 Technology Park             |             | Analytical Services Inc         |  |
| John Lore / Partner   |                   | 770-326-2571                |         | 770-453-7716          |           | 770-731-1200             |          | 110 Technology Park             |             | Analytical Services Inc         |  |
| Item                  | Sample Identifier | Matrix                      | Date    | Time                  | Preserved | # of Cont                | OC Level | TAT                             | Analyses    | Comments                        |  |
| ①                     | DDMT-DE-GV        | Soil                        | 7/16/98 | 1400                  | 6         | 6                        | OHM Min  | 7                               | X X X X X X | Samples Contain                 |  |
| ②                     | TRP Bskn          | Water                       |         |                       | 3         | 3                        | "        | 7                               | X X X X X X | broken glass from               |  |
| 3                     |                   |                             |         |                       |           |                          |          |                                 |             | unknown glass                   |  |
| 4                     |                   |                             |         |                       |           |                          |          |                                 |             | Vials excavated                 |  |
| 5                     |                   |                             |         |                       |           |                          |          |                                 |             | from Test pit.                  |  |
| 6                     |                   |                             |         |                       |           |                          |          |                                 |             | Contents of Glass               |  |
| 7                     |                   |                             |         |                       |           |                          |          |                                 |             | Vials are not known.            |  |
| 8                     |                   |                             |         |                       |           |                          |          |                                 |             | (See attached for               |  |
| 9                     |                   |                             |         |                       |           |                          |          |                                 |             | Complete breakdown              |  |
| 10                    |                   |                             |         |                       |           |                          |          |                                 |             | of analyses)                    |  |
| SAMPLES COLLECTED BY  |                   | COURIER AND AIR BILL NUMBER |         | DATE                  |           | TIME                     |          | SAMPLE'S CONDITION UPON RECEIPT |             | COOLER TEMPERATURE UPON RECEIPT |  |
| RELINQUISHED BY       |                   | RECEIVED BY                 |         | DATE                  |           | TIME                     |          | SAMPLE'S CONDITION UPON RECEIPT |             | COOLER TEMPERATURE UPON RECEIPT |  |
| Dana C. Condon        |                   | D.C. Condon                 |         | 7/16/98               |           | 1300                     |          | SAMPLE'S CONDITION UPON RECEIPT |             | COOLER TEMPERATURE UPON RECEIPT |  |
| D.C. Condon           |                   | Fedex                       |         | 7/16/98               |           | 1900                     |          | SAMPLE'S CONDITION UPON RECEIPT |             | COOLER TEMPERATURE UPON RECEIPT |  |
|                       |                   | D.C. Condon                 |         | 7/17/98               |           | 0935                     |          | SAMPLE'S CONDITION UPON RECEIPT |             | COOLER TEMPERATURE UPON RECEIPT |  |

Distribution: White - Laboratory (To be returned with Analytical Report); Goldenrod - Project File; Yellow - Project Data Manager

# TAB

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Appendix D

478 451



MEMPHIS AND SHELBY COUNTY  
**HEALTH DEPARTMENT**

**YVONNE S. MADLOCK**  
*Director*

**JOHN B. KIRKLEY, M.D.**  
*Interim Health Officer*



**DR. W. W. HERENTON**  
*Mayor of Memphis*

**JIM ROUT**  
*Mayor of Shelby County*

February 3, 1998

Mr. Glenn L. Kaden  
Memphis Defense Depot  
2163 Airways Boulevard  
Memphis, TN 38114

**RE: EMERGENCY CONSTRUCTION OF RECOVERY WELL(S) AT: 2163 Airways**  
**(Dunn Field/Memphis Defense Depot)**  
**Permit #98-009 RW-03 - RW-09**

Dear Mr. Kaden:

This letter is to inform you that a construction permit has been issued to your selected well driller, approving the above referenced recovery well(s). We appreciate the cooperation you have given the Health Department during the application review process. Please be reminded of the following requirements:

1. The Health Department is to be notified when construction of the wells) begins.
2. The Health Department is to be notified if the well driller violates any of the conditions for which the permit was issued.
3. The Health Department is to be notified for prior approval of any changes in plans for construction such as a well site location, number of wells needed, well usage such as converting a recovery well to a monitoring well, or in the well driller initially selected to do the work.
4. Well logs on the well(s) are to be submitted to this Office within thirty (30) days of work completion.

Once again, your cooperation in this matter will be appreciated. Should you have any questions or need additional information, you can contact Mr. Greg Parker at (901) 576-7741.

Sincerely,

A handwritten signature in cursive script, appearing to read "J. Carter S. Gray".  
**J. Carter S. Gray, Manager**  
**POLLUTION CONTROL SECTION**

GP:JCSG:mpc  
Enclosure



# WATER QUALITY CONTROL

Memphis and Shelby County Health Department

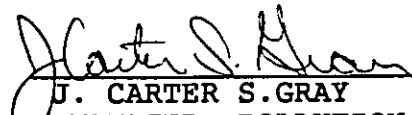
## RECOVERY WELL CONSTRUCTION PERMIT

WELL DRILLING COMPANY BOART LONGYEAR COMPANY/ENVIRONMENTAL DRILLING DIV.  
 ADDRESS P. O. Box 355 Little Falls, MN 56345  
 DATE ISSUED 1/12/98 EXPIRATION DATE 4/12/98 PERMIT # 98-009  
 DESCRIPTION OF WORK Construction of Recovery Wells at: 2163 Airways  
 EMERGENCY PERMIT (Dunn Field/Defense Depot) RW-03 - RW-09

This permit is issued based on signed commitment by the driller and the owner of said well to fully comply with the requirements set forth in the approved application or as directed by the Memphis and Shelby County Health Department. Deviation from the approved application or any conditions that are set forth by the Health Department shall void this permit.

### CONDITIONS:

1. Any water in drilling the wells shall be obtained from a potable source of water and a chlorine residual maintained throughout the drilling process.
2. All applicable fees must be paid to the Memphis\Shelby County Health Department.
3. The Health Department shall be notified just before construction is to begin.
4. A copy of the well logs shall be submitted to the Health Department within (30) thirty days of completion.
5. All requirements outlined in the Rules and Regulations shall be complied with.
6. Any changes in the number of wells needed, or in their location or or construction such as conversion to a monitoring well shall be brought to the attention of the Health Department.
7. Any additional wells that may be needed at a later will require a separate application be filed with this office along with the \$25 processing fee and the \$100 inspection fee.
8. Any abandoned wells shall be properly sealed as required by the Health Department.

  
 J. CARTER S. GRAY  
 MANAGER, POLLUTION CONTROL

No authority is granted by this permit to construct, operate, or maintain any well in violation of any law, statute, code, ordinance, rule, or regulation of Memphis and Shelby County, Tennessee.

NON TRANSFERABLE

POST OR FILE AT CONSTRUCTION SITE

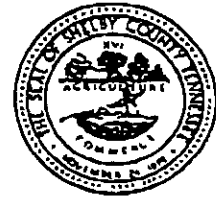
GF 2/3/98



MEMPHIS AND SHELBY COUNTY  
**HEALTH DEPARTMENT**

YVONNE S. MADLOCK  
*Director*

JOHN B. KIRKLEY, M.D.  
*Interim Health Officer*



DR. W. W. HERENTON  
*Mayor of Memphis*

JIM ROUT  
*Mayor of Shelby County*

March 17, 1998

Mr. Glenn L. Kaden  
Memphis Defense Depot  
2163 Airways Boulevard  
Memphis, Tn 38114

RE: EMERGENCY FILL/ABANDONMENT OF A WELL:  
1708 Dunn  
(Memphis Defense Depot/Dunn Field)  
Permit #98-039 Recovery Well-05

Dear Mr. Kaden:

This letter is to inform you that a construction permit has been issued to your selected well contractor, authorizing him to begin the fill and abandonment of the above referenced well. We appreciate the cooperation you have given the Health Department during the application review process. Your further cooperation is required by complying with the following:

1. The Health Department is to be notified when the work is scheduled so that we can witness the procedures.
2. The Health Department is to be notified if the well driller violates any of the conditions for which the permit was issued.
3. The Health Department is to be notified for prior approval of any changes in plans for filling the well, or in the well contractor initially selected to do the work.
4. Inspection Fee Required? Yes xx No    Amount \$50.00  
Payment has been received.

If you have any questions or need additional information, please contact Mr. Greg Parker at 576-7741.

Sincerely,

J. Carter S. Gray, Manager  
POLLUTION CONTROL SECTION

GP:JCSG:mpc

Enclosure

Parker

GP 3/18/98

478 454



DR. W. W. HERENTON  
Mayor of Memphis

MEMPHIS AND SHELBY COUNTY  
**HEALTH DEPARTMENT**

YVONNE S. MADLOCK  
Director

JOHN B. KIRKLEY, M.D.  
Interim Health Officer



JIM ROUT  
Mayor of Shelby County

March 18, 1998

Mr. Stephen Offner  
Boart Longyear Company  
1101 Alderson Street  
Schefield, WS 54476

RE: EMERGENCY FILL/ABANDONMENT OF WELL AT: 1708 Dunn  
(Memphis Defense Depot/Dunn Field)  
Permit #98-039 Recovery Well-05

Dear Mr. Offner:

This letter acknowledges the oral approval given by this Office for the emergency fill and abandonment of a well at the above referenced location. The "CONSTRUCTION PERMIT" has been enclosed authorizing you to begin work at the earliest possible date. You will be expected to comply with all conditions indicated on the permit as well as the specifications outlined on the application. The permit must be maintained at the job site for the duration of the fill and abandonment process.

Your prompt attention and cooperation in this matter will be appreciated. In the meantime if you have any questions, please contact Mr. Greg Parker at 576-7741.

Sincerely,

J. Carter S. Gray, Manager  
POLLUTION CONTROL SECTION

GP:JCSG:mpc

Enclosure

Parker

GP 3/18/98

478 455

**WATER QUALITY CONTROL**

Memphis and Shelby County Health Department

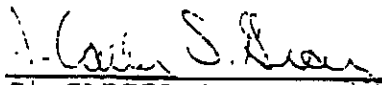
**WATER WELL CONSTRUCTION PERMIT**

WELL DRILLING COMPANY BOART LONGYEAR COMPANY  
ADDRESS 101 Alderson Street Scheffield, MS 54476  
DATE ISSUED 3/13/98 EXPIRATION DATE 6/13/98 PERMIT # 98-039  
DESCRIPTION OF WORK Fill and abandonment of a well: 1708 Dunn  
EMERGENCY PERMIT (Memphis Defense Depot/Dunn Field) Abandonment of Recovery Wells

This permit is issued based on signed commitment by the driller and the owner of said well to fully comply with the requirements set forth in the approved application or as directed by the Memphis and Shelby County Health Department. Deviation from the approved application or any conditions that are set forth by the Health Department shall void this permit.

**CONDITIONS:**

1. The abandoned well shall be sealed only by a licensed well contractor.
2. All procedures used in sealing the well shall be witnessed by a representative of the Memphis and Shelby County Health Department.
3. All water lines to the well are to be disconnected.
4. The well is to be dismantled in such a way that all working parts from inside the casing are removed.
5. Any obstructions found in the well are to be removed.
6. The empty casing is to be filled by one of two methods:
  - a) With a Portland Class A or quick setting cement in a ratio not over seven (7) gallons of water per ninety-four pounds of cement.
  - b) A coarse grained high solids non-drilling mud grade bentonite slurry such as Baroid Benseal, American Colloid or equal. The bentonite grout shall be mixed in accordance with the manufacturers recommendations.
7. The grout shall be pumped from the bottom of the well upward through a tremmie pipe in one continuous operation in order to avoid separation or dilution of the seal material. A return shall be seen that is the same consistency at the top as the material that is pumped into the well.
8. Chlorine shall be added at the beginning and during the sealing process.
9. The well must be sealed within thirty (30) days of receipt of this permit.
10. The Health Department shall be notified before procedures are to begin in sealing the well. This includes all dismantling procedures and lowering the pipe used for grouting.

  
J. CARTER S. GRAY  
MANAGER, POLLUTION CONTROL

No authority is granted by this permit to construct, operate, or maintain any well in violation of any law, statute, code, ordinance, rule, or regulation of Memphis and Shelby County, Tennessee.

**NON TRANSFERABLE****POST OR FILE AT CONSTRUCTION SITE**

GP 3/18/98

**BOART LONGYEAR**  
**WELL/BORING ABANDONMENT FORM**

478 456

CLIENT: OHM

LOCATION: Memphis, TN

JOB NO. 3410-1115

WELL/BORING NO: RW-05

REASON FOR ABANDONMENT: Grout Contamination

DATE OF ABANDONMENT: 3-19-98

Construction Type: ☒ Drilled ☐ Driven ☐ Other \_\_\_\_\_

Formation Type: ☒ Unconsolidated ☐ Bedrock

Sealing Method: ☐ Gravity ☒ Pumped ☐ Other \_\_\_\_\_

Sealing Materials:

☐ Bent. Chips ☒ Cement-Bent. Grout ☒ Other Sd.&Pellets

| Sealing Material  | From (Ft.) | To (Ft.) | # Bags or Vol.   |
|-------------------|------------|----------|------------------|
| Cement Grout      | 0.0        | 72.5     | 9 Bags @ 94 Lbs. |
| Bentonite Pellets | 72.5       | 74.5     | 1 Pail           |
| Sand              | 74.5       | 87.5     | 250 Lbs.         |

**WELL INFORMATION ONLY**

Total Well Depth 89.5  
Casing Diameter 6.0"  
Casing Depth 79.5  
Depth to Water 76.0

Screen Removed? ☐ yes ☒ no  
Overdrilled? ☐ yes ☒ no  
Casing Pulled? ☐ yes ☒ no  
Cut Below Surface? ☒ yes ☐ no

SUPPLIES USED:

HOLEPLUG \_\_\_\_\_ GROUT 105 OTHER \_\_\_\_\_  
bags gal.



# FIELD BORING LOG

478 457

Sheet

1 Of 1

ULSACE

MEMPHIS DEFENSE DEPOT- DUNN FIELD

Job No. 20022

LOCATION MEMPHIS, TN

Elev. 297.1

Boring No. RW-03

### GROUND While drilling

### Time after drilling

1600 02/11/98

Start 1200

**WATER** Before casing removal

### Depth to water

Unit 2/11/98

### After casing removal

© 67' b1s

### Depth to cave-in

Chief JW

| Sample No | Moisture | Blows on Sampler |      | Sample Recovery | Total Blows | VISUAL FIELD CLASSIFICATION AND REMARKS                                                                           | Casing/Probe<br>Weight<br>Drop | Unconfined Strength | Boulders | Blows on |       | Drilling Method |
|-----------|----------|------------------|------|-----------------|-------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------|----------|----------|-------|-----------------|
|           |          | 0/6              | 6/12 |                 |             |                                                                                                                   |                                |                     |          | Casing   | Probe |                 |
|           |          |                  |      |                 |             | BROWN SOIL                                                                                                        |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | LIGHT BROWN SILT WITH CLAY,<br>OCCASIONAL ORANGE MOTTLING (ML)                                                    |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 10          | BROWN CLAYEY SILT (ML)<br>WET 5'-12'                                                                              |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | SOME ORANGE MOTTLING<br>AND BLACK NODULES 16'-18'                                                                 |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 20          |                                                                                                                   |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | YELLOWISH BROWN CLAYEY SILT WITH SAND (ML)<br>MOTTLED RED AND YELLOW SANDY SILT WITH CLAY (ML)                    |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 30          | ORANGE SILTY SAND (SM)<br>ORANGE SAND (SW)                                                                        |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | PEBBLY SAND (SP)<br>BEIGE 33'-34'<br>ORANGE 34'-45'                                                               |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 40          |                                                                                                                   |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | ORANGE SAND (SW)<br>BEIGE PEBBLY SAND (SP)<br>SAND (SW)<br>BEIGE 47-50'<br>ORANGE 50'-53'                         |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 50          |                                                                                                                   |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | BROWN SANDY SILT 56'-56.3' BEIGE VERY PEBBLY SAND (SP)<br>BEIGE VERY PEBBLY SAND (SP)<br>BEIGE SAND (SW)          |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 60          | TAN AND ORANGE PEBBLY SANDS (SP)<br>SAND (SW)<br>BEIGE 61'-65'<br>LIGHT ORANGE 65'-73'                            |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             |                                                                                                                   |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 70          | REDDISH GRAY CLAY 73'-73.3' (CL)                                                                                  |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | ORANGE SAND (SW)<br>TAN SAND (SW)<br>TAN PEBBLY SAND (SW)                                                         |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 80          | TAN SILTY CLAY (CL)<br>BOTTOM OF BORING<br>TAN GRAVELLY CLAY. 78.5'-79' (CL)<br>REDDISH GRAY CLAY. 74.7'-75' (CL) |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 90          |                                                                                                                   |                                |                     |          |          |       |                 |

# FIELD BORING LOG

Sheet 1 Of 1

OR USACE MEMPHIS DEFENSE DEPOT-DUNN FIELD  
LOCATION MEMPHIS, TN Elev. 303.3

Job No. 20022

Boring No. RW-04

| <u>GROUND</u> | While drilling        |
|---------------|-----------------------|
| <u>WATER</u>  | Before casing removal |
|               | After casing removal  |

|                     |      |         |
|---------------------|------|---------|
| Time after drilling | 1030 | 2/11/98 |
| Depth to water      |      |         |
| Depth to cave-in    |      |         |

Start 1000  
Unit 2/9/98  
Chief JW

| Sample No | Moisture | Blows on Sampler |      | Sample Recovery | Total Blows | VISUAL FIELD CLASSIFICATION AND REMARKS    | Casing/Probe<br>Weight<br>Drop | Unconfined Strength | Boulders | Blows on    |            | Drilling Method |
|-----------|----------|------------------|------|-----------------|-------------|--------------------------------------------|--------------------------------|---------------------|----------|-------------|------------|-----------------|
|           |          | 0/6              | 6/12 |                 |             |                                            |                                |                     |          | Casing Size | Probe Size |                 |
|           |          |                  |      |                 |             | DARK BROWN SOIL.                           |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             | LIGHT BROWN SILT WITH CLAY (ML)            |                                |                     |          |             |            |                 |
|           |          |                  |      |                 | 10          |                                            |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             | CLAYEY SILT (ML).                          |                                |                     |          |             |            |                 |
|           |          |                  |      |                 | 20          | BROWN: 10'-20'<br>YELLOWISH BROWN: 20'-29' |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             |                                            |                                |                     |          |             |            |                 |
|           |          |                  |      |                 | 30          | REDDISH BROWN SANDY SILT WITH CLAY (ML).   |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             | RED AND BEIGE SILTY SAND (SM).             |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             | RED SAND WITH PEBBLES (SP).                |                                |                     |          |             |            |                 |
|           |          |                  |      |                 | 40          | <del>RED AND BLACK CLAYEY SAND (SC)</del>  |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             | PEBBLY SAND (SP).                          |                                |                     |          |             |            |                 |
|           |          |                  |      |                 | 50          | RED: 41'-45'<br>ORANGE: 45'-53'            |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             | YELLOW SAND (SW).                          |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             | ORANGE PEBBLY SAND (SP).                   |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             | BROWN SILT WITH CLAY (ML). 57'-57.3'       |                                |                     |          |             |            |                 |
|           |          |                  |      |                 | 60          | TAN SAND (SW).                             |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             | BEIGE AND ORANGE VERY PEBBLY SAND (SP).    |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             | TAN CLAYEY SILT (ML). 68'-68.3'            |                                |                     |          |             |            |                 |
|           |          |                  |      |                 | 70          |                                            |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             | ORANGE SAND (SW).                          |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             | TAN CLAYEY SILT (ML). 78'-78.3'            |                                |                     |          |             |            |                 |
|           |          |                  |      |                 | 80          |                                            |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             | BEIGE SAND WITH PEBBLES (SP).              |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             | RED SILTY CLAY (CL).                       |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             | ORANGE SAND (SW).                          |                                |                     |          |             |            |                 |
|           |          |                  |      |                 | 90          | BROWNISH GRAY CLAY (CL)                    |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             | BOTTOM OF BORING                           |                                |                     |          |             |            |                 |
|           |          |                  |      |                 |             | ORANGE GRAVELY CLAY (CL). 86'-86.5'        |                                |                     |          |             |            |                 |

# FIELD BORING LOG

R USACE MEMPHIS DEFENSE DEPOT-DUNN FIELD  
LOCATION MEMPHIS, TN Elev. 305.8

Job No. 20022

Boring No. RW-05

### GROUND While drilling

### Time after drilling

0930 2/5/98

Start 1100

## WATER

### Before casing removal

### Depth to water

Unit 2/3/98

### After casing removal

© 76' BLS

## Depth to cave-in

Chief Tw

| Sample No | Moisture | Blows on Sampler |      | Sample Recovery | Total Blows | VISUAL FIELD CLASSIFICATION AND REMARKS<br>THOMAS A. MCGRORY, P.G.                                                 | Casing/Probe<br>Weight<br>Drop | Unconfined Strength | Boulders | Blows on |       | Drilling Method |
|-----------|----------|------------------|------|-----------------|-------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------|---------------------|----------|----------|-------|-----------------|
|           |          | 0/6              | 6/12 |                 |             |                                                                                                                    |                                |                     |          | Casing   | Probe |                 |
|           |          |                  |      |                 |             | DARK BROWN SOIL                                                                                                    |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | BROWN SILT (ML)                                                                                                    |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 10          | BROWN SILT WITH CLAY (ML)                                                                                          |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | CLAYEY SILT (ML)                                                                                                   |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 20          | BROWN 13'-23'<br>REDDISH BROWN 23'-24'<br>YELLOWISH BROWN 24'-25'<br>BROWN 25'-32'<br>DAMP TO WET 13'-23', 25'-32' |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 30          | DARK REDDISH BROWN CLAYEY SILT WITH SAND (ML)                                                                      |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | <del>LIGHT REDDISH BROWN SANDY SILT WITH CLAY (ML)</del>                                                           |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | MOTTLED RED, ORANGE AND BEIGE SILTY SAND (SM)                                                                      |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 40          | DARK REDDISH BROWN PEBBLY SAND WITH SILT (SP)                                                                      |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | DARK RED SAND (SW)                                                                                                 |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | <del>BLACK AND RED SAND WITH SILT (SW)</del>                                                                       |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 50          | PEBBLY SAND (SP)                                                                                                   |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | DARK RED 43'-45'                                                                                                   |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | ORANGISH RED 45'-58'                                                                                               |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 60          | TAN AND BEIGE SAND (SW)                                                                                            |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | <del>TAN PEBBLY SAND (SP)</del>                                                                                    |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 63.0-63.3   | YELLOWISH BROWN SILTY CLAY (CL)                                                                                    |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | PEBBLY SAND (SP)                                                                                                   |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 70          | YELLOWISH BROWN 63.3'-64'                                                                                          |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | ORANGE AND BEIGE 64'-71'                                                                                           |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | SAND (SW)                                                                                                          |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | TAN 71'-75'                                                                                                        |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 80          | ORANGE 75'-87'                                                                                                     |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | MOIST 73'-75'                                                                                                      |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | WET 75'-87'                                                                                                        |                                |                     |          |          |       |                 |
|           |          |                  |      |                 | 90          | ORANGE PEBBLY SAND (SP). WET                                                                                       |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | BOTTOM OF BORING                                                                                                   |                                |                     |          |          |       |                 |
|           |          |                  |      |                 |             | REDDISH GRAY SILTY CLAY (CL)                                                                                       |                                |                     |          |          |       |                 |





# FIELD BORING LOG

478 460 1  
Sheet 1 Of 1

FOR USACE

MEMPHIS DEFENSE DEPOT-DUNN FIELD

Job No. 20022

LOCATION MEMPHIS, TN

Elev. \_\_\_\_\_

Boring No. RW-05A

GROUND While drilling \_\_\_\_\_

Time after drilling \_\_\_\_\_

Start 1400

WATER Before casing removal \_\_\_\_\_

Depth to water \_\_\_\_\_

Unit 3/16/98

After casing removal \_\_\_\_\_

Depth to cave-in \_\_\_\_\_

Chief SJ

| Sample No | Altitude | Blows on Sampler |      | Sample Recovery | Total Blows | VISUAL FIELD CLASSIFICATION AND REMARKS                        | Casing/Probe |      | Unconfined Strength | Boulders | Drilling Method |
|-----------|----------|------------------|------|-----------------|-------------|----------------------------------------------------------------|--------------|------|---------------------|----------|-----------------|
|           |          | 0/6              | 6/12 |                 |             |                                                                | Weight       | Drop |                     |          |                 |
|           |          |                  |      |                 |             | THOMAS A. McCORRY, P.G.                                        |              |      |                     |          |                 |
|           |          |                  |      |                 |             | GRAY CRUSHED STONE, TEMPORARY ACCESS ROAD                      |              |      |                     |          |                 |
|           |          |                  |      |                 |             | CLAYEY SILT                                                    |              |      |                     |          |                 |
|           |          |                  |      |                 |             | BROWN 1'-19'                                                   |              |      |                     |          |                 |
|           |          |                  |      |                 |             | LIGHT BROWN; MOTTLED WITH YELLOW, ORANGE AND BLACK 19'-25'     |              |      |                     |          |                 |
|           |          |                  |      |                 |             | BROWN 25'-32'                                                  |              |      |                     |          |                 |
|           |          |                  |      |                 |             | ROOTS 1'-2'                                                    |              |      |                     |          |                 |
|           |          |                  |      |                 |             | DAMP TO WET 15'-32'                                            |              |      |                     |          |                 |
|           |          |                  |      |                 |             |                                                                |              |      |                     |          |                 |
|           |          |                  |      |                 |             | ORANGE AND BROWN SANDY SILT WITH CLAY                          |              |      |                     |          |                 |
|           |          |                  |      |                 |             | RED SILTY SAND                                                 |              |      |                     |          |                 |
|           |          |                  |      |                 |             | RED SILTY SAND WITH GRAVEL                                     |              |      |                     |          |                 |
|           |          |                  |      |                 |             | RED GRAVELY SAND                                               |              |      |                     |          |                 |
|           |          |                  |      |                 |             |                                                                |              |      |                     |          |                 |
|           |          |                  |      |                 |             | ORANGE SAND WITH GRAVEL AND SMALL COBBLES                      |              |      |                     |          |                 |
|           |          |                  |      |                 |             | BEIGE SAND                                                     |              |      |                     |          |                 |
|           |          |                  |      |                 |             | BEIGE SAND WITH GRAVEL                                         |              |      |                     |          |                 |
|           |          |                  |      |                 |             | TAN GRAVELY SAND                                               |              |      |                     |          |                 |
|           |          |                  |      |                 |             | 1" THICK LAYER OF PURPLE-GRAY CLAY - 72'                       |              |      |                     |          |                 |
|           |          |                  |      |                 |             |                                                                |              |      |                     |          |                 |
|           |          |                  |      |                 |             | ORANGE AND TAN SAND                                            |              |      |                     |          |                 |
|           |          |                  |      |                 |             | 2-2" THICK LAYERS OF GRAY CLAY<br>ONE AT 89', THE OTHER AT 90' |              |      |                     |          |                 |
|           |          |                  |      |                 |             | WET STARTING ABOUT 80'                                         |              |      |                     |          |                 |
|           |          |                  |      |                 |             |                                                                |              |      |                     |          |                 |
|           |          |                  |      |                 |             | CLAYEY GRAVEL. CLAY IS GRAY, GRAVEL IS TAN.<br>SATURATED       |              |      |                     |          |                 |
|           |          |                  |      |                 |             | GRAY AND BROWN CLAY                                            |              |      |                     |          |                 |
|           |          |                  |      |                 |             | BOTTOM OF BORING                                               |              |      |                     |          |                 |

WELL CASING  
6" ID  
TYPE 304  
STAINLESS  
STEEL

STAINLESS  
STEEL  
CENTRA-  
LIZERS  
AT 77',  
62', 47',  
32' AND  
17'

CEMENT/  
BENTONITE  
GROUT  
FROM 2'  
TO 72'

BENTONITE  
PELLETS  
FROM 72'  
TO 76'

FILTER  
PACK  
FROM 93'  
TO 76'

WELL  
SCREEN  
8x-92'  
6" ID  
0.040 SLOT  
TYPE 304  
STAINLESS  
STEEL  
6" END  
CAP

93'-95'  
SEALED WITH  
BENTONITE  
PELLETS



# FIELD BORING LOG

Job No. 20022

Boring No. RW-06

MEMPHIS DEFENSE DEPOT-DUNN FIELD  
LOCATION MEMPHIS, TN Elev. 302.6

|               |                       |                            |                     |       |       |       |
|---------------|-----------------------|----------------------------|---------------------|-------|-------|-------|
| <u>GROUND</u> | While drilling        | _____                      | Time after drilling | _____ | Start | _____ |
|               | Before casing removal | _____                      | Depth to water      | _____ | Unit  | _____ |
| <u>WATER</u>  | After casing removal  | 73 FEET BELOW LAND SURFACE | Depth to cave-in    | _____ | Chief | _____ |

| Sample No. | Moisture | Blows on Sampler |      | Sample Recovery | Total Blows | VISUAL FIELD CLASSIFICATION AND REMARKS<br>TOM MCCRORY, P.G.                                               | Casing/Probe _____<br>Weight _____<br>Drop _____ | Unconfined Strength | Boulders | Blows on    |            | Drilling Method |
|------------|----------|------------------|------|-----------------|-------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------|---------------------|----------|-------------|------------|-----------------|
|            |          | 0/6              | 6/12 |                 |             |                                                                                                            |                                                  |                     |          | Casing Size | Probe Size |                 |
|            |          |                  |      |                 |             | DARK BROWN SOIL                                                                                            |                                                  |                     |          |             |            |                 |
|            |          |                  |      |                 |             | 10 YELLOWISH BROWN SILT<br>WITH CLAY (ML)<br>SOME INTERVALS INCLUDE<br>MOTTLED ORANGE AND<br>BLACK NODULES |                                                  |                     |          |             |            |                 |
|            |          |                  |      |                 |             | 30 REDDISH BROWN SANDY SILT (ML)                                                                           |                                                  |                     |          |             |            |                 |
|            |          |                  |      |                 |             | 40 RED SILTY SAND (SM)                                                                                     |                                                  |                     |          |             |            |                 |
|            |          |                  |      |                 |             | 50 RED AND ORANGE PEBBLY SAND<br>WITH SILT (SP)                                                            |                                                  |                     |          |             |            |                 |
|            |          |                  |      |                 |             | 60 YELLOW SAND (SW)                                                                                        |                                                  |                     |          |             |            |                 |
|            |          |                  |      |                 |             | 62.0-62.2 RED POORLY GRADED GRAVEL WITH SAND (GW)<br>GRAY CLAY (CL)                                        |                                                  |                     |          |             |            |                 |
|            |          |                  |      |                 |             | 70 YELLOW SAND (SW)                                                                                        |                                                  |                     |          |             |            |                 |
|            |          |                  |      |                 |             | 80 BROWN PEBBLY SAND (SP)                                                                                  |                                                  |                     |          |             |            |                 |
|            |          |                  |      |                 |             | 90 REDDISH GRAY CLAY (CL)<br>BOTTOM OF BORING                                                              |                                                  |                     |          |             |            |                 |
|            |          |                  |      |                 |             | BORING BACKFILLED WITH BENTONITE<br>PELLETS TO 88 FEET BELOW LAND SURFACE                                  |                                                  |                     |          |             |            |                 |



OHM Remediation  
Services Corp.  
A subsidiary of OHM Corporation

# Rotasonic Drilling by Boert Longyear FIELD BORING LOG

478 462

Sheet 1 of 1

FOR USACE

MEMPHIS DEFENSE DEPOT-DUNN FIELD

Job No. 20022

LOCATION Memphis, TN

Elev. 295.6

Boring No. RW-07

GROUND While drilling

Time after drilling 1/26/98 1400

Start 1200

WATER Before casing removal

Depth to water

Unit

After casing removal

66' b/s

Depth to cave-in

Chief JW

| Sample No. | Moisture | Blows on Sampler |      | Sample Recovery | Total Blows | VISUAL FIELD CLASSIFICATION AND REMARKS                                                      | Casing/Probe |      | Unconfined Strength | Boulders | Blows on    |            | Drilling Method |
|------------|----------|------------------|------|-----------------|-------------|----------------------------------------------------------------------------------------------|--------------|------|---------------------|----------|-------------|------------|-----------------|
|            |          | 0/6              | 6/12 |                 |             |                                                                                              | Weight       | Drop |                     |          | Casing Size | Probe Size |                 |
|            |          |                  |      |                 |             | Dark brown top soil with grass sod                                                           |              |      |                     |          |             |            |                 |
| 20         |          |                  |      |                 |             | Brown, silty CLAY(CL), with trace of root material (wet from 5' to 10' b/s)                  |              |      |                     |          |             |            |                 |
| 20         |          |                  |      |                 |             | Yellowish brown to reddish brown, silty, sandy CLAY(CL), dry, with trace of mafic inclusions |              |      |                     |          |             |            |                 |
| 30         |          |                  |      |                 |             | Reddish brown clayey SILT(ML), dry                                                           |              |      |                     |          |             |            |                 |
| 40         |          |                  |      |                 |             | Red silty SAND(SM), dry, with some chert gravel (grey clay lenses)                           |              |      |                     |          |             |            |                 |
| 50         |          |                  |      |                 |             | Orange silty med. SAND(SM), dry, with trace of chert gravel                                  |              |      |                     |          |             |            |                 |
| 60         |          |                  |      |                 |             | Yellowish brown med. well sorted SAND(SP), dry, with some gravel                             |              |      |                     |          |             |            |                 |
| 70         |          |                  |      |                 |             | Yellow med. well sorted SAND(SP), wet, with gravel                                           |              |      |                     |          |             |            |                 |
| 80         |          |                  |      |                 |             | Bottom of Boring<br>Reddish grey CLAY(CL), dry, med. plasticity, stiff                       |              |      |                     |          |             |            |                 |
| 90         |          |                  |      |                 |             | Start of boring 1/26/98 - 1200<br>End boring 1/26/98 - 1400                                  |              |      |                     |          |             |            |                 |



Sheet 1 Of 1

Job No. 20022

Boring No. RU-09

OR USACE MEMPHIS DEFENSE DEPOT-DUNN FIELD  
LOCATION Memphis, TN Elev. 289.3

Elev. 289.3

### GROUND While drilling

Time after drilling 1050 01/31/98

Start 1400

**WATER** <sup>—</sup> Before casing removal

### Depth to water

~~Time~~ 01/30/98

**WATER** After casing removal

@ 59' bls

### Depth to cave-in

Chief                     

| Sample No. | Moisture | Blows on Sampler |      | Sample Recovery | Total Blows | VISUAL FIELD CLASSIFICATION AND REMARKS                                                          | Casing/Probe | Unconfined Strength | Boulders | Blows on |             | Drilling Method |
|------------|----------|------------------|------|-----------------|-------------|--------------------------------------------------------------------------------------------------|--------------|---------------------|----------|----------|-------------|-----------------|
|            |          | 0/6              | 6/12 |                 |             |                                                                                                  | Weight       |                     |          | Drop     | Casing Size |                 |
|            |          |                  |      |                 |             | Brown top soil w/ grass sod<br>Brown clayey SILT (ML), w/ organic material                       |              |                     |          |          |             |                 |
|            |          |                  |      |                 |             | Grey clayey SILT (ML), w/ root material and gravel, moist to wet                                 |              |                     |          |          |             |                 |
|            |          |                  |      |                 |             | Dark grey clayey organic SILT (OH), very loose (muddy), saturated                                |              |                     |          |          |             |                 |
|            |          |                  |      |                 |             | Red brown silty CLAY (CL)                                                                        |              |                     |          |          |             |                 |
|            |          |                  |      |                 |             | Red brown clayey SILT (ML)                                                                       |              |                     |          |          |             |                 |
|            |          |                  |      |                 |             | Red med. SAND (SP) w/ gravel, dry                                                                |              |                     |          |          |             |                 |
|            |          |                  |      |                 |             | Red orange med. SAND (SW), dense drilling                                                        |              |                     |          |          |             |                 |
|            |          |                  |      |                 |             | Yellow to tan med. SAND (SW), dry, w/ trace of clay inclusions                                   |              |                     |          |          |             |                 |
|            |          |                  |      |                 |             | Grey-pink sandy CLAY (CL), dry, very plastic                                                     |              |                     |          |          |             |                 |
|            |          |                  |      |                 |             | Yellow to tan med. SAND (SP), dry, w/ trace of gravel                                            |              |                     |          |          |             |                 |
|            |          |                  |      |                 |             | Light brown med. SAND (SP), wet, w/ trace to some gravel.                                        |              |                     |          |          |             |                 |
|            |          |                  |      |                 |             | Bottom of Boring                                                                                 |              |                     |          |          |             |                 |
|            |          |                  |      |                 |             | Brown grey silty CLAY (CL), dry, stiff, med. plastic, w/ trace of organic material 75.5' - 76.0' |              |                     |          |          |             |                 |
|            |          |                  |      |                 |             | Brown clayey SILT (ML), friable, dry, w/ iron-like nodules 75' - 75.5'                           |              |                     |          |          |             |                 |

# TAB

Appendix E-1

**DISPOSAL CHARACTERIZATION SAMPLES  
SOIL CUTTINGS FROM RW-5, RW-6, RW-7, RW-8 & RW-9**

*Date Collected 02/06/98*



# ANALYTICAL SERVICES, INC. <sup>478 467</sup>

ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

13 March, 1998

## Case Narrative Report 91734

The samples were collected 6 February, 1998 and received by ASI 10-11 February, 1998. As indicated on the Chain of Custody, seals were not present on the sample containers. All other conditions for proper sample receipt were met. The samples were logged into the LIMS as report 91734 for the following analyses as per client request: Aqueous samples - HERB (EPA 8151), BNA (EPA 8270C), PEST (EPA 8081A), VOA (EPA 8260B), Mercury (EPA 7470), Metals (EPA 6010B), pH (EPA 9040), Reactive CN (EPA 7.3.3.2), and Reactive Sulfide (EPA 7.3.4.2); Solid samples - TCLP HERB (EPA 1311/8151), BNA (EPA 1311/8270C), PEST (EPA 1311/8081), VOA (EPA 1311/8260B), Mercury (EPA 1311/7470), and Metals (EPA 1311/6010B), Ignitability (EPA 1010), pH (EPA 9045), Reactive CN (EPA 7.3.3.2) and Reactive Sulfide (EPA 7.3.4.2). Holding times for sample preparation and analysis were met with the exception of pH which should be analyzed in the field.

HERB analysis (EPA 8151) for aqueous samples gave a high LCRPD for 2,4,5-T and low MS/MSD/MSRPD for 2,4-D, 2,4,5-TP and 2,4,5-T. All other spike and surrogate recoveries were acceptable.

BNA analysis (EPA 8270C) for aqueous samples gave a high MS for 2,4-Dinitrotoluene and high MSRPD for 2-Chlorophenol, 4-Nitrophenol and Pentachlorophenol. Samples #91800-33MS and 91800-33MSD gave high surrogate recoveries for 2-Fluorobiphenyl. All other spike and surrogate recoveries were acceptable.

PEST analysis (EPA 8081A) for aqueous samples gave high MS/MSD for BHC-gamma (Lindane), Heptachlor and Aldrin. Sample #91556MS gave high surrogate recoveries for Dibutylchlorodate and Decachlorobiphenyl; Sample #91556MSD gave a high surrogate recovery for Decachlorobiphenyl; Samples #36227BLK and 36227LCS gave high surrogate recoveries for Tetrachloro-m-xylene. Samples #36227BLK, 36227LCS and 36227LCSD were re-run, thus producing acceptable surrogate results. All other spike and surrogate recoveries were acceptable.

VOA analysis (EPA 8260B) for aqueous samples met all data quality objectives.

Mercury analysis (EPA 7470) for aqueous samples met all data quality objectives.

Metals analysis (EPA 6010B) for aqueous samples gave a high MSD for Ag. All other spike recoveries were acceptable.



pH analysis (EPA 9040) for aqueous samples met all data quality objectives.

Reactive CN analysis (EPA 7.3.3.2) for aqueous samples met all data quality objectives.

Reactive Sulfide analysis (EPA 7.3.4.2) for aqueous samples met all data quality objectives.

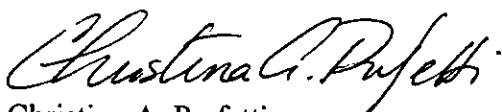
TCLP analysis for HERB (EPA 1311/8150) met all data quality objectives. TLCP analysis for BNA (EPA 1311/8270C) gave low surrogate recoveries for 2-Fluorophenol for Samples #91734-3, 91734-4 and 91734-4RR, low surrogate recoveries for Phenol-d5 for Samples #1734-4 and 91734-4RR, and a low surrogate recovery for 2,4,6-Tribromophenol for Sample #91734-4 due to the matrix effect. Sample #91734-4 was re-extracted and re-run. All other BNA spike and surrogate recoveries were acceptable. TCLP analysis for PEST (EPA 1311/8081A) met all data quality objectives. TCLP analysis for VOA (EPA 1311/8260B) gave high MS/MSD recoveries for 1,1-Dichloroethene and Vinyl Chloride, high surrogate recoveries for Toluene-d8 for Samples #91734-6MS and 91734-6MSD, and a low surrogate recovery for Toluene-d8 for Sample #91734-4. All other VOA spike and surrogate recoveries were acceptable. TCLP analysis for Mercury (EPA 1311/7470) gave a low MS recovery and high MSD/MSRPD recoveries. The batch passes on LCS/LCSD. TCLP analysis for Metals (EPA 1311/6010B) gave a low MS recovery for Cr, a high PDS for Ag, and a low PDS for Cr. All other spike recoveries were acceptable.

Ignitability analysis (EPA 1010) for solid samples met all data quality objectives.

pH analysis (EPA 9045) for solid samples met all data quality objectives.

Reactive CN analysis (EPA 7.3.3.2) for solid samples met all data quality objectives.

Reactive Sulfide analysis (EPA 7.3.4.2) for solid samples met all data quality objectives.



Christina A. Perfetti  
Quality Assurance



478 469

**ANALYTICAL SERVICES, INC.****ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

February 26, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 91734-1**Sample Description**Soil, DDMT\Dunn Field Memphis TN, Project #20022, RW-007, 02/06/98, 10:23,  
received 02/11/98**RESULTS**

|                                             |                          | <u>Result</u> | <u>Detection<br/>Limit</u> |
|---------------------------------------------|--------------------------|---------------|----------------------------|
| gnitability (°F) (EPA 1010).....            |                          | >212          | 70                         |
| pH (laboratory) (EPA 9045).....             |                          | 7.38          | -                          |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL           | 1                          |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL           | 5                          |
| Toxicity Characteristic Leaching Procedure  |                          |               |                            |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |               |                            |
| <u>EPA HW</u>                               | <u>Parameter</u>         | <u>Result</u> | <u>Detection<br/>Limit</u> |
| <u>Number</u>                               | <u>Parameter</u>         | <u>(mg/l)</u> | <u>(mg/l)</u>              |
| D004                                        | Arsenic (As).....        | BDL           | 2.5                        |
| D005                                        | Barium (Ba).....         | 0.35          | 0.2                        |
| D006                                        | Cadmium (Cd).....        | BDL           | 0.01                       |
| D020                                        | Chlordane.....           | BDL           | 0.01                       |
| D007                                        | Chromium (Cr).....       | 0.01          | 0.01                       |
| D026                                        | Total Cresol.....        | BDL           | 0.05                       |
| D016                                        | 2,4-D.....               | BDL           | 0.05                       |
| D027                                        | 1,4-Dichlorobenzene..... | BDL           | 0.05                       |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL           | 0.05                       |
| D012                                        | Endrin.....              | BDL           | 0.001                      |
| D031                                        | Heptachlor.....          | BDL           | 0.001                      |
| D031                                        | Heptachlor epoxide.....  | BDL           | 0.001                      |
| D032                                        | Hexachlorobenzene.....   | BDL           | 0.05                       |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
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February 26, 1998  
Report No. 91734-1

Soil, DDMT\Dunn Field Memphis TN, Project #20022, RW-007, 02/06/98, 10:23,  
received 02/11/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| <u>EPA HW</u><br><u>Number</u> | <u>Parameter</u>           | <u>Result</u><br><u>(mg/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(mg/l)</u> | <u>Regulatory</u><br><u>Limit</u><br><u>(mg/l)</u> |
|--------------------------------|----------------------------|--------------------------------|---------------------------------------------------|----------------------------------------------------|
| D033                           | Hexachlorobutadiene.....   | BDL                            | 0.05                                              | 0.5                                                |
| D034                           | Hexachloroethane.....      | BDL                            | 0.05                                              | 3.0                                                |
| D008                           | Lead (Pb).....             | BDL                            | 0.1                                               | 5.0                                                |
| D013                           | Lindane.....               | BDL                            | 0.01                                              | 0.4                                                |
| D009                           | Mercury (Hg).....          | BDL                            | 0.005                                             | 0.2                                                |
| D014                           | Methoxychlor.....          | BDL                            | 0.5                                               | 10.0                                               |
| D036                           | Nitrobenzene.....          | BDL                            | 0.05                                              | 2.0                                                |
| D037                           | Pentachlorophenol.....     | BDL                            | 0.05                                              | 100.0                                              |
| D010                           | Selenium (Se).....         | BDL                            | 0.5                                               | 1.0                                                |
| D011                           | Silver (Ag).....           | BDL                            | 0.01                                              | 5.0                                                |
| D015                           | Toxaphene.....             | BDL                            | 0.05                                              | 0.5                                                |
| D041                           | 2,4,5-Trichlorophenol..... | BDL                            | 0.05                                              | 400.0                                              |
| D042                           | 2,4,6-Trichlorophenol..... | BDL                            | 0.05                                              | 2.0                                                |
| D017                           | 2,4,5-TP Silvex.....       | BDL                            | 0.1                                               | 1.0                                                |
| D038                           | Pyridine.....              | BDL                            | 0.05                                              | 5.0                                                |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| <u>EPA HW</u><br><u>Number</u> | <u>Parameter</u>          | <u>Result</u><br><u>(mg/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(mg/l)</u> | <u>Regulatory</u><br><u>Limit</u><br><u>(mg/l)</u> |
|--------------------------------|---------------------------|--------------------------------|---------------------------------------------------|----------------------------------------------------|
| D018                           | Benzene.....              | BDL                            | 0.02                                              | 0.5                                                |
| D019                           | Carbon tetrachloride..... | BDL                            | 0.02                                              | 0.5                                                |
| D021                           | Chlorobenzene.....        | BDL                            | 0.02                                              | 100.0                                              |
| D022                           | Chloroform.....           | BDL                            | 0.02                                              | 6.0                                                |
| D028                           | 1,2-Dichloroethane.....   | BDL                            | 0.02                                              | 0.5                                                |
| D029                           | 1,1-Dichloroethene.....   | BDL                            | 0.02                                              | 0.7                                                |
| D035                           | Methyl ethyl ketone.....  | BDL                            | 0.5                                               | 200.0                                              |
| D039                           | Tetrachloroethene.....    | BDL                            | 0.02                                              | 0.7                                                |
| D040                           | Trichloroethene.....      | BDL                            | 0.02                                              | 0.5                                                |
| D043                           | Vinyl chloride.....       | BDL                            | 0.02                                              | 0.2                                                |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. Pyle*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

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**ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

February 26, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 91734-2**Sample Description**Soil, DDMT\Dunn Field Memphis TN, Project #20022, RW-008, 02/06/98, 11:20,  
received 02/11/98**RESULTS**

|                                             |                          | <u>Result</u>          | <u>Detection Limit</u>  |
|---------------------------------------------|--------------------------|------------------------|-------------------------|
| gnitability (°F) (EPA 1010).....            |                          | >212                   | 70                      |
| pH (laboratory) (EPA 9045).....             |                          | 6.89                   | -                       |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL                    | 1                       |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL                    | 5                       |
| Toxicity Characteristic Leaching Procedure  |                          |                        |                         |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |                        |                         |
| <u>EPA HW</u>                               |                          | <u>Detection Limit</u> | <u>Regulatory Limit</u> |
| <u>Number</u>                               | <u>Parameter</u>         | <u>(mg/l)</u>          | <u>(mg/l)</u>           |
| D004                                        | Arsenic (As).....        | BDL                    | 5.0                     |
| D005                                        | Barium (Ba).....         | 0.4                    | 100.0                   |
| D006                                        | Cadmium (Cd).....        | BDL                    | 1.0                     |
| D020                                        | Chlordane.....           | BDL                    | 0.03                    |
| D007                                        | Chromium (Cr).....       | BDL                    | 5.0                     |
| D026                                        | Total Cresol.....        | BDL                    | 200.0                   |
| D016                                        | 2,4-D.....               | BDL                    | 10.0                    |
| D027                                        | 1,4-Dichlorobenzene..... | BDL                    | 7.5                     |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL                    | 0.13                    |
| D012                                        | Endrin.....              | BDL                    | 0.02                    |
| D031                                        | Heptachlor.....          | BDL                    | 0.008                   |
| D031                                        | Heptachlor epoxide.....  | BDL                    | 0.008                   |
| D032                                        | Hexachlorobenzene.....   | BDL                    | 0.13                    |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
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February 26, 1998  
Report No. 91734-2

Soil, DDMT\Dunn Field Memphis TN, Project #20022, RW-008, 02/06/98, 11:20,  
received 02/11/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| <u>EPA HW</u><br><u>Number</u> | <u>Parameter</u>           | <u>Result</u><br><u>(mg/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(mg/l)</u> | <u>Regulatory</u><br><u>Limit</u><br><u>(mg/l)</u> |
|--------------------------------|----------------------------|--------------------------------|---------------------------------------------------|----------------------------------------------------|
| D033                           | Hexachlorobutadiene.....   | BDL                            | 0.05                                              | 0.5                                                |
| D034                           | Hexachloroethane.....      | BDL                            | 0.05                                              | 3.0                                                |
| D008                           | Lead (Pb).....             | BDL                            | 0.1                                               | 5.0                                                |
| D013                           | Lindane.....               | BDL                            | 0.01                                              | 0.4                                                |
| D009                           | Mercury (Hg).....          | BDL                            | 0.005                                             | 0.2                                                |
| D014                           | Methoxychlor.....          | BDL                            | 0.5                                               | 10.0                                               |
| D036                           | Nitrobenzene.....          | BDL                            | 0.05                                              | 2.0                                                |
| D037                           | Pentachlorophenol.....     | BDL                            | 0.05                                              | 100.0                                              |
| D010                           | Selenium (Se).....         | BDL                            | 0.5                                               | 1.0                                                |
| D011                           | Silver (Ag).....           | BDL                            | 0.01                                              | 5.0                                                |
| D015                           | Toxaphene.....             | BDL                            | 0.05                                              | 0.5                                                |
| D041                           | 2,4,5-Trichlorophenol..... | BDL                            | 0.05                                              | 400.0                                              |
| D042                           | 2,4,6-Trichlorophenol..... | BDL                            | 0.05                                              | 2.0                                                |
| D017                           | 2,4,5-TP Silvex.....       | BDL                            | 0.1                                               | 1.0                                                |
| D038                           | Pyridine.....              | BDL                            | 0.05                                              | 5.0                                                |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| <u>EPA HW</u><br><u>Number</u> | <u>Parameter</u>          | <u>Result</u><br><u>(mg/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(mg/l)</u> | <u>Regulatory</u><br><u>Limit</u><br><u>(mg/l)</u> |
|--------------------------------|---------------------------|--------------------------------|---------------------------------------------------|----------------------------------------------------|
| D018                           | Benzene.....              | BDL                            | 0.02                                              | 0.5                                                |
| D019                           | Carbon tetrachloride..... | BDL                            | 0.02                                              | 0.5                                                |
| D021                           | Chlorobenzene.....        | BDL                            | 0.02                                              | 100.0                                              |
| D022                           | Chloroform.....           | BDL                            | 0.02                                              | 6.0                                                |
| D028                           | 1,2-Dichloroethane.....   | BDL                            | 0.02                                              | 0.5                                                |
| D029                           | 1,1-Dichloroethene.....   | BDL                            | 0.02                                              | 0.7                                                |
| D035                           | Methyl ethyl ketone.....  | BDL                            | 0.5                                               | 200.0                                              |
| D039                           | Tetrachloroethene.....    | 0.02                           | 0.02                                              | 0.7                                                |
| D040                           | Trichloroethene.....      | BDL                            | 0.02                                              | 0.5                                                |
| D043                           | Vinyl chloride.....       | BDL                            | 0.02                                              | 0.2                                                |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. Pyle*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.****ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

February 26, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 91734-3**Sample Description**Soil, DDMT\Dunn Field Memphis TN, Project #20022, RW-006, 02/06/98, 10:53,  
received 02/11/98**RESULTS**

|                                                                                       |                          | <u>Result</u>          | <u>Detection Limit</u>  |
|---------------------------------------------------------------------------------------|--------------------------|------------------------|-------------------------|
| gnitability (°F) (EPA 1010).....                                                      |                          | >212                   | 70                      |
| pH (laboratory) (EPA 9045).....                                                       |                          | 7.15                   | -                       |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2).....                                           |                          | BDL                    | 1                       |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2).....                                           |                          | BDL                    | 5                       |
| Toxicity Characteristic Leaching Procedure<br>TCLP Non-volatile Extraction (EPA 1311) |                          | <u>Detection Limit</u> | <u>Regulatory Limit</u> |
| <u>EPA HW</u>                                                                         | <u>Result</u>            | <u>Limit</u>           | <u>Limit</u>            |
| <u>Number</u> <u>Parameter</u>                                                        | <u>(mg/l)</u>            | <u>(mg/l)</u>          | <u>(mg/l)</u>           |
| D004                                                                                  | Arsenic (As).....        | BDL                    | 5.0                     |
| D005                                                                                  | Barium (Ba).....         | 0.4                    | 100.0                   |
| D006                                                                                  | Cadmium (Cd).....        | BDL                    | 1.0                     |
| D020                                                                                  | Chlordane.....           | BDL                    | 0.03                    |
| D007                                                                                  | Chromium (Cr).....       | BDL                    | 5.0                     |
| D026                                                                                  | Total Cresol.....        | BDL                    | 200.0                   |
| D016                                                                                  | 2,4-D.....               | BDL                    | 10.0                    |
| D027                                                                                  | 1,4-Dichlorobenzene..... | BDL                    | 7.5                     |
| D030                                                                                  | 2,4-Dinitrotoluene.....  | BDL                    | 0.13                    |
| D012                                                                                  | Endrin.....              | BDL                    | 0.02                    |
| D031                                                                                  | Heptachlor.....          | BDL                    | 0.008                   |
| D031                                                                                  | Heptachlor epoxide.....  | BDL                    | 0.008                   |
| D032                                                                                  | Hexachlorobenzene.....   | BDL                    | 0.13                    |

BDL - Below Detection Limit

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OHM Remediation Services Corp.  
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February 26, 1998  
Report No. 91734-3

Soil, DDMT\Dunn Field Memphis TN, Project #20022, RW-006, 02/06/98, 10:53,  
received 02/11/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | BDL              | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. Puletti*  
Quality Assurance



# ANALYTICAL SERVICES, INC.

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## ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

### LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

February 26, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 91734-4

### Sample Description

Soil, DDMT\Dunn Field Memphis TN, Project #20022, RW-009, 02/06/98, 13:40,  
received 02/11/98

### RESULTS

|                                             |                          | <u>Result</u> | <u>Detection</u><br><u>Limit</u> |                                   |
|---------------------------------------------|--------------------------|---------------|----------------------------------|-----------------------------------|
| gnitability (°F) (EPA 1010).....            |                          | >212          | 70                               |                                   |
| pH (laboratory) (EPA 9045).....             |                          | 7.08          | -                                |                                   |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL           | 1                                |                                   |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL           | 5                                |                                   |
| Toxicity Characteristic Leaching Procedure  |                          |               |                                  |                                   |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |               |                                  |                                   |
| <u>EPA HW</u>                               |                          | <u>Result</u> | <u>Detection</u><br><u>Limit</u> | <u>Regulatory</u><br><u>Limit</u> |
| <u>Number</u>                               | <u>Parameter</u>         | <u>(mg/l)</u> | <u>(mg/l)</u>                    | <u>(mg/l)</u>                     |
| D004                                        | Arsenic (As).....        | BDL           | 2.5                              | 5.0                               |
| D005                                        | Barium (Ba).....         | 0.2           | 0.2                              | 100.0                             |
| D006                                        | Cadmium (Cd).....        | BDL           | 0.01                             | 1.0                               |
| D020                                        | Chlordane.....           | BDL           | 0.01                             | 0.03                              |
| D007                                        | Chromium (Cr).....       | 0.01          | 0.01                             | 5.0                               |
| D026                                        | Total Cresol.....        | BDL           | 0.05                             | 200.0                             |
| D016                                        | 2,4-D.....               | BDL           | 0.05                             | 10.0                              |
| D027                                        | 1,4-Dichlorobenzene..... | BDL           | 0.05                             | 7.5                               |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL           | 0.05                             | 0.13                              |
| D012                                        | Endrin.....              | BDL           | 0.001                            | 0.02                              |
| D031                                        | Heptachlor.....          | BDL           | 0.001                            | 0.008                             |
| D031                                        | Heptachlor epoxide.....  | BDL           | 0.001                            | 0.008                             |
| D032                                        | Hexachlorobenzene.....   | BDL           | 0.05                             | 0.13                              |

BDL - Below Detection Limit



OHM Remediation Services Corp.  
Page 2 of 2

February 26, 1998  
Report No. 91734-4

Soil, DDMT\Dunn Field Memphis TN, Project #20022, RW-009, 02/06/98, 13:40,  
received 02/11/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| <u>EPA HW</u><br><u>Number</u> | <u>Parameter</u>           | <u>Result</u><br><u>(mg/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(mg/l)</u> | <u>Regulatory</u><br><u>Limit</u><br><u>(mg/l)</u> |
|--------------------------------|----------------------------|--------------------------------|---------------------------------------------------|----------------------------------------------------|
| D033                           | Hexachlorobutadiene.....   | BDL                            | 0.05                                              | 0.5                                                |
| D034                           | Hexachloroethane.....      | BDL                            | 0.05                                              | 3.0                                                |
| D008                           | Lead (Pb).....             | BDL                            | 0.1                                               | 5.0                                                |
| D013                           | Lindane.....               | BDL                            | 0.01                                              | 0.4                                                |
| D009                           | Mercury (Hg).....          | BDL                            | 0.005                                             | 0.2                                                |
| D014                           | Methoxychlor.....          | BDL                            | 0.5                                               | 10.0                                               |
| D036                           | Nitrobenzene.....          | BDL                            | 0.05                                              | 2.0                                                |
| D037                           | Pentachlorophenol.....     | BDL                            | 0.05                                              | 100.0                                              |
| D010                           | Selenium (Se).....         | BDL                            | 0.5                                               | 1.0                                                |
| D011                           | Silver (Ag).....           | BDL                            | 0.01                                              | 5.0                                                |
| D015                           | Toxaphene.....             | BDL                            | 0.05                                              | 0.5                                                |
| D041                           | 2,4,5-Trichlorophenol..... | BDL                            | 0.05                                              | 400.0                                              |
| D042                           | 2,4,6-Trichlorophenol..... | BDL                            | 0.05                                              | 2.0                                                |
| D017                           | 2,4,5-TP Silvex.....       | BDL                            | 0.1                                               | 1.0                                                |
| D038                           | Pyridine.....              | BDL                            | 0.05                                              | 5.0                                                |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| <u>EPA HW</u><br><u>Number</u> | <u>Parameter</u>          | <u>Result</u><br><u>(mg/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(mg/l)</u> | <u>Regulatory</u><br><u>Limit</u><br><u>(mg/l)</u> |
|--------------------------------|---------------------------|--------------------------------|---------------------------------------------------|----------------------------------------------------|
| D018                           | Benzene.....              | BDL                            | 0.02                                              | 0.5                                                |
| D019                           | Carbon tetrachloride..... | BDL                            | 0.02                                              | 0.5                                                |
| D021                           | Chlorobenzene.....        | BDL                            | 0.02                                              | 100.0                                              |
| D022                           | Chloroform.....           | BDL                            | 0.02                                              | 6.0                                                |
| D028                           | 1,2-Dichloroethane.....   | BDL                            | 0.02                                              | 0.5                                                |
| D029                           | 1,1-Dichloroethene.....   | BDL                            | 0.02                                              | 0.7                                                |
| D035                           | Methyl ethyl ketone.....  | BDL                            | 0.5                                               | 200.0                                              |
| D039                           | Tetrachloroethene.....    | BDL                            | 0.02                                              | 0.7                                                |
| D040                           | Trichloroethene.....      | BDL                            | 0.02                                              | 0.5                                                |
| D043                           | Vinyl chloride.....       | BDL                            | 0.02                                              | 0.2                                                |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina C. Pyle*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

February 26, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 91734-5**Sample Description**Soil, DDMT\Dunn Field Memphis TN, Project #20022, RW-005, 02/06/98, 14:10,  
received 02/11/98**RESULTS**

|                                                                                       |                          | <u>Result</u>          | <u>Detection Limit</u>  |
|---------------------------------------------------------------------------------------|--------------------------|------------------------|-------------------------|
| gnitability (°F) (EPA 1010).....                                                      |                          | >212                   | 70                      |
| pH (laboratory) (EPA 9045).....                                                       |                          | 7.10                   | -                       |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2).....                                           |                          | BDL                    | 1                       |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2).....                                           |                          | BDL                    | 5                       |
| Toxicity Characteristic Leaching Procedure<br>TCLP Non-volatile Extraction (EPA 1311) |                          | <u>Detection Limit</u> | <u>Regulatory Limit</u> |
| <u>EPA HW</u>                                                                         | <u>Result</u>            | <u>Limit</u>           | <u>Limit</u>            |
| <u>Number</u> <u>Parameter</u>                                                        | <u>(mg/l)</u>            | <u>(mg/l)</u>          | <u>(mg/l)</u>           |
| D004                                                                                  | Arsenic (As).....        | BDL                    | 2.5                     |
| D005                                                                                  | Barium (Ba).....         | 0.4                    | 0.2                     |
| D006                                                                                  | Cadmium (Cd).....        | BDL                    | 0.01                    |
| D020                                                                                  | Chlordane.....           | BDL                    | 0.01                    |
| D007                                                                                  | Chromium (Cr).....       | BDL                    | 0.01                    |
| D026                                                                                  | Total Cresol.....        | BDL                    | 0.05                    |
| D016                                                                                  | 2,4-D.....               | BDL                    | 0.05                    |
| D027                                                                                  | 1,4-Dichlorobenzene..... | BDL                    | 0.05                    |
| D030                                                                                  | 2,4-Dinitrotoluene.....  | BDL                    | 0.05                    |
| D012                                                                                  | Endrin.....              | BDL                    | 0.001                   |
| D031                                                                                  | Heptachlor.....          | BDL                    | 0.001                   |
| D031                                                                                  | Heptachlor epoxide.....  | BDL                    | 0.001                   |
| D032                                                                                  | Hexachlorobenzene.....   | BDL                    | 0.05                    |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

February 26, 1998  
Report No. 91734-5

Soil, DDMT\Dunn Field Memphis TN, Project #20022, RW-005, 02/06/98, 14:10,  
received 02/11/98

### RESULTS

Toxicity Characteristic Leaching Procedure  
TCLP Non-volatile Extraction (EPA 1311)

| <u>EPA HW</u><br><u>Number</u> | <u>Parameter</u>           | <u>Result</u><br><u>(mg/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(mg/l)</u> | <u>Regulatory</u><br><u>Limit</u><br><u>(mg/l)</u> |
|--------------------------------|----------------------------|--------------------------------|---------------------------------------------------|----------------------------------------------------|
| D033                           | Hexachlorobutadiene.....   | BDL                            | 0.05                                              | 0.5                                                |
| D034                           | Hexachloroethane.....      | BDL                            | 0.05                                              | 3.0                                                |
| D008                           | Lead (Pb).....             | BDL                            | 0.1                                               | 5.0                                                |
| D013                           | Lindane.....               | BDL                            | 0.01                                              | 0.4                                                |
| D009                           | Mercury (Hg).....          | BDL                            | 0.005                                             | 0.2                                                |
| D014                           | Methoxychlor.....          | BDL                            | 0.5                                               | 10.0                                               |
| D036                           | Nitrobenzene.....          | BDL                            | 0.05                                              | 2.0                                                |
| D037                           | Pentachlorophenol.....     | BDL                            | 0.05                                              | 100.0                                              |
| D010                           | Selenium (Se).....         | BDL                            | 0.5                                               | 1.0                                                |
| D011                           | Silver (Ag).....           | BDL                            | 0.01                                              | 5.0                                                |
| D015                           | Toxaphene.....             | BDL                            | 0.05                                              | 0.5                                                |
| D041                           | 2,4,5-Trichlorophenol..... | BDL                            | 0.05                                              | 400.0                                              |
| D042                           | 2,4,6-Trichlorophenol..... | BDL                            | 0.05                                              | 2.0                                                |
| D017                           | 2,4,5-TP Silvex.....       | BDL                            | 0.1                                               | 1.0                                                |
| D038                           | Pyridine.....              | BDL                            | 0.05                                              | 5.0                                                |

Toxicity Characteristic Leaching Procedure  
TCLP Zero Headspace Extraction (EPA 1311)

| <u>EPA HW</u><br><u>Number</u> | <u>Parameter</u>          | <u>Result</u><br><u>(mg/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(mg/l)</u> | <u>Regulatory</u><br><u>Limit</u><br><u>(mg/l)</u> |
|--------------------------------|---------------------------|--------------------------------|---------------------------------------------------|----------------------------------------------------|
| D018                           | Benzene.....              | BDL                            | 0.02                                              | 0.5                                                |
| D019                           | Carbon tetrachloride..... | BDL                            | 0.02                                              | 0.5                                                |
| D021                           | Chlorobenzene.....        | BDL                            | 0.02                                              | 100.0                                              |
| D022                           | Chloroform.....           | BDL                            | 0.02                                              | 6.0                                                |
| D028                           | 1,2-Dichloroethane.....   | BDL                            | 0.02                                              | 0.5                                                |
| D029                           | 1,1-Dichloroethene.....   | BDL                            | 0.02                                              | 0.7                                                |
| D035                           | Methyl ethyl ketone.....  | BDL                            | 0.5                                               | 200.0                                              |
| D039                           | Tetrachloroethene.....    | BDL                            | 0.02                                              | 0.7                                                |
| D040                           | Trichloroethene.....      | BDL                            | 0.02                                              | 0.5                                                |
| D043                           | Vinyl chloride.....       | BDL                            | 0.02                                              | 0.2                                                |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina G. Pyle*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

478 479

**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

February 26, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 91734-6**Sample Description**Soil, DDMT\Dunn Field Memphis TN, Project #20022, RW-014, 02/06/98, 11:20,  
received 02/11/98**RESULTS**

|                                             |                          | <u>Result</u>          | <u>Detection Limit</u>  |
|---------------------------------------------|--------------------------|------------------------|-------------------------|
| gnitability (°F) (EPA 1010).....            |                          | >212                   | 70                      |
| pH (laboratory) (EPA 9045).....             |                          | 6.96                   |                         |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL                    | 1                       |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL                    | 5                       |
| Toxicity Characteristic Leaching Procedure  |                          |                        |                         |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |                        |                         |
| <u>EPA HW</u>                               | <u>Result</u>            | <u>Detection Limit</u> | <u>Regulatory Limit</u> |
| <u>Number</u> <u>Parameter</u>              | <u>(mg/l)</u>            | <u>(mg/l)</u>          | <u>(mg/l)</u>           |
| D004                                        | Arsenic (As).....        | BDL                    | 5.0                     |
| D005                                        | Barium (Ba).....         | 0.4                    | 100.0                   |
| D006                                        | Cadmium (Cd).....        | BDL                    | 1.0                     |
| D020                                        | Chlordane.....           | BDL                    | 0.03                    |
| D007                                        | Chromium (Cr).....       | BDL                    | 5.0                     |
| D026                                        | Total Cresol.....        | BDL                    | 200.0                   |
| D016                                        | 2,4-D.....               | BDL                    | 10.0                    |
| D027                                        | 1,4-Dichlorobenzene..... | BDL                    | 7.5                     |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL                    | 0.13                    |
| D012                                        | Endrin.....              | BDL                    | 0.02                    |
| D031                                        | Heptachlor.....          | BDL                    | 0.008                   |
| D031                                        | Heptachlor epoxide.....  | BDL                    | 0.008                   |
| D032                                        | Hexachlorobenzene.....   | BDL                    | 0.13                    |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

February 26, 1998  
Report No. 91734-6

Soil, DDMT\Dunn Field Memphis TN, Project #20022, RW-014, 02/06/98, 11:20,  
received 02/11/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| <u>EPA HW</u><br><u>Number</u> | <u>Parameter</u>           | <u>Result</u><br><u>(mg/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(mg/l)</u> | <u>Regulatory</u><br><u>Limit</u><br><u>(mg/l)</u> |
|--------------------------------|----------------------------|--------------------------------|---------------------------------------------------|----------------------------------------------------|
| D033                           | Hexachlorobutadiene.....   | BDL                            | 0.05                                              | 0.5                                                |
| D034                           | Hexachloroethane.....      | BDL                            | 0.05                                              | 3.0                                                |
| D008                           | Lead (Pb).....             | BDL                            | 0.1                                               | 5.0                                                |
| D013                           | Lindane.....               | BDL                            | 0.01                                              | 0.4                                                |
| D009                           | Mercury (Hg).....          | BDL                            | 0.005                                             | 0.2                                                |
| D014                           | Methoxychlor.....          | BDL                            | 0.5                                               | 10.0                                               |
| D036                           | Nitrobenzene.....          | BDL                            | 0.05                                              | 2.0                                                |
| D037                           | Pentachlorophenol.....     | BDL                            | 0.05                                              | 100.0                                              |
| D010                           | Selenium (Se).....         | BDL                            | 0.5                                               | 1.0                                                |
| D011                           | Silver (Ag).....           | BDL                            | 0.01                                              | 5.0                                                |
| D015                           | Toxaphene.....             | BDL                            | 0.05                                              | 0.5                                                |
| D041                           | 2,4,5-Trichlorophenol..... | BDL                            | 0.05                                              | 400.0                                              |
| D042                           | 2,4,6-Trichlorophenol..... | BDL                            | 0.05                                              | 2.0                                                |
| D017                           | 2,4,5-TP Silvex.....       | BDL                            | 0.1                                               | 1.0                                                |
| D038                           | Pyridine.....              | BDL                            | 0.05                                              | 5.0                                                |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| <u>EPA HW</u><br><u>Number</u> | <u>Parameter</u>          | <u>Result</u><br><u>(mg/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(mg/l)</u> | <u>Regulatory</u><br><u>Limit</u><br><u>(mg/l)</u> |
|--------------------------------|---------------------------|--------------------------------|---------------------------------------------------|----------------------------------------------------|
| D018                           | Benzene.....              | BDL                            | 0.02                                              | 0.5                                                |
| D019                           | Carbon tetrachloride..... | BDL                            | 0.02                                              | 0.5                                                |
| D021                           | Chlorobenzene.....        | BDL                            | 0.02                                              | 100.0                                              |
| D022                           | Chloroform.....           | BDL                            | 0.02                                              | 6.0                                                |
| D028                           | 1,2-Dichloroethane.....   | BDL                            | 0.02                                              | 0.5                                                |
| D029                           | 1,1-Dichloroethene.....   | BDL                            | 0.02                                              | 0.7                                                |
| D035                           | Methyl ethyl ketone.....  | BDL                            | 0.5                                               | 200.0                                              |
| D039                           | Tetrachloroethene.....    | BDL                            | 0.02                                              | 0.7                                                |
| D040                           | Trichloroethene.....      | BDL                            | 0.02                                              | 0.5                                                |
| D043                           | Vinyl chloride.....       | BDL                            | 0.02                                              | 0.2                                                |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina L. Pyle*  
Quality Assurance



# ANALYTICAL SERVICES, INC. <sup>478 481</sup>

## ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

### LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

February 26, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 91734-7

### Sample Description

Water, DDMT\Dunn Field Memphis TN, Project #20022, RW-005 EQ B, 02/06/98,  
14:30, received 02/11/98

### RESULTS

|                                            | <u>Result</u> | <u>Detection<br/>Limit</u> |
|--------------------------------------------|---------------|----------------------------|
| pH (laboratory) (EPA 9040).....            | 7.40          | -                          |
| Reactive Cyanide (mg/l) (EPA 7.3.3.2)..... | BDL           | 1                          |
| Reactive Sulfide (mg/l) (EPA 7.3.4.2)..... | BDL           | 5                          |
| <u>Metals</u>                              | <u>(mg/l)</u> | <u>(mg/l)</u>              |
| Total Arsenic (As) (EPA 6010).....         | BDL           | 0.01                       |
| Total Barium (Ba) (EPA 6010).....          | BDL           | 0.2                        |
| Total Cadmium (Cd) (EPA 6010).....         | BDL           | 0.005                      |
| Total Chromium (Cr) (EPA 6010).....        | BDL           | 0.01                       |
| Total Lead (Pb) (EPA 6010).....            | BDL           | 0.003                      |
| Total Mercury (Hg) (EPA 7470).....         | BDL           | 0.0005                     |
| Total Selenium (Se) (EPA 6010).....        | BDL           | 0.005                      |
| Total Silver (Ag) (EPA 6010).....          | BDL           | 0.01                       |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 3

February 26, 1998  
Report No. 91734-7

Water, DDMT\Dunn Field Memphis TN, Project #20022, RW-005 EQ B, 02/06/98,  
14:30, received 02/11/98

### RESULTS

| <u>Volatile Organics (EPA 8260)</u>                 | <u>Result<br/>(ug/l)</u> | <u>Detection<br/>Limit<br/>(ug/l)</u> |
|-----------------------------------------------------|--------------------------|---------------------------------------|
| Benzene.....                                        | BDL                      | 0.4                                   |
| Carbon tetrachloride.....                           | BDL                      | 2.1                                   |
| Chloroform.....                                     | 0.74                     | 0.3                                   |
| Chlorobenzene.....                                  | BDL                      | 0.4                                   |
| 1,2-Dichloroethane.....                             | BDL                      | 0.6                                   |
| 1,1-Dichloroethene.....                             | BDL                      | 1.2                                   |
| Methyl ethyl ketone.....                            | BDL                      | 1                                     |
| Tetrachloroethene.....                              | BDL                      | 1.4                                   |
| Trichloroethene.....                                | BDL                      | 1                                     |
| Vinyl chloride.....                                 | BDL                      | 1.1                                   |
| <u>Acid Extractable Organics (EPA 8270)</u>         | <u>(ug/l)</u>            | <u>(ug/l)</u>                         |
| Cresols.....                                        | BDL                      | 10                                    |
| Pentachlorophenol.....                              | BDL                      | 25                                    |
| 2,4,5-Trichlorophenol.....                          | BDL                      | 25                                    |
| 2,4,6-Trichlorophenol.....                          | BDL                      | 10                                    |
| <u>Base/Neutral Extractable Organics (EPA 8270)</u> | <u>(ug/l)</u>            | <u>(ug/l)</u>                         |
| 1,4-Dichlorobenzene.....                            | BDL                      | 10                                    |
| 2,4-Dinitrotoluene.....                             | BDL                      | 10                                    |
| Hexachlorobenzene.....                              | BDL                      | 10                                    |
| Hexachlorobutadiene.....                            | BDL                      | 10                                    |
| Hexachloroethane.....                               | BDL                      | 10                                    |
| Nitrobenzene.....                                   | BDL                      | 10                                    |
| Pyridine.....                                       | BDL                      | 10                                    |

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BDL - Below Detection Limit

OHM Remediation Services Corp.  
page 3 of 3

February 26, 1998  
Report No. 91734-7

Water, DDMT\Dunn Field Memphis TN, Project #20022, RW-005 EQ B, 02/06/98,  
14:30, received 02/11/98

### RESULTS

|                                          | Result        | Detection     |
|------------------------------------------|---------------|---------------|
|                                          | (ug/l)        | Limit         |
| <u>Pesticides (EPA 8081)</u>             |               | (ug/l)        |
| Chlordane.....                           | BDL           | 0.50          |
| Lindane.....                             | BDL           | 0.10          |
| Endrin.....                              | BDL           | 0.10          |
| Heptachlor.....                          | BDL           | 0.10          |
| Heptachlor epoxide.....                  | BDL           | 0.10          |
| Methoxychlor.....                        | BDL           | 0.30          |
| Toxaphene.....                           | BDL           | 5.0           |
| <u>Chlorinated Herbicides (EPA 8151)</u> | <u>(ug/l)</u> | <u>(ug/l)</u> |
| 2,4-D.....                               | BDL           | 5.0           |
| 2,4,5-TP (Silvex).....                   | BDL           | 10            |

BDL - Below Detection Limit

Respectfully submitted,

Shari Harper  
Project Manager

Christina C. Pyle  
Quality Assurance

cc: Mr. John Lore





# ANALYTICAL SERVICES, INC.

## ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

### LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

February 26, 1998

Attention: Ms. Elena Rodriguez

P.O. No. 1041997

Report No. 91734-8

### Sample Description

Water, DDMT\Dunn Field Memphis TN, Project #20022, Trip Blank,,, received 02/11/98

### RESULTS

| <u>Volatile Organics (EPA 8260)</u> | <u>Result</u><br><u>(ug/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(ug/l)</u> |
|-------------------------------------|--------------------------------|---------------------------------------------------|
| Benzene.....                        | BDL                            | 0.4                                               |
| Carbon tetrachloride.....           | BDL                            | 2.1                                               |
| Chloroform.....                     | BDL                            | 0.3                                               |
| Chlorobenzene.....                  | BDL                            | 0.4                                               |
| 1,2-Dichloroethane.....             | BDL                            | 0.6                                               |
| 1,1-Dichloroethene.....             | BDL                            | 1.2                                               |
| Methyl ethyl ketone.....            | BDL                            | 1                                                 |
| Tetrachloroethene.....              | BDL                            | 1.4                                               |
| Trichloroethene.....                | BDL                            | 1                                                 |
| Vinyl chloride.....                 | BDL                            | 1.1                                               |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager

*Christina D. Duff*  
Quality Assurance

Analytical Services Inc. Batch QC  
For Report Number :91734  
Chlorinated Herbicides

Matrix : Aqueous

Batch # 35974

Method : EPA 8151 / 615

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                              | 48         | 65          | 30        | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                  | 41         | 50          | 19        | 40 - 140           | 0 - 40       |
| 2,4,5-T                            | 41         | 68          | 49        | 40 - 140           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                               | 15         | 2           | 147       | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 11         | 28          | 91        | 40 - 140           | 0 - 40       |
| 2,4,5-T                             | 13         | 20          | 42        | 40 - 140           | 0 - 40       |

478 486

Analytical Services Inc. Batch QC

## Surrogate Recovery

## Chlorinated Herbicides

Matrix : Aqueous

Batch # 35974

Method : EPA 8151 / 615

## % Recovery Objectives

|             |            | S1  | DCAA |    | 20 - 160 |    |    |
|-------------|------------|-----|------|----|----------|----|----|
| Sample      | File       | S1  | S2   | S3 | S4       | S5 | S6 |
| 35974BLK    | 020698021F | 72  |      |    |          |    |    |
| 35974LCS    | 020698022F | 40  |      |    |          |    |    |
| 35974LCSD   | 020698023F | 39  |      |    |          |    |    |
| 91332-34    | 020698028R | 61  |      |    |          |    |    |
| 91332-34MS  | 020698029R | 48  |      |    |          |    |    |
| 91332-34MSD | 020698030R | 63  |      |    |          |    |    |
| 91332-35    | 020698031F | 15  |      |    |          |    |    |
| 91301-2     | 020698038F | 96  |      |    |          |    |    |
| 91301-3     | 020698039F | 70  |      |    |          |    |    |
| 35974LCSSR  | 020698044R | 100 |      |    |          |    |    |
| 35974LCSDRR | 020698045R | 100 |      |    |          |    |    |
| 91357       | 020698052R | 100 |      |    |          |    |    |
| 91429       | 020698053F | 86  |      |    |          |    |    |
| 91734-7     | 021398004F | 82  |      |    |          |    |    |
| 91556       | 021298097F | 119 |      |    |          |    |    |
| 91712       | 021998006F | 125 |      |    |          |    |    |
| 91844       | 021998012F | 83  |      |    |          |    |    |

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Q.C. Information for Batch # 35974

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Blank Results Information  
Chlorinated Herbicides Method : EPA 8151<sub>a</sub> / 615

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| Analyte  | Blank<br>Result | Detection<br>Limit |
|----------|-----------------|--------------------|
| 2,4-D    | BDL             | 5.0                |
| 2,4,5-TP | BDL             | 10                 |

Sample Batch Information  
Chlorinated Herbicides      Method : EPA 8151 / 615

| Sample ID   | Preparation |      |    | Preparation<br>Notes | Analysis |      |     | Inst # |
|-------------|-------------|------|----|----------------------|----------|------|-----|--------|
|             | Date        | Time | By |                      | Date     | Time | By  |        |
| 35974BLK    | 02/03/98    | 1505 | DH | CANCELLED            | 02/19/98 | 0128 | JQZ | GC-1   |
| 35974LCS    | 02/03/98    | 1505 | DH |                      | 02/06/98 | 0156 | JQZ | GC-1   |
| 35974LCSD   | 02/03/98    | 1505 | DH |                      | 02/06/98 | 0224 | JQZ | GC-1   |
| 91332-34    | 02/03/98    | 1505 | DH |                      | 02/06/98 | 0415 | JQZ | GC-1   |
| 91332-34MS  | 02/03/98    | 1505 | DH |                      | 02/06/98 | 0444 | JQZ | GC-1   |
| 91332-34MSD | 02/03/98    | 1505 | DH |                      | 02/06/98 | 0512 | JQZ | GC-1   |
| 91332-35    | 02/03/98    | 1505 | DH |                      | 02/06/98 | 0607 | JQZ | GC-1   |
| 91301-1     | 02/03/98    | 1505 | DH |                      | / /      |      |     |        |
| 91301-2     | 02/03/98    | 1505 | DH |                      | 02/06/98 | 0855 | JQZ | GC-1   |
| 91301-3     | 02/03/98    | 1505 | DH |                      | 02/06/98 | 0952 | JQZ | GC-1   |
| 91429       | 02/04/98    | 0845 | DH |                      | 02/06/98 | 1626 | JQZ | GC-1   |
| 91357       | 02/04/98    | 0845 | DH |                      | 02/06/98 | 1529 | JQZ | GC-1   |
| 35974LCSRR  | 02/04/98    | 1000 | DH |                      | 02/06/98 | 1144 | JQZ | GC-1   |
| 35974LCSDRR | 02/04/98    | 1000 | DH |                      | 02/06/98 | 1200 | JQZ | GC-1   |
| 91556       | 02/10/98    | 1600 | DH |                      | 02/12/98 | 1707 | JQZ | GC-1   |
| 91734-7     | 02/12/98    | 0835 | DH |                      | 02/13/98 | 1447 | JQZ | GC-1   |
| 91712       | 02/18/98    |      |    |                      | 02/19/98 | 1319 | JQZ | GC-1   |
| 91844       | 02/18/98    |      |    |                      | 02/06/98 | 1528 | JQZ | GC-1   |

Analytical Services Inc. Batch QC  
 For Report Number :91734  
 Base Neutrals / Acids

Matrix : Aqueous

Batch # 36216

Method : EPA 8270

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Phenol                             | 35         | 36          | 4         | 12 - 89            | 0 - 42       |
| 2-Chlorophenol                     | 64         | 64          | 1         | 27 - 123           | 0 - 40       |
| 1,4-Dichlorobenzene                | 68         | 65          | 4         | 36 - 97            | 0 - 28       |
| N-Nitrosodipropylamine             | 82         | 80          | 2         | 41 - 116           | 0 - 38       |
| 1,2,4-Trichlorobenzene             | 105        | 98          | 7         | 44 - 142           | 0 - 28       |
| 4-Chloro-3-methylphenol            | 73         | 72          | 1         | 23 - 97            | 0 - 42       |
| Acenaphthene                       | 107        | 110         | 2         | 46 - 118           | 0 - 31       |
| 2,4-Dinitrotoluene                 | 78         | 78          | 0         | 24 - 96            | 0 - 38       |
| 4-Nitrophenol                      | 40         | 38          | 6         | 10 - 80            | 0 - 50       |
| Pentachlorophenol                  | 95         | 93          | 3         | 9 - 103            | 0 - 50       |
| Pyrene                             | 101        | 101         | 0         | 26 - 127           | 0 - 31       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Phenol                              | 43         | 29          | 39        | 12 - 89            | 0 - 42       |
| 2-Chlorophenol                      | 53         | 32          | 50        | 27 - 123           | 0 - 40       |
| 1,4-Dichlorobenzene                 | 72         | 72          | 1         | 36 - 97            | 0 - 28       |
| N-Nitrosodipropylamine              | 80         | 80          | 0         | 41 - 116           | 0 - 38       |
| 1,2,4-Trichlorobenzene              | 105        | 104         | 1         | 44 - 142           | 0 - 28       |
| 4-Chloro-3-methylphenol             | 67         | 58          | 14        | 23 - 97            | 0 - 42       |
| Acenaphthene                        | 106        | 107         | 0         | 46 - 118           | 0 - 31       |
| 2,4-Dinitrotoluene                  | 99         | 93          | 6         | 24 - 96            | 0 - 38       |
| 4-Nitrophenol                       | 32         | 11          | 97        | 10 - 80            | 0 - 50       |
| Pentachlorophenol                   | 84         | 29          | 96        | 9 - 103            | 0 - 50       |
| Pyrene                              | 87         | 91          | 4         | 26 - 127           | 0 - 31       |

## Analytical Services Inc. Batch QC

## Surrogate Recovery

## Base Neutrals / Acids

Matrix : Aqueous

Batch # 36216

Method : EPA 8270

## % Recovery Objectives

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|    |                      |          |
|----|----------------------|----------|
| S1 | 2-Fluorophenol       | 21 - 100 |
| S2 | Phenol-d5            | 10 - 94  |
| S3 | Nitrobenzene-d5      | 35 - 114 |
| S4 | 2-Fluorobiphenyl     | 43 - 116 |
| S5 | 2,4,6-Tribromophenol | 10 - 123 |
| S6 | Terphenyl-d14        | 33 - 141 |

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| Sample      | File  | S1 | S2 | S3  | S4  | S5  | S6  |
|-------------|-------|----|----|-----|-----|-----|-----|
| 36216BLK    | A7898 | 52 | 43 | 103 | 112 | 102 | 113 |
| 36216LCS    | A7899 | 48 | 32 | 89  | 105 | 104 | 106 |
| 36216LCSD   | A7900 | 46 | 31 | 88  | 90  | 101 | 107 |
| 91734-7     | B3922 | 46 | 30 | 82  | 88  | 76  | 81  |
| 91800-1     | A7951 | 42 | 34 | 75  | 120 | 100 | 93  |
| 91800-2     | A7952 | 38 | 31 | 86  | 131 | 106 | 86  |
| 91800-3     | A7953 | 47 | 36 | 82  | 124 | 117 | 105 |
| 91800-30    | A7954 | 42 | 36 | 68  | 115 | 96  | 98  |
| 91800-31    | A7955 | 26 | 26 | 39  | 75  | 62  | 64  |
| 91800-32    | A7956 | 36 | 31 | 67  | 107 | 83  | 96  |
| 91800-33    | A7957 | 40 | 30 | 95  | 131 | 121 | 129 |
| 91800-33MS  | A7958 | 46 | 45 | 85  | 123 | 104 | 99  |
| 91800-33MSD | A7959 | 26 | 28 | 82  | 128 | 49  | 100 |
| 91800-34    | A7960 | 37 | 32 | 72  | 98  | 77  | 116 |
| 91800-35    | A7961 | 11 | 22 | 73  | 114 | 31  | 125 |
| 91751-3     | A7936 | 45 | 41 | 81  | 152 | 122 | 117 |
| 91800-4     | B4014 | 45 | 25 | 90  | 89  | 68  | 91  |
| 91800-7     | B4015 | 7  | 15 | 80  | 76  | 10  | 87  |
| 91800-8     | B4016 | 23 | 18 | 83  | 77  | 41  | 81  |
| 91800-9     | B4017 | 26 | 13 | 79  | 74  | 35  | 68  |
| 91893-3     | A7980 | 44 | 46 | 86  | 101 | 98  | 110 |
| 91800-10    | A7981 | 27 | 32 | 51  | 66  | 50  | 47  |

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Q.C. Information for Batch # 36216

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Blank Results Information  
Base Neutrals / Acids      Method : EPA 8270

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| Analyte               | Blank<br>Result | Detection<br>Limit |
|-----------------------|-----------------|--------------------|
| Cresols               | BDL             | 10                 |
| Pentachlorophenol     | BDL             | 25                 |
| 2,4,5-Trichlorophenol | BDL             | 25                 |
| 2,4,6-Trichlorophenol | BDL             | 10                 |
| 1,4-Dichlorobenzene   | BDL             | 10                 |
| 2,4-Dinitrotoluene    | BDL             | 10                 |
| Hexachlorobenzene     | BDL             | 10                 |
| Hexachlorobutadiene   | BDL             | 10                 |
| Hexachloroethane      | BDL             | 10                 |
| Nitrobenzene          | BDL             | 10                 |
| Pyridine              | BDL             | 10                 |



Sample Batch Information  
Base Neutrals / Acids      Method : EPA 8270

| Sample ID   | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst # |
|-------------|-------------|------|-------|----------------------|----------|------|-----|--------|
|             | Date        | Time | By    |                      | Date     | Time | By  |        |
| 36216BLK    | 02/09/98    | 1700 | JW    |                      | 02/11/98 | 1131 | TAS | 5970   |
| 36216LCS    | 02/09/98    | 1700 | JW    |                      | 02/11/98 | 1203 | TAS | 5970   |
| 36216LCSD   | 02/09/98    | 1700 | JW    |                      | 02/11/98 | 1235 | TAS | 5970   |
| 90405       | 02/09/98    | 1700 | JW    |                      | /        | /    |     |        |
| 91734-7     | 02/12/98    | 0900 | JW/CM |                      | 02/12/98 | 1730 | TAS | 5971   |
| 91751-3     | 02/13/98    | 0800 | TB    |                      | 02/16/98 | 1351 | TAS | 5970   |
| 91800-1     | 02/16/98    | 0900 | JW/CM |                      | 02/16/98 | 1407 | TAS | 5970   |
| 91800-2     | 02/16/98    | 0900 | JW/CM |                      | 02/16/98 | 1439 | TAS | 5970   |
| 91800-3     | 02/16/98    | 0900 | JW/CM |                      | 02/16/98 | 1511 | TAS | 5970   |
| 91800-30    | 02/16/98    | 0900 | JW/CM |                      | 02/16/98 | 1543 | TAS | 5970   |
| 91800-31    | 02/16/98    | 0900 | JW/CM |                      | 02/16/98 | 1615 | TAS | 5970   |
| 91800-32    | 02/16/98    | 0900 | JW/CM |                      | 02/16/98 | 1647 | TAS | 5970   |
| 91800-33    | 02/16/98    | 0900 | JW/CM |                      | 02/16/98 | 1720 | TAS | 5970   |
| 91800-33MS  | 02/16/98    | 0900 | JW/CM |                      | 02/16/98 | 1752 | TAS | 5970   |
| 91800-33MSD | 02/16/98    | 0900 | JW/CM |                      | 02/16/98 | 1823 | TAS | 5970   |
| 91800-34    | 02/16/98    | 0900 | JW/CM |                      | 02/16/98 | 1855 | TAS | 5970   |
| 91800-35    | 02/16/98    | 0900 | JW/CM |                      | 02/16/98 | 1927 | TAS | 5970   |
| 91800-4     | 02/16/98    | 1400 | JW/CM |                      | 02/17/98 | 2152 | TAS | 5971   |
| 91800-7     | 02/16/98    | 1400 | JW/CM |                      | 02/17/98 | 2225 | TAS | 5971   |
| 91800-8     | 02/16/98    | 1400 | JW/CM |                      | 02/17/98 | 2258 | TAS | 5971   |
| 91800-9     | 02/16/98    | 1400 | JW/CM |                      | 02/17/98 | 2331 | TAS | 5971   |
| 91800-10    | 02/16/98    | 1400 | JW/CM |                      | 02/18/98 | 1737 | TAS | 5970   |
| 91796-1     | 02/16/98    | 1000 | TB    |                      | /        | /    |     |        |
| 91796-1DUP  | 02/16/98    | 1000 | TB    |                      | /        | /    |     |        |
| 91796-2     | 02/16/98    | 1000 | TB    |                      | /        | /    |     |        |
| 91893-3     | /           | /    |       |                      | 02/18/98 | 1703 | TAS | 5970   |

Analytical Services Inc. Batch QC  
For Report Number :91734  
Organochlorine Pesticides

Matrix : Aqueous

Batch # 36227

Method : EPA 8081

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                | 96         | 95          | 1         | 32 - 127           | 0 - 40       |
| Heptachlor                         | 88         | 88          | 0         | 34 - 111           | 0 - 40       |
| Aldrin                             | 100        | 101         | 1         | 42 - 122           | 0 - 40       |
| Dieldrin                           | 92         | 93          | 1         | 36 - 146           | 0 - 40       |
| Endrin                             | 87         | 86          | 1         | 30 - 147           | 0 - 40       |
| 4,4'-DDT                           | 68         | 69          | 1         | 25 - 160           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                 | 128        | 131         | 2         | 32 - 127           | 0 - 40       |
| Heptachlor                          | 115        | 117         | 2         | 34 - 111           | 0 - 40       |
| Aldrin                              | 126        | 127         | 1         | 42 - 122           | 0 - 40       |
| Dieldrin                            | 124        | 122         | 2         | 36 - 146           | 0 - 40       |
| Endrin                              | 122        | 122         | 0         | 30 - 147           | 0 - 40       |
| 4,4'-DDT                            | 97         | 99          | 2         | 25 - 160           | 0 - 40       |

Analytical Services Inc. Batch QC  
Surrogate Recovery  
Organochlorine Pesticides

Matrix : Aqueous

Batch # 36227

Method : EPA 8081

## % Recovery Objectives

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|    |                      |          |
|----|----------------------|----------|
| S1 | Dibutylchlorendate   | 14 - 161 |
| S2 | Tetrachloro-m-xylene | 47 - 113 |
| S3 | Decachlorobiphenyl   | 10 - 139 |

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| Sample      | File           | S1  | S2  | S3  | S4 | S5 | S6 |
|-------------|----------------|-----|-----|-----|----|----|----|
| 91556       | 021398035F     | 165 | 90  | 134 |    |    |    |
| 91556MS     | 021398032F     | 166 | 98  | 151 |    |    |    |
| 91556MSD    | 021398033F     | 161 | 92  | 144 |    |    |    |
| 36227BLK    | 021398041F     | 148 | 117 | 123 |    |    |    |
| 36227LCS    | 021398042F     | 148 | 119 | 117 |    |    |    |
| 36277LCSD   | 021398043F     | 148 | 113 | 115 |    |    |    |
| 91734-7     | 021798004F     | 131 | 107 | 137 |    |    |    |
| 36227BLKRR  | 011798088F0401 | 145 | 76  | 111 |    |    |    |
| 36227LCSRR  | 011798089F0401 | 149 | 88  | 109 |    |    |    |
| 36227LCSDRR | 011798090F0401 | 147 | 90  | 103 |    |    |    |

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Q.C. Information for Batch # 36227

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Blank Results Information  
Organochlorine Pesticides Method : EPA 8081

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| Analyte            | Blank<br>Result | Detection<br>Limit |
|--------------------|-----------------|--------------------|
| Chlordane          | BDL             | 0.50               |
| Lindane            | BDL             | 0.10               |
| Endrin             | BDL             | 0.10               |
| Heptachlor         | BDL             | 0.10               |
| Heptachlor epoxide | BDL             | 0.10               |
| Methoxychlor       | BDL             | 0.30               |
| Toxaphene          | BDL             | 5.0                |

Sample Batch Information  
 Organochlorine Pesticides      Method : EPA 8081

| Sample ID   | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst # |
|-------------|-------------|------|-------|----------------------|----------|------|-----|--------|
|             | Date        | Time | By    |                      | Date     | Time | By  |        |
| 36227BLK    | 02/10/98    | 0900 | JW/CM |                      | 02/16/98 | 1801 | JQZ | GC-3   |
| 36227LCS    | 02/10/98    | 0900 | JW/CM |                      | 02/16/98 | 1840 | JQZ | GC-3   |
| 36227LCSD   | 02/10/98    | 0900 | JW/CM |                      | /        | /    |     |        |
| 91556       | 02/10/98    | 0900 | JW/CM |                      | 02/16/98 | 1503 | JQZ | GC-3   |
| 91556MS     | 02/10/98    | 0900 | JW/CM |                      | 02/16/98 | 1345 | JQZ | GC-3   |
| 91556MSD    | 02/10/98    | 0900 | JW/CM |                      | 02/16/98 | 1409 | JQZ | GC-3   |
| 91734-7     | 02/12/98    | 0900 | JW/CM |                      | 02/17/98 | 0837 | JQZ | GC-3   |
| 91796-1     | 02/16/98    | 1000 | TB    |                      | /        | /    |     |        |
| 91796-1DUP  | 02/16/98    | 1000 | TB    |                      | /        | /    |     |        |
| 91796-2     | 02/16/98    | 1000 | TB    |                      | /        | /    |     |        |
| 91796-2DUP  | 02/16/98    | 1000 | TB    |                      | /        | /    |     |        |
| 36227BLKRR  | 02/17/98    | 1700 | JW    |                      | 02/17/98 | 0130 | JQZ | GC-3   |
| 36227LCSRR  | 02/17/98    | 1700 | JW    |                      | 02/16/98 | 0218 | JQZ | GC-3   |
| 36227LCSDRR | 02/17/98    | 1700 | JW    |                      | 02/16/98 | 0218 | JQZ | GC-3   |
| 91886-2     | 02/17/98    | 1400 | JW/CM |                      | /        | /    |     |        |
| 91886-3     | 02/17/98    | 1400 | JW/CM |                      | /        | /    |     |        |
| 91886-4     | 02/17/98    | 1400 | JW/CM |                      | /        | /    |     |        |
| 91886-5     | 02/17/98    | 1400 | JW/CM |                      | /        | /    |     |        |
| 91886-6     | 02/17/98    | 1400 | JW/CM |                      | /        | /    |     |        |
| 91883       | 02/17/98    | 1400 | JW/CM |                      | /        | /    |     |        |
| 91902-3     | 02/18/98    | 0900 | JW/CM |                      | /        | /    |     |        |
| 91902-4     | 02/18/98    | 0900 | JW/CM |                      | /        | /    |     |        |

Analytical Services Inc. Batch QC  
For Report Number :91734  
Chlorinated Herbicides

Matrix : TCLP

Batch # 36305

Method : EPA 8151

| Lab Control Information<br>Analyte  | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                               | 71         | 83          | 16        | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 82         | 90          | 9         | 40 - 140           | 0 - 40       |
| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
| 2,4-D                               | 95         | 120         | 23        | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 68         | 82          | 19        | 40 - 140           | 0 - 40       |

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Matrix : TCLP

Batch # 36305

Method : EPA 8151

## % Recovery Objectives

|            |            | S1  | DCAA |    | 18 - 163 |    |    |
|------------|------------|-----|------|----|----------|----|----|
| Sample     | File       | S1  | S2   | S3 | S4       | S5 | S6 |
| 36305BLK   | 021298018F | 74  |      |    |          |    |    |
| 36305LCS   | 021298019F | 78  |      |    |          |    |    |
| 36305LCSD  | 021298020F | 96  |      |    |          |    |    |
| 91734-1    | 021298021F | 97  |      |    |          |    |    |
| 91734-2    | 021298022F | 109 |      |    |          |    |    |
| 91734-3    | 021298023F | 112 |      |    |          |    |    |
| 91734-4    | 021298024F | 76  |      |    |          |    |    |
| 91734-5    | 021298025F | 88  |      |    |          |    |    |
| 91734-6    | 021298026F | 114 |      |    |          |    |    |
| 91734-6DUP | 021298027F | 110 |      |    |          |    |    |
| 91734-1MS  | 021298030F | 87  |      |    |          |    |    |
| 91734-1MSD | 021298031F | 96  |      |    |          |    |    |
| 91976-1    | 021998010F | 96  |      |    |          |    |    |
| 91976-2    | 021998011F | 98  |      |    |          |    |    |

Q.C. Information for Batch # 36305

Printed: 02/23/98 08:19:11

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Blank Results Information  
Chlorinated Herbicides Method : EPA 8151

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| Analyte |                 | Blank<br>Result | Detection<br>Limit |
|---------|-----------------|-----------------|--------------------|
| D016    | 2,4-D           | BDL             | 0.05               |
| D017    | 2,4,5-TP Silvex | BDL             | 0.1                |



Sample Batch Information  
Chlorinated Herbicides      Method : EPA 8151

| Sample ID  | Preparation |      |    | Preparation<br>Notes | Analysis |      |     | Inst # |
|------------|-------------|------|----|----------------------|----------|------|-----|--------|
|            | Date        | Time | By |                      | Date     | Time | By  |        |
| 36305BLK   | 02/13/98    | 1030 | DH |                      | 02/13/98 | 2033 | JQZ | GC-1   |
| 36305LCS   | 02/13/98    | 1030 | DH |                      | 02/13/98 | 2101 | JQZ | GC-1   |
| 36305LCSD  | 02/13/98    | 1030 | DH |                      | 02/13/98 | 1543 | JQZ | GC-1   |
| 91734-1    | 02/13/98    | 1030 | DH |                      | 02/13/98 | 2156 | JQZ | GC-1   |
| 91734-1MS  | 02/13/98    | 1030 | DH |                      | 02/14/98 | 0209 | JQZ | GC-1   |
| 91734-1MSD | 02/13/98    | 1030 | DH |                      | 02/14/98 | 0238 | JQZ | GC-1   |
| 91734-2    | 02/13/98    | 1030 | DH |                      | 02/13/98 | 2157 | JQZ | GC-1   |
| 91734-3    | 02/13/98    | 1030 | DH |                      | 02/13/98 | 2253 | JQZ | GC-1   |
| 91734-4    | 02/13/98    | 1030 | DH |                      | 02/13/98 | 2321 | JQZ | GC-1   |
| 91734-5    | 02/13/98    | 1030 | DH |                      | 02/13/98 | 2349 | JQZ | GC-1   |
| 91734-6    | 02/13/98    | 1030 | DH |                      | 02/14/98 | 0017 | JQZ | GC-1   |
| 91734-6DUP | 02/13/98    | 1030 | DH |                      | 02/14/98 | 0045 | JQZ | GC-1   |
| 91976-1    | 02/18/98    | 1615 | DH |                      | 02/19/98 | 1431 | JQZ | GC-1   |
| 91976-2    | 02/18/98    | 1615 | DH |                      | 02/19/98 | 1500 | JQZ | GC-1   |
| 91902-1    | 02/19/98    | 1150 | DH |                      | /        | /    |     |        |
| 91902-2    | 02/19/98    | 1150 | DH |                      | /        | /    |     |        |
| 91936-1    | 02/19/98    | 1150 | DH |                      | /        | /    |     |        |

Analytical Services Inc. Batch QC.0  
 For Report Number :91734  
 Base Neutrals / Acids

Matrix : TCLP

Batch # 36306

Method : EPA 8270

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| o-Cresol                           | 37         | 44          | 17        | 10 - 150           | 0 - 50       |
| m-Cresol + p-Cresol                | 33         | 39          | 18        | 10 - 150           | 0 - 50       |
| 1,4-Dichlorobenzene                | 57         | 48          | 17        | 36 - 97            | 0 - 28       |
| 2,4-Dinitrotoluene                 | 49         | 60          | 20        | 24 - 96            | 0 - 38       |
| Hexachlorobenzene                  | 59         | 73          | 21        | 10 - 152           | 0 - 40       |
| Hexachlorobutadiene                | 41         | 46          | 11        | 24 - 116           | 0 - 40       |
| Hexachloroethane                   | 59         | 43          | 33        | 40 - 113           | 0 - 40       |
| Nitrobenzene                       | 46         | 65          | 35        | 35 - 180           | 0 - 40       |
| Pentachlorophenol                  | 29         | 36          | 22        | 9 - 103            | 0 - 50       |
| Pyridine                           | 24         | 34          | 36        | 10 - 110           | 0 - 90       |
| 2,4,5-Trichlorophenol              | 41         | 57          | 32        | 10 - 150           | 0 - 50       |
| 2,4,6-Trichlorophenol              | 39         | 56          | 36        | 37 - 144           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| o-Cresol                            | 37         | 33          | 10        | 10 - 150           | 0 - 50       |
| m-Cresol + p-Cresol                 | 32         | 30          | 7         | 10 - 150           | 0 - 50       |
| 1,4-Dichlorobenzene                 | 48         | 40          | 20        | 36 - 97            | 0 - 28       |
| 2,4-Dinitrotoluene                  | 58         | 51          | 12        | 24 - 96            | 0 - 38       |
| Hexachlorobenzene                   | 73         | 59          | 21        | 10 - 152           | 0 - 40       |
| Hexachlorobutadiene                 | 43         | 37          | 15        | 24 - 116           | 0 - 40       |
| Hexachloroethane                    | 42         | 54          | 25        | 40 - 113           | 0 - 40       |
| Nitrobenzene                        | 65         | 55          | 17        | 35 - 180           | 0 - 40       |
| Pentachlorophenol                   | 11         | 15          | 31        | 9 - 103            | 0 - 50       |
| Pyridine                            | 31         | 30          | 2         | 10 - 110           | 0 - 90       |
| 2,4,5-Trichlorophenol               | 32         | 44          | 31        | 10 - 150           | 0 - 50       |
| 2,4,6-Trichlorophenol               | 41         | 41          | 1         | 37 - 144           | 0 - 40       |

## Analytical Services Inc. Batch QC

Surrogate Recovery

Base Neutrals / Acids

Matrix : TCLP

Batch # 36306

Method : EPA 8270

## % Recovery Objectives

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|    |                      |          |
|----|----------------------|----------|
| S1 | 2-Fluorophenol       | 21 - 100 |
| S2 | Phenol-d5            | 10 - 94  |
| S3 | Nitrobenzene-d5      | 35 - 114 |
| S4 | 2-Fluorobiphenyl     | 43 - 116 |
| S5 | 2,4,6-Tribromophenol | 10 - 123 |
| S6 | Terphenyl-d14        | 33 - 141 |

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| Sample                     | File  | S1 | S2 | S3 | S4  | S5  | S6  |
|----------------------------|-------|----|----|----|-----|-----|-----|
| <hr/>                      |       |    |    |    |     |     |     |
| 36306BLK                   | B3934 | 23 | 12 | 40 | 45  | 37  | 68  |
| 36306LCS                   | B3935 | 22 | 13 | 49 | 51  | 56  | 81  |
| 36306LCSD                  | B3936 | 30 | 18 | 68 | 68  | 76  | 98  |
| 91734-1                    | B3943 | 31 | 17 | 66 | 65  | 71  | 93  |
| 91734-1MS                  | B3944 | 22 | 13 | 67 | 69  | 44  | 76  |
| 91734-1MSD                 | B3945 | 22 | 14 | 61 | 60  | 57  | 72  |
| 91734-2                    | B3946 | 21 | 11 | 50 | 53  | 45  | 56  |
| 91734-3                    | B3947 | 13 | 11 | 55 | 56  | 21  | 87  |
| 91808                      | B3957 | 64 | 21 | 94 | 70  | 22  | 78  |
| 91734-4                    | B3958 | 5  | 6  | 46 | 45  | 7   | 47  |
| ^^Note: RE-EXTRACT         |       |    |    |    |     |     |     |
| <hr/>                      |       |    |    |    |     |     |     |
| 91734-5                    | B3959 | 30 | 17 | 72 | 75  | 91  | 94  |
| 91734-5DUP                 | B3960 | 29 | 17 | 74 | 75  | 76  | 84  |
| 91734-6                    | B3961 | 22 | 10 | 43 | 44  | 53  | 81  |
| 91751-1                    | B3967 | 32 | 23 | 67 | 83  | 75  | 103 |
| ^^Note: 1:10               |       |    |    |    |     |     |     |
| <hr/>                      |       |    |    |    |     |     |     |
| 91751-2                    | B3968 | 36 | 29 | 61 | 149 | 115 | 106 |
| ^^Note: 1:50 MATRIX EFFECT |       |    |    |    |     |     |     |
| <hr/>                      |       |    |    |    |     |     |     |
| 91734-4RR                  | B3995 | 5  | 2  | 66 | 72  | 14  | 123 |
| ^^Note: MATRIX EFFECT      |       |    |    |    |     |     |     |
| <hr/>                      |       |    |    |    |     |     |     |
| 91976-1                    | A7992 | 27 | 39 | 87 | 99  | 67  | 99  |
| 91976-2                    | A7993 | 22 | 35 | 80 | 97  | 39  | 102 |

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Q.C. Information for Batch # 36306

Printed: 02/23/98 08:19:13

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Blank Results Information  
Base Neutrals / Acids      Method : EPA 8270

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| Analyte |                       | Blank<br>Result | Detection<br>Limit |
|---------|-----------------------|-----------------|--------------------|
| D026    | Total Cresol          | BDL             | 0.05               |
| D027    | 1,4-Dichlorobenzene   | BDL             | 0.05               |
| D030    | 2,4-Dinitrotoluene    | BDL             | 0.05               |
| D032    | Hexachlorobenzene     | BDL             | 0.05               |
| D033    | Hexachlorobutadiene   | BDL             | 0.05               |
| D034    | Hexachloroethane      | BDL             | 0.05               |
| D036    | Nitrobenzene          | BDL             | 0.05               |
| D037    | Pentachlorophenol     | BDL             | 0.05               |
| D041    | 2,4,5-Trichlorophenol | BDL             | 0.05               |
| D042    | 2,4,6-Trichlorophenol | BDL             | 0.05               |
| D038    | Pyridine              | BDL             | 0.05               |

Sample Batch Information  
Base Neutrals / Acids      Method : EPA 8270

| Sample ID  | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst # |
|------------|-------------|------|-------|----------------------|----------|------|-----|--------|
|            | Date        | Time | By    |                      | Date     | Time | By  |        |
| 36306BLK   | 02/13/98    | 0900 | JW/CM |                      | 02/15/98 | 1457 | TAS | 5971   |
| 36306LCS   | 02/13/98    | 0900 | JW/CM |                      | 02/15/98 | 1532 | TAS | 5971   |
| 36306LCSD  | 02/13/98    | 0900 | JW/CM |                      | 02/15/98 | 1607 | TAS | 5971   |
| 91734-1    | 02/13/98    | 0900 | JW/CM |                      | 02/15/98 | 2011 | TAS | 5971   |
| 91734-1MS  | 02/13/98    | 0900 | JW/CM |                      | 02/15/98 | 2046 | TAS | 5971   |
| 91734-1MSD | 02/13/98    | 0900 | JW/CM |                      | 02/15/98 | 2120 | TAS | 5971   |
| 91734-2    | 02/13/98    | 0900 | JW/CM |                      | 02/15/98 | 2155 | TAS | 5971   |
| 91734-3    | 02/13/98    | 0900 | JW/CM |                      | 02/15/98 | 2230 | TAS | 5971   |
| 91734-4    | 02/13/98    | 0900 | JW/CM |                      | 02/16/98 | 0430 | TAS | 5971   |
| 91734-5    | 02/13/98    | 0900 | JW/CM |                      | 02/16/98 | 0505 | TAS | 5971   |
| 91734-5DUP | 02/13/98    | 0900 | JW/CM |                      | 02/16/98 | 0539 | TAS | 5971   |
| 91734-6    | 02/13/98    | 0900 | JW/CM |                      | 02/16/98 | 0614 | TAS | 5971   |
| 91751-1    | 02/13/98    | 0900 | JW/CM |                      | 02/16/98 | 0942 | TAS | 5971   |
| 91751-2    | 02/13/98    | 0900 | JW/CM |                      | 02/16/98 | 1017 | TAS | 5971   |
| 91808      | 02/13/98    | 0900 | JW/CM |                      | 02/16/98 | 0355 | TAS | 5971   |
| 91734-4RR  | 02/16/98    | 1400 | JW/CM |                      | 02/17/98 | 0212 | TAS | 5971   |
| 91976-1    | 02/18/98    | 1500 | JW    |                      | 02/19/98 | 0936 | TAS | 5970   |
| 91976-2    | 02/18/98    | 1500 | JW    |                      | 02/19/98 | 1009 | TAS | 5970   |
| 91936-1    | 02/20/98    | 1400 | JW/CM |                      | /        | /    |     |        |
| 91945      | 02/20/98    | 1400 | JW/CM |                      | /        | /    |     |        |

Analytical Services Inc. Batch QC  
 For Report Number :91734  
 Organochlorine Pesticides

Matrix : TCLP

Batch # 36371

Method : EPA 8081

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                | 96         | 100         | 5         | 32 - 127           | 0 - 40       |
| Heptachlor                         | 95         | 99          | 4         | 34 - 111           | 0 - 40       |
| Toxaphene                          | 82         | 88          | 7         | 25 - 160           | 0 - 40       |
| Heptachlor epoxide                 | 100        | 105         | 4         | 25 - 160           | 0 - 40       |
| Endrin                             | 76         | 79          | 4         | 30 - 147           | 0 - 40       |
| Chlordane                          | 96         | 102         | 7         | 25 - 160           | 0 - 40       |
| Methoxychlor                       | 100        | 100         | 0         | 25 - 160           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                 | 96         | 102         | 6         | 32 - 127           | 0 - 40       |
| Heptachlor                          | 84         | 90          | 7         | 34 - 111           | 0 - 40       |
| Toxaphene                           | 97         | 98          | 1         | 25 - 160           | 0 - 40       |
| Heptachlor epoxide                  | 94         | 104         | 10        | 25 - 160           | 0 - 40       |
| Endrin                              | 77         | 81          | 6         | 30 - 147           | 0 - 40       |
| Chlordane                           | 108        | 138         | 24        | 25 - 160           | 0 - 40       |
| Methoxychlor                        | 89         | 93          | 4         | 25 - 160           | 0 - 40       |

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Organochlorine Pesticides

Matrix : TCLP

Batch # 36371

Method : EPA 8081

## % Recovery Objectives

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|    |                      |          |
|----|----------------------|----------|
| S1 | Dibutylchlorendate   | 34 - 151 |
| S2 | Tetrachloro-m-xylene | 40 - 111 |
| S3 | Decachlorobiphenyl   | 24 - 153 |

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| Sample     | File       | S1  | S2 | S3  | S4 | S5 | S6 |
|------------|------------|-----|----|-----|----|----|----|
| <hr/>      |            |     |    |     |    |    |    |
| 36371BLK   | 021398014F | 95  | 70 | 84  |    |    |    |
| 36371LCS   | 021398015F | 106 | 71 | 90  |    |    |    |
| 36371LCSD  | 021398016F | 108 | 81 | 109 |    |    |    |
| 91734-1    | 021398017F | 86  | 58 | 94  |    |    |    |
| 91734-2    | 021398018F | 99  | 75 | 111 |    |    |    |
| 91734-3    | 021398019F | 101 | 76 | 106 |    |    |    |
| 91734-4    | 021398020F | 108 | 74 | 111 |    |    |    |
| 91734-5    | 021398021F | 99  | 85 | 99  |    |    |    |
| 01734-6    | 021398022F | 111 | 60 | 96  |    |    |    |
| 91734-6DUP | 021398023F | 118 | 94 | 111 |    |    |    |
| 91734-2MS  | 021398039F | 131 | 80 | 123 |    |    |    |
| 91734-2MSD | 021398040F | 137 | 91 | 132 |    |    |    |
| 91976-1    | 021898066F | 120 | 97 | 104 |    |    |    |
| 91976-2    | 021898067F | 108 | 97 | 78  |    |    |    |

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Q.C. Information for Batch # 36371

Printed: 02/23/98 08:19:14

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Blank Results Information  
Organochlorine Pesticides Method : EPA 8081

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| Analyte |                    | Blank<br>Result | Detection<br>Limit |
|---------|--------------------|-----------------|--------------------|
| D020    | Chlordane          | BDL             | 0.01               |
| D012    | Endrin             | BDL             | 0.001              |
| D031    | Heptachlor         | BDL             | 0.001              |
| D031    | Heptachlor epoxide | BDL             | 0.001              |
| D013    | Lindane            | BDL             | 0.01               |
| D014    | Methoxychlor       | BDL             | 0.5                |
| D015    | Toxaphene          | BDL             | 0.05               |



Sample Batch Information  
 Organochlorine Pesticides      Method : EPA 8081

| Sample ID  | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst # |
|------------|-------------|------|-------|----------------------|----------|------|-----|--------|
|            | Date        | Time | By    |                      | Date     | Time | By  |        |
| 36371BLK   | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0032 | JQZ | GC-3   |
| 36371LCS   | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0101 | JQZ | GC-3   |
| 36371LCSD  | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0130 | JQZ | GC-3   |
| 91734-1    | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0159 | JQZ | GC-3   |
| 91734-2    | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0228 | JQZ | GC-3   |
| 91734-2MS  | 02/13/98    | 1400 | JW/CM |                      | 02/16/98 | 1639 | JQZ | GC-3   |
| 91734-2MSD | 02/13/98    | 1400 | JW/CM |                      | 02/16/98 | 1703 | JQZ | GC-3   |
| 91734-3    | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0257 | JQZ | GC-3   |
| 91734-4    | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0326 | JQZ | GC-3   |
| 91734-5    | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0355 | JQZ | GC-3   |
| 91734-6    | 02/13/98    | 1400 | JW/CM |                      | /        | /    |     |        |
| 91734-6DUP | 02/13/98    | 1400 | JW/CM |                      | 02/16/98 | 0935 | JQZ | GC-3   |
| 91976-1    | 02/18/98    | 1500 | JW    |                      | 02/19/98 | 1423 | JQZ | GC-3   |
| 91976-2    | 02/18/98    | 1500 | JW    |                      | 02/19/98 | 1447 | JQZ | GC-3   |
| 91902-1    | 02/19/98    | 1700 | JW/CM |                      | /        | /    |     |        |
| 91902-2    | 02/19/98    | 1700 | JW/CM |                      | /        | /    |     |        |
| 91936-1    | 02/19/98    | 1700 | JW/CM |                      | /        | /    |     |        |
| 01734-6    | /           | /    |       |                      | 02/14/98 | 0905 | JQZ | GC-3   |

Analytical Services Inc. Batch QC  
For Report Number :91734  
Volatile Organics

Matrix : Aqueous

Batch # 36388

Method : EPA 8260

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 1,1-Dichloroethene                 | 109        | 108         | 1         | 61 - 145           | 0 - 14       |
| Trichloroethene                    | 100        | 98          | 2         | 71 - 120           | 0 - 14       |
| Benzene                            | 103        | 101         | 2         | 76 - 127           | 0 - 11       |
| Toluene                            | 101        | 102         | 1         | 76 - 125           | 0 - 13       |
| Chlorobenzene                      | 100        | 101         | 1         | 75 - 130           | 0 - 13       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 1,1-Dichloroethene                  | 95         | 104         | 9         | 61 - 145           | 0 - 14       |
| Trichloroethene                     | 116        | 120         | 3         | 71 - 120           | 0 - 14       |
| Benzene                             | 111        | 114         | 3         | 76 - 127           | 0 - 11       |
| Toluene                             | 106        | 104         | 2         | 76 - 125           | 0 - 13       |
| Chlorobenzene                       | 105        | 106         | 0         | 75 - 130           | 0 - 13       |

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Aqueous

Batch # 36388

Method : EPA 8260

## % Recovery Objectives

|    |                       |          |
|----|-----------------------|----------|
| S1 | 1,2-Dichloroethane-d4 | 76 - 119 |
| S2 | Toluene-d8            | 88 - 110 |
| S3 | Ethylbenzene-d10      | 75 - 115 |
| S4 | 4-Bromofluorobenzene  | 86 - 120 |

| Sample       | File  | S1  | S2  | S3  | S4  | S5 | S6 |
|--------------|-------|-----|-----|-----|-----|----|----|
| 36388LCS     | A1016 | 105 | 89  | 101 | 101 |    |    |
| 36388LCSD    | A1017 | 98  | 101 | 104 | 103 |    |    |
| 36388BLK     | A1018 | 103 | 100 | 99  | 103 |    |    |
| 91734-7      | A1019 | 105 | 100 | 97  | 101 |    |    |
| 91734-8      | A1020 | 103 | 97  | 97  | 96  |    |    |
| 91751-4      | A1022 | 104 | 97  | 101 | 99  |    |    |
| 91751-3D     | A1023 | 110 | 99  | 100 | 98  |    |    |
| 91736-1      | A1024 | 103 | 100 | 98  | 96  |    |    |
| 91736-2      | A1025 | 113 | 103 | 98  | 101 |    |    |
| 91736-3      | A1026 | 105 | 93  | 98  | 97  |    |    |
| 91736-3MS    | A1027 | 103 | 99  | 100 | 98  |    |    |
| 91736-3MSD   | A1028 | 106 | 96  | 98  | 97  |    |    |
| 91736-4      | A1029 | 112 | 100 | 97  | 98  |    |    |
| 91723        | A1030 | 115 | 103 | 98  | 99  |    |    |
| 91556        | C1427 | 100 | 97  | 101 | 94  |    |    |
| 91556DUP     | C1428 | 101 | 98  | 99  | 95  |    |    |
| 91751-3      | A1089 | 112 | 110 | 99  | 108 |    |    |
| 91736-2D     | B3294 | 92  | 97  | 86  | 100 |    |    |
| ^^Note: DF=5 |       |     |     |     |     |    |    |
| 91898-4      | B3295 | 90  | 97  | 89  | 104 |    |    |
| 91898-3      | B3296 | 97  | 96  | 81  | 98  |    |    |
| 91718-1      | B3310 | 89  | 95  | 91  | 105 |    |    |
| 91718-2      | B3311 | 96  | 98  | 82  | 92  |    |    |
| 91718-1D     | A1144 | 109 | 111 | 97  | 115 |    |    |
| 91718-2D     | A1145 | 112 | 110 | 100 | 113 |    |    |
| 91797-2      | C1489 | 114 | 83  | 69  | 100 |    |    |
| 91797-4      | C1490 | 111 | 96  | 91  | 102 |    |    |
| 91797-7      | C1491 | 112 | 97  | 97  | 103 |    |    |
| 91797-10     | C1492 | 112 | 98  | 95  | 102 |    |    |
| 91797-12     | C1493 | 113 | 100 | 103 | 103 |    |    |
| 91797-15     | C1494 | 112 | 101 | 105 | 103 |    |    |
| 91797-2DUP   | C1556 | 101 | 88  | 77  | 97  |    |    |

Q.C. Information for Batch # 36388

Printed: 02/23/98 08:19:15

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Blank Results Information  
Volatile Organics      Method : EPA 8260

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| Analyte              | Blank<br>Result | Detection<br>Limit |
|----------------------|-----------------|--------------------|
| Benzene              | BDL             | 0.4                |
| Carbon tetrachloride | BDL             | 2.1                |
| Chloroform           | BDL             | 0.3                |
| Chlorobenzene        | BDL             | 0.4                |
| 1,2-Dichloroethane   | BDL             | 0.6                |
| 1,1-Dichloroethene   | BDL             | 1.2                |
| Methyl ethyl ketone  | BDL             | 1                  |
| Tetrachloroethene    | BDL             | 1.4                |
| Trichloroethene      | BDL             | 1                  |
| Vinyl chloride       | BDL             | 1.1                |

Sample Batch Information  
Volatile Organics Method : EPA 8260

| Sample ID  | Preparation |         | Preparation<br>Notes | Analysis |          |      | Inst # |
|------------|-------------|---------|----------------------|----------|----------|------|--------|
|            | Date        | Time By |                      | Date     | Time By  |      |        |
| 36388LCS   | /           | /       |                      | 02/15/98 | 1227 RFA | VOA1 |        |
| 36388LCSD  | /           | /       |                      | 02/15/98 | 1254 RFA | VOA1 |        |
| 36388BLK   | /           | /       |                      | 02/15/98 | 1321 RFA | VOA1 |        |
| 91734-7    | /           | /       |                      | 02/15/98 | 1348 RFA | VOA1 |        |
| 91734-8    | /           | /       |                      | 02/15/98 | 1415 RFA | VOA1 |        |
| 91751-4    | /           | /       |                      | 02/15/98 | 1633 RFA | VOA1 |        |
| 91751-3    | /           | /       |                      | 02/17/98 | 1647 RFA | VOA1 |        |
| 91736-1    | /           | /       |                      | 02/15/98 | 1727 RFA | VOA1 |        |
| 91736-2    | /           | /       |                      | 02/15/98 | 1754 RFA | VOA1 |        |
| 91736-3    | /           | /       |                      | 02/15/98 | 1822 RFA | VOA1 |        |
| 91736-3MS  | /           | /       |                      | 02/15/98 | 1849 RFA | VOA1 |        |
| 91736-3MSD | /           | /       |                      | 02/15/98 | 1916 RFA | VOA1 |        |
| 91736-4    | /           | /       |                      | 02/15/98 | 1943 RFA | VOA1 |        |
| 91723      | /           | /       |                      | 02/15/98 | 2010 RFA | VOA1 |        |
| 91556      | /           | /       |                      | 02/14/98 | 1809 LLP | VOA3 |        |
| 91556DUP   | /           | /       |                      | 02/14/98 | 1837 LLP | VOA3 |        |
| 91751-3D   | /           | /       |                      | 02/15/98 | 1700 RFA | VOA1 |        |
| 91736-2D   | /           | /       |                      | 02/18/98 | 1702 LLP | VOA2 |        |
| 91898-4    | /           | /       |                      | 02/18/98 | 1814 LLP | VOA2 |        |
| 91898-3    | /           | /       |                      | 02/18/98 | 1838 LLP | VOA2 |        |
| 91718-1    | /           | /       |                      | 02/19/98 | 0016 LLP | VOA2 |        |
| 91718-2    | /           | /       |                      | 02/19/98 | 0040 LLP | VOA2 |        |
| 91718-1D   | /           | /       |                      | 02/19/98 | 1215 LLP | VOA2 |        |
| 91718-2D   | /           | /       |                      | 02/19/98 | 1242 LLP | VOA2 |        |
| 91797-2    | /           | /       |                      | 02/17/98 | 1829 LLP | VOA3 |        |
| 91797-4    | /           | /       |                      | 02/17/98 | 1858 LLP | VOA3 |        |
| 91797-7    | /           | /       |                      | 02/17/98 | 1926 LLP | VOA3 |        |
| 91797-10   | /           | /       |                      | 02/17/98 | 1953 LLP | VOA3 |        |
| 91797-12   | /           | /       |                      | 02/17/98 | 2020 LLP | VOA3 |        |
| 91797-15   | /           | /       |                      | 02/17/98 | 2046 LLP | VOA3 |        |
| 91797-2DUP | /           | /       |                      | 02/20/98 | 1640 LLP | VOA3 |        |

Analytical Services Inc. Batch QC  
For Report Number :91734  
Volatile Organics

Matrix : TCLP

Batch # 36410

Method : EPA 8260

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Benzene                            | 90         | 95          | 5         | 90 - 115           | 0 - 13       |
| Carbon tetrachloride               | 94         | 96          | 2         | 55 - 115           | 0 - 15       |
| Chlorobenzene                      | 87         | 88          | 1         | 87 - 109           | 0 - 10       |
| Chloroform                         | 83         | 87          | 5         | 55 - 115           | 0 - 15       |
| 1,2-Dichloroethane                 | 90         | 92          | 3         | 90 - 115           | 0 - 13       |
| 1,1-Dichloroethene                 | 83         | 89          | 7         | 55 - 111           | 0 - 15       |
| MEK (2-Butanone)                   | 90         | 95          | 5         | 55 - 115           | 0 - 15       |
| Tetrachloroethene                  | 64         | 69          | 8         | 55 - 115           | 0 - 15       |
| Trichloroethene                    | 91         | 97          | 6         | 78 - 110           | 0 - 11       |
| Vinyl chloride                     | 85         | 83          | 3         | 55 - 115           | 0 - 15       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Benzene                             | 102        | 96          | 5         | 90 - 115           | 0 - 13       |
| Carbon tetrachloride                | 97         | 94          | 3         | 55 - 115           | 0 - 15       |
| Chlorobenzene                       | 93         | 89          | 5         | 87 - 109           | 0 - 10       |
| Chloroform                          | 97         | 89          | 8         | 55 - 115           | 0 - 15       |
| 1,2-Dichloroethane                  | 107        | 95          | 11        | 90 - 115           | 0 - 13       |
| 1,1-Dichloroethene                  | 143        | 129         | 11        | 55 - 111           | 0 - 15       |
| MEK (2-Butanone)                    | 111        | 115         | 3         | 55 - 115           | 0 - 15       |
| Tetrachloroethene                   | 70         | 66          | 6         | 55 - 115           | 0 - 15       |
| Trichloroethene                     | 101        | 94          | 8         | 78 - 110           | 0 - 11       |
| Vinyl chloride                      | 151        | 144         | 5         | 55 - 115           | 0 - 15       |

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : TCLP

Batch # 36410

Method : EPA 8260

## % Recovery Objectives

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|    |                       |          |
|----|-----------------------|----------|
| S1 | 1,2-Dichloroethane-d4 | 76 - 119 |
| S2 | Toluene-d8            | 88 - 110 |
| S3 | Ethylbenzene-d10      | 75 - 115 |
| S4 | 4-Bromofluorobenzene  | 86 - 115 |

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| Sample | File | S1 | S2 | S3 | S4 | S5 | S6 |
|--------|------|----|----|----|----|----|----|
|--------|------|----|----|----|----|----|----|

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|            |       |     |     |     |     |  |  |
|------------|-------|-----|-----|-----|-----|--|--|
| 36410BLK   | A1077 | 112 | 104 | 100 | 105 |  |  |
| 36410LCS   | A1075 | 107 | 109 | 105 | 113 |  |  |
| 36410LCSD  | A1076 | 109 | 109 | 105 | 110 |  |  |
| 91734-6MS  | A1084 | 117 | 115 | 103 | 112 |  |  |
| 91734-6MSD | A1085 | 113 | 114 | 105 | 113 |  |  |
| 91734-1    | A1078 | 113 | 107 | 100 | 101 |  |  |
| 91734-2    | A1079 | 112 | 106 | 96  | 106 |  |  |
| 91734-3    | A1080 | 117 | 103 | 94  | 106 |  |  |
| 91734-4    | A1081 | 119 | 73  | 101 | 108 |  |  |
| 91734-5    | A1082 | 112 | 107 | 98  | 103 |  |  |
| 91734-6    | A1083 | 114 | 110 | 97  | 105 |  |  |
| 91734-4DUP | A1086 | 113 | 110 | 101 | 108 |  |  |
| 91751-1    | A1087 | 111 | 108 | 103 | 111 |  |  |
| 91751-2    | A1088 | 113 | 108 | 104 | 110 |  |  |
| 36410BLK2  | B3284 | 90  | 98  | 87  | 97  |  |  |
| 91976-1    | B3301 | 97  | 99  | 87  | 104 |  |  |
| 91976-2    | B3302 | 98  | 100 | 91  | 109 |  |  |
| 91903-1    | B3299 | 87  | 93  | 88  | 103 |  |  |
| 91903-2    | B3300 | 96  | 96  | 89  | 101 |  |  |
| 91898-1    | B3298 | 93  | 96  | 89  | 101 |  |  |
| 91898-2    | B3297 | 93  | 94  | 87  | 97  |  |  |

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Q.C. Information for Batch # 36410

Printed: 02/23/98 08:19:16

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Blank Results Information  
Volatile Organics Method : EPA 8260

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| Analyte                   | Blank<br>Result | Detection<br>Limit |
|---------------------------|-----------------|--------------------|
| D018 Benzene              | BDL             | 0.02               |
| D019 Carbon tetrachloride | BDL             | 0.02               |
| D021 Chlorobenzene        | BDL             | 0.02               |
| D022 Chloroform           | BDL             | 0.02               |
| D028 1,2-Dichloroethane   | BDL             | 0.02               |
| D029 1,1-Dichloroethene   | BDL             | 0.02               |
| D035 Methyl ethyl ketone  | BDL             | 0.5                |
| D039 Tetrachloroethene    | BDL             | 0.02               |
| D040 Trichloroethene      | BDL             | 0.02               |
| D043 Vinyl chloride       | BDL             | 0.02               |



Sample Batch Information  
Volatile Organics Method : EPA 8260

| Sample ID  | Preparation |         | Preparation<br>Notes | Analysis |      |     | Inst # |
|------------|-------------|---------|----------------------|----------|------|-----|--------|
|            | Date        | Time By |                      | Date     | Time | By  |        |
| 36410BLK   | /           | /       |                      | 02/17/98 | 1119 | RFA | VOA1   |
| 36410LCS   | /           | /       |                      | 02/17/98 | 1024 | RFA | VOA1   |
| 36410LCSD  | /           | /       |                      | 02/17/98 | 1052 | RFA | VOA1   |
| 91734-6MS  | /           | /       |                      | 02/17/98 | 1430 | RFA | VOA1   |
| 91734-6MSD | /           | /       |                      | 02/17/98 | 1457 | RFA | VOA1   |
| 91734-1    | /           | /       |                      | 02/17/98 | 1146 | RFA | VOA1   |
| 91734-2    | /           | /       |                      | 02/17/98 | 1213 | RFA | VOA1   |
| 91734-3    | /           | /       |                      | 02/17/98 | 1241 | RFA | VOA1   |
| 91734-4    | /           | /       |                      | 02/17/98 | 1308 | RFA | VOA1   |
| 91734-5    | /           | /       |                      | 02/17/98 | 1335 | RFA | VOA1   |
| 91734-6    | /           | /       |                      | 02/17/98 | 1402 | RFA | VOA1   |
| 91734-4DUP | /           | /       |                      | 02/17/98 | 1524 | RFA | VOA1   |
| 91751-1    | /           | /       |                      | 02/17/98 | 1552 | RFA | VOA1   |
| 91751-2    | /           | /       |                      | 02/17/98 | 1620 | RFA | VOA1   |
| 36410BLK2  | /           | /       |                      | 02/18/98 | 0942 | LLP | VOA2   |
| 91976-1    | /           | /       |                      | 02/18/98 | 2039 | LLP | VOA2   |
| 91976-2    | /           | /       |                      | 02/18/98 | 2104 | LLP | VOA2   |
| 91903-1    | /           | /       |                      | 02/18/98 | 1951 | LLP | VOA2   |
| 91903-2    | /           | /       |                      | 02/18/98 | 2015 | LLP | VOA2   |
| 91898-1    | /           | /       |                      | 02/18/98 | 1927 | LLP | VOA2   |
| 91898-2    | /           | /       |                      | 02/18/98 | 1903 | LLP | VOA2   |

Analytical Services Inc. Batch QC  
For Report Number :91734

## Batch General Information

| Batch Number | Analyte | Analysis Method | Matrix    | Blank Result | Prep. Method |
|--------------|---------|-----------------|-----------|--------------|--------------|
| 36005        | Ign     | EPA 1010        | Aq/Solid  | 0.0000       |              |
| 36095        | Hg      | EPA 7470        | Aqueous < | 0.0002       |              |
| 36096        | Hg      | EPA 7470        | TCLP <    | 0.0002       |              |
| 36154        | Ag      | EPA 6010        | Aqueous < | 0.0100       |              |
| 36154        | As      | EPA 6010        | Aqueous < | 0.0100       |              |
| 36154        | Ba      | EPA 6010        | Aqueous < | 0.0100       |              |
| 36154        | Cd      | EPA 6010        | Aqueous < | 0.0050       |              |
| 36154        | Cr      | EPA 6010        | Aqueous < | 0.0050       |              |
| 36154        | Pb      | EPA 6010        | Aqueous < | 0.0030       |              |
| 36154        | Se      | EPA 6010        | Aqueous < | 0.0100       |              |
| 36161        | Ag      | EPA 6010        | TCLP <    | 0.0100       |              |

^^Note : BATCH PASSES ON LCS/LCSD/MS/MSD

|       |    |          |        |        |  |
|-------|----|----------|--------|--------|--|
| 36161 | As | EPA 6010 | TCLP < | 0.0300 |  |
| 36161 | Ba | EPA 6010 | TCLP < | 0.2000 |  |
| 36161 | Cd | EPA 6010 | TCLP < | 0.0100 |  |
| 36161 | Cr | EPA 6010 | TCLP < | 0.0100 |  |

^^Note : QC PASSES ON LCS, LCSD, MSD

|       |           |             |           |        |  |
|-------|-----------|-------------|-----------|--------|--|
| 36161 | Pb        | EPA 6010    | TCLP <    | 0.0250 |  |
| 36161 | Se        | EPA 6010    | TCLP <    | 0.0400 |  |
| 36289 | pH        | EPA 9045    | Soil      | 0.0000 |  |
| 36383 | React S2  | EPA 7.3.4.2 | Aq/Soil < | 5.0000 |  |
| 36386 | pH        | EPA 9040    | Aqueous   | 0.0000 |  |
| 36393 | React. CN | EPA 7.3.3.2 | Aq/Soil < | 1.0000 |  |

## Lab Control Information

| Batch Number | Analyte | Method   | LC %Rec | LCD %Rec | LC RPD | %Recovery Range | RPD Range |
|--------------|---------|----------|---------|----------|--------|-----------------|-----------|
| 36005        | Ign     | EPA 1010 | 99      | 100      | 1      |                 | 0 - 20    |
| 36095        | Hg      | EPA 7470 | 89      | 83       | 7      | 76 - 124        | 0 - 20    |
| 36096        | Hg      | EPA 7470 | 91      | 91       | 0      | 76 - 124        | 0 - 20    |
| 36154        | Ag      | EPA 6010 | 117     | 119      | 2      | 76 - 124        | 0 - 20    |
| 36154        | As      | EPA 6010 | 95      | 96       | 1      | 76 - 124        | 0 - 20    |
| 36154        | Ba      | EPA 6010 | 93      | 94       | 1      | 76 - 124        | 0 - 20    |
| 36154        | Cd      | EPA 6010 | 88      | 88       | 0      | 76 - 124        | 0 - 20    |
| 36154        | Cr      | EPA 6010 | 88      | 89       | 1      | 76 - 124        | 0 - 20    |
| 36154        | Pb      | EPA 6010 | 94      | 94       | 0      | 76 - 124        | 0 - 20    |
| 36154        | Se      | EPA 6010 | 84      | 84       | 0      | 76 - 124        | 0 - 20    |
| 36161        | Ag      | EPA 6010 | 120     | 120      | 0      | 76 - 124        | 0 - 20    |
| 36161        | As      | EPA 6010 | 91      | 89       | 2      | 76 - 124        | 0 - 20    |
| 36161        | Ba      | EPA 6010 | 91      | 89       | 2      | 76 - 124        | 0 - 20    |
| 36161        | Cd      | EPA 6010 | 110     | 100      | 10     | 76 - 124        | 0 - 20    |

Analytical Services Inc. Batch QC  
For Report Number :91734

## Lab Control Information

| Batch<br>Number | Analyte   | Method      | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-----------------|-----------|-------------|------------|-------------|-----------|--------------------|--------------|
| 36161           | Cr        | EPA 6010    | 84         | 82          | 2         | 76 - 124           | 0 - 20       |
| 36161           | Pb        | EPA 6010    | 87         | 85          | 2         | 76 - 124           | 0 - 20       |
| 36161           | Se        | EPA 6010    | 98         | 96          | 2         | 76 - 124           | 0 - 20       |
| 36289           | pH        | EPA 9045    | 100        | 100         | 0         | 80 - 120           | 0 - 20       |
| 36383           | React S2  | EPA 7.3.4.2 | 104        | 96          | 8         | 60 - 140           | 0 - 40       |
| 36386           | pH        | EPA 9040    | 99         | 99          | 0         | 80 - 120           | 0 - 20       |
| 36393           | React. CN | EPA 7.3.3.2 | 98         | 98          | 0         | 75 - 125           | 0 - 30       |

## Matrix Spike Information

| Batch<br>Number | Analyte | Method   | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-----------------|---------|----------|------------|-------------|-----------|--------------------|--------------|
| 36095           | Hg      | EPA 7470 | 89         | 90          | 1         | 76 - 124           | 0 - 20       |
| 36096           | Hg      | EPA 7470 | 59         | 128         | 74        | 76 - 124           | 0 - 20       |
| 36154           | Ag      | EPA 6010 | 120        | 130         | 8         | 76 - 124           | 0 - 20       |
| 36154           | As      | EPA 6010 | 96         | 98          | 2         | 76 - 124           | 0 - 20       |
| 36154           | Ba      | EPA 6010 | 94         | 95          | 1         | 76 - 124           | 0 - 20       |
| 36154           | Cd      | EPA 6010 | 88         | 89          | 1         | 76 - 124           | 0 - 20       |
| 36154           | Cr      | EPA 6010 | 88         | 88          | 0         | 76 - 124           | 0 - 20       |
| 36154           | Pb      | EPA 6010 | 93         | 94          | 1         | 76 - 124           | 0 - 20       |
| 36154           | Se      | EPA 6010 | 83         | 84          | 1         | 76 - 124           | 0 - 20       |
| 36161           | Ag      | EPA 6010 | 110        | 120         | 9         | 76 - 124           | 0 - 20       |
| 36161           | As      | EPA 6010 | 81         | 86          | 6         | 76 - 124           | 0 - 20       |
| 36161           | Ba      | EPA 6010 | 84         | 89          | 6         | 76 - 124           | 0 - 20       |
| 36161           | Cd      | EPA 6010 | 91         | 98          | 7         | 76 - 124           | 0 - 20       |
| 36161           | Cr      | EPA 6010 | 73         | 78          | 7         | 76 - 124           | 0 - 20       |
| 36161           | Pb      | EPA 6010 | 77         | 80          | 4         | 76 - 124           | 0 - 20       |
| 36161           | Se      | EPA 6010 | 90         | 95          | 5         | 76 - 124           | 0 - 20       |

Analytical Services Inc. Batch QC  
For Report Number :91734

## Post Digestion Spike Information

| Batch<br>Number | Analyte | Method   | PDS<br>%Rec | %Recovery<br>Range |
|-----------------|---------|----------|-------------|--------------------|
| 36154           | Ag      | EPA 6010 | 90          | 76 - 124           |
| 36154           | As      | EPA 6010 | 94          | 76 - 124           |
| 36154           | Ba      | EPA 6010 | 89          | 76 - 124           |
| 36154           | Cd      | EPA 6010 | 85          | 76 - 124           |
| 36154           | Cr      | EPA 6010 | 89          | 76 - 124           |
| 36154           | Pb      | EPA 6010 | 90          | 76 - 124           |
| 36154           | Se      | EPA 6010 | 83          | 76 - 124           |
| 36161           | Ag      | EPA 6010 | 220         | 76 - 124           |
| 36161           | As      | EPA 6010 | 82          | 76 - 124           |
| 36161           | Ba      | EPA 6010 | 85          | 76 - 124           |
| 36161           | Cd      | EPA 6010 | 96          | 76 - 124           |
| 36161           | Cr      | EPA 6010 | 75          | 76 - 124           |
| 36161           | Pb      | EPA 6010 | 77          | 76 - 124           |
| 36161           | Se      | EPA 6010 | 91          | 76 - 124           |

## Unspiked Sample Duplicate Information

| Batch<br>Number | Analyte   | Method      | Sample 1<br>RPD | Sample 2<br>RPD | RPD<br>Range |
|-----------------|-----------|-------------|-----------------|-----------------|--------------|
| 36289           | pH        | EPA 9045    | 0               | 1               | 0 - 20       |
| 36383           | React S2  | EPA 7.3.4.2 | 0               |                 | 0 - 40       |
| 36386           | pH        | EPA 9040    | 0               | 0               | 0 - 20       |
| 36393           | React. CN | EPA 7.3.3.2 | 0               |                 | 0 - 30       |

Sample Batch Information  
Analysis : Ign

| Sample ID  | Tag | Preparation |         | Preparation<br>Notes | Analysis |      |    | Inst |
|------------|-----|-------------|---------|----------------------|----------|------|----|------|
|            |     | Date        | Time By |                      | Date     | Time | By |      |
| 91398      |     | /           | /       |                      | 02/03/98 | 1815 | NL |      |
| 91609-1    |     | /           | /       |                      | 02/09/98 | 1230 | NL |      |
| 36005LCS   |     | /           | /       |                      | 02/09/98 | 1230 | NL |      |
| 36005LCSD  |     | /           | /       |                      | 02/09/98 | 1800 | NL |      |
| 91609-2    |     | /           | /       |                      | 02/09/98 | 1230 | NL |      |
| 91609-1DUP |     | /           | /       |                      | 02/09/98 | 1230 | NL |      |
| 91668-1    |     | /           | /       |                      | 02/09/98 | 1735 | NL |      |
| 91668-2    |     | /           | /       |                      | 02/09/98 | 1735 | NL |      |
| 91661      |     | /           | /       |                      | 02/09/98 | 1735 | NL |      |
| 91734-1    |     | /           | /       |                      | 02/11/98 | 1600 | NL |      |
| 91734-2    |     | /           | /       |                      | 02/11/98 | 1600 | NL |      |
| 91734-3    |     | /           | /       |                      | 02/11/98 | 1600 | NL |      |
| 91734-4    |     | /           | /       |                      | 02/11/98 | 1600 | NL |      |
| 91734-5    |     | /           | /       |                      | 02/11/98 | 1600 | NL |      |
| 91734-6    |     | /           | /       |                      | 02/11/98 | 1600 | NL |      |
| 91734-6DUP |     | /           | /       |                      | 02/11/98 | 1600 | NL |      |
| 91765-1    |     | /           | /       |                      | 02/12/98 | 1530 | NL |      |
| 91765-2    |     | /           | /       |                      | 02/12/98 | 1530 | NL |      |
| 91765-3    |     | /           | /       |                      | 02/12/98 | 1530 | NL |      |
| 91765-4    |     | /           | /       |                      | 02/12/98 | 1530 | NL |      |
| 91765-5    |     | /           | /       |                      | 02/12/98 | 1530 | NL |      |
| 91808      |     | /           | /       |                      | 02/13/98 | 1530 | NL |      |
| 91864      |     | /           | /       |                      | 02/17/98 | 1108 | NL |      |

Q.C. Information for Batch # 36095

For Report Number :91734

Sample Batch Information  
Analysis : Hg

| Sample ID  | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|            |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 36095BLANK | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1430 | FBS | HG1  |
| 36095LCS   | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1432 | FBS | HG1  |
| 36095LCSD  | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1435 | FBS | HG1  |
| 91758-2MS  | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1437 | FBS | HG1  |
| 91758-2MSD | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1439 | FBS | HG1  |
| 91758-3DUP | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1442 | FBS | HG1  |
| 91716      | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1537 | FBS | HG1  |
| 91734-7    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1526 | FBS | HG1  |
| 91694-1    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1519 | FBS | HG1  |
| 91736-1    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1512 | FBS | HG1  |
| 91736-2    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1514 | FBS | HG1  |
| 91736-3    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1516 | FBS | HG1  |
| 91751-3    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1528 | FBS | HG1  |
| 91712      | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1531 | FBS | HG1  |
| 91732-1    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1533 | FBS | HG1  |
| 91749-1    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1535 | FBS | HG1  |
| 91758-1    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1448 | FBS | HG1  |
| 91758-2    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1444 | FBS | HG1  |
| 91758-3    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1446 | FBS | HG1  |
| 91758-4    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1451 | FBS | HG1  |
| 91758-5    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1458 | FBS | HG1  |
| 91758-6    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1500 | FBS | HG1  |
| 91758-7    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1503 | FBS | HG1  |
| 91758-8    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1505 | FBS | HG1  |
| 91758-9    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1507 | FBS | HG1  |
| 91758-10   | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1509 | FBS | HG1  |

Sample Batch Information  
Analysis : Hg

| Sample ID  | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|            |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 36096LCS   | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1554 | FBS | HG1  |
| 36096LCSD  | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1556 | FBS | HG1  |
| 91553-3MS  | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1558 | FBS | HG1  |
| 91553-3MSD | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1601 | FBS | HG1  |
| 91553-3DUP | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1603 | FBS | HG1  |
| 91553-3    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1605 | FBS | HG1  |
| 91664      | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1608 | FBS | HG1  |
| 91685-1    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1610 | FBS | HG1  |
| 91685-2    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1612 | FBS | HG1  |
| 91685-3    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1619 | FBS | HG1  |
| 91680      | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1638 | FBS | HG1  |
| 91734-1    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1624 | FBS | HG1  |
| 91734-2    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1626 | FBS | HG1  |
| 91734-3    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1629 | FBS | HG1  |
| 91734-4    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1631 | FBS | HG1  |
| 91734-5    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1633 | FBS | HG1  |
| 91734-6    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1636 | FBS | HG1  |
| 91751-1    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1640 | FBS | HG1  |
| 91751-2    | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1647 | FBS | HG1  |
| 91808      | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1652 | FBS | HG1  |
| 36096BLANK | HG  | 02/13/98    | 0925 | FBS |                      | 02/13/98 | 1551 | FBS | HG1  |

Q.C. Information for Batch # 36154

For Report Number :91734

Sample Batch Information  
Analysis : Ag, As, Ba, Cd, Cr, Pb, Se

| Sample ID  | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|            |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 36154BLANK |     | 02/12/98    | 0810 | KSP | TRACE                | 02/12/98 | 1233 | MCW | ICP2 |
| 36154LCS   |     | 02/12/98    | 0810 | KSP | TRACE                | 02/12/98 | 1236 | MCW | ICP2 |
| 36154LCSD  |     | 02/12/98    | 0810 | KSP | TRACE                | 02/12/98 | 1240 | MCW | ICP2 |
| 91651-1MS  |     | 02/12/98    | 0810 | KSP | TRACE                | 02/12/98 | 1244 | MCW | ICP2 |
| 91651-1MSD |     | 02/12/98    | 0810 | KSP | TRACE                | 02/12/98 | 1247 | MCW | ICP2 |
| 91651-2PDS |     | 02/12/98    | 0810 | KSP | TRACE                | 02/12/98 | 1250 | MCW | ICP2 |
| 91651-2DUP |     | 02/12/98    | 0810 | KSP | TRACE                | 02/12/98 | 1253 | MCW | ICP2 |
| 91651-1    |     | 02/12/98    | 0810 | KSP | TRACE                | 02/12/98 | 1256 | MCW | ICP2 |
| 91651-2    |     | 02/12/98    | 0810 | KSP | TRACE                | 02/12/98 | 1259 | MCW | ICP2 |
| 91734-7    |     | 02/12/98    | 0810 | KSP | TRACE                | 02/12/98 | 1301 | MCW | ICP2 |
| 91061-6    |     | 02/12/98    | 0810 | KSP | TRACE                | 02/12/98 | 1312 | MCW | ICP2 |
| QC BLANK   |     | 02/12/98    | 0810 | KSP | TRACE                | 02/12/98 | 1315 | MCW | ICP2 |



Sample Batch Information  
Analysis : Ag, As, Ba, Cd, Cr, Pb, Se

| Sample ID  | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|            |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 36161BLANK |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2014 | MCW | ICP1 |
| 36161LCS   |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2018 | MCW | ICP1 |
| 36161LCSD  |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2022 | MCW | ICP1 |
| 91734-4MS  |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2027 | MCW | ICP1 |
| 91734-4MSD |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2031 | MCW | ICP1 |
| 91734-4PDS |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2035 | MCW | ICP1 |
| 91734-4DUP |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2039 | MCW | ICP1 |
| 91553-3    |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2048 | MCW | ICP1 |
| 91685-1    |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2052 | MCW | ICP1 |
| 91685-2    |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2105 | MCW | ICP1 |
| 91685-3    |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2109 | MCW | ICP1 |
| 91701      |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2113 | MCW | ICP1 |
| 91734-1    |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2117 | MCW | ICP1 |
| 91734-2    |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2122 | MCW | ICP1 |
| 91734-3    |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2126 | MCW | ICP1 |
| 91734-4    |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2044 | MCW | ICP1 |
| 91734-5    |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2130 | MCW | ICP1 |
| 91734-6    |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2134 | MCW | ICP1 |
| 91808MS    |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2147 | MCW | ICP1 |
| 91808MSD   |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2151 | MCW | ICP1 |
| 91808      |     | 02/13/98    | 1130 | KSP | TCLP                 | 02/13/98 | 2156 | MCW | ICP1 |

Q.C. Information for Batch # 36289

For Report Number :91734

Sample Batch Information  
Analysis : pH

| Sample ID   | Tag | Preparation |         | Preparation<br>Notes | Analysis |      |    | Inst |
|-------------|-----|-------------|---------|----------------------|----------|------|----|------|
|             |     | Date        | Time By |                      | Date     | Time | By |      |
| 36289CALCHK |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 36289LCS    |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 36289LCSD   |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91687       |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91687DUP    |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91663-1     |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91663-2     |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91663-3     |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91663-4     |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91734-5     |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91734-3     |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91734-1     |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91734-2     |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91734-4     |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91734-6     |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91734-6DUP  |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91696-1     |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91696-2     |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91696-3     |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91696-4     |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |
| 91707-14    |     | /           | /       |                      | 02/10/98 | 1800 | JN | 410A |

Sample Batch Information  
Analysis : React S2

| Sample ID | Tag | Preparation |      |    | Preparation<br>Notes | Analysis |      |    | Inst |
|-----------|-----|-------------|------|----|----------------------|----------|------|----|------|
|           |     | Date        | Time | By |                      | Date     | Time | By |      |
| 36383BLK  |     | 02/13/98    | 1300 | JN |                      | 02/13/98 | 1430 | JN |      |
| 36383LCS  |     | 02/13/98    | 1300 | JN |                      | 02/13/98 | 1430 | JN |      |
| 36383LCSD |     | 02/13/98    | 1300 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-1   |     | 02/13/98    | 1000 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-2   |     | 02/13/98    | 1000 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-3   |     | 02/13/98    | 1000 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-4   |     | 02/13/98    | 1000 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-5   |     | 02/13/98    | 1100 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-6   |     | 02/13/98    | 1100 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-7   |     | 02/13/98    | 1100 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91808     |     | 02/13/98    | 1100 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91864     |     | 02/19/98    | 0959 | JN |                      | 02/20/98 | 1600 | JN |      |

Q.C. Information for Batch # 36386

For Report Number :91734

Sample Batch Information  
Analysis : pH

| Sample ID   | Tag | Preparation |      |    | Preparation<br>Notes | Analysis |      |    | Inst |
|-------------|-----|-------------|------|----|----------------------|----------|------|----|------|
|             |     | Date        | Time | By |                      | Date     | Time | By |      |
| 36386CALCHK |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 36386LCS    |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 36386LCSD   |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91840       |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91840DUP    |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91734-7     |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91808       |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91844       |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91846-2     |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91838-2     |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91845       |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91848       |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91814-3     |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91814-4     |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91865       |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91864       |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91864DUP    |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91858-1     |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91858-2     |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91858-3     |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |
| 91858-4     |     | /           | /    |    |                      | 02/13/98 | 1500 | JN | 410A |

Sample Batch Information  
Analysis : React. CN

| Sample ID  | Tag | Preparation |         | Preparation | Analysis |      |     | Inst  |
|------------|-----|-------------|---------|-------------|----------|------|-----|-------|
|            |     | Date        | Time By | Notes       | Date     | Time | By  |       |
| 36393BLK   |     | /           | /       |             | 02/16/98 | 1245 | ARS | GENE5 |
| 36393LCS   |     | /           | /       |             | 02/16/98 | 1245 | ARS | GENE5 |
| 36393LCSD  |     | /           | /       |             | 02/16/98 | 1245 | ARS | GENE5 |
| 36393CAL5  |     | /           | /       |             | 02/16/98 | 1245 | ARS | GENE5 |
| 91734-1    |     | /           | /       |             | 02/16/98 | 1245 | ARS | GENE5 |
| 91734-1DUP |     | /           | /       |             | 02/16/98 | 1245 | ARS | GENE5 |
| 91734-2    |     | /           | /       |             | 02/16/98 | 1245 | ARS | GENE5 |
| 91734-3    |     | /           | /       |             | 02/16/98 | 1245 | ARS | GENE5 |
| 91734-4    |     | /           | /       |             | 02/16/98 | 1245 | ARS | GENE5 |
| 91734-5    |     | /           | /       |             | 02/16/98 | 1245 | ARS | GENE5 |
| 91734-6    |     | /           | /       |             | 02/16/98 | 1245 | ARS | GENE5 |
| 91734-7    |     | /           | /       |             | 02/16/98 | 1245 | ARS | GENE5 |
| 91808      |     | /           | /       |             | 02/16/98 | 1245 | ARS | GENE5 |
| 91864      |     | /           | /       |             | 02/20/98 | 1510 | ARS | GENE5 |
| 91902-1    |     | /           | /       |             | 02/20/98 | 1510 | ARS | GENE5 |
| 91902-2    |     | /           | /       |             | 02/20/98 | 1510 | ARS | GENE5 |
| 91936-1    |     | /           | /       |             | 02/20/98 | 1510 | ARS | GENE5 |

ASI # 91734



# OHM Remediation Services Corp

**Subsidiary of OHM Corporation**  
**U.S. Route 224 East • Findlay, Ohio 45840 • (419) 423-3526**

# CHAIN-OF-CUSTODY RECORD

**LABORATORY COPY**

206421

FORM 0019 REV 2-97

| QRM # LAB COORDINATOR                                                                                                             | LAB COORDINATOR'S PHONE       | LAB COORDINATOR'S FAX | LABORATORY SERVICE ID   | LABORATORY CONTACT | MAIL REPORT (COMPANY NAME) |           |          |     |          |                                  |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------|-------------------------|--------------------|----------------------------|-----------|----------|-----|----------|----------------------------------|
| Elena Rodriguez                                                                                                                   | 770 734 8060                  | 770 453 7716          |                         | Shen Harper        | OHM Corp                   |           |          |     |          |                                  |
| DDMT Don Field                                                                                                                    | Memphis TN                    | 20022                 |                         |                    |                            |           |          |     |          |                                  |
| PROJECT CONTACT                                                                                                                   | PROJECT PHONE NUMBER          | PROJECT FAX           | LABORATORY PHONE        | LABORATORY FAX     | RECIPIENT NAME             |           |          |     |          |                                  |
| Steve Offner                                                                                                                      | 770 326 2571                  | 770 453 7716          | 770 734 4200            |                    | Elena Rodriguez            |           |          |     |          |                                  |
| PROJECT ADDRESS                                                                                                                   | CITY STATE AND ZIP CODE       | CLIENT                | LABORATORY ADDRESS      |                    | ADDRESS                    |           |          |     |          |                                  |
| 1708 Dunn Ave                                                                                                                     | Memphis, TN 38114             | VSACE                 | 110 Technology Parkway  |                    | 5445 Triangle Parkway      |           |          |     |          |                                  |
| PROJECT MANAGER                                                                                                                   | PROJECT MANAGER'S PHONE       | PROJECT MANAGER'S FAX | CITY STATE AND ZIP CODE |                    | CITY, STATE AND ZIP CODE   |           |          |     |          |                                  |
| John Lore                                                                                                                         | 805 622 2811                  | 305 624 7367          | Noncross GA 30092       |                    | Noncross, GA 30092         |           |          |     |          |                                  |
| Item                                                                                                                              | Sample Identifier             | Matrix                | Date                    | Time               | Preserved                  | # of Cont | QC Level | TAT | Analyses | Comments                         |
| 1                                                                                                                                 | RW-007                        | Soil                  | 2/6/98                  | 10:23              | 0                          | 1         |          | 7   | X        | -12 Cooled                       |
| 2                                                                                                                                 | RW-008                        | Soil                  | 2/6/98                  | 11:20              | 0                          | 1         |          | 7   | X        | -2                               |
| 3                                                                                                                                 | RW-006                        | Soil                  | 2/6/98                  | 10:53              | 0                          | 1         |          | 7   | X        | -3                               |
| 4                                                                                                                                 | RW-009                        | Soil                  | 2/6/98                  | 13:40              | 0                          | 1         |          | 7   | X        | -4                               |
| 5                                                                                                                                 | RW-005                        | Soil                  | 2/6/98                  | 14:10              | 0                          | 1         |          | 7   | X        | -5                               |
| 6                                                                                                                                 | <del>RW-005-B</del><br>RW-014 | Soil                  | 2/6/98                  | 11:20              | 0                          | 1         |          | 7   | X        | -6                               |
| 7                                                                                                                                 | RW-005 EQB                    | water                 | 2/6/98                  | 14:30              | 102.4<br>FROG              | 10        |          | 7   | X        | -7                               |
| 8                                                                                                                                 | Trip Blank                    | water                 | -                       | -                  | HCL                        | 3         |          | 7   | X        | -8                               |
| 9                                                                                                                                 |                               |                       |                         |                    |                            |           |          |     |          |                                  |
| 10                                                                                                                                |                               |                       |                         |                    |                            |           |          |     |          |                                  |
| SAMPLES COLLECTED BY                                                                                                              |                               |                       |                         |                    |                            |           |          |     |          | COOLER TEMPERATURE UPON RECEIPT  |
| RELINQUISHED BY                                                                                                                   |                               |                       |                         |                    |                            |           |          |     |          | 2°C                              |
| RECEIVED BY                                                                                                                       |                               |                       |                         |                    |                            |           |          |     |          | SAMPLE'S CONDITION UPON RECEIPT  |
| John McCarthy                                                                                                                     |                               |                       |                         |                    |                            |           |          |     |          | bagged; no seal; pH = 1 (Metals) |
| DATE                                                                                                                              |                               |                       |                         |                    |                            |           |          |     |          | TIME                             |
| 2/6/98                                                                                                                            |                               |                       |                         |                    |                            |           |          |     |          | 2:30 PM                          |
|                                                                                                                                   |                               |                       |                         |                    |                            |           |          |     |          | 11:30                            |
| COURIER AND AIR BILL NUMBER                                                                                                       |                               |                       |                         |                    |                            |           |          |     |          |                                  |
| Fed Ex                                                                                                                            |                               |                       |                         |                    |                            |           |          |     |          |                                  |
| J. Muller 2/10-2/11                                                                                                               |                               |                       |                         |                    |                            |           |          |     |          |                                  |
| Fed Ex # 6130752401 • 6130752375                                                                                                  |                               |                       |                         |                    |                            |           |          |     |          |                                  |
| Distribution: White - Laboratory (To be returned with Analytical Report), Goldenrod - Project File; Yellow - Project Data Manager |                               |                       |                         |                    |                            |           |          |     |          |                                  |

# TAB

Appendix E-2

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**DISPOSAL CHARACTERIZATION SAMPLES  
SOIL CUTTINGS FROM RW-3 & RW-4  
AND  
WATER SAMPLE FROM FIRE HYDRANT**

*Date Collected 02/13/98*



13 March, 1998

Case Narrative Report 91902

The samples were collected 13 February, 1998 and received by ASI 14 February, 1998. As indicated on the Chain of Custody, there were no custody seals present. All other conditions for proper sample receipt were met. The samples were logged into the LIMS as report 91902 for the following analyses as per client request: Aqueous samples - HERB (EPA 8151), PEST (EPA 8081A), BNA (EPA 8270C), VOA (EPA 8260B), Mercury (EPA 7470), Metals (EPA 6010B), pH (EPA 9040), Reactive CN (EPA 7.3.3.2) and Reactive Sulfide (EPA 7.3.4.2); Solid samples - TCLP HERB (EPA 1311/8151), TCLP PEST (EPA 1311/8081A), TCLP BNA (EPA 1311/8270C), TCLP VOA (EPA 1311/8260B), TCLP Mercury (EPA 1311/7470) and TCLP Metals (EPA 1311/6010B), pH (EPA 9045), Reactive CN (EPA 7.3.3.2), Reactive Sulfide (EPA 7.3.4.2) and Ignitability (EPA 1010). Holding times for sample preparation and analysis were met with the exception of pH which should be analyzed in the field.

HERB analysis (EPA 8151) for aqueous samples met all data quality objectives.

PEST analysis (EPA 8081A) for aqueous samples gave high MS/MSD recoveries for BHC-gamma (Lindane), Heptachlor and Aldrin due to a matrix effect. A high surrogate recovery for Dibutylchlorodate was obtained for Sample #91556MS; high surrogate recoveries for Tetrachloro-m-xylene were obtained for Samples #36227BLK and 36227LCS; high surrogate recoveries for Decachlorobiphenyl were obtained for Samples #91556MS and 91556MSD. The Blank and LCS/LCSD were re-extracted and re-analyzed, thus producing acceptable results. All other spike and surrogate recoveries were acceptable.

BNA analysis (EPA 8270C) for aqueous samples gave a low surrogate recovery for 2-Fluorophenol for Sample #91902-4 due to a matrix effect. All other spike and surrogate recoveries were acceptable.

VOA analysis (EPA 8260B) for aqueous samples gave high surrogate recoveries for Toluene-d8 for Samples #91837-1MS and 91837-1MSD. All other spike and surrogate recoveries were acceptable.

Mercury analysis (EPA 7470) for aqueous samples met all data quality objectives.

Metals analysis (EPA 6010B) for aqueous samples was split into two batches. Batch #36179 gave low MS/MSD and PDS recoveries for Ag. The batch passes on LCS/LCSD. Batch #36189 met all data quality objectives.

pH analysis (EPA 9040) for aqueous samples met all data quality objectives.

Reactive CN analysis (EPA 7.3.3.2) for aqueous samples met all data quality objectives.

Reactive Sulfide analysis (EPA 7.3.4.2) for aqueous samples met all data quality objectives.

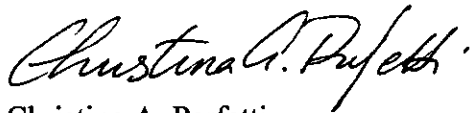
TCLP analysis for HERB (EPA 1311/8151) met all data quality objectives. TCLP analysis for PEST (EPA 1311/8081A) met all data quality objectives. TCLP analysis for BNA (EPA 1311/8270C) gave high MS/MSD recoveries for 2,4-Dinitrotoluene, Hexachlorobenzene and Nitrobenzene. All other BNA spike and surrogate recoveries were acceptable. TCLP analysis for VOA (EPA 1311/8260B) gave low MS/MSD recoveries for Benzene, Chlorobenzene and 1,2-Dichloroethane, a low MS for Trichloroethene, and a high surrogate recovery for Toluene-d8 for Sample #91902-2MS. All other VOA spike and surrogate recoveries were acceptable. TCLP analysis for Mercury (EPA 1311/7470) met all data quality objectives. TCLP analysis for Metals (EPA 1311/6010B) gave low MS/MSD recoveries for Cd and Pb, and a low PDS recovery for Ag. All other spike recoveries were acceptable.

pH analysis (EPA 9045) for solid samples met all data quality objectives.

Reactive CN analysis (EPA 7.3.3.2) for solid samples met all data quality objectives.

Reactive Sulfide analysis (EPA 7.3.4.2) for solid samples met all data quality objectives.

Ignitability analysis (EPA 1010) for solid samples met all data quality objectives.



Christina A. Perfetti  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

478 534

**ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

March 4, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 91902-1**Sample Description**Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, RW-003,  
02/13/98, 15:00, received 02/14/98**RESULTS**

|                                             |                          | <u>Result</u> | <u>Detection Limit</u> |                         |
|---------------------------------------------|--------------------------|---------------|------------------------|-------------------------|
| Ignitability (°F) (EPA 1010).....           |                          | >212          | 70                     |                         |
| pH (laboratory) (EPA 9045).....             |                          | 8.29          | -                      |                         |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL           | 1                      |                         |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL           | 5                      |                         |
| Toxicity Characteristic Leaching Procedure  |                          |               |                        |                         |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |               |                        |                         |
| <u>EPA HW</u>                               |                          | <u>Result</u> | <u>Detection Limit</u> | <u>Regulatory Limit</u> |
| <u>Number</u>                               | <u>Parameter</u>         | <u>(mg/l)</u> | <u>(mg/l)</u>          | <u>(mg/l)</u>           |
| D004                                        | Arsenic (As).....        | BDL           | 2.5                    | 5.0                     |
| D005                                        | Barium (Ba).....         | 0.3           | 0.1                    | 100.0                   |
| D006                                        | Cadmium (Cd).....        | BDL           | 0.01                   | 1.0                     |
| D020                                        | Chlordane.....           | BDL           | 0.01                   | 0.03                    |
| D007                                        | Chromium (Cr).....       | BDL           | 0.01                   | 5.0                     |
| D026                                        | Total Cresol.....        | BDL           | 0.05                   | 200.0                   |
| D016                                        | 2,4-D.....               | BDL           | 0.05                   | 10.0                    |
| D027                                        | 1,4-Dichlorobenzene..... | BDL           | 0.05                   | 7.5                     |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL           | 0.05                   | 0.13                    |
| D012                                        | Endrin.....              | BDL           | 0.001                  | 0.02                    |
| D031                                        | Heptachlor.....          | BDL           | 0.001                  | 0.008                   |
| D031                                        | Heptachlor epoxide.....  | BDL           | 0.001                  | 0.008                   |
| D032                                        | Hexachlorobenzene.....   | BDL           | 0.05                   | 0.13                    |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

March 4, 1998  
Report No. 91902-1

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, RW-003,  
02/13/98, 15:00, received 02/14/98

### RESULTS

Toxicity Characteristic Leaching Procedure  
TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

Toxicity Characteristic Leaching Procedure  
TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.03             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*

Project Manager

*Christina C. Dyke*  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.****ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

March 4, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 91902-2**Sample Description**Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, RW-004,  
02/13/98, 15:00, received 02/14/98**RESULTS**

|                                             |                          |               | <u>Result</u>                 | <u>Detection Limit</u>         |
|---------------------------------------------|--------------------------|---------------|-------------------------------|--------------------------------|
| Ignitability (°F) (EPA 1010).....           |                          |               | >212                          | 70                             |
| pH (laboratory) (EPA 9045).....             |                          |               | 7.81                          | -                              |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          |               | BDL                           | 1                              |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          |               | BDL                           | 5                              |
| Toxicity Characteristic Leaching Procedure  |                          |               |                               |                                |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |               |                               |                                |
| EPA HW                                      |                          |               |                               |                                |
| <u>Number</u>                               | <u>Parameter</u>         | <u>(mg/l)</u> | <u>Detection Limit (mg/l)</u> | <u>Regulatory Limit (mg/l)</u> |
| D004                                        | Arsenic (As).....        | BDL           | 2.5                           | 5.0                            |
| D005                                        | Barium (Ba).....         | 0.3           | 0.1                           | 100.0                          |
| D006                                        | Cadmium (Cd).....        | BDL           | 0.01                          | 1.0                            |
| D020                                        | Chlordane.....           | BDL           | 0.01                          | 0.03                           |
| D007                                        | Chromium (Cr).....       | BDL           | 0.01                          | 5.0                            |
| D026                                        | Total Cresol.....        | BDL           | 0.05                          | 200.0                          |
| D016                                        | 2,4-D.....               | BDL           | 0.05                          | 10.0                           |
| D027                                        | 1,4-Dichlorobenzene..... | BDL           | 0.05                          | 7.5                            |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL           | 0.05                          | 0.13                           |
| D012                                        | Endrin.....              | BDL           | 0.001                         | 0.02                           |
| D031                                        | Heptachlor.....          | BDL           | 0.001                         | 0.008                          |
| D031                                        | Heptachlor epoxide.....  | BDL           | 0.001                         | 0.008                          |
| D032                                        | Hexachlorobenzene.....   | BDL           | 0.05                          | 0.13                           |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

March 4, 1998  
Report No. 91902-2

Soil, composite, DDMT\Dunn Field Memphis TN, Project #20022, RW-004,  
02/13/98, 15:00, received 02/14/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | BDL              | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager  
*Christina P. Pyle*  
Quality Assurance

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## ANALYTICAL SERVICES, INC.

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ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092

(770) 734-4200 • FAX (770) 734-4201

LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

March 4, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 91902-3Sample Description

Water, grab, DDMT\Dunn Field Memphis TN, Project #20022, RW-004EQB,  
02/13/98, 15:00, received 02/14/98

RESULTS

|                                             | <u>Result</u> | <u>Detection Limit</u> |
|---------------------------------------------|---------------|------------------------|
| pH (laboratory) (EPA 9040) .....            | 8.33          | -                      |
| Reactive Cyanide (mg/l) (EPA 7.3.3.2) ..... | BDL           | 1                      |
| Reactive Sulfide (mg/l) (EPA 7.3.4.2) ..... | BDL           | 5                      |
| <u>Metals</u>                               | <u>(mg/l)</u> | <u>(mg/l)</u>          |
| Total Arsenic (As) (EPA 6010) .....         | BDL           | 0.01                   |
| Total Barium (Ba) (EPA 6010) .....          | BDL           | 0.2                    |
| Total Cadmium (Cd) (EPA 6010) .....         | BDL           | 0.005                  |
| Total Chromium (Cr) (EPA 6010) .....        | BDL           | 0.01                   |
| Total Lead (Pb) (EPA 6010) .....            | BDL           | 0.003                  |
| Total Mercury (Hg) (EPA 7470) .....         | BDL           | 0.0005                 |
| Total Selenium (Se) (EPA 6010) .....        | BDL           | 0.005                  |
| Total Silver (Ag) (EPA 6010) .....          | BDL           | 0.01                   |

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BDL - Below Detection Limit

OHM Remediation Services Corp.  
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March 4, 1998  
Report No. 91902-3

Water, grab, DDMT\Dunn Field Memphis TN, Project #20022, RW-004EQB,  
02/13/98, 15:00, received 02/14/98

### RESULTS

| <u>Volatile Organics (EPA 8260)</u>                 | <u>Result</u><br><u>(ug/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(ug/l)</u> |
|-----------------------------------------------------|--------------------------------|---------------------------------------------------|
| Benzene.....                                        | BDL                            | 0.4                                               |
| Carbon tetrachloride.....                           | BDL                            | 2.1                                               |
| Chloroform.....                                     | BDL                            | 0.3                                               |
| Chlorobenzene.....                                  | BDL                            | 0.4                                               |
| 1,2-Dichloroethane.....                             | BDL                            | 0.6                                               |
| 1,1-Dichloroethene.....                             | BDL                            | 1.2                                               |
| Methyl ethyl ketone.....                            | BDL                            | 1                                                 |
| Tetrachloroethene.....                              | BDL                            | 1.4                                               |
| Trichloroethene.....                                | BDL                            | 1                                                 |
| Vinyl chloride.....                                 | BDL                            | 1.1                                               |
| <u>Acid Extractable Organics (EPA 8270)</u>         | <u>(ug/l)</u>                  | <u>(ug/l)</u>                                     |
| Cresols.....                                        | BDL                            | 10                                                |
| Pentachlorophenol.....                              | BDL                            | 25                                                |
| 2,4,5-Trichlorophenol.....                          | BDL                            | 25                                                |
| 2,4,6-Trichlorophenol.....                          | BDL                            | 10                                                |
| <u>Base/Neutral Extractable Organics (EPA 8270)</u> | <u>(ug/l)</u>                  | <u>(ug/l)</u>                                     |
| 1,4-Dichlorobenzene.....                            | BDL                            | 10                                                |
| 2,4-Dinitrotoluene.....                             | BDL                            | 10                                                |
| Hexachlorobenzene.....                              | BDL                            | 10                                                |
| Hexachlorobutadiene.....                            | BDL                            | 10                                                |
| Hexachloroethane.....                               | BDL                            | 10                                                |
| Nitrobenzene.....                                   | BDL                            | 10                                                |
| Pyridine.....                                       | BDL                            | 10                                                |

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BDL - Below Detection Limit



OHM Remediation Services Corp.  
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March 4, 1998  
Report No. 91902-3

Water, grab, DDMT\Dunn Field Memphis TN, Project #20022, RW-004EQB,  
02/13/98, 15:00, received 02/14/98

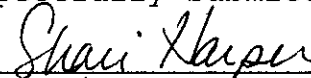
**RESULTS**

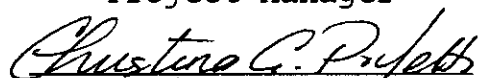
| <u>Pesticides (EPA 8081)</u>             | <u>Result</u><br><u>(ug/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(ug/l)</u> |
|------------------------------------------|--------------------------------|---------------------------------------------------|
| Chlordane.....                           | BDL                            | 0.5                                               |
| Lindane.....                             | BDL                            | 0.1                                               |
| Endrin.....                              | BDL                            | 0.1                                               |
| Heptachlor.....                          | BDL                            | 0.1                                               |
| Heptachlor epoxide.....                  | BDL                            | 0.1                                               |
| Methoxychlor.....                        | BDL                            | 0.3                                               |
| Toxaphene.....                           | BDL                            | 5.0                                               |
| <u>Chlorinated Herbicides (EPA 8151)</u> | <u>(ug/l)</u>                  | <u>(ug/l)</u>                                     |
| 2,4-D.....                               | BDL                            | 5.0                                               |
| 2,4,5-TP (Silvex).....                   | BDL                            | 10                                                |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

  
Project Manager

  
Quality Assurance



# ANALYTICAL SERVICES, INC.

## ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

### LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

March 4, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 91902-4

### Sample Description

Water, grab, DDMT\Dunn Field Memphis TN, Project #20022, FH-001, 02/13/98,  
15:00, received 02/14/98

### RESULTS

|                                             | <u>Result</u> | <u>Detection<br/>Limit</u> |
|---------------------------------------------|---------------|----------------------------|
| pH (laboratory) (EPA 9040) .....            | 7.98          | -                          |
| Reactive Cyanide (mg/l) (EPA 7.3.3.2) ..... | BDL           | 1                          |
| Reactive Sulfide (mg/l) (EPA 7.3.4.2) ..... | BDL           | 5                          |
| <u>Metals</u>                               | <u>(mg/l)</u> | <u>(mg/l)</u>              |
| Total Arsenic (As) (EPA 6010) .....         | BDL           | 0.01                       |
| Total Barium (Ba) (EPA 6010) .....          | BDL           | 0.2                        |
| Total Cadmium (Cd) (EPA 6010) .....         | BDL           | 0.005                      |
| Total Chromium (Cr) (EPA 6010) .....        | BDL           | 0.01                       |
| Total Lead (Pb) (EPA 6010) .....            | BDL           | 0.003                      |
| Total Mercury (Hg) (EPA 7470) .....         | BDL           | 0.0005                     |
| Total Selenium (Se) (EPA 6010) .....        | BDL           | 0.005                      |
| Total Silver (Ag) (EPA 6010) .....          | BDL           | 0.01                       |

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BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 3

March 4, 1998  
Report No. 91902-4

Water, grab, DDMT\Dunn Field Memphis TN, Project #20022, FH-001, 02/13/98,  
15:00, received 02/14/98

### RESULTS

| <u>Volatile Organics (EPA 8260)</u>                 | <u>Result<br/>(ug/l)</u> | <u>Detection<br/>Limit<br/>(ug/l)</u> |
|-----------------------------------------------------|--------------------------|---------------------------------------|
| Benzene.....                                        | BDL                      | 0.4                                   |
| Carbon tetrachloride.....                           | BDL                      | 2.1                                   |
| Chloroform.....                                     | BDL                      | 0.3                                   |
| Chlorobenzene.....                                  | BDL                      | 0.4                                   |
| 1,2-Dichloroethane.....                             | BDL                      | 0.6                                   |
| 1,1-Dichloroethene.....                             | BDL                      | 1.2                                   |
| Methyl ethyl ketone.....                            | BDL                      | 1                                     |
| Tetrachloroethene.....                              | BDL                      | 1.4                                   |
| Trichloroethene.....                                | BDL                      | 1                                     |
| Vinyl chloride.....                                 | BDL                      | 1.1                                   |
| <u>Acid Extractable Organics (EPA 8270)</u>         | <u>(ug/l)</u>            | <u>(ug/l)</u>                         |
| Cresols.....                                        | BDL                      | 10                                    |
| Pentachlorophenol.....                              | BDL                      | 25                                    |
| 2,4,5-Trichlorophenol.....                          | BDL                      | 25                                    |
| 2,4,6-Trichlorophenol.....                          | BDL                      | 10                                    |
| <u>Base/Neutral Extractable Organics (EPA 8270)</u> | <u>(ug/l)</u>            | <u>(ug/l)</u>                         |
| 1,4-Dichlorobenzene.....                            | BDL                      | 10                                    |
| 2,4-Dinitrotoluene.....                             | BDL                      | 10                                    |
| Hexachlorobenzene.....                              | BDL                      | 10                                    |
| Hexachlorobutadiene.....                            | BDL                      | 10                                    |
| Hexachloroethane.....                               | BDL                      | 10                                    |
| Nitrobenzene.....                                   | BDL                      | 10                                    |
| Pyridine.....                                       | BDL                      | 10                                    |

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BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 3 of 3

March 4, 1998  
Report No. 91902-4

Water, grab, DDMT\Dunn Field Memphis TN, Project #20022, FH-001, 02/13/98,  
15:00, received 02/14/98

**RESULTS**

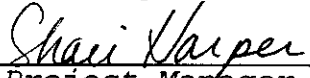
| <u>Pesticides (EPA 8081)</u>                 | <u>Result</u><br><u>(ug/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(ug/l)</u> |
|----------------------------------------------|--------------------------------|---------------------------------------------------|
| Chlordane.....                               | BDL                            | 0.5                                               |
| Lindane.....                                 | BDL                            | 0.1                                               |
| Endrin.....                                  | BDL                            | 0.1                                               |
| Heptachlor.....                              | BDL                            | 0.1                                               |
| Heptachlor epoxide.....                      | BDL                            | 0.1                                               |
| Methoxychlor.....                            | BDL                            | 0.3                                               |
| Toxaphene.....                               | BDL                            | 5.0                                               |
| <br><u>Chlorinated Herbicides (EPA 8151)</u> | <br><u>(ug/l)</u>              | <br><u>(ug/l)</u>                                 |
| 2,4-D.....                                   | BDL                            | 5.0                                               |
| 2,4,5-TP (Silvex).....                       | BDL                            | 10                                                |

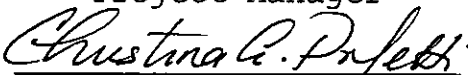
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BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

  
Project Manager

  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.****ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS**110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

March 4, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 91902-5**Sample Description**Water, DDMT\Dunn Field Memphis TN, Project #20022, Trip Blank, received  
02/14/98**RESULTS**

| <u>Volatile Organics (EPA 8260)</u> | <u>Result</u><br><u>(ug/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(ug/l)</u> |
|-------------------------------------|--------------------------------|---------------------------------------------------|
| Benzene.....                        | BDL                            | 0.4                                               |
| Carbon tetrachloride.....           | BDL                            | 2.1                                               |
| Chloroform.....                     | BDL                            | 0.3                                               |
| Chlorobenzene.....                  | BDL                            | 0.4                                               |
| 1,2-Dichloroethane.....             | BDL                            | 0.6                                               |
| 1,1-Dichloroethene.....             | BDL                            | 1.2                                               |
| Methyl ethyl ketone.....            | BDL                            | 1                                                 |
| Tetrachloroethene.....              | BDL                            | 1.4                                               |
| Trichloroethene.....                | BDL                            | 1                                                 |
| Vinyl chloride.....                 | BDL                            | 1.1                                               |

BDL - Below Detection Limit

cc: Mr. John Lore

Respectfully submitted,

*Shari Harper*  
Project Manager*Christina C. Puffett*  
Quality Assurance

Analytical Services Inc. Batch QC  
 For Report Number :91902  
 Base Neutrals / Acids

Matrix : TCLP

Batch # 36063

Method : EPA 8270

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| o-Cresol                           | 91         | 94          | 4         | 10 - 150           | 0 - 50       |
| m-Cresol + p-Cresol                | 77         | 78          | 2         | 10 - 150           | 0 - 50       |
| 1,4-Dichlorobenzene                | 76         | 78          | 2         | 36 - 97            | 0 - 28       |
| 2,4-Dinitrotoluene                 | 83         | 85          | 2         | 24 - 96            | 0 - 38       |
| Hexachlorobenzene                  | 133        | 125         | 7         | 10 - 152           | 0 - 40       |
| Hexachlorobutadiene                | 107        | 98          | 8         | 24 - 116           | 0 - 40       |
| Hexachloroethane                   | 66         | 68          | 3         | 40 - 113           | 0 - 40       |
| Nitrobenzene                       | 94         | 94          | 0         | 35 - 180           | 0 - 40       |
| Pentachlorophenol                  | 72         | 87          | 19        | 9 - 103            | 0 - 50       |
| Pyridine                           | 35         | 40          | 14        | 10 - 110           | 0 - 90       |
| 2,4,5-Trichlorophenol              | 118        | 132         | 11        | 10 - 150           | 0 - 50       |
| 2,4,6-Trichlorophenol              | 117        | 130         | 11        | 37 - 144           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| o-Cresol                            | 105        | 98          | 8         | 10 - 150           | 0 - 50       |
| m-Cresol + p-Cresol                 | 51         | 48          | 6         | 10 - 150           | 0 - 50       |
| 1,4-Dichlorobenzene                 | 76         | 74          | 2         | 36 - 97            | 0 - 28       |
| 2,4-Dinitrotoluene                  | 110        | 99          | 11        | 24 - 96            | 0 - 38       |
| Hexachlorobenzene                   | 172        | 162         | 6         | 10 - 152           | 0 - 40       |
| Hexachlorobutadiene                 | 78         | 73          | 6         | 24 - 116           | 0 - 40       |
| Hexachloroethane                    | 80         | 75          | 8         | 40 - 113           | 0 - 40       |
| Nitrobenzene                        | 272        | 252         | 8         | 35 - 180           | 0 - 40       |
| Pentachlorophenol                   | 73         | 61          | 18        | 9 - 103            | 0 - 50       |
| Pyridine                            | 63         | 60          | 6         | 10 - 110           | 0 - 90       |
| 2,4,5-Trichlorophenol               | 74         | 77          | 4         | 10 - 150           | 0 - 50       |
| 2,4,6-Trichlorophenol               | 97         | 86          | 11        | 37 - 144           | 0 - 40       |

Matrix : TCLP

Batch # 36063

Method : EPA 8270

## % Recovery Objectives

|    |                      |          |
|----|----------------------|----------|
| S1 | 2-Fluorophenol       | 21 - 100 |
| S2 | Phenol-d5            | 10 - 94  |
| S3 | Nitrobenzene-d5      | 35 - 114 |
| S4 | 2-Fluorobiphenyl     | 43 - 116 |
| S5 | 2,4,6-Tribromophenol | 10 - 123 |
| S6 | Terphenyl-d14        | 33 - 141 |

| Sample                          | File  | S1 | S2 | S3  | S4  | S5 | S6  |
|---------------------------------|-------|----|----|-----|-----|----|-----|
| 36063BLK                        | A7816 | 32 | 30 | 79  | 114 | 48 | 105 |
| 36063LCS                        | A7817 | 46 | 36 | 79  | 89  | 70 | 103 |
| 36063LCSD                       | A7818 | 50 | 37 | 82  | 90  | 76 | 98  |
| 91459-2                         | A7844 | 44 | 38 | 93  | 112 | 85 | 110 |
| 91459-3                         | A7845 |    |    |     |     |    |     |
| ^^Note: FV=10ML NO USABLE DATA  |       |    |    |     |     |    |     |
| 91459-2MS                       | A7846 | 39 | 21 | 79  | 113 | 95 | 128 |
| 91459-2MSD                      | A7847 | 34 | 19 | 78  | 110 | 83 | 112 |
| 91459-3D                        | A7851 |    |    |     |     |    |     |
| ^^Note: 1:100 SURR. DILUTED OUT |       |    |    |     |     |    |     |
| 91585-18                        | A7904 | 44 | 36 | 78  | 111 | 98 | 133 |
| 91585-19                        | A7905 | 47 | 36 | 84  | 114 | 99 | 110 |
| 91585-20                        | A7906 | 40 | 33 | 81  | 119 | 99 | 85  |
| 91598-1D                        | A7912 | 29 | 32 | 118 | 99  | 91 | 123 |
| ^^Note: 1:50 MATRIX EFFECT      |       |    |    |     |     |    |     |
| 91598-2                         | A7913 | 40 | 22 | 115 | 245 | 48 | 11  |
| ^^Note: 1:50 MATRIX EFFECT      |       |    |    |     |     |    |     |
| 91598-1                         | A7914 | 32 | 25 | 113 | 107 | 13 | 64  |
| ^^Note: FV=5ML MATRIX EFFECT    |       |    |    |     |     |    |     |
| 91685-1                         | A7932 | 27 | 20 | 67  | 143 | 83 | 126 |
| ^^Note: FV=5ML MATRIX EFFECT    |       |    |    |     |     |    |     |
| 91685-2                         | A7933 | 21 | 26 | 93  | 128 | 86 | 111 |
| ^^Note: MATRIX EFFECT           |       |    |    |     |     |    |     |
| 91685-3                         | A7934 | 46 | 31 | 121 | 63  | 79 | 40  |
| ^^Note: FV=10ML MATRIX EFFECT   |       |    |    |     |     |    |     |
| 91685-3DUP                      | A7935 | 21 | 16 | 178 | 82  | 46 | 55  |
| ^^Note: FV=10ML MATRIX EFFECT   |       |    |    |     |     |    |     |

## Analytical Services Inc. Batch QC

Surrogate Recovery

Base Neutrals / Acids

Matrix : TCLP

Batch # 36063

Method : EPA 8270

## % Recovery Objectives

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|    |                      |          |
|----|----------------------|----------|
| S1 | 2-Fluorophenol       | 21 - 100 |
| S2 | Phenol-d5            | 10 - 94  |
| S3 | Nitrobenzene-d5      | 35 - 114 |
| S4 | 2-Fluorobiphenyl     | 43 - 116 |
| S5 | 2,4,6-Tribromophenol | 10 - 123 |
| S6 | Terphenyl-d14        | 33 - 141 |

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| Sample                          | File  | S1 | S2 | S3  | S4  | S5  | S6  |
|---------------------------------|-------|----|----|-----|-----|-----|-----|
| <hr/>                           |       |    |    |     |     |     |     |
| 91685-3D                        | A7937 |    |    |     |     |     |     |
| ^^Note: 1:100 SURR. DILUTED OUT |       |    |    |     |     |     |     |
| 91685-3DUP D                    | A7938 |    |    |     |     |     |     |
| ^^Note: 1:100 SURR. DILUTED OUT |       |    |    |     |     |     |     |
| 91898-1                         | A8002 | 30 | 54 | 83  | 73  | 74  | 102 |
| ^^Note: 1:50                    |       |    |    |     |     |     |     |
| 91898-2                         | A8003 | 35 | 61 | 110 | 464 | 144 | 134 |
| ^^Note: 1:50;MATRIX EFFECT      |       |    |    |     |     |     |     |
| 91902-1                         | A8004 | 33 | 37 | 80  | 96  | 77  | 84  |
| 91902-2                         | A8005 | 26 | 31 | 79  | 95  | 18  | 95  |

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Blank Results Information  
Base Neutrals / Acids      Method : EPA 8270

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| Analyte |                       | Blank<br>Result | Detection<br>Limit |
|---------|-----------------------|-----------------|--------------------|
| D026    | Total Cresol          | BDL             | 0.05               |
| D027    | 1,4-Dichlorobenzene   | BDL             | 0.05               |
| D030    | 2,4-Dinitrotoluene    | BDL             | 0.05               |
| D032    | Hexachlorobenzene     | BDL             | 0.05               |
| D033    | Hexachlorobutadiene   | BDL             | 0.05               |
| D034    | Hexachloroethane      | BDL             | 0.05               |
| D036    | Nitrobenzene          | BDL             | 0.05               |
| D037    | Pentachlorophenol     | BDL             | 0.05               |
| D041    | 2,4,5-Trichlorophenol | BDL             | 0.05               |
| D042    | 2,4,6-Trichlorophenol | BDL             | 0.05               |
| D038    | Pyridine              | BDL             | 0.05               |

Sample Batch Information  
Base Neutrals / Acids      Method : EPA 8270

| Sample ID    | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst # |
|--------------|-------------|------|-------|----------------------|----------|------|-----|--------|
|              | Date        | Time | By    |                      | Date     | Time | By  |        |
| 36063BLK     | 02/06/98    | 1400 | JW    |                      | 02/08/98 | 1144 | TAS | 5970   |
| 36063LCS     | 02/06/98    | 1400 | JW    |                      | 02/08/98 | 1217 | TAS | 5970   |
| 36063LCSD    | 02/06/98    | 1400 | JW    |                      | 02/08/98 | 1250 | TAS | 5970   |
| 91459-2      | 02/06/98    | 1400 | JW    |                      | 02/09/98 | 1236 | TAS | 5970   |
| 91459-2MS    | 02/06/98    | 1400 | JW    |                      | 02/09/98 | 1343 | TAS | 5970   |
| 91459-2MSD   | 02/06/98    | 1400 | JW    |                      | 02/09/98 | 1415 | TAS | 5970   |
| 91459-3      | 02/06/98    | 1400 | JW    |                      | 02/09/98 | 1309 | TAS | 5970   |
| 91598-1      | 02/09/98    | 1300 | JW/CM |                      | 02/11/98 | 2002 | TAS | 5970   |
| 91598-2      | 02/09/98    | 1300 | JW/CM |                      | 02/11/98 | 1930 | TAS | 5970   |
| 91459-3D     | /           | /    |       |                      | 02/09/98 | 1628 | TAS | 5970   |
| 91585-18     | 02/10/98    | 1500 | JW/CM |                      | 02/11/98 | 1442 | TAS | 5970   |
| 91585-19     | 02/10/98    | 1500 | JW/CM |                      | 02/11/98 | 1515 | TAS | 5970   |
| 91585-20     | 02/10/98    | 1500 | JW/CM |                      | 02/11/98 | 1546 | TAS | 5970   |
| 91598-1D     | /           | /    |       |                      | 02/11/98 | 1858 | TAS | 5970   |
| 91685-1      | 02/12/98    | 1100 | JW/CM |                      | 02/13/98 | 1143 | TAS | 5970   |
| 91685-2      | 02/12/98    | 1100 | JW/CM |                      | 02/13/98 | 1215 | TAS | 5970   |
| 91685-3      | 02/12/98    | 1100 | JW/CM |                      | 02/13/98 | 1247 | TAS | 5970   |
| 91685-3DUP   | 02/12/98    | 1100 | JW/CM |                      | 02/13/98 | 1319 | TAS | 5970   |
| 91685-3D     | /           | /    |       |                      | 02/13/98 | 1431 | TAS | 5970   |
| 91685-3DUP D | /           | /    |       |                      | 02/13/98 | 1503 | TAS | 5970   |
| 91898-1      | 02/19/98    | 0900 | JW/CM |                      | 02/19/98 | 1725 | TAS | 5970   |
| 91898-2      | 02/19/98    | 0900 | JW/CM |                      | 02/19/98 | 1758 | TAS | 5970   |
| 91902-1      | 02/19/98    | 0900 | JW/CM |                      | 02/19/98 | 1831 | TAS | 5970   |
| 91902-2      | 02/19/98    | 0900 | JW/CM |                      | 02/19/98 | 1904 | TAS | 5970   |

Analytical Services Inc. Batch QC  
 For Report Number :91902  
 Organochlorine Pesticides

Matrix : Aqueous

Batch # 36227

Method : EPA 8081

| Lab Control Information<br>Analyte  | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                 | 96         | 95          | 1         | 32 - 127           | 0 - 40       |
| Heptachlor                          | 88         | 88          | 0         | 34 - 111           | 0 - 40       |
| Aldrin                              | 100        | 101         | 1         | 42 - 122           | 0 - 40       |
| Dieldrin                            | 92         | 93          | 1         | 36 - 146           | 0 - 40       |
| Endrin                              | 87         | 86          | 1         | 30 - 147           | 0 - 40       |
| 4,4'-DDT                            | 68         | 69          | 1         | 25 - 160           | 0 - 40       |
| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
| BHC-gamma (Lindane)                 | 128        | 131         | 2         | 32 - 127           | 0 - 40       |
| Heptachlor                          | 115        | 117         | 2         | 34 - 111           | 0 - 40       |
| Aldrin                              | 126        | 127         | 1         | 42 - 122           | 0 - 40       |
| Dieldrin                            | 124        | 122         | 2         | 36 - 146           | 0 - 40       |
| Endrin                              | 122        | 122         | 0         | 30 - 147           | 0 - 40       |
| 4,4'-DDT                            | 97         | 99          | 2         | 25 - 160           | 0 - 40       |

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Organochlorine Pesticides

Matrix : Aqueous

Batch # 36227

Method : EPA 8081

## % Recovery Objectives

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|    |                      |          |
|----|----------------------|----------|
| S1 | Dibutylchlorendate   | 14 - 161 |
| S2 | Tetrachloro-m-xylene | 47 - 113 |
| S3 | Decachlorobiphenyl   | 10 - 139 |

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| Sample      | File           | S1  | S2  | S3  | S4 | S5 | S6 |
|-------------|----------------|-----|-----|-----|----|----|----|
| <hr/>       |                |     |     |     |    |    |    |
| 91556       | 021398035F     | 165 | 90  | 134 |    |    |    |
| 91556MS     | 021398032F     | 166 | 98  | 151 |    |    |    |
| 91556MSD    | 021398033F     | 161 | 92  | 144 |    |    |    |
| 36227BLK    | 021398041F     | 148 | 117 | 123 |    |    |    |
| 36227LCS    | 021398042F     | 148 | 119 | 117 |    |    |    |
| 36227LCSD   | 021398043F     | 148 | 113 | 115 |    |    |    |
| 91734-7     | 021798004F     | 131 | 107 | 137 |    |    |    |
| 36227BLKRR  | 011798088F0401 | 145 | 76  | 111 |    |    |    |
| 36227LCSRR  | 011798089F0401 | 149 | 88  | 109 |    |    |    |
| 36227LCSDRR | 011798090F0401 | 147 | 90  | 103 |    |    |    |
| 91796-1     | 022098019F     | 139 | 111 | 109 |    |    |    |
| 91796-2DUP  | 022098021F     | 152 | 122 | 117 |    |    |    |
| 91796-2     | 022098022F     | 140 | 110 | 122 |    |    |    |
| 91796-1DUP  | 022098020F     | 147 | 109 | 134 |    |    |    |
| 91902-3     | 022098034F     | 140 | 105 | 112 |    |    |    |
| 91902-4     | 022098035F     | 151 | 111 | 116 |    |    |    |
| 91883       | 022398027R     | 70  | 61  | 56  |    |    |    |
| 91886-2     | 022398049F     | 100 | 97  | 57  |    |    |    |
| 91886-3     | 022398050F     | 90  | 92  | 56  |    |    |    |
| 91886-4     | 022398051F     | 90  | 88  | 58  |    |    |    |
| 91886-5     | 022398052F     | 94  | 100 | 47  |    |    |    |
| 91886-6     | 022398053F     | 109 | 90  | 87  |    |    |    |

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Q.C. Information for Batch # 36227

Printed: 03/03/98 13:59:57

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Blank Results Information  
Organochlorine Pesticides      Method : EPA 8081

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| Analyte            | Blank<br>Result | Detection<br>Limit |
|--------------------|-----------------|--------------------|
| Chlordane          | BDL             | 0.5                |
| Lindane            | BDL             | 0.1                |
| Endrin             | BDL             | 0.1                |
| Heptachlor         | BDL             | 0.1                |
| Heptachlor epoxide | BDL             | 0.1                |
| Methoxychlor       | BDL             | 0.3                |
| Toxaphene          | BDL             | 5.0                |

Sample Batch Information  
Organochlorine Pesticides Method : EPA 8081

| Sample ID   | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst # |
|-------------|-------------|------|-------|----------------------|----------|------|-----|--------|
|             | Date        | Time | By    |                      | Date     | Time | By  |        |
| 36227BLK    | 02/10/98    | 0900 | JW/CM |                      | 02/16/98 | 1801 | JQZ | GC-3   |
| 36227LCS    | 02/10/98    | 0900 | JW/CM |                      | 02/16/98 | 1840 | JQZ | GC-3   |
| 36227LCSD   | 02/10/98    | 0900 | JW/CM |                      | 02/16/98 | 1905 | JQZ | GC-3   |
| 91556       | 02/10/98    | 0900 | JW/CM |                      | 02/16/98 | 1503 | JQZ | GC-3   |
| 91556MS     | 02/10/98    | 0900 | JW/CM |                      | 02/16/98 | 1345 | JQZ | GC-3   |
| 91556MSD    | 02/10/98    | 0900 | JW/CM |                      | 02/16/98 | 1409 | JQZ | GC-3   |
| 91734-7     | 02/12/98    | 0900 | JW/CM |                      | 02/17/98 | 0837 | JQZ | GC-3   |
| 91796-1     | 02/16/98    | 1000 | TB    |                      | 02/20/98 | 1727 | JQZ | GC-3   |
| 91796-1DUP  | 02/16/98    | 1000 | TB    |                      | 02/20/98 | 1750 | JQZ | GC-3   |
| 91796-2     | 02/16/98    | 1000 | TB    |                      | 02/20/98 | 1838 | JQZ | GC-3   |
| 91796-2DUP  | 02/16/98    | 1000 | TB    |                      | 02/20/98 | 1814 | JQZ | GC-3   |
| 36227BLKRR  | 02/17/98    | 1700 | JW    |                      | 02/18/98 | 0130 | JQZ | GC-3   |
| 36227LCSRR  | 02/17/98    | 1700 | JW    |                      | 02/18/98 | 0218 | JQZ | GC-3   |
| 36227LCSDRR | 02/17/98    | 1700 | JW    |                      | 02/18/98 | 0218 | JQZ | GC-3   |
| 91886-2     | 02/17/98    | 1400 | JW/CM |                      | 02/24/98 | 1328 | JQZ | GC-3   |
| 91886-3     | 02/17/98    | 1400 | JW/CM |                      | 02/24/98 | 1352 | JQZ | GC-3   |
| 91886-4     | 02/17/98    | 1400 | JW/CM |                      | 02/24/98 | 1416 | JQZ | GC-3   |
| 91886-5     | 02/17/98    | 1400 | JW/CM |                      | 02/24/98 | 1440 | JQZ | GC-3   |
| 91886-6     | 02/17/98    | 1400 | JW/CM |                      | 02/24/98 | 1504 | JQZ | GC-3   |
| 91883       | 02/17/98    | 1400 | JW/CM |                      | 02/23/98 | 0354 | JQZ | GC-3   |
| 91902-3     | 02/18/98    | 0900 | JW/CM |                      | 02/20/98 | 2325 | JQZ | GC-3   |
| 91902-4     | 02/18/98    | 0900 | JW/CM |                      | 02/20/98 | 2349 | JQZ | GC-3   |

Analytical Services Inc. Batch QC  
For Report Number :91902  
Chlorinated Herbicides

Matrix : TCLP

Batch # 36305

Method : EPA 8151

| Lab Control Information<br>Analyte  | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                               | 71         | 83          | 16        | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 82         | 90          | 9         | 40 - 140           | 0 - 40       |
| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
| 2,4-D                               | 95         | 120         | 23        | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 68         | 82          | 19        | 40 - 140           | 0 - 40       |





Q.C. Information for Batch # 36305

Printed: 03/03/98 13:59:58

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Blank Results Information  
Chlorinated Herbicides Method : EPA 8151

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| Analyte |                 | Blank<br>Result | Detection<br>Limit |
|---------|-----------------|-----------------|--------------------|
| D016    | 2,4-D           | BDL             | 0.05               |
| D017    | 2,4,5-TP Silvex | BDL             | 0.1                |

Sample Batch Information  
Chlorinated Herbicides Method : EPA 8151

| Sample ID  | Preparation |      |    | Preparation<br>Notes | Analysis |      |     | Inst # |
|------------|-------------|------|----|----------------------|----------|------|-----|--------|
|            | Date        | Time | By |                      | Date     | Time | By  |        |
| 36305BLK   | 02/13/98    | 1030 | DH |                      | 02/13/98 | 2033 | JQZ | GC-1   |
| 36305LCS   | 02/13/98    | 1030 | DH |                      | 02/13/98 | 2101 | JQZ | GC-1   |
| 36305LCSD  | 02/13/98    | 1030 | DH |                      | 02/13/98 | 1543 | JQZ | GC-1   |
| 91734-1    | 02/13/98    | 1030 | DH |                      | 02/13/98 | 2156 | JQZ | GC-1   |
| 91734-1MS  | 02/13/98    | 1030 | DH |                      | 02/14/98 | 0209 | JQZ | GC-1   |
| 91734-1MSD | 02/13/98    | 1030 | DH |                      | 02/14/98 | 0238 | JQZ | GC-1   |
| 91734-2    | 02/13/98    | 1030 | DH |                      | 02/13/98 | 2157 | JQZ | GC-1   |
| 91734-3    | 02/13/98    | 1030 | DH |                      | 02/13/98 | 2253 | JQZ | GC-1   |
| 91734-4    | 02/13/98    | 1030 | DH |                      | 02/13/98 | 2321 | JQZ | GC-1   |
| 91734-5    | 02/13/98    | 1030 | DH |                      | 02/13/98 | 2349 | JQZ | GC-1   |
| 91734-6    | 02/13/98    | 1030 | DH |                      | 02/14/98 | 0017 | JQZ | GC-1   |
| 91734-6DUP | 02/13/98    | 1030 | DH |                      | 02/14/98 | 0045 | JQZ | GC-1   |
| 91976-1    | 02/18/98    | 1615 | DH |                      | 02/19/98 | 1431 | JQZ | GC-1   |
| 91976-2    | 02/18/98    | 1615 | DH |                      | 02/19/98 | 1500 | JQZ | GC-1   |
| 91902-1    | 02/19/98    | 1150 | DH |                      | 02/20/98 | 2320 | JQZ | GC-1   |
| 91902-2    | 02/19/98    | 1150 | DH |                      | 02/20/98 | 2348 | JQZ | GC-1   |
| 91936-1    | 02/19/98    | 1150 | DH |                      | 02/20/98 | 2251 | JQZ | GC-1   |
| 92177-1    | 02/24/98    | 1305 | DH |                      | 02/25/98 | 1209 | JQZ | GC-1   |
| 92177-2    | 02/24/98    | 1305 | DH |                      | 02/25/98 | 1207 | JQZ | GC-1   |

Analytical Services Inc. Batch QC  
 For Report Number :91902  
 Organochlorine Pesticides

Matrix : TCLP

Batch # 36371

Method : EPA 8081

| Lab Control Information<br>Analyte  | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                 | 96         | 100         | 5         | 32 - 127           | 0 - 40       |
| Heptachlor                          | 95         | 99          | 4         | 34 - 111           | 0 - 40       |
| Toxaphene                           | 82         | 88          | 7         | 25 - 160           | 0 - 40       |
| Heptachlor epoxide                  | 100        | 105         | 4         | 25 - 160           | 0 - 40       |
| Endrin                              | 76         | 79          | 4         | 30 - 147           | 0 - 40       |
| Chlordane                           | 96         | 102         | 7         | 25 - 160           | 0 - 40       |
| Methoxychlor                        | 100        | 100         | 0         | 25 - 160           | 0 - 40       |
| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
| BHC-gamma (Lindane)                 | 96         | 102         | 6         | 32 - 127           | 0 - 40       |
| Heptachlor                          | 84         | 90          | 7         | 34 - 111           | 0 - 40       |
| Toxaphene                           | 97         | 98          | 1         | 25 - 160           | 0 - 40       |
| Heptachlor epoxide                  | 94         | 104         | 10        | 25 - 160           | 0 - 40       |
| Endrin                              | 77         | 81          | 6         | 30 - 147           | 0 - 40       |
| Chlordane                           | 108        | 138         | 24        | 25 - 160           | 0 - 40       |
| Methoxychlor                        | 89         | 93          | 4         | 25 - 160           | 0 - 40       |

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Organochlorine Pesticides

Matrix : TCLP

Batch # 36371

Method : EPA 8081

## % Recovery Objectives

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|    |                      |          |
|----|----------------------|----------|
| S1 | Dibutylchlorendate   | 34 - 151 |
| S2 | Tetrachloro-m-xylene | 40 - 111 |
| S3 | Decachlorobiphenyl   | 24 - 153 |

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| Sample     | File       | S1  | S2  | S3  | S4 | S5 | S6 |
|------------|------------|-----|-----|-----|----|----|----|
| <hr/>      |            |     |     |     |    |    |    |
| 36371BLK   | 021398014F | 95  | 70  | 84  |    |    |    |
| 36371LCS   | 021398015F | 106 | 71  | 90  |    |    |    |
| 36371LCSD  | 021398016F | 108 | 81  | 109 |    |    |    |
| 91734-1    | 021398017F | 86  | 58  | 94  |    |    |    |
| 91734-2    | 021398018F | 99  | 75  | 111 |    |    |    |
| 91734-3    | 021398019F | 101 | 76  | 106 |    |    |    |
| 91734-4    | 021398020F | 108 | 74  | 111 |    |    |    |
| 91734-5    | 021398021F | 99  | 85  | 99  |    |    |    |
| 01734-6    | 021398022F | 111 | 60  | 96  |    |    |    |
| 91734-6DUP | 021398023F | 118 | 94  | 111 |    |    |    |
| 91734-2MS  | 021398039F | 131 | 80  | 123 |    |    |    |
| 91734-2MSD | 021398040F | 137 | 91  | 132 |    |    |    |
| 91976-1    | 021898066F | 120 | 97  | 104 |    |    |    |
| 91976-2    | 021898067F | 108 | 97  | 78  |    |    |    |
| 91902-3    | 022098034F | 140 | 105 | 112 |    |    |    |
| 91902-4    | 022098035F | 150 | 111 | 116 |    |    |    |
| 91902-1    | 022098081F | 126 | 92  | 95  |    |    |    |
| 91902-2    | 022098082F | 97  | 74  | 76  |    |    |    |
| 91936-1    | 022098083F | 88  | 78  | 32  |    |    |    |
| 92177-1    | 022398056F | 101 | 93  | 130 |    |    |    |
| 92177-2    | 022398057F | 86  | 91  | 105 |    |    |    |

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Q.C. Information for Batch # 36371

Printed: 03/03/98 14:00:00

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Blank Results Information  
Organochlorine Pesticides Method : EPA 8081

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| Analyte |                    | Blank<br>Result | Detection<br>Limit |
|---------|--------------------|-----------------|--------------------|
| D020    | Chlordane          | BDL             | 0.01               |
| D012    | Endrin             | BDL             | 0.001              |
| D031    | Heptachlor         | BDL             | 0.001              |
| D031    | Heptachlor epoxide | BDL             | 0.001              |
| D013    | Lindane            | BDL             | 0.01               |
| D014    | Methoxychlor       | BDL             | 0.5                |
| D015    | Toxaphene          | BDL             | 0.05               |

Sample Batch Information  
 Organochlorine Pesticides      Method : EPA 8081

| Sample ID  | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst # |
|------------|-------------|------|-------|----------------------|----------|------|-----|--------|
|            | Date        | Time | By    |                      | Date     | Time | By  |        |
| 36371BLK   | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0032 | JQZ | GC-3   |
| 36371LCS   | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0101 | JQZ | GC-3   |
| 36371LCSD  | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0130 | JQZ | GC-3   |
| 91734-1    | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0159 | JQZ | GC-3   |
| 91734-2    | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0228 | JQZ | GC-3   |
| 91734-2MS  | 02/13/98    | 1400 | JW/CM |                      | 02/16/98 | 1639 | JQZ | GC-3   |
| 91734-2MSD | 02/13/98    | 1400 | JW/CM |                      | 02/16/98 | 1703 | JQZ | GC-3   |
| 91734-3    | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0257 | JQZ | GC-3   |
| 91734-4    | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0326 | JQZ | GC-3   |
| 91734-5    | 02/13/98    | 1400 | JW/CM |                      | 02/14/98 | 0355 | JQZ | GC-3   |
| 91734-6    | 02/13/98    | 1400 | JW/CM |                      | /        | /    |     |        |
| 91734-6DUP | 02/13/98    | 1400 | JW/CM |                      | 02/16/98 | 0935 | JQZ | GC-3   |
| 91976-1    | 02/18/98    | 1500 | JW    |                      | 02/19/98 | 1423 | JQZ | GC-3   |
| 91976-2    | 02/18/98    | 1500 | JW    |                      | 02/19/98 | 1447 | JQZ | GC-3   |
| 91902-1    | 02/19/98    | 1700 | JW/CM |                      | 02/21/98 | 1812 | JQZ | GC-3   |
| 91902-2    | 02/19/98    | 1700 | JW/CM |                      | 02/21/98 | 1836 | JQZ | GC-3   |
| 91936-1    | 02/19/98    | 1700 | JW/CM |                      | 02/21/98 | 1900 | JQZ | GC-3   |
| 92177-1    | 02/24/98    | 1200 | TB    |                      | 02/24/98 | 1703 | JQZ | GC-3   |
| 92177-2    | 02/24/98    | 1200 | TB    |                      | 02/24/98 | 1728 | JQZ | GC-3   |
| 01734-6    | /           | /    |       |                      | 02/14/98 | 0905 | JQZ | GC-3   |
| 91902-3    | /           | /    |       |                      | 02/20/98 | 2301 | JQZ | GC-3   |
| 91902-4    | /           | /    |       |                      | 02/20/98 | 2325 | JQZ | GC-3   |

Analytical Services Inc. Batch QC  
 For Report Number :91902  
 Base Neutrals / Acids

Matrix : Aqueous

Batch # 36421

Method : EPA 8270

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Phenol                             | 29         | 30          | 1         | 12 - 89            | 0 - 42       |
| 2-Chlorophenol                     | 43         | 46          | 6         | 27 - 123           | 0 - 40       |
| 1,4-Dichlorobenzene                | 68         | 73          | 7         | 36 - 97            | 0 - 28       |
| N-Nitrosodipropylamine             | 96         | 102         | 7         | 41 - 116           | 0 - 38       |
| 1,2,4-Trichlorobenzene             | 78         | 80          | 3         | 44 - 142           | 0 - 28       |
| 4-Chloro-3-methylphenol            | 59         | 61          | 3         | 23 - 97            | 0 - 42       |
| Acenaphthene                       | 88         | 92          | 4         | 46 - 118           | 0 - 31       |
| 2,4-Dinitrotoluene                 | 61         | 61          | 1         | 24 - 96            | 0 - 38       |
| 4-Nitrophenol                      | 11         | 11          | 2         | 10 - 80            | 0 - 50       |
| Pentachlorophenol                  | 24         | 31          | 25        | 9 - 103            | 0 - 50       |
| Pyrene                             | 104        | 99          | 5         | 26 - 127           | 0 - 31       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Phenol                              | 37         | 34          | 8         | 12 - 89            | 0 - 42       |
| 2-Chlorophenol                      | 69         | 65          | 6         | 27 - 123           | 0 - 40       |
| 1,4-Dichlorobenzene                 | 67         | 60          | 10        | 36 - 97            | 0 - 28       |
| N-Nitrosodipropylamine              | 93         | 82          | 13        | 41 - 116           | 0 - 38       |
| 1,2,4-Trichlorobenzene              | 77         | 71          | 8         | 44 - 142           | 0 - 28       |
| 4-Chloro-3-methylphenol             | 76         | 69          | 10        | 23 - 97            | 0 - 42       |
| Acenaphthene                        | 82         | 76          | 8         | 46 - 118           | 0 - 31       |
| 2,4-Dinitrotoluene                  | 29         | 28          | 2         | 24 - 96            | 0 - 38       |
| 4-Nitrophenol                       | 30         | 27          | 9         | 10 - 80            | 0 - 50       |
| Pentachlorophenol                   | 86         | 79          | 9         | 9 - 103            | 0 - 50       |
| Pyrene                              | 95         | 85          | 11        | 26 - 127           | 0 - 31       |

## Analytical Services Inc. Batch QC

## Surrogate Recovery

## Base Neutrals / Acids

Matrix : Aqueous

Batch # 36421

Method : EPA 8270

## % Recovery Objectives

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|    |                      |          |
|----|----------------------|----------|
| S1 | 2-Fluorophenol       | 21 - 100 |
| S2 | Phenol-d5            | 10 - 94  |
| S3 | Nitrobenzene-d5      | 35 - 114 |
| S4 | 2-Fluorobiphenyl     | 43 - 116 |
| S5 | 2,4,6-Tribromophenol | 10 - 123 |
| S6 | Terphenyl-d14        | 33 - 141 |

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| Sample                               | File  | S1 | S2 | S3 | S4  | S5 | S6  |
|--------------------------------------|-------|----|----|----|-----|----|-----|
| <hr/>                                |       |    |    |    |     |    |     |
| 36421BLK                             | A7991 | 21 | 29 | 86 | 103 | 34 | 104 |
| 36421LCS                             | A7994 | 21 | 31 | 79 | 97  | 44 | 108 |
| 36421LCSD                            | A7995 | 23 | 30 | 84 | 101 | 53 | 100 |
| ^^Note: MS/MSD WILL BE ANALYZED ASAP |       |    |    |    |     |    |     |
|                                      |       |    |    |    |     |    |     |
| 91902-3                              | A7996 | 40 | 38 | 80 | 100 | 78 | 97  |
| 91902-4                              | A7997 | 10 | 18 | 79 | 95  | 18 | 87  |
| 91900-7                              | A7998 | 33 | 32 | 80 | 102 | 69 | 93  |
| 91900-8                              | A7999 | 38 | 39 | 72 | 89  | 85 | 63  |
| 91609-16                             | B4039 | 45 | 24 | 80 | 84  | 68 | 106 |
| 91609-17                             | B4040 | 22 | 15 | 57 | 57  | 38 | 96  |
| 92015-1                              | B4041 |    |    | 82 | 88  |    | 55  |
| ^^Note: BN ONLY                      |       |    |    |    |     |    |     |
|                                      |       |    |    |    |     |    |     |
| 92015-2                              | B4042 |    |    | 90 | 94  |    | 63  |
| ^^Note: BN ONLY                      |       |    |    |    |     |    |     |
|                                      |       |    |    |    |     |    |     |
| 92015-3                              | B4043 |    |    | 78 | 72  |    | 48  |
| ^^Note: BN ONLY                      |       |    |    |    |     |    |     |
|                                      |       |    |    |    |     |    |     |
| 92015-4                              | B4044 |    |    | 82 | 84  |    | 48  |
| ^^Note: BN ONLY                      |       |    |    |    |     |    |     |
|                                      |       |    |    |    |     |    |     |
| 92015-5                              | A8006 |    |    | 89 | 100 |    | 78  |
| ^^Note: BN ONLY                      |       |    |    |    |     |    |     |
|                                      |       |    |    |    |     |    |     |
| 92154-1                              | B4191 | 41 | 20 | 64 | 58  | 29 | 68  |
| 92154-2                              | B4192 | 43 | 22 | 73 | 68  | 91 | 91  |
| 92154-3                              | B4193 | 11 | 4  | 62 | 59  | 1  | 55  |
| ^^Note: RE-EXTRACT                   |       |    |    |    |     |    |     |
|                                      |       |    |    |    |     |    |     |
| 92154-9MS                            | B4240 | 51 | 35 | 83 | 82  | 87 | 87  |
| 92154-10MSD                          | B4241 | 44 | 31 | 71 | 71  | 78 | 74  |

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Q.C. Information for Batch # 36421

Printed: 03/03/98 14:00:01

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Blank Results Information  
Base Neutrals / Acids      Method : EPA 8270

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| Analyte               | Blank<br>Result | Detection<br>Limit |
|-----------------------|-----------------|--------------------|
| Cresols               | BDL             | 10                 |
| Pentachlorophenol     | BDL             | 25                 |
| 2,4,5-Trichlorophenol | BDL             | 25                 |
| 2,4,6-Trichlorophenol | BDL             | 10                 |
| 1,4-Dichlorobenzene   | BDL             | 10                 |
| 2,4-Dinitrotoluene    | BDL             | 10                 |
| Hexachlorobenzene     | BDL             | 10                 |
| Hexachlorobutadiene   | BDL             | 10                 |
| Hexachloroethane      | BDL             | 10                 |
| Nitrobenzene          | BDL             | 10                 |
| Pyridine              | BDL             | 10                 |

Sample Batch Information  
Base Neutrals / Acids      Method : EPA 8270

| Sample ID   | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst # |
|-------------|-------------|------|-------|----------------------|----------|------|-----|--------|
|             | Date        | Time | By    |                      | Date     | Time | By  |        |
| 36421BLK    | 02/18/98    | 0900 | JW/CM |                      | 02/19/98 | 0903 | RAC | 5970   |
| 36421LCS    | 02/18/98    | 0900 | JW/CM |                      | 02/19/98 | 1042 | RAC | 5970   |
| 36421LCSD   | 02/18/98    | 0900 | JW/CM |                      | 02/19/98 | 1114 | RAC | 5970   |
| 91902-3     | 02/18/98    | 0900 | JW/CM |                      | 02/19/98 | 1148 | RAC | 5970   |
| 91902-4     | 02/18/98    | 0900 | JW/CM |                      | 02/19/98 | 1220 | RAC | 5970   |
| 91900-7     | 02/18/98    | 0900 | JW/CM | PAH                  | 02/19/98 | 1253 | RAC | 5970   |
| 91900-8     | 02/18/98    | 0900 | JW/CM | PAH                  | 02/19/98 | 1325 | RAC | 5970   |
| 91609-16    | 02/19/98    | 0900 | JW/CM |                      | 02/19/98 | 1807 | RAC | 5971   |
| 91609-17    | 02/19/98    | 0900 | JW/CM |                      | 02/19/98 | 1844 | RAC | 5971   |
| 92015-1     | 02/19/98    | 0900 | JW/CM | PAH                  | 02/19/98 | 1920 | RAC | 5971   |
| 92015-2     | 02/19/98    | 0900 | JW/CM | PAH                  | 02/19/98 | 1957 | RAC | 5971   |
| 92015-3     | 02/19/98    | 0900 | JW/CM | PAH                  | 02/19/98 | 2033 | RAC | 5971   |
| 92015-4     | 02/19/98    | 0900 | JW/CM | PAH                  | 02/19/98 | 2109 | RAC | 5971   |
| 92015-5     | 02/19/98    | 0900 | JW/CM | PAH                  | 02/19/98 | 1937 | RAC | 5970   |
| 92154-1     | 02/25/98    | 1400 | JW    |                      | 02/26/98 | 1736 | RAC | 5971   |
| 92154-2     | 02/25/98    | 1400 | JW    |                      | 02/26/98 | 1809 | RAC | 5971   |
| 92154-3     | 02/25/98    | 1400 | JW    |                      | 02/26/98 | 1843 | RAC | 5971   |
| 92154-4     | 02/25/98    | 1400 | JW    |                      | /        | /    |     |        |
| 92154-5     | 02/25/98    | 1400 | JW    |                      | /        | /    |     |        |
| 92154-6     | 02/25/98    | 1400 | JW    |                      | /        | /    |     |        |
| 92154-7     | 02/25/98    | 1400 | JW    |                      | /        | /    |     |        |
| 92154-8     | 02/25/98    | 1400 | JW    |                      | /        | /    |     |        |
| 92154-9MS   | 02/26/98    | 0900 | JW    |                      | 03/02/98 | 0531 | RAC | 5971   |
| 92154-10MSD | 02/26/98    | 0900 | JW    |                      | 03/02/98 | 0607 | RAC | 5971   |
| 92154-11DUP | 02/26/98    | 0900 | JW    |                      | /        | /    |     |        |

Analytical Services Inc. Batch QC  
For Report Number :91902  
Chlorinated Herbicides

Matrix : Aqueous

Batch # 36461

Method : EPA 8151 / 615

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                              | 40         | 52          | 25        | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                  | 49         | 55          | 12        | 40 - 140           | 0 - 40       |
| 2,4,5-T                            | 65         | 57          | 14        | 40 - 140           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                               | 53         | 44          | 18        | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 59         | 61          | 4         | 40 - 140           | 0 - 40       |
| 2,4,5-T                             | 58         | 65          | 11        | 40 - 140           | 0 - 40       |

Analytical Services Inc. Batch QC  
Surrogate Recovery  
Chlorinated Herbicides

Matrix : Aqueous

Batch # 36461

Method : EPA 8151 / 615

## % Recovery Objectives

|            |            | 20 - 160 |    |    |    |    |    |
|------------|------------|----------|----|----|----|----|----|
|            |            | DCAA     |    |    |    |    |    |
|            |            | S1       |    |    |    |    |    |
| Sample     | File       | S1       | S2 | S3 | S4 | S5 | S6 |
| 36461BLK   | 022098007F | 100      |    |    |    |    |    |
| 36461LCS   | 022098008F | 89       |    |    |    |    |    |
| 36461LCSD  | 022098009F | 124      |    |    |    |    |    |
| 91902-3    | 022098010F | 107      |    |    |    |    |    |
| 91902-3MS  | 022098011F | 118      |    |    |    |    |    |
| 91902-4    | 022098015F | 116      |    |    |    |    |    |
| 91941      | 022098016F | 136      |    |    |    |    |    |
| 92010-1    | 022098017F | 82       |    |    |    |    |    |
| 91886-2    | 022098028F | 78       |    |    |    |    |    |
| 91886-3    | 022098029F | 102      |    |    |    |    |    |
| 91886-4    | 022098030F | 84       |    |    |    |    |    |
| 91886-5    | 022098031F | 92       |    |    |    |    |    |
| 91886-6    | 022098032F | 100      |    |    |    |    |    |
| 91883      | 022098033F | 130      |    |    |    |    |    |
| 91902-3MSD | 022398003F | 100      |    |    |    |    |    |
| 92141      | 022498006F | 104      |    |    |    |    |    |
| 92154-1    | 022698004F | 122      |    |    |    |    |    |
| 92154-2    | 022698005r | 130      |    |    |    |    |    |
| 92154-3    | 022698006R | 116      |    |    |    |    |    |
| 92154-4    | 022698007R | 116      |    |    |    |    |    |
| 92154-5    | 022698008F | 110      |    |    |    |    |    |
| 92154-6    | 022698009F | 120      |    |    |    |    |    |
| 92154-7    | 022698010F | 96       |    |    |    |    |    |
| 92154-8    | 022698011F | 118      |    |    |    |    |    |
| 92154-8DUP | 022698013F | 106      |    |    |    |    |    |
| 92154-11   | 022698020F | 96       |    |    |    |    |    |

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Blank Results Information  
Chlorinated Herbicides Method : EPA 8151 / 615

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| Analyte  | Blank<br>Result | Detection<br>Limit |
|----------|-----------------|--------------------|
| 2,4-D    | BDL             | 5.0                |
| 2,4,5-TP | BDL             | 10                 |

Sample Batch Information  
Chlorinated Herbicides      Method : EPA 8151 / 615

| Sample ID  | Preparation |      |    | Preparation<br>Notes | Analysis |      |     | Inst # |
|------------|-------------|------|----|----------------------|----------|------|-----|--------|
|            | Date        | Time | By |                      | Date     | Time | By  |        |
| 36461BLK   | 02/18/98    | 0830 | DH |                      | 02/20/98 | 1643 | JQZ | GC-1   |
| 36461LCS   | 02/18/98    | 0830 | DH |                      | 02/20/98 | 1740 | JQZ | GC-3   |
| 36461LCSD  | 02/18/98    | 0830 | DH |                      | 02/20/98 | 1809 | JQZ | GC-1   |
| 91902-3    | 02/18/98    | 0830 | DH |                      | 02/20/98 | 1837 | JQZ | GC-1   |
| 91902-3MS  | 02/18/98    | 0830 | DH |                      | 02/20/98 | 1906 | JQZ | GC-1   |
| 91902-3MSD | 02/18/98    | 0830 | DH |                      | 02/24/98 | 1741 | JQZ | GC-1   |
| 91902-4    | 02/18/98    | 0830 | DH |                      | 02/20/98 | 2030 | JQZ | GC-1   |
| 91886-3    | 02/18/98    | 0830 | DH |                      | 02/21/98 | 0333 | JQZ | GC-1   |
| 91886-4    | 02/18/98    | 0830 | DH |                      | 02/21/98 | 0333 | JQZ | GC-1   |
| 91886-5    | 02/18/98    | 0830 | DH |                      | 02/21/98 | 0401 | JQZ | GC-1   |
| 91886-6    | 02/18/98    | 0830 | DH |                      | 02/21/98 | 0429 | JQZ | GC-1   |
| 91883      | 02/18/98    | 0830 | DH |                      | 02/21/98 | 0525 | JQZ | GC-1   |
| 91941      | 02/19/98    | 1150 | DH |                      | 02/20/98 | 2127 | JQZ | GC-1   |
| 92010-1    | 02/19/98    | 1150 | DH |                      | 02/20/98 | 2155 | JQZ | GC-1   |
| 91886-2    | 02/20/98    | 0930 | DH |                      | 02/21/98 | 0305 | JQZ | GC-1   |
| 92141      | 02/23/98    | 0840 | DH |                      | 02/25/98 | 1337 | JQZ | GC-1   |
| 92154-1    | 02/24/98    | 0900 | DH |                      | 02/26/98 | 1116 | JQZ | GC-1   |
| 92154-11   | 02/24/98    | 0900 | DH |                      | 02/26/98 | 2039 | JQZ | GC-1   |
| 92154-2    | 02/24/98    | 0900 | DH |                      | 02/26/98 | 1116 | JQZ | GC-1   |
| 92154-3    | 02/24/98    | 0900 | DH |                      | 02/26/98 | 1144 | JQZ | GC-1   |
| 92154-4    | 02/24/98    | 0900 | DH |                      | 02/26/98 | 1240 | JQZ | GC-1   |
| 92154-5    | 02/24/98    | 0900 | DH |                      | 02/26/98 | 1309 | JQZ | GC-1   |
| 92154-6    | 02/24/98    | 0900 | DH |                      | 02/26/98 | 1337 | JQZ | GC-1   |
| 92154-7    | 02/24/98    | 0900 | DH |                      | 02/26/98 | 1405 | JQZ | GC-1   |
| 92154-8    | 02/24/98    | 0900 | DH |                      | 02/26/98 | 1435 | JQZ | GC-1   |
| 92154-8DUP | 02/24/98    | 0900 | DH |                      | 02/26/98 | 1502 | JQZ | GC-1   |

Analytical Services Inc. Batch QC  
For Report Number :91902  
Volatile Organics

Matrix : Aqueous

Batch # 36497

Method : EPA 8260

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 1,1-Dichloroethene                 | 88         | 91          | 3         | 61 - 145           | 0 - 14       |
| Trichloroethene                    | 101        | 105         | 4         | 71 - 120           | 0 - 14       |
| Benzene                            | 106        | 107         | 1         | 76 - 127           | 0 - 11       |
| Toluene                            | 101        | 100         | 1         | 76 - 125           | 0 - 13       |
| Chlorobenzene                      | 102        | 102         | 1         | 75 - 130           | 0 - 13       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 1,1-Dichloroethene                  | 85         | 79          | 8         | 61 - 145           | 0 - 14       |
| Trichloroethene                     | 97         | 87          | 10        | 71 - 120           | 0 - 14       |
| Benzene                             | 102        | 94          | 9         | 76 - 127           | 0 - 11       |
| Toluene                             | 95         | 94          | 1         | 76 - 125           | 0 - 13       |
| Chlorobenzene                       | 93         | 87          | 7         | 75 - 130           | 0 - 13       |

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Aqueous

Batch # 36497

Method : EPA 8260

## % Recovery Objectives

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|    |                       |          |
|----|-----------------------|----------|
| S1 | 1,2-Dichloroethane-d4 | 76 - 119 |
| S2 | Toluene-d8            | 88 - 110 |
| S3 | Ethylbenzene-d10      | 75 - 115 |
| S4 | 4-Bromofluorobenzene  | 86 - 120 |

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| Sample     | File  | S1  | S2  | S3  | S4  | S5 | S6 |
|------------|-------|-----|-----|-----|-----|----|----|
| <hr/>      |       |     |     |     |     |    |    |
| 36497LCS   | A0999 | 103 | 99  | 101 | 100 |    |    |
| 36497LCSD  | A1000 | 99  | 98  | 100 | 99  |    |    |
| 36497BLK   | A0996 | 99  | 102 | 97  | 102 |    |    |
| 91837-1    | A1148 | 116 | 109 | 99  | 78  |    |    |
| 91837-2    | A1149 | 116 | 102 | 99  | 115 |    |    |
| 91837-3    | A1150 | 120 | 77  | 100 | 114 |    |    |
| 91837-4    | A1151 | 120 | 75  | 102 | 115 |    |    |
| 91837-7    | A1152 | 112 | 110 | 100 | 113 |    |    |
| 91837-8    | A1153 | 131 | 111 | 106 | 114 |    |    |
| 91837-1MS  | A1157 | 119 | 113 | 109 | 101 |    |    |
| 91837-1MSD | A1158 | 112 | 116 | 106 | 109 |    |    |
| 91837-1DUP | B3372 | 90  | 99  | 89  | 100 |    |    |
| 91837-3DUP | B3373 | 89  | 101 | 93  | 101 |    |    |
| 91837-4DUP | B3374 | 90  | 96  | 91  | 101 |    |    |
| 91837-8DUP | B3375 | 94  | 101 | 89  | 103 |    |    |
| 91894-1    | B3378 | 90  | 104 | 91  | 101 |    |    |
| 91894-2    | B3379 | 98  | 100 | 93  | 102 |    |    |
| 91894-3    | B3380 | 94  | 99  | 88  | 97  |    |    |
| 91894-4    | B3381 | 97  | 100 | 90  | 99  |    |    |
| 91894-5    | B3382 | 108 | 100 | 89  | 108 |    |    |
| 91894-6    | B3383 | 96  | 97  | 93  | 109 |    |    |
| 91894-7    | B3384 | 105 | 100 | 91  | 108 |    |    |
| 91905      | A1163 | 110 | 107 | 100 | 109 |    |    |
| 91902-3    | A1180 | 102 | 108 | 105 | 110 |    |    |
| 91902-4    | A1181 | 101 | 99  | 105 | 113 |    |    |
| 91902-5    | A1182 | 105 | 96  | 103 | 109 |    |    |
| 91936-2    | A1183 | 104 | 98  | 104 | 103 |    |    |

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Q.C. Information for Batch # 36497

Printed: 03/03/98 14:00:04

Blank Results Information  
Volatile Organics Method : EPA 8260

| Analyte              | Blank<br>Result | Detection<br>Limit |
|----------------------|-----------------|--------------------|
| Benzene              | BDL             | 0.4                |
| Carbon tetrachloride | BDL             | 2.1                |
| Chloroform           | BDL             | 0.3                |
| Chlorobenzene        | BDL             | 0.4                |
| 1,2-Dichloroethane   | BDL             | 0.6                |
| 1,1-Dichloroethene   | BDL             | 1.2                |
| Methyl ethyl ketone  | BDL             | 1                  |
| Tetrachloroethene    | BDL             | 1.4                |
| Trichloroethene      | BDL             | 1                  |
| Vinyl chloride       | BDL             | 1.1                |

Sample Batch Information  
Volatile Organics Method : EPA 8260

| Sample ID  | Preparation |         | Preparation<br>Notes | Analysis |      |         | Inst # |
|------------|-------------|---------|----------------------|----------|------|---------|--------|
|            | Date        | Time By |                      | Date     | Time | By      |        |
| 36497LCS   | /           | /       |                      | 02/14/98 | 1502 | LLP     | VOA1   |
| 36497LCSD  | /           | /       |                      | 02/14/98 | 1530 | LLP     | VOA1   |
| 36497BLK   | /           | /       |                      | 02/14/98 | 1340 | LLP     | VOA1   |
| 91837-1    | /           | /       |                      | 02/19/98 | 1403 | LLP     | VOA1   |
| 91837-2    | /           | /       |                      | 02/19/98 | 1431 | LLP     | VOA1   |
| 91837-3    | /           | /       |                      | 02/19/98 | 1458 | LLP     | VOA1   |
| 91837-4    | /           | /       |                      | 02/19/98 | 1526 | LLP     | VOA1   |
| 91837-7    | /           | /       |                      | 02/19/98 | 1553 | LLP     | VOA1   |
| 91837-8    | /           | /       |                      | 02/19/98 | 1649 | LLP     | VOA1   |
| 91837-1MS  | /           | /       |                      | 02/19/98 | 1839 | LLP     | VOA1   |
| 91837-1MSD | /           | /       |                      | 02/19/98 | 1906 | LLP     | VOA1   |
| 91837-1DUP | /           | /       |                      | 02/20/98 | 1828 | RFA     | VOA2   |
| 91837-3DUP | /           | /       |                      | 02/20/98 | 1852 | RFA     | VOA2   |
| 91837-4DUP | /           | /       |                      | 02/20/98 | 1916 | RFA     | VOA2   |
| 91837-8DUP | /           | /       |                      | 02/20/98 | 1941 | RFA     | VOA2   |
| 91894-1    | /           | /       |                      | 02/20/98 | 2054 | LLP894- | VOA2   |
| 91894-2    | /           | /       |                      | 02/20/98 | 2118 | LLP894- | VOA2   |
| 91894-3    | /           | /       |                      | 02/20/98 | 2142 | LLP     | VOA2   |
| 91894-4    | /           | /       |                      | 02/20/98 | 2206 | LLP     | VOA2   |
| 91894-5    | /           | /       |                      | 02/20/98 | 2230 | LLP     | VOA2   |
| 91894-6    | /           | /       |                      | 02/20/98 | 2254 | LLP     | VOA2   |
| 91894-7    | /           | /       |                      | 02/20/98 | 2318 | LLP     | VOA2   |
| 91905      | /           | /       |                      | 02/19/98 | 2055 | LLP     | VOA1   |
| 91902-3    | /           | /       |                      | 02/20/98 | 1350 | LLP     | VOA1   |
| 91902-4    | /           | /       |                      | 02/20/98 | 1417 | LLP     | VOA1   |
| 91902-5    | /           | /       |                      | 02/20/98 | 1444 | LLP     | VOA1   |
| 91936-2    | /           | /       |                      | 02/20/98 | 1512 | LLP     | VOA1   |

Analytical Services Inc. Batch QC  
For Report Number :91902  
Volatile Organics

Matrix : TCLP

Batch # 36510

Method : EPA 8260

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Benzene                            | 95         | 106         | 11        | 90 - 115           | 0 - 13       |
| Carbon tetrachloride               | 91         | 106         | 15        | 55 - 115           | 0 - 15       |
| Chlorobenzene                      | 96         | 100         | 4         | 87 - 109           | 0 - 10       |
| Chloroform                         | 92         | 99          | 7         | 55 - 115           | 0 - 15       |
| 1,2-Dichloroethane                 | 96         | 105         | 9         | 90 - 115           | 0 - 13       |
| 1,1-Dichloroethene                 | 73         | 80          | 9         | 55 - 111           | 0 - 15       |
| MEK (2-Butanone)                   | 62         | 56          | 10        | 55 - 115           | 0 - 15       |
| Tetrachloroethene                  | 85         | 96          | 12        | 55 - 115           | 0 - 15       |
| Trichloroethene                    | 85         | 94          | 10        | 78 - 110           | 0 - 11       |
| Vinyl chloride                     | 68         | 78          | 14        | 55 - 115           | 0 - 15       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Benzene                             | 86         | 88          | 2         | 90 - 115           | 0 - 13       |
| Carbon tetrachloride                | 81         | 84          | 4         | 55 - 115           | 0 - 15       |
| Chlorobenzene                       | 80         | 81          | 1         | 87 - 109           | 0 - 10       |
| Chloroform                          | 80         | 81          | 1         | 55 - 115           | 0 - 15       |
| 1,2-Dichloroethane                  | 84         | 85          | 1         | 90 - 115           | 0 - 13       |
| 1,1-Dichloroethene                  | 72         | 73          | 1         | 55 - 111           | 0 - 15       |
| MEK (2-Butanone)                    | 86         | 86          | 0         | 55 - 115           | 0 - 15       |
| Tetrachloroethene                   | 75         | 75          | 0         | 55 - 115           | 0 - 15       |
| Trichloroethene                     | 76         | 80          | 5         | 78 - 110           | 0 - 11       |
| Vinyl chloride                      | 67         | 70          | 4         | 55 - 115           | 0 - 15       |

Matrix : TCLP

Batch # 36510

Method : EPA 8260

## % Recovery Objectives

|    |                       |          |
|----|-----------------------|----------|
| S1 | 1,2-Dichloroethane-d4 | 76 - 119 |
| S2 | Toluene-d8            | 88 - 110 |
| S3 | Ethylbenzene-d10      | 75 - 115 |
| S4 | 4-Bromofluorobenzene  | 86 - 115 |

| Sample        | File  | S1  | S2  | S3  | S4  | S5 | S6 |
|---------------|-------|-----|-----|-----|-----|----|----|
| 36510LCS      | A1172 | 116 | 109 | 112 | 115 |    |    |
| 36510LCSD     | A1173 | 103 | 95  | 111 | 112 |    |    |
| 36510BLK      | A1174 | 118 | 99  | 107 | 108 |    |    |
| 91902-2MS     | A1177 | 106 | 98  | 109 | 110 |    |    |
| 91902-2MSD    | A1178 | 117 | 113 | 106 | 105 |    |    |
| 91936-1       | A1179 | 105 | 114 | 105 | 78  |    |    |
| 91902-1       | A1175 | 103 | 98  | 105 | 111 |    |    |
| 91902-2       | A1176 | 102 | 96  | 105 | 108 |    |    |
| 91945         | A1184 | 104 | 99  | 104 | 115 |    |    |
| 91945D        | A1232 | 106 | 98  | 95  | 99  |    |    |
| ^^Note: DF=50 |       |     |     |     |     |    |    |
| 91936-1DUP    | A1271 | 106 | 96  | 98  | 97  |    |    |

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Blank Results Information  
Volatile Organics Method : EPA 8260

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| Analyte |                      | Blank<br>Result | Detection<br>Limit |
|---------|----------------------|-----------------|--------------------|
| D018    | Benzene              | BDL             | 0.02               |
| D019    | Carbon tetrachloride | BDL             | 0.02               |
| D021    | Chlorobenzene        | BDL             | 0.02               |
| D022    | Chloroform           | BDL             | 0.02               |
| D028    | 1,2-Dichloroethane   | BDL             | 0.02               |
| D029    | 1,1-Dichloroethene   | BDL             | 0.02               |
| D035    | Methyl ethyl ketone  | BDL             | 0.5                |
| D039    | Tetrachloroethene    | BDL             | 0.02               |
| D040    | Trichloroethene      | BDL             | 0.02               |
| D043    | Vinyl chloride       | BDL             | 0.02               |

Sample Batch Information  
Volatile Organics Method : EPA 8260

| Sample ID  | Preparation<br>Date | Time | By | Preparation<br>Notes | Analysis<br>Date | Time | By  | Inst # |
|------------|---------------------|------|----|----------------------|------------------|------|-----|--------|
| 36510LCS   | /                   | /    |    |                      | 02/20/98         | 1012 | RFA | VOA1   |
| 36510LCSD  | /                   | /    |    |                      | 02/20/98         | 1039 | RFA | VOA1   |
| 36510BLK   | /                   | /    |    |                      | 02/20/98         | 1106 | RFA | VOA1   |
| 91902-2MS  | /                   | /    |    |                      | 02/20/98         | 1228 | RFA | VOA1   |
| 91902-2MSD | /                   | /    |    |                      | 02/20/98         | 1255 | RFA | VOA1   |
| 91936-1    | /                   | /    |    |                      | 02/20/98         | 1322 | RFA | VOA1   |
| 91902-1    | /                   | /    |    |                      | 02/20/98         | 1133 | RFA | VOA1   |
| 91902-2    | /                   | /    |    |                      | 02/20/98         | 1201 | RFA | VOA1   |
| 91945      | /                   | /    |    |                      | 02/20/98         | 1539 | RFA | VOA1   |
| 91945D     | /                   | /    |    |                      | 02/23/98         | 1237 | RFA | VOA1   |
| 91936-1DUP | /                   | /    |    |                      | 02/24/98         | 1532 | RFA | VOA1   |

Analytical Services Inc. Batch QC  
For Report Number :91902

## QC Batch General Information

| Batch Number                      | Analyte   | Analysis Method | Matrix   | Blank Result | Prep. Method |
|-----------------------------------|-----------|-----------------|----------|--------------|--------------|
| 36101                             | Hg        | EPA 7470        | Aqueous  | < 0.0002     |              |
| 36102                             | Hg        | EPA 7470        | TCLP     | < 0.0002     |              |
| 36179                             | Ag        | EPA 6010        | Aqueous  | < 0.0100     |              |
| ^^Note : BATCH PASSES ON LCS/LCSD |           |                 |          |              |              |
| 36179                             | As        | EPA 6010        | Aqueous  | < 0.0100     |              |
| 36179                             | Ba        | EPA 6010        | Aqueous  | < 0.0100     |              |
| 36179                             | Cd        | EPA 6010        | Aqueous  | < 0.0050     |              |
| 36179                             | Cr        | EPA 6010        | Aqueous  | < 0.0050     |              |
| 36179                             | Pb        | EPA 6010        | Aqueous  | < 0.0030     |              |
| 36179                             | Se        | EPA 6010        | Aqueous  | < 0.0050     |              |
| 36183                             | Ag        | EPA 6010        | TCLP     | < 0.0100     |              |
| 36183                             | As        | EPA 6010        | TCLP     | < 0.0100     |              |
| 36183                             | Ba        | EPA 6010        | TCLP     | < 0.1000     |              |
| 36183                             | Cd        | EPA 6010        | TCLP     | < 0.0100     |              |
| 36183                             | Cr        | EPA 6010        | TCLP     | < 0.0100     |              |
| 36183                             | Pb        | EPA 6010        | TCLP     | < 0.0200     |              |
| 36183                             | Se        | EPA 6010        | TCLP     | < 0.0100     |              |
| 36189                             | Ag        | EPA 6010        | Aqueous  | < 0.0100     |              |
| 36189                             | As        | EPA 6010        | Aqueous  | < 0.0100     |              |
| 36189                             | Ba        | EPA 6010        | Aqueous  | < 0.0100     |              |
| 36189                             | Cd        | EPA 6010        | Aqueous  | < 0.0050     |              |
| 36189                             | Cr        | EPA 6010        | Aqueous  | < 0.0050     |              |
| 36189                             | Pb        | EPA 6010        | Aqueous  | < 0.0050     |              |
| 36189                             | Se        | EPA 6010        | Aqueous  | < 0.0050     |              |
| 36383                             | React S2  | EPA 7.3.4.2     | Aq/Soil  | < 5.0000     |              |
| 36393                             | React. CN | EPA 7.3.3.2     | Aq/Soil  | < 1.0000     |              |
| 36425                             | pH        | EPA 9040        | Aqueous  | 0.0000       |              |
| 36425                             | pH        | EPA 9045        | Soil     | 0.0000       |              |
| 36482                             | Ign       | EPA 1010        | Aq/Solid | 0.0000       |              |

## Lab Control Information

| Batch Number | Analyte | Method   | LC %Rec | LCD %Rec | LC RPD | %Recovery Range | RPD Range |
|--------------|---------|----------|---------|----------|--------|-----------------|-----------|
| 36101        | Hg      | EPA 7470 | 92      | 94       | 2      | 76 - 124        | 0 - 20    |
| 36102        | Hg      | EPA 7470 | 111     | 113      | 2      | 76 - 124        | 0 - 20    |
| 36179        | Ag      | EPA 6010 | 110     | 100      | 10     | 76 - 124        | 0 - 20    |
| 36179        | As      | EPA 6010 | 97      | 93       | 4      | 76 - 124        | 0 - 20    |
| 36179        | Ba      | EPA 6010 | 100     | 95       | 5      | 76 - 124        | 0 - 20    |
| 36179        | Cd      | EPA 6010 | 96      | 92       | 4      | 76 - 124        | 0 - 20    |
| 36179        | Cr      | EPA 6010 | 98      | 94       | 4      | 76 - 124        | 0 - 20    |
| 36179        | Pb      | EPA 6010 | 100     | 96       | 4      | 76 - 124        | 0 - 20    |
| 36179        | Se      | EPA 6010 | 86      | 83       | 4      | 76 - 124        | 0 - 20    |

Analytical Services Inc. Batch QC  
For Report Number :91902

## Lab Control Information

| Batch<br>Number | Analyte   | Method      | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-----------------|-----------|-------------|------------|-------------|-----------|--------------------|--------------|
| 36183           | Ag        | EPA 6010    | 84         | 81          | 4         | 76 - 124           | 0 - 20       |
| 36183           | As        | EPA 6010    | 89         | 88          | 1         | 76 - 124           | 0 - 20       |
| 36183           | Ba        | EPA 6010    | 85         | 82          | 4         | 76 - 124           | 0 - 20       |
| 36183           | Cd        | EPA 6010    | 83         | 83          | 0         | 76 - 124           | 0 - 20       |
| 36183           | Cr        | EPA 6010    | 83         | 82          | 1         | 76 - 124           | 0 - 20       |
| 36183           | Pb        | EPA 6010    | 83         | 83          | 0         | 76 - 124           | 0 - 20       |
| 36183           | Se        | EPA 6010    | 81         | 81          | 0         | 76 - 124           | 0 - 20       |
| 36189           | Ag        | EPA 6010    | 110        | 120         | 9         | 76 - 124           | 0 - 20       |
| 36189           | As        | EPA 6010    | 99         | 100         | 1         | 76 - 124           | 0 - 20       |
| 36189           | Ba        | EPA 6010    | 94         | 96          | 2         | 76 - 124           | 0 - 20       |
| 36189           | Cd        | EPA 6010    | 97         | 100         | 3         | 76 - 124           | 0 - 20       |
| 36189           | Cr        | EPA 6010    | 96         | 99          | 3         | 76 - 124           | 0 - 20       |
| 36189           | Pb        | EPA 6010    | 100        | 100         | 0         | 76 - 124           | 0 - 20       |
| 36189           | Se        | EPA 6010    | 97         | 100         | 3         | 76 - 124           | 0 - 20       |
| 36383           | React S2  | EPA 7.3.4.2 | 104        | 96          | 8         | 60 - 140           | 0 - 40       |
| 36393           | React. CN | EPA 7.3.3.2 | 98         | 98          | 0         | 75 - 125           | 0 - 30       |
| 36425           | pH        | EPA 9040    | 100        | 110         | 10        | 80 - 120           | 0 - 20       |
| 36425           | pH        | EPA 9045    | 100        | 100         | 0         | 80 - 120           | 0 - 20       |

## Matrix Spike Information

| Batch<br>Number | Analyte | Method   | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-----------------|---------|----------|------------|-------------|-----------|--------------------|--------------|
| 36101           | Hg      | EPA 7470 | 95         | 95          | 0         | 76 - 124           | 0 - 20       |
| 36102           | Hg      | EPA 7470 | 93         | 104         | 11        | 76 - 124           | 0 - 20       |
| 36179           | Ag      | EPA 6010 | 65         | 65          | 0         | 76 - 124           | 0 - 20       |
| 36179           | As      | EPA 6010 | 92         | 92          | 0         | 76 - 124           | 0 - 20       |
| 36179           | Ba      | EPA 6010 | 92         | 92          | 0         | 76 - 124           | 0 - 20       |
| 36179           | Cd      | EPA 6010 | 88         | 88          | 0         | 76 - 124           | 0 - 20       |
| 36179           | Cr      | EPA 6010 | 90         | 91          | 1         | 76 - 124           | 0 - 20       |
| 36179           | Pb      | EPA 6010 | 91         | 91          | 0         | 76 - 124           | 0 - 20       |
| 36179           | Se      | EPA 6010 | 80         | 81          | 1         | 76 - 124           | 0 - 20       |
| 36183           | Ag      | EPA 6010 | 83         | 80          | 4         | 76 - 124           | 0 - 20       |
| 36183           | As      | EPA 6010 | 87         | 91          | 4         | 76 - 124           | 0 - 20       |
| 36183           | Ba      | EPA 6010 | 80         | 81          | 1         | 76 - 124           | 0 - 20       |
| 36183           | Cd      | EPA 6010 | 59         | 68          | 14        | 76 - 124           | 0 - 20       |
| 36183           | Cr      | EPA 6010 | 78         | 81          | 4         | 76 - 124           | 0 - 20       |
| 36183           | Pb      | EPA 6010 | 0          | 70          | NC        | 76 - 124           | 0 - 20       |
| 36183           | Se      | EPA 6010 | 79         | 83          | 5         | 76 - 124           | 0 - 20       |
| 36189           | Ag      | EPA 6010 | 120        | 110         | 9         | 76 - 124           | 0 - 20       |
| 36189           | As      | EPA 6010 | 100        | 100         | 0         | 76 - 124           | 0 - 20       |
| 36189           | Ba      | EPA 6010 | 96         | 94          | 2         | 76 - 124           | 0 - 20       |
| 36189           | Cd      | EPA 6010 | 100        | 99          | 1         | 76 - 124           | 0 - 20       |
| 36189           | Cr      | EPA 6010 | 98         | 97          | 1         | 76 - 124           | 0 - 20       |
| 36189           | Pb      | EPA 6010 | 100        | 100         | 0         | 76 - 124           | 0 - 20       |
| 36189           | Se      | EPA 6010 | 100        | 98          | 2         | 76 - 124           | 0 - 20       |



Analytical Services Inc. Batch QC  
For Report Number :91902

## Post Digestion Spike Information

| Batch<br>Number | Analyte | Method   | PDS<br>%Rec | %Recovery<br>Range |
|-----------------|---------|----------|-------------|--------------------|
| 36179           | Ag      | EPA 6010 | 56          | 76 - 124           |
| 36179           | As      | EPA 6010 | 95          | 76 - 124           |
| 36179           | Ba      | EPA 6010 | 95          | 76 - 124           |
| 36179           | Cd      | EPA 6010 | 91          | 76 - 124           |
| 36179           | Cr      | EPA 6010 | 93          | 76 - 124           |
| 36179           | Pb      | EPA 6010 | 95          | 76 - 124           |
| 36179           | Se      | EPA 6010 | 84          | 76 - 124           |
| 36183           | Ag      | EPA 6010 | 49          | 76 - 124           |
| 36183           | As      | EPA 6010 | 98          | 76 - 124           |
| 36183           | Ba      | EPA 6010 | 83          | 76 - 124           |
| 36183           | Cd      | EPA 6010 | 90          | 76 - 124           |
| 36183           | Cr      | EPA 6010 | 87          | 76 - 124           |
| 36183           | Pb      | EPA 6010 | 88          | 76 - 124           |
| 36183           | Se      | EPA 6010 | 88          | 76 - 124           |
| 36189           | Ag      | EPA 6010 | 85          | 76 - 124           |
| 36189           | As      | EPA 6010 | 100         | 76 - 124           |
| 36189           | Ba      | EPA 6010 | 95          | 76 - 124           |
| 36189           | Cd      | EPA 6010 | 99          | 76 - 124           |
| 36189           | Cr      | EPA 6010 | 98          | 76 - 124           |
| 36189           | Pb      | EPA 6010 | 100         | 76 - 124           |
| 36189           | Se      | EPA 6010 | 99          | 76 - 124           |

## Unspiked Sample Duplicate Information

| Batch<br>Number | Analyte   | Method      | Sample 1<br>RPD | Sample 2<br>RPD | RPD<br>Range |
|-----------------|-----------|-------------|-----------------|-----------------|--------------|
| 36383           | React S2  | EPA 7.3.4.2 | 0               | 0               | 0 - 40       |
| 36393           | React. CN | EPA 7.3.3.2 | 0               |                 | 0 - 30       |
| 36425           | pH        | EPA 9040    | 0               | 0               | 0 - 20       |
| 36425           | pH        | EPA 9045    | 0               | 0               | 0 - 20       |

Sample Batch Information  
Analysis : Hg

| Sample ID  | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|            |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 36101BLANK | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0910 | FBS | HG1  |
| 36101LCS   | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0912 | FBS | HG1  |
| 36101LCSD  | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0915 | FBS | HG1  |
| 91886-1MS  | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0917 | FBS | HG1  |
| 91886-1MSD | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0919 | FBS | HG1  |
| 91886-2DUP | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0922 | FBS | HG1  |
| 91902-3    | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0938 | FBS | HG1  |
| 91902-4    | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0940 | FBS | HG1  |
| 91838-1    | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0943 | FBS | HG1  |
| 91844      | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0945 | FBS | HG1  |
| 91881-1    | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0947 | FBS | HG1  |
| 91881-2    | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0950 | FBS | HG1  |
| 91894-1    | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0952 | FBS | HG1  |
| 91894-2    | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0954 | FBS | HG1  |
| 91894-3    | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0957 | FBS | HG1  |
| 91894-4    | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0959 | FBS | HG1  |
| 91894-5    | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 1006 | FBS | HG1  |
| 91898-3    | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 1008 | FBS | HG1  |
| 91882-1    | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 1011 | FBS | HG1  |
| 91882-2    | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 1013 | FBS | HG1  |
| 91883      | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 1015 | FBS | HG1  |
| 91886-1    | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0924 | FBS | HG1  |
| 91886-2    | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0926 | FBS | HG1  |
| 91938      | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 1018 | FBS | HG1  |
| 91886-3    | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 1929 | FBS | HG1  |
| 91886-4    | HG  | 02/18/98    | 0900 | FBS |                      | 02/19/98 | 0931 | FBS | HG1  |

Q.C. Information for Batch # 36102

For Report Number :91902

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Sample Batch Information  
Analysis : Hg

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| Sample ID  | Tag | Preparation |      |     | Preparation | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|-------------|----------|------|-----|------|
|            |     | Date        | Time | By  | Notes       | Date     | Time | By  |      |
| 36102BLANK | HG  | 02/18/98    | 1150 | FBS |             | 02/18/98 | 1410 | FBS | HG1  |
| 36102LCS   | HG  | 02/18/98    | 1150 | FBS |             | 02/18/98 | 1412 | FBS | HG1  |
| 36102LCSD  | HG  | 02/18/98    | 1150 | FBS |             | 02/18/98 | 1414 | FBS | HG1  |
| 91902-1MS  | HG  | 02/18/98    | 1150 | FBS |             | 02/18/98 | 1416 | FBS | HG1  |
| 91902-1MSD | HG  | 02/18/98    | 1150 | FBS |             | 02/18/98 | 1419 | FBS | HG1  |
| 91902-1DUP | HG  | 02/18/98    | 1150 | FBS |             | 02/18/98 | 1421 | FBS | HG1  |
| 91864      | HG  | 02/18/98    | 1150 | FBS |             | 02/18/98 | 1428 | FBS | HG1  |
| 91893      | HG  | 02/18/98    | 1150 | FBS |             | 02/18/98 | 1430 | FBS | HG1  |
| 91898-1    | HG  | 02/18/98    | 1150 | FBS |             | 02/18/98 | 1437 | FBS | HG1  |
| 91898-2    | HG  | 02/18/98    | 1150 | FBS |             | 02/18/98 | 1440 | FBS | HG1  |
| 91902-1    | HG  | 02/18/98    | 1150 | FBS |             | 02/18/98 | 1423 | FBS | HG1  |
| 91902-2    | HG  | 02/18/98    | 1150 | FBS |             | 02/18/98 | 1426 | FBS | HG1  |

Sample Batch Information  
Analysis : Ag, As, Ba, Cd, Cr, Pb, Se

| Sample ID  | Preparation |          |      |     | Preparation<br>Notes | Analysis |      |     |      | Inst |
|------------|-------------|----------|------|-----|----------------------|----------|------|-----|------|------|
|            | Tag         | Date     | Time | By  |                      | Date     | Time | By  |      |      |
| 36179BLANK |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 1815 | MAB | ICP2 |      |
| 36179LCS   |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 1819 | MAB | ICP2 |      |
| 36179LCSD  |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 1822 | MAB | ICP2 |      |
| 91894-6MS  |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 1825 | MAB | ICP2 |      |
| 91894-6MSD |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 1828 | MAB | ICP2 |      |
| 91894-7PDS |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 1832 | MAB | ICP2 |      |
| 91894-7DUP |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 1835 | MAB | ICP2 |      |
| 91800-26   |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 1845 | MAB | ICP2 |      |
| 91800-27   |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 1855 | MAB | ICP2 |      |
| 91800-28   |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 1858 | MAB | ICP2 |      |
| 91800-29   |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 1901 | MAB | ICP2 |      |
| 91837-1    |             | 02/18/98 | 0920 | DCM | DISS                 | 02/18/98 | 1905 | MAB | ICP2 |      |
| 91837-2    |             | 02/18/98 | 0920 | DCM | DISS                 | 02/18/98 | 1908 | MAB | ICP2 |      |
| 91837-3    |             | 02/18/98 | 0920 | DCM | DISS                 | 02/18/98 | 1934 | MAB | ICP2 |      |
| 91837-4    |             | 02/18/98 | 0920 | DCM | DISS                 | 02/18/98 | 1937 | MAB | ICP2 |      |
| 91837-7    |             | 02/18/98 | 0920 | DCM | DISS                 | 02/18/98 | 1940 | MAB | ICP2 |      |
| 91837-8    |             | 02/18/98 | 0920 | DCM | DISS                 | 02/18/98 | 1944 | MAB | ICP2 |      |
| 91881-1    |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 1947 | MAB | ICP2 |      |
| 91881-2    |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 1957 | MAB | ICP2 |      |
| 91894-1    |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 2000 | MAB | ICP2 |      |
| 91894-2    |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 2003 | MAB | ICP2 |      |
| 91894-3    |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 2007 | MAB | ICP2 |      |
| 91894-4    |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 2010 | MAB | ICP2 |      |
| 91894-5    |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 2013 | MAB | ICP2 |      |
| 91894-6    |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 1838 | MAB | ICP2 |      |
| 91894-7    |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 1842 | MAB | ICP2 |      |
| 91902-3    |             | 02/18/98 | 0920 | DCM | TRACE                | 02/18/98 | 2017 | MAB | ICP2 |      |

Q.C. Information for Batch # 36183

For Report Number : 91902

Sample Batch Information  
Analysis : Ag, As, Ba, Cd, Cr, Pb, Se

| Sample ID   | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|-------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|             |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 36183BLANK  |     | 02/19/98    | 0940 | DCM | TCLP                 | 02/19/98 | 1201 | MCW | ICP2 |
| 36183LCS    |     | 02/19/98    | 0940 | DCM | TCLP                 | 02/19/98 | 1204 | MCW | ICP2 |
| 36183LCSD   |     | 02/19/98    | 0940 | DCM | TCLP                 | 02/19/98 | 1208 | MCW | ICP2 |
| 91244AT1MS  |     | 02/19/98    | 0940 | DCM | TCLP                 | 02/19/98 | 1211 | MCW | ICP2 |
| 91244AT1MSD |     | 02/19/98    | 0940 | DCM | TCLP                 | 02/19/98 | 1214 | MCW | ICP2 |
| 91893PDS    |     | 02/19/98    | 0940 | DCM | TCLP                 | 02/19/98 | 1217 | MCW | ICP2 |
| 91893DUP    |     | 02/19/98    | 0940 | DCM | TCLP                 | 02/19/98 | 1221 | MCW | ICP2 |
| 91244AT1    |     | 02/19/98    | 0940 | DCM | TCLP                 | 02/19/98 | 1224 | MCW | ICP2 |
| 91864       |     | 02/19/98    | 0940 | DCM | TCLP                 | 02/19/98 | 1227 | MCW | ICP2 |
| 91893       |     | 02/19/98    | 0940 | DCM | TCLP                 | 02/19/98 | 1231 | MCW | ICP2 |
| 91898-1     |     | 02/19/98    | 0940 | DCM | TCLP                 | 02/19/98 | 1241 | MCW | ICP2 |
| 91898-2     |     | 02/19/98    | 0940 | DCM | TCLP                 | 02/19/98 | 1248 | MCW | ICP2 |
| 91902-1     |     | 02/19/98    | 0940 | DCM | TCLP                 | 02/19/98 | 1251 | MCW | ICP2 |
| 91902-2     |     | 02/19/98    | 0940 | DCM | TCLP                 | 02/19/98 | 1254 | MCW | ICP2 |
| 91976-1     |     | 02/19/98    | 0940 | DCM | TCLP                 | 02/19/98 | 1258 | MCW | ICP2 |
| 91976-2     |     | 02/19/98    | 0940 | DCM | TCLP                 | 02/19/98 | 1301 | MCW | ICP2 |

Sample Batch Information  
Analysis : Ag, As, Ba, Cd, Cr, Pb, Se

| Sample ID    | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|--------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|              |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 36189BLANK   |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2053 | MAB | ICP2 |
| 36189LCS     |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2057 | MAB | ICP2 |
| 36189LCSD    |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2100 | MAB | ICP2 |
| 91797-24MS   |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2103 | MAB | ICP2 |
| 91797-24MSD  |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2106 | MAB | ICP2 |
| 91902-4PDS   |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2110 | MAB | ICP2 |
| 92066-1DUP   |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2113 | MAB | ICP2 |
| 91898-3      |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2116 | MAB | ICP2 |
| 91797-24     |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2120 | MAB | ICP2 |
| 91902-4      |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2133 | MAB | ICP2 |
| 92066-1      |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2136 | MAB | ICP2 |
| 92066-2      |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2139 | MAB | ICP2 |
| 92066-3      |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2143 | MAB | ICP2 |
| 92066-4      |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2146 | MAB | ICP2 |
| 92066-5      |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2149 | MAB | ICP2 |
| 92066-6      |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2153 | MAB | ICP2 |
| 91882-1      |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2156 | MAB | ICP2 |
| 91882-2      |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2159 | MAB | ICP2 |
| 91883        |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2203 | MAB | ICP2 |
| 91886-1      |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2213 | MAB | ICP2 |
| 91886-2      |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2216 | MAB | ICP2 |
| 91886-3      |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2219 | MAB | ICP2 |
| 91886-4      |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2222 | MAB | ICP2 |
| 91886-5      |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2226 | MAB | ICP2 |
| 91886-6      |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2229 | MAB | ICP2 |
| 91797-24 D/N |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2123 | MAB | ICP2 |
| QC BLK       |     | 02/20/98    | 0900 | DCM | TRACE                | 02/20/98 | 2232 | MAB | ICP2 |

Q.C. Information for Batch # 36383

For Report Number :91902

Sample Batch Information  
Analysis : React S2

| Sample ID  | Tag | Preparation |      |    | Preparation<br>Notes | Analysis |      |    | Inst |
|------------|-----|-------------|------|----|----------------------|----------|------|----|------|
|            |     | Date        | Time | By |                      | Date     | Time | By |      |
| 36383BLK   |     | 02/13/98    | 1300 | JN |                      | 02/13/98 | 1430 | JN |      |
| 36383LCS   |     | 02/13/98    | 1300 | JN |                      | 02/13/98 | 1430 | JN |      |
| 36383LCSD  |     | 02/13/98    | 1300 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-1    |     | 02/13/98    | 1000 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-2    |     | 02/13/98    | 1000 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-3    |     | 02/13/98    | 1000 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-4    |     | 02/13/98    | 1000 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-5    |     | 02/13/98    | 1100 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-6    |     | 02/13/98    | 1100 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91734-7    |     | 02/13/98    | 1100 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91808      |     | 02/13/98    | 1100 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91864      |     | 02/19/98    | 0959 | JN |                      | 02/20/98 | 1600 | JN |      |
| 91734-1DUP |     | 02/19/98    | 1100 | JN |                      | 02/13/98 | 1430 | JN |      |
| 91902-1    |     | 02/19/98    | 0959 | JN |                      | 02/23/98 | 1400 | JN |      |
| 91902-2    |     | 02/19/98    | 0959 | JN |                      | 02/23/98 | 1400 | JN |      |
| 91936-1    |     | 02/19/98    | 0959 | JN |                      | 02/23/98 | 1400 | JN |      |
| 91902-3    |     | 02/20/98    | 1459 | JN |                      | 02/23/98 | 1400 | JN |      |
| 91902-4    |     | 02/20/98    | 1459 | JN |                      | 02/23/98 | 1400 | JN |      |
| 91902-4DUP |     | 02/20/98    | 1459 | JN |                      | 02/23/98 | 1400 | JN |      |
| 92203-1    |     | 02/24/98    | 1645 | JN |                      | 02/25/98 | 1600 | JN |      |
| 92203-2    |     | 02/24/98    | 1645 | JN |                      | 02/25/98 | 1600 | JN |      |
| 92203-3    |     | 02/24/98    | 1645 | JN |                      | 02/25/98 | 1600 | JN |      |
| 92203-4    |     | 02/24/98    | 1645 | JN |                      | 02/25/98 | 1600 | JN |      |
| 92203-5    |     | 02/24/98    | 1645 | JN |                      | 02/25/98 | 1600 | JN |      |
| 92183      |     | 02/24/98    | 1720 | JN |                      | 02/25/98 | 1600 | JN |      |

Q.C. Information for Batch # 36393

For Report Number :91902

Sample Batch Information  
Analysis : React. CN

| Sample ID  | Tag | Preparation<br>Date | Preparation<br>Time By | Preparation<br>Notes | Analysis<br>Date | Analysis<br>Time | Analysis<br>By | Inst  |
|------------|-----|---------------------|------------------------|----------------------|------------------|------------------|----------------|-------|
| 36393BLK   |     | /                   | /                      |                      | 02/16/98         | 1245             | ARS            | GENE5 |
| 36393LCS   |     | /                   | /                      |                      | 02/16/98         | 1245             | ARS            | GENE5 |
| 36393LCSD  |     | /                   | /                      |                      | 02/16/98         | 1245             | ARS            | GENE5 |
| 36393CAL5  |     | /                   | /                      |                      | 02/16/98         | 1245             | ARS            | GENE5 |
| 91734-1    |     | /                   | /                      |                      | 02/16/98         | 1245             | ARS            | GENE5 |
| 91734-1DUP |     | /                   | /                      |                      | 02/16/98         | 1245             | ARS            | GENE5 |
| 91734-2    |     | /                   | /                      |                      | 02/16/98         | 1245             | ARS            | GENE5 |
| 91734-3    |     | /                   | /                      |                      | 02/16/98         | 1245             | ARS            | GENE5 |
| 91734-4    |     | /                   | /                      |                      | 02/16/98         | 1245             | ARS            | GENE5 |
| 91734-5    |     | /                   | /                      |                      | 02/16/98         | 1245             | ARS            | GENE5 |
| 91734-6    |     | /                   | /                      |                      | 02/16/98         | 1245             | ARS            | GENE5 |
| 91734-7    |     | /                   | /                      |                      | 02/16/98         | 1245             | ARS            | GENE5 |
| 91808      |     | /                   | /                      |                      | 02/16/98         | 1245             | ARS            | GENE5 |
| 91864      |     | /                   | /                      |                      | 02/20/98         | 1510             | ARS            | GENE5 |
| 91902-1    |     | /                   | /                      |                      | 02/20/98         | 1510             | ARS            | GENE5 |
| 91902-2    |     | /                   | /                      |                      | 02/20/98         | 1510             | ARS            | GENE5 |
| 91936-1    |     | /                   | /                      |                      | 02/20/98         | 1510             | ARS            | GENE5 |
| 91202-3    |     | /                   | /                      |                      | 02/23/98         | 1710             | ARS            | GENE5 |
| 91202-4    |     | /                   | /                      |                      | 02/23/98         | 1710             | ARS            | GENE5 |
| 91202-4DUP |     | /                   | /                      |                      | 02/23/98         | 1710             | ARS            | GENE5 |
| 92138      |     | /                   | /                      |                      | 02/26/98         | 1310             | ARS            | GENE5 |



Q.C. Information for Batch # 36425

For Report Number: 91902

Sample Batch Information  
Analysis : pH, pH

| Sample ID   | Tag | Preparation |         | Preparation<br>Notes | Analysis |      |    | Inst |
|-------------|-----|-------------|---------|----------------------|----------|------|----|------|
|             |     | Date        | Time By |                      | Date     | Time | By |      |
| 36425CALCHK |     | /           | /       |                      | 02/17/98 | 1800 | JN | 410A |
| 36425LCS    |     | /           | /       |                      | 02/17/98 | 1800 | JN | 410A |
| 36425LCSD   |     | /           | /       |                      | 02/17/98 | 1800 | JN | 410A |
| 91941       |     | /           | /       |                      | 02/17/98 | 1800 | JN | 410A |
| 91941DUP    |     | /           | /       |                      | 02/17/98 | 1800 | JN | 410A |
| 91924-1     |     | /           | /       |                      | 02/17/98 | 1800 | JN | 410A |
| 91916       |     | /           | /       |                      | 02/17/98 | 1800 | JN | 410A |
| 91918-1     |     | /           | /       |                      | 02/17/98 | 1800 | JN | 410A |
| 91902-1     |     | /           | /       |                      | 02/17/98 | 1800 | JN | 410A |
| 91902-1DUP  |     | /           | /       |                      | 02/17/98 | 1800 | JN | 410A |
| 91902-2     |     | /           | /       |                      | 02/17/98 | 1800 | JN | 410A |
| 91902-3     |     | /           | /       |                      | 02/17/98 | 1800 | JN | 410A |
| 91902-4     |     | /           | /       |                      | 02/17/98 | 1800 | JN | 410A |
| 91955       |     | /           | /       |                      | 02/17/98 | 1800 | JN | 410A |
| 91973       |     | /           | /       |                      | 02/17/98 | 1800 | JN | 410A |
| 91971       |     | /           | /       |                      | 02/17/98 | 1800 | JN | 410A |

Sample Batch Information  
Analysis : Ign

| Sample ID  | Tag | Preparation |         | Preparation<br>Notes | Analysis |      |    | Inst |
|------------|-----|-------------|---------|----------------------|----------|------|----|------|
|            |     | Date        | Time By |                      | Date     | Time | By |      |
| 91609-1    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-2    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-3    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-4    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-5    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-6    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-7    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-8    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-9    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-10   |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-12   |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91609-13   |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91999      |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91902-1    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91902-2    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91902-1DUP |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91902-2DUP |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 91936-1    |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 36482LCS   |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 36482LCSD  |     | /           | /       |                      | 02/19/98 | 1130 | NL |      |
| 92011ATI   |     | /           | /       |                      | 02/25/98 | 1030 | NL |      |



**OHM Remediation  
Services Corp**

Subsidiary of OHM Corporation  
U.S. Route 224 East • Findlay, Ohio 45840 • (419) 423-3526

## CHAIN-OF-CUSTODY RECORD

LABORATORY COPY

206424

WO# 91902

FORM 0019 REV 2-97

| OHM LAB COORDINATOR  |                   | LAB COORDINATOR'S PHONE     |         | LAB COORDINATOR'S FAX |           | LABORATORY SERVICE ID   |          | LABORATORY CONTACT      |          | MAIL REPORT (COMPANY NAME)                  |  |
|----------------------|-------------------|-----------------------------|---------|-----------------------|-----------|-------------------------|----------|-------------------------|----------|---------------------------------------------|--|
| Elena Rodriguez      |                   | 770 734 8060                |         | 770 453 7716          |           |                         |          | Sherr. Harper           |          | OHM Corp.                                   |  |
| PROJECT NAME         |                   | PROJECT LOCATION            |         | PROJECT NUMBER        |           | LABORATORY PHONE        |          | LABORATORY FAX          |          | RECIPIENT NAME                              |  |
| DDMT                 |                   | Dunn Field                  |         | 20022                 |           | 770 734 4200            |          | 770 734 4201            |          | Elena Rodriguez                             |  |
| PROJECT CONTACT      |                   | PROJECT PHONE NUMBER        |         | PROJECT FAX           |           | LABORATORY ADDRESS      |          | LABORATORY FAX          |          | ADDRESS                                     |  |
| Steve Offner         |                   | 770 326 8571                |         | 770 453 7716          |           | 110 Technology Parkway  |          | 770 734 4201            |          | 5445 Triang 6 Parkway                       |  |
| PROJECT ADDRESS      |                   | CITY STATE AND ZIP CODE     |         | CLIENT                |           | CITY STATE AND ZIP CODE |          | CITY STATE AND ZIP CODE |          | CITY STATE AND ZIP CODE                     |  |
| 1708 Dunn Ave        |                   | Memphis, TN                 |         | USACE                 |           | Norcross GA 30092       |          | Norcross GA 30092       |          | Norcross, GA 30092                          |  |
| PROJECT MANAGER      |                   | PROJECT MANAGER'S PHONE     |         | PROJECT MANAGER'S FAX |           | PROJECT MANAGER'S FAX   |          | PROJECT MANAGER'S FAX   |          | PROJECT MANAGER'S FAX                       |  |
| John Lore            |                   | 305 622 2811                |         | 305 624 7367          |           | 305 624 7367            |          | 305 624 7367            |          | 305 624 7367                                |  |
| Item                 | Sample Identifier | Matrix                      | Date    | Time                  | Preserved | # of Cont               | QC Level | TAT                     | Analyses | Comments                                    |  |
| 1                    | RW-003            | Soil                        | 2/13/98 | 1500                  | 1         | 1                       | 7        | 7                       | X        | composite per cent.                         |  |
| 2                    | RW-004            | Soil                        | 2/13/98 | 1500                  | 1         | 1                       | 7        | 7                       | X        | composite per cent.                         |  |
| 3                    | RW-004 EQB        | water                       | 2/13/98 | 1500                  | 8         | 8                       | 7        | 7                       | X        | grab per cent.                              |  |
| 4                    | FH-001            | water                       | 2/13/98 | 1500                  | 8         | 8                       | 7        | 7                       | X        | FH = Fire Hydrant<br>grab per cent.         |  |
| 5                    | Trip Blank        | water                       |         |                       | 3         | 3                       |          |                         | X        |                                             |  |
| 6                    |                   |                             |         |                       |           |                         |          |                         |          |                                             |  |
| 7                    |                   |                             |         |                       |           |                         |          |                         |          |                                             |  |
| 8                    |                   |                             |         |                       |           |                         |          |                         |          |                                             |  |
| 9                    |                   |                             |         |                       |           |                         |          |                         |          |                                             |  |
| 10                   |                   |                             |         |                       |           |                         |          |                         |          |                                             |  |
| SAMPLES COLLECTED BY |                   | COURIER AND AIR BILL NUMBER |         | RECEIVED BY           |           | DATE                    |          | TIME                    |          | SAMPLE'S CONDITION UPON RECEIPT             |  |
|                      |                   |                             |         | J. H. H. H.           |           | 2/14/98                 |          | 1100                    |          | no custody seal, i.e. 6°C, grab, pH = (met) |  |
| RELINQUISHED BY      |                   |                             |         | J. H. H. H.           |           | 2/16/98                 |          |                         |          | 21 cont                                     |  |
|                      |                   |                             |         |                       |           |                         |          |                         |          | 590                                         |  |
|                      |                   |                             |         |                       |           |                         |          |                         |          | 590                                         |  |

Distribution: White - Laboratory (To be returned with Analytical Report), Goldenrod - Project File; Yellow - Project Data Manager

# TAB

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Appendix E-3

**DISPOSAL CHARACTERIZATION SAMPLE  
SOIL EXCAVATED FROM RW-5A**

*Date Collected 03/19/98*

06 April, 1998

Case Narrative Report 93137

The samples were collected on 19 March, 1998 and received by ASI on 20 March, 1998. As indicated on the Chain of Custody, all conditions for proper sample receipt were met. The samples were logged into the LIMS as report 93137 for the following analyses as per client request: Aqueous samples - HERB (EPA 8151), PEST (EPA 8081A), BNA (EPA 8270C), VOA (EPA 8260B), Mercury (EPA 7470), Metals (EPA 6010B), pH (EPA 9040), Reactive CN (EPA 7.3.3.2) and Reactive Sulfide (EPA 7.3.4.2); Solid samples - TCLP HERB (EPA 1311/8151), TCLP PEST (EPA 1311/8081A), TCLP BNA (EPA 1311/8270C), TCLP VOA (EPA 1311/8260B), TCLP Mercury (EPA 1311/7470) and TCLP Metals (EPA 1311/6010B), pH (EPA 9045), Reactive CN (EPA 7.3.3.2), Reactive Sulfide (EPA 7.3.4.2) and Ignitability (EPA 1010). Holding times for sample preparation and analysis were met with the exception of pH which should be analyzed in the field.

HERB analysis (EPA 8151) for aqueous samples gave high MSD recoveries for 2,4,5-TP (Silvex) and 2,4,5-T and a high MSRPD value for 2,4,5-T. All LCS/LCSD spikes and all surrogate recoveries were acceptable.

PEST analysis (EPA 8081A) for aqueous samples met all data quality objectives. MS/MSD samples were not analyzed in this batch due to lack of sample available; the batch passes on LCS/LCSD.

BNA analysis (EPA 8270C) for aqueous samples met all data quality objectives.

VOA analysis (EPA 8260B) for aqueous samples gave a low MSD recovery for 1,1-Dichloroethene and high MSRPD values for 1,1-Dichloroethene and Trichloroethene. All VOA LCS/LCSD spikes and all surrogate recoveries were acceptable.

Mercury analysis (EPA 7470) for aqueous samples met all data quality objectives.

Metals analysis (EPA 6010B) for aqueous samples met all data quality objectives with the exception of a low PDS recovery for Ag.

pH analysis (EPA 9040) for aqueous samples met all data quality objectives.

Reactive CN analysis (EPA 7.3.3.2) for aqueous samples met all data quality objectives.

Reactive Sulfide analysis (EPA 7.3.4.2) for aqueous samples met all data quality objectives.

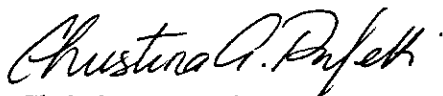
TCLP analysis for HERB (EPA 1311/8151) gave low MS recoveries and high MSRPD values for 1,4-D and 2,4,5-TP. All LCS/LCSD spikes and all surrogate recoveries were acceptable. TCLP analysis for PEST (EPA 1311/8081A) met all data quality objectives. TCLP analysis for BNA (EPA 1311/8270C) gave high MS/MSD recoveries for Hexachlorobutadiene and Hexachloroethane and high 2-Fluorobiphenyl recoveries for 92837-2MS and 92837-2MSD due to a matrix effect. All other BNA spike and surrogate recoveries were acceptable. TCLP analysis for VOA (EPA 1311/8260B) met all data quality objectives with the exception of a low MS recovery for Benzene. TCLP analysis for Mercury (EPA 1311/7470) met all data quality objectives. TCLP analysis for Metals (EPA 1311/6010B) gave a low MS recovery for Cr, and low MSD recoveries for Ba, Cr and Pb. The detection limit was raised for Ba, but all samples produced hits which were higher than the elevated detection limit.

pH analysis (EPA 9045) for solid samples met all data quality objectives.

Reactive CN analysis (EPA 7.3.3.2) for solid samples met all data quality objectives.

Reactive Sulfide analysis (EPA 7.3.4.2) for solid samples met all data quality objectives.

Ignitability analysis (EPA 1010) for solid samples met all data quality objectives.



Christina A. Perfetti  
Quality Assurance

**ASI****ANALYTICAL SERVICES, INC.**

478 595

ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201**LABORATORY REPORT**OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

April 8, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 93137-1**Sample Description**Soil, DDMT\Dunn Field Memphis TN, Project #20022, RW-005A, 03/19/98, 09:30,  
received 03/20/98**RESULTS**

|                                             |                          | <u>Result</u>        | <u>Detection Limit</u>         |
|---------------------------------------------|--------------------------|----------------------|--------------------------------|
| Ignitability (°F) (EPA 1010).....           |                          | >212                 | 70                             |
| pH (laboratory) (EPA 9045).....             |                          | 7.50                 | -                              |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL                  | 1                              |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL                  | 5                              |
| Toxicity Characteristic Leaching Procedure  |                          |                      |                                |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |                      |                                |
| EPA HW                                      |                          |                      |                                |
| <u>Number</u>                               | <u>Parameter</u>         | <u>Result (mg/l)</u> | <u>Detection Limit (mg/l)</u>  |
|                                             |                          |                      | <u>Regulatory Limit (mg/l)</u> |
| D004                                        | Arsenic (As).....        | BDL                  | 2.5                            |
| D005                                        | Barium (Ba).....         | 0.6                  | 0.1                            |
| D006                                        | Cadmium (Cd).....        | BDL                  | 0.01                           |
| D020                                        | Chlordane.....           | BDL                  | 0.01                           |
| D007                                        | Chromium (Cr).....       | BDL                  | 0.01                           |
| D026                                        | Total Cresol.....        | BDL                  | 0.05                           |
| D016                                        | 2,4-D.....               | BDL                  | 0.05                           |
| D027                                        | 1,4-Dichlorobenzene..... | BDL                  | 0.05                           |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL                  | 0.05                           |
| D012                                        | Endrin.....              | 0.002                | 0.001                          |
| D031                                        | Heptachlor.....          | BDL                  | 0.001                          |
| D031                                        | Heptachlor epoxide.....  | BDL                  | 0.001                          |
| D032                                        | Hexachlorobenzene.....   | BDL                  | 0.05                           |

BDL - Below Detection Limit



OHM Remediation Services Corp.  
Page 2 of 2

April 8, 1998  
Report No. 93137-1

Soil, DDMT\Dunn Field Memphis TN, Project #20022, RW-005A, 03/19/98, 09:30,  
received 03/20/98

### RESULTS

#### Toxicity Characteristic Leaching Procedure TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

#### Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | BDL              | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. Steve Offner

Respectfully submitted,

*Shari Harper*  
Project Manager  
*Christina R. Pugh*  
Quality Assurance

## ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

### LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

April 8, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 93137-2

### Sample Description

Soil, DDMT\Dunn Field Memphis TN, Project #20022, RW-005B, 03/19/98, 09:30,  
received 03/20/98

### RESULTS

|                                             |                          | <u>Result</u>          | <u>Detection Limit</u>  |
|---------------------------------------------|--------------------------|------------------------|-------------------------|
| Ignitability (°F) (EPA 1010).....           |                          | >212                   | 70                      |
| pH (laboratory) (EPA 9045).....             |                          | 7.64                   | -                       |
| Reactive Cyanide (mg/kg) (EPA 7.3.3.2)..... |                          | BDL                    | 1                       |
| Reactive Sulfide (mg/kg) (EPA 7.3.4.2)..... |                          | BDL                    | 5                       |
| Toxicity Characteristic Leaching Procedure  |                          |                        |                         |
| TCLP Non-volatile Extraction (EPA 1311)     |                          |                        |                         |
| EPA HW                                      |                          | <u>Detection Limit</u> | <u>Regulatory Limit</u> |
| <u>Number</u>                               | <u>Parameter</u>         | <u>(mg/l)</u>          | <u>(mg/l)</u>           |
| D004                                        | Arsenic (As).....        | BDL                    | 2.5                     |
| D005                                        | Barium (Ba).....         | 0.9                    | 0.1                     |
| D006                                        | Cadmium (Cd).....        | BDL                    | 0.01                    |
| D020                                        | Chlordane.....           | BDL                    | 0.01                    |
| D007                                        | Chromium (Cr).....       | BDL                    | 0.01                    |
| D026                                        | Total Cresol.....        | BDL                    | 0.05                    |
| D016                                        | 2,4-D.....               | BDL                    | 0.05                    |
| D027                                        | 1,4-Dichlorobenzene..... | BDL                    | 0.05                    |
| D030                                        | 2,4-Dinitrotoluene.....  | BDL                    | 0.05                    |
| D012                                        | Endrin.....              | BDL                    | 0.001                   |
| D031                                        | Heptachlor.....          | BDL                    | 0.001                   |
| D031                                        | Heptachlor epoxide.....  | BDL                    | 0.001                   |
| D032                                        | Hexachlorobenzene.....   | BDL                    | 0.05                    |

BDL - Below Detection Limit

OHM Remediation Services Corp.  
Page 2 of 2

April 8, 1998  
Report No. 93137-2

Soil, DDMT\Dunn Field Memphis TN, Project #20022, RW-005B, 03/19/98, 09:30,  
received 03/20/98

### RESULTS

Toxicity Characteristic Leaching Procedure  
TCLP Non-volatile Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                  | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|----------------------------|------------------|------------------------------|-------------------------------|
| D033             | Hexachlorobutadiene.....   | BDL              | 0.05                         | 0.5                           |
| D034             | Hexachloroethane.....      | BDL              | 0.05                         | 3.0                           |
| D008             | Lead (Pb).....             | BDL              | 0.1                          | 5.0                           |
| D013             | Lindane.....               | BDL              | 0.01                         | 0.4                           |
| D009             | Mercury (Hg).....          | BDL              | 0.005                        | 0.2                           |
| D014             | Methoxychlor.....          | BDL              | 0.5                          | 10.0                          |
| D036             | Nitrobenzene.....          | BDL              | 0.05                         | 2.0                           |
| D037             | Pentachlorophenol.....     | BDL              | 0.05                         | 100.0                         |
| D010             | Selenium (Se).....         | BDL              | 0.5                          | 1.0                           |
| D011             | Silver (Ag).....           | BDL              | 0.01                         | 5.0                           |
| D015             | Toxaphene.....             | BDL              | 0.05                         | 0.5                           |
| D041             | 2,4,5-Trichlorophenol..... | BDL              | 0.05                         | 400.0                         |
| D042             | 2,4,6-Trichlorophenol..... | BDL              | 0.05                         | 2.0                           |
| D017             | 2,4,5-TP Silvex.....       | BDL              | 0.1                          | 1.0                           |
| D038             | Pyridine.....              | BDL              | 0.05                         | 5.0                           |

Toxicity Characteristic Leaching Procedure  
TCLP Zero Headspace Extraction (EPA 1311)

| EPA HW<br>Number | Parameter                 | Result<br>(mg/l) | Detection<br>Limit<br>(mg/l) | Regulatory<br>Limit<br>(mg/l) |
|------------------|---------------------------|------------------|------------------------------|-------------------------------|
| D018             | Benzene.....              | BDL              | 0.02                         | 0.5                           |
| D019             | Carbon tetrachloride..... | BDL              | 0.02                         | 0.5                           |
| D021             | Chlorobenzene.....        | BDL              | 0.02                         | 100.0                         |
| D022             | Chloroform.....           | BDL              | 0.02                         | 6.0                           |
| D028             | 1,2-Dichloroethane.....   | BDL              | 0.02                         | 0.5                           |
| D029             | 1,1-Dichloroethene.....   | BDL              | 0.02                         | 0.7                           |
| D035             | Methyl ethyl ketone.....  | BDL              | 0.5                          | 200.0                         |
| D039             | Tetrachloroethene.....    | 0.07             | 0.02                         | 0.7                           |
| D040             | Trichloroethene.....      | BDL              | 0.02                         | 0.5                           |
| D043             | Vinyl chloride.....       | BDL              | 0.02                         | 0.2                           |

BDL - Below Detection Limit

cc: Mr. Steve Offner

Respectfully submitted,

*Shari Kayser*  
Project Manager  
*Christina P. Pyle*  
Quality Assurance



# ANALYTICAL SERVICES, INC.

478 599

ENVIRONMENTAL MONITORING &amp; LABORATORY ANALYSIS

110 TECHNOLOGY PARKWAY • NORCROSS, GA 30092  
(770) 734-4200 • FAX (770) 734-4201

## LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

April 8, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 93137-3

## Sample Description

Water, DDMT\Dunn Field Memphis TN, Project #20022, Trip Blank, 03/19/98,  
09:30, received 03/20/98

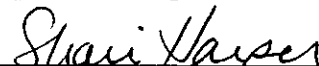
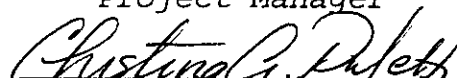
## RESULTS

| <u>Volatile Organics (EPA 8260)</u> | <u>Result</u><br><u>(ug/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(ug/l)</u> |
|-------------------------------------|--------------------------------|---------------------------------------------------|
| Benzene.....                        | BDL                            | 0.4                                               |
| Carbon tetrachloride.....           | BDL                            | 2.1                                               |
| Chloroform.....                     | BDL                            | 0.3                                               |
| Chlorobenzene.....                  | BDL                            | 0.4                                               |
| 1,2-Dichloroethane.....             | BDL                            | 0.6                                               |
| 1,1-Dichloroethene.....             | BDL                            | 1.2                                               |
| Methyl ethyl ketone.....            | BDL                            | 1                                                 |
| Tetrachloroethene.....              | BDL                            | 1.4                                               |
| Trichloroethene.....                | BDL                            | 1                                                 |
| Vinyl chloride.....                 | BDL                            | 1.1                                               |

BDL - Below Detection Limit

cc: Mr. Steve Offner

Respectfully submitted,

  
Project Manager  
Quality Assurance



# ANALYTICAL SERVICES, INC.

ENVIRONMENTAL MONITORING & LABORATORY ANALYSIS

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## LABORATORY REPORT

OHM Remediation Services Corp.  
5445 Triangle Parkway  
Suite 400  
Norcross, GA 30092

April 8, 1998

P.O. No. 1041997

Attention: Ms. Elena Rodriguez

Report No. 93137-4

## Sample Description

Water, DDMT\Dunn Field Memphis TN, Project #20022, Equipment Blank,  
03/19/98, 09:30, received 03/20/98

## RESULTS

|                                            | <u>Result</u> | <u>Detection<br/>Limit</u> |
|--------------------------------------------|---------------|----------------------------|
| pH (laboratory) (EPA 9040).....            | 7.81          | -                          |
| Reactive Cyanide (mg/l) (EPA 7.3.3.2)..... | BDL           | 1                          |
| Reactive Sulfide (mg/l) (EPA 7.3.4.2)..... | BDL           | 5                          |
| <u>Metals</u>                              | <u>(mg/l)</u> | <u>(mg/l)</u>              |
| Total Arsenic (As) (EPA 6010).....         | BDL           | 0.01                       |
| Total Barium (Ba) (EPA 6010).....          | BDL           | 0.2                        |
| Total Cadmium (Cd) (EPA 6010).....         | BDL           | 0.005                      |
| Total Chromium (Cr) (EPA 6010).....        | BDL           | 0.01                       |
| Total Lead (Pb) (EPA 6010).....            | BDL           | 0.003                      |
| Total Mercury (Hg) (EPA 7470).....         | BDL           | 0.0005                     |
| Total Selenium (Se) (EPA 6010).....        | BDL           | 0.005                      |
| Total Silver (Ag) (EPA 6010).....          | BDL           | 0.01                       |

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BDL - Below Detection Limit

OHM Remediation Services Corp.  
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April 8, 1998  
Report No. 93137-4

Water, DDMT\Dunn Field Memphis TN, Project #20022, Equipment Blank,  
03/19/98, 09:30, received 03/20/98

### RESULTS

|                                                     | Result        | Detection     |
|-----------------------------------------------------|---------------|---------------|
|                                                     | (ug/l)        | Limit         |
| <u>Volatile Organics (EPA 8260)</u>                 |               | (ug/l)        |
| Benzene.....                                        | BDL           | 0.4           |
| Carbon tetrachloride.....                           | BDL           | 2.1           |
| Chloroform.....                                     | BDL           | 0.3           |
| Chlorobenzene.....                                  | BDL           | 0.4           |
| 1,2-Dichloroethane.....                             | BDL           | 0.6           |
| 1,1-Dichloroethene.....                             | BDL           | 1.2           |
| Methyl ethyl ketone.....                            | BDL           | 1             |
| Tetrachloroethene.....                              | BDL           | 1.4           |
| Trichloroethene.....                                | BDL           | 1             |
| Vinyl chloride.....                                 | BDL           | 1.1           |
| <u>Acid Extractable Organics (EPA 8270)</u>         | <u>(ug/l)</u> | <u>(ug/l)</u> |
| Cresols.....                                        | BDL           | 10            |
| Pentachlorophenol.....                              | BDL           | 25            |
| 2,4,5-Trichlorophenol.....                          | BDL           | 25            |
| 2,4,6-Trichlorophenol.....                          | BDL           | 10            |
| <u>Base/Neutral Extractable Organics (EPA 8270)</u> | <u>(ug/l)</u> | <u>(ug/l)</u> |
| 1,4-Dichlorobenzene.....                            | BDL           | 10            |
| 2,4-Dinitrotoluene.....                             | BDL           | 10            |
| Hexachlorobenzene.....                              | BDL           | 10            |
| Hexachlorobutadiene.....                            | BDL           | 10            |
| Hexachloroethane.....                               | BDL           | 10            |
| Nitrobenzene.....                                   | BDL           | 10            |
| Pyridine.....                                       | BDL           | 10            |

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BDL - Below Detection Limit

OHM Remediation Services Corp.  
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April 8, 1998  
Report No. 93137-4

Water, DDMT\Dunn Field Memphis TN, Project #20022, Equipment Blank,  
03/19/98, 09:30, received 03/20/98

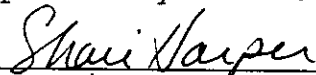
**RESULTS**

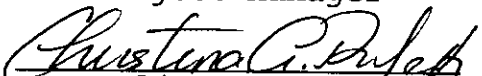
| <u>Pesticides (EPA 8081)</u>             | <u>Result</u><br><u>(ug/l)</u> | <u>Detection</u><br><u>Limit</u><br><u>(ug/l)</u> |
|------------------------------------------|--------------------------------|---------------------------------------------------|
| Chlordane.....                           | BDL                            | 0.5                                               |
| Lindane.....                             | BDL                            | 0.1                                               |
| Endrin.....                              | BDL                            | 0.1                                               |
| Heptachlor.....                          | BDL                            | 0.1                                               |
| Heptachlor epoxide.....                  | BDL                            | 0.1                                               |
| Methoxychlor.....                        | BDL                            | 0.3                                               |
| Toxaphene.....                           | BDL                            | 5.0                                               |
| <u>Chlorinated Herbicides (EPA 8151)</u> | <u>(ug/l)</u>                  | <u>(ug/l)</u>                                     |
| 2,4-D.....                               | BDL                            | 5.0                                               |
| 2,4,5-TP (Silvex).....                   | BDL                            | 10                                                |

BDL - Below Detection Limit

cc: Mr. Steve Offner

Respectfully submitted,

  
Project Manager

  
Quality Assurance

Analytical Services Inc. Batch QC  
 For Report Number :93137  
 Base Neutrals / Acids

Matrix : TCLP

Batch # 37163

Method : EPA 8270

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| o-Cresol                           | 87         | 90          | 3         | 10 - 150           | 0 - 50       |
| m-Cresol + p-Cresol                | 83         | 81          | 3         | 10 - 150           | 0 - 50       |
| 1,4-Dichlorobenzene                | 78         | 78          | 1         | 36 - 97            | 0 - 28       |
| 2,4-Dinitrotoluene                 | 87         | 92          | 5         | 24 - 96            | 0 - 38       |
| Hexachlorobenzene                  | 140        | 144         | 3         | 10 - 152           | 0 - 40       |
| Hexachlorobutadiene                | 106        | 94          | 12        | 24 - 116           | 0 - 40       |
| Hexachloroethane                   | 89         | 90          | 1         | 40 - 113           | 0 - 40       |
| Nitrobenzene                       | 77         | 81          | 5         | 35 - 180           | 0 - 40       |
| Pentachlorophenol                  | 90         | 89          | 2         | 9 - 103            | 0 - 50       |
| Pyridine                           | 35         | 36          | 2         | 10 - 110           | 0 - 90       |
| 2,4,5-Trichlorophenol              | 115        | 117         | 2         | 10 - 150           | 0 - 50       |
| 2,4,6-Trichlorophenol              | 111        | 114         | 3         | 37 - 144           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| o-Cresol                            | 20         | 24          | 18        | 10 - 150           | 0 - 50       |
| m-Cresol + p-Cresol                 | 16         | 18          | 15        | 10 - 150           | 0 - 50       |
| 1,4-Dichlorobenzene                 | 92         | 91          | 1         | 36 - 97            | 0 - 28       |
| 2,4-Dinitrotoluene                  | 83         | 86          | 4         | 24 - 96            | 0 - 38       |
| Hexachlorobenzene                   | 139        | 139         | 0         | 10 - 152           | 0 - 40       |
| Hexachlorobutadiene                 | 139        | 134         | 3         | 24 - 116           | 0 - 40       |
| Hexachloroethane                    | 122        | 122         | 0         | 40 - 113           | 0 - 40       |
| Nitrobenzene                        | 104        | 106         | 2         | 35 - 180           | 0 - 40       |
| Pentachlorophenol                   | 45         | 48          | 6         | 9 - 103            | 0 - 50       |
| Pyridine                            | 42         | 39          | 8         | 10 - 110           | 0 - 90       |
| 2,4,5-Trichlorophenol               | 83         | 73          | 12        | 10 - 150           | 0 - 50       |
| 2,4,6-Trichlorophenol               | 75         | 74          | 1         | 37 - 144           | 0 - 40       |



Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Base Neutrals / Acids  
 Batch # 37163

Matrix : TCLP

Method : EPA 8270

## % Recovery Objectives

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|    |                      |          |
|----|----------------------|----------|
| S1 | 2-Fluorophenol       | 21 - 100 |
| S2 | Phenol-d5            | 10 - 94  |
| S3 | Nitrobenzene-d5      | 35 - 114 |
| S4 | 2-Fluorobiphenyl     | 43 - 116 |
| S5 | 2,4,6-Tribromophenol | 10 - 123 |
| S6 | Terphenyl-d14        | 33 - 141 |

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| Sample                               | File  | S1 | S2 | S3  | S4  | S5 | S6  |
|--------------------------------------|-------|----|----|-----|-----|----|-----|
| <hr/>                                |       |    |    |     |     |    |     |
| 37163BLK                             | A8505 | 33 | 36 | 67  | 110 | 74 | 102 |
| 37163LCS                             | A8506 | 41 | 40 | 66  | 112 | 83 | 108 |
| 37163LCSD                            | A8507 | 40 | 39 | 71  | 112 | 85 | 104 |
| 92839-1                              | A8539 | 26 | 41 | 110 | 347 | 82 | 99  |
| ^^Note: 1:50; MATRIX EFFECT          |       |    |    |     |     |    |     |
| 92839-2                              | A8540 |    |    |     |     |    |     |
| ^^Note: 1:100;SURROGATES DILUTED OUT |       |    |    |     |     |    |     |
| 92837-2                              | A8542 | 24 | 16 | 101 | 128 | 51 | 99  |
| ^^Note: MATRIX EFFECT                |       |    |    |     |     |    |     |
| 92837-2MS                            | A8543 | 24 | 18 | 89  | 123 | 55 | 94  |
| ^^Note: MATRIX EFFECT                |       |    |    |     |     |    |     |
| 92837-2MSD                           | A8544 | 23 | 16 | 88  | 125 | 59 | 92  |
| ^^Note: MATRIX EFFECT                |       |    |    |     |     |    |     |
| 92852-1                              | A8551 | 37 | 38 | 74  | 123 | 84 | 87  |
| ^^Note: MATRIX EFFECT                |       |    |    |     |     |    |     |
| 92977-3                              | A8569 |    |    |     |     |    |     |
| ^^Note: 1:100 SURR. DILUTED OUT      |       |    |    |     |     |    |     |
| 92977-4                              | A8570 |    |    |     |     |    |     |
| ^^Note: 1:100 SURR. DILUTED OUT      |       |    |    |     |     |    |     |
| 92977-5                              | A8571 |    |    |     |     |    |     |
| ^^Note: 1:100 SURR. DILUTED OUT      |       |    |    |     |     |    |     |
| 93036                                | A8677 | 42 | 28 | 84  | 115 | 93 | 101 |
| 93137-1                              | A8691 | 45 | 42 | 89  | 104 | 89 | 92  |
| 93137-2                              | A8692 | 43 | 39 | 75  | 109 | 80 | 86  |

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Blank Results Information  
Base Neutrals / Acids      Method : EPA 8270

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| Analyte |                       | Blank<br>Result | Detection<br>Limit |
|---------|-----------------------|-----------------|--------------------|
| D026    | Total Cresol          | BDL             | 0.05               |
| D027    | 1,4-Dichlorobenzene   | BDL             | 0.05               |
| D030    | 2,4-Dinitrotoluene    | BDL             | 0.05               |
| D032    | Hexachlorobenzene     | BDL             | 0.05               |
| D033    | Hexachlorobutadiene   | BDL             | 0.05               |
| D034    | Hexachloroethane      | BDL             | 0.05               |
| D036    | Nitrobenzene          | BDL             | 0.05               |
| D037    | Pentachlorophenol     | BDL             | 0.05               |
| D041    | 2,4,5-Trichlorophenol | BDL             | 0.05               |
| D042    | 2,4,6-Trichlorophenol | BDL             | 0.05               |
| D038    | Pyridine              | BDL             | 0.05               |

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Q.C. Information for Batch # 37163

Page 4  
Printed: 03/30/98 15:55:32Sample Batch Information  
Base Neutrals / Acids      Method : EPA 8270

| Sample ID  | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst # |
|------------|-------------|------|-------|----------------------|----------|------|-----|--------|
|            | Date        | Time | By    |                      | Date     | Time | By  |        |
| 37163BLK   | 03/17/98    | 1330 | TB    |                      | 03/18/98 | 1231 | RAC | 5970   |
| 37163LCS   | 03/17/98    | 1330 | TB    |                      | 03/18/98 | 1306 | RAC | 5970   |
| 37163LCSD  | 03/17/98    | 1330 | TB    |                      | 03/18/98 | 1341 | RAC | 5970   |
| 92839-1    | 03/17/98    | 1330 | TB    |                      | 03/19/98 | 0759 | RAC | 5970   |
| 92839-2    | 03/17/98    | 1330 | TB    |                      | 03/19/98 | 0833 | RAC | 5970   |
| 92837-2    | 03/17/98    | 1330 | TB    |                      | 03/19/98 | 0943 | RAC | 5970   |
| 92837-2MS  | 03/17/98    | 1330 | TB    |                      | 03/19/98 | 1018 | RAC | 5970   |
| 92837-2MSD | 03/17/98    | 1330 | TB    |                      | 03/19/98 | 1053 | RAC | 5970   |
| 92852-1    | 03/18/98    | 1430 | TB/JW |                      | 03/19/98 | 1651 | RAC | 5970   |
| 92839-1D   | /           | /    |       |                      | 03/19/98 | 0759 | RAC | 5970   |
| 92977-3    | 03/20/98    | 1300 | JW    |                      | 03/20/98 | 2117 | TAS | 5970   |
| 92977-4    | 03/20/98    | 1300 | JW    |                      | 03/20/98 | 2151 | TAS | 5970   |
| 92977-5    | 03/20/98    | 1300 | JW    |                      | 03/20/98 | 2226 | TAS | 5970   |
| 93036      | 03/24/98    | 1400 | JW/TB |                      | 03/25/98 | 2017 | RAC | 5970   |
| 93137-1    | 03/25/98    | 1400 | JW    |                      | 03/26/98 | 1033 | RAC | 5970   |
| 93137-2    | 03/25/98    | 1400 | JW    |                      | 03/26/98 | 1104 | RAC | 5970   |

Analytical Services Inc. Batch QC  
 For Report Number :93137  
 Organochlorine Pesticides

Matrix : Aqueous

Batch # 37179

Method : EPA 8081

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                | 86         | 80          | 8         | 32 - 127           | 0 - 40       |
| ^^Note : NO SAMPLES FOR MS MSD     |            |             |           |                    |              |
| Heptachlor                         | 87         | 81          | 7         | 34 - 111           | 0 - 40       |
| Aldrin                             | 92         | 88          | 5         | 42 - 122           | 0 - 40       |
| Dieldrin                           | 94         | 88          | 6         | 36 - 146           | 0 - 40       |
| Endrin                             | 91         | 86          | 6         | 30 - 147           | 0 - 40       |
| 4,4'-DDT                           | 100        | 96          | 4         | 25 - 160           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                 | 0          | 0           | NC        | 32 - 127           | 0 - 40       |
| ^^Note : NO SAMPLES FOR MS MSD      |            |             |           |                    |              |
| Heptachlor                          | 0          | 0           | NC        | 34 - 111           | 0 - 40       |
| Aldrin                              | 0          | 0           | NC        | 42 - 122           | 0 - 40       |
| Dieldrin                            | 0          | 0           | NC        | 36 - 146           | 0 - 40       |
| Endrin                              | 0          | 0           | NC        | 30 - 147           | 0 - 40       |
| 4,4'-DDT                            | 0          | 0           | NC        | 25 - 160           | 0 - 40       |

NC = Not Calculated

Analytical Services Inc. Batch QC

Surrogate Recovery

Organochlorine Pesticides

Matrix : Aqueous

Batch # 37179

Method : EPA 8081

## % Recovery Objectives

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|    |                      |          |
|----|----------------------|----------|
| S1 | Dibutylchloredate    | 14 - 161 |
| S2 | Tetrachloro-m-xylene | 47 - 113 |
| S3 | Decachlorobiphenyl   | 10 - 139 |

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| Sample    | File       | S1  | S2 | S3 | S4 | S5 | S6 |
|-----------|------------|-----|----|----|----|----|----|
| 37179BLK  | 031898012F | 116 | 65 | 77 |    |    |    |
| 37179LCS  | 031898013F | 129 | 72 | 67 |    |    |    |
| 37179LCSD | 031898014F | 123 | 65 | 79 |    |    |    |
| 92975-4   | 031898052F | 143 | 77 | 71 |    |    |    |
| 92975-5   | 031898053F | 152 | 80 | 95 |    |    |    |
| 92975-6   | 031898054F | 140 | 80 | 94 |    |    |    |
| 92975-7   | 031898055F | 140 | 81 | 66 |    |    |    |
| 92975-8   | 031898056F | 141 | 78 | 97 |    |    |    |
| 92975-9   | 031898057F | 148 | 88 | 55 |    |    |    |
| 92975-10  | 031898058F | 144 | 88 | 80 |    |    |    |
| 92975-11  | 032098017F | 124 | 76 | 96 |    |    |    |
| 93137-4   | 032598075F | 123 | 81 | 59 |    |    |    |

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Blank Results Information  
Organochlorine Pesticides      Method : EPA 8081

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| Analyte            | Blank<br>Result | Detection<br>Limit |
|--------------------|-----------------|--------------------|
| Chlordane          | BDL             | 0.5                |
| Lindane            | BDL             | 0.1                |
| Endrin             | BDL             | 0.1                |
| Heptachlor         | BDL             | 0.1                |
| Heptachlor epoxide | BDL             | 0.1                |
| Methoxychlor       | BDL             | 0.3                |
| Toxaphene          | BDL             | 5.0                |

Sample Batch Information  
Organochlorine Pesticides Method : EPA 8081

| Sample ID | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst # |
|-----------|-------------|------|-------|----------------------|----------|------|-----|--------|
|           | Date        | Time | By    |                      | Date     | Time | By  |        |
| 37179BLK  | 03/18/98    | 1430 | TB/MB |                      | 03/18/98 | 2215 | JQZ | GC-3   |
| 37179LCS  | 03/18/98    | 1430 | TB/MB |                      | 03/18/98 | 2239 | JQZ | GC-3   |
| 37179LCSD | 03/18/98    | 1430 | TB/MB |                      | 03/18/98 | 2303 | JQZ | GC-3   |
| 92975-4   | 03/19/98    | 0800 | TB    |                      | 03/19/98 | 1650 | JQZ | GC-3   |
| 92975-5   | 03/19/98    | 0800 | TB    |                      | 03/19/98 | 1714 | JQZ | GC-3   |
| 92975-6   | 03/19/98    | 0800 | TB    |                      | 03/19/98 | 1738 | JQZ | GC-3   |
| 92975-7   | 03/19/98    | 0800 | TB    |                      | 03/19/98 | 1802 | JQZ | GC-3   |
| 92975-8   | 03/19/98    | 0800 | TB    |                      | 03/19/98 | 1826 | JQZ | GC-3   |
| 92975-9   | 03/19/98    | 0800 | TB    |                      | 03/19/98 | 1850 | JQZ | GC-3   |
| 92975-10  | 03/19/98    | 0800 | TB    |                      | 03/19/98 | 1914 | JQZ | GC-3   |
| 92975-11  | 03/19/98    | 1000 | TB    |                      | 03/20/98 | 2138 | JQZ | GC-3   |
| 93137-4   | 03/24/98    | 1400 | JW/TB |                      | 03/18/98 | 1833 | JQZ | GC-3   |
| 93207-10  | 03/25/98    | 0730 | TB    |                      | /        | /    |     |        |
| 93207-8   | 03/25/98    | 0730 | TB    |                      | /        | /    |     |        |
| 93207-9   | 03/25/98    | 0730 | TB    |                      | /        | /    |     |        |
| 93207-11  | 03/25/98    | 0730 | TB    |                      | /        | /    |     |        |
| 93207-12  | 03/25/98    | 0730 | TB    |                      | /        | /    |     |        |
| 93207-13  | 03/25/98    | 0730 | TB    |                      | /        | /    |     |        |
| 93207-14  | 03/25/98    | 0730 | TB    |                      | /        | /    |     |        |

Analytical Services Inc. Batch QC  
 For Report Number :93137  
 Base Neutrals / Acids

Matrix : Aqueous

Batch # 37191

Method : EPA 8270

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Phenol                             | 25         | 23          | 8         | 12 - 89            | 0 - 42       |
| 2-Chlorophenol                     | 53         | 52          | 1         | 27 - 123           | 0 - 40       |
| 1,4-Dichlorobenzene                | 49         | 41          | 18        | 36 - 97            | 0 - 28       |
| N-Nitrosodipropylamine             | 73         | 61          | 19        | 41 - 116           | 0 - 38       |
| 1,2,4-Trichlorobenzene             | 63         | 49          | 24        | 44 - 142           | 0 - 28       |
| 4-Chloro-3-methylphenol            | 70         | 54          | 26        | 23 - 97            | 0 - 42       |
| Acenaphthene                       | 69         | 55          | 23        | 46 - 118           | 0 - 31       |
| 2,4-Dinitrotoluene                 | 66         | 62          | 6         | 24 - 96            | 0 - 38       |
| 4-Nitrophenol                      | 17         | 22          | 25        | 10 - 80            | 0 - 50       |
| Pentachlorophenol                  | 67         | 94          | 34        | 9 - 103            | 0 - 50       |
| Pyrene                             | 87         | 73          | 19        | 26 - 127           | 0 - 31       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Phenol                              | 14         | 17          | 21        | 12 - 89            | 0 - 42       |
| 2-Chlorophenol                      | 46         | 54          | 16        | 27 - 123           | 0 - 40       |
| 1,4-Dichlorobenzene                 | 56         | 51          | 9         | 36 - 97            | 0 - 28       |
| N-Nitrosodipropylamine              | 78         | 78          | 0         | 41 - 116           | 0 - 38       |
| 1,2,4-Trichlorobenzene              | 71         | 64          | 11        | 44 - 142           | 0 - 28       |
| 4-Chloro-3-methylphenol             | 28         | 35          | 22        | 23 - 97            | 0 - 42       |
| Acenaphthene                        | 82         | 78          | 4         | 46 - 118           | 0 - 31       |
| 2,4-Dinitrotoluene                  | 92         | 88          | 5         | 24 - 96            | 0 - 38       |
| 4-Nitrophenol                       | 43         | 45          | 3         | 10 - 80            | 0 - 50       |
| Pentachlorophenol                   | 87         | 77          | 12        | 9 - 103            | 0 - 50       |
| Pyrene                              | 88         | 80          | 9         | 26 - 127           | 0 - 31       |



Matrix : Aqueous

Batch # 37191

Method : EPA 8270

## % Recovery Objectives

|    |                      |          |
|----|----------------------|----------|
| S1 | 2-Fluorophenol       | 21 - 100 |
| S2 | Phenol-d5            | 10 - 94  |
| S3 | Nitrobenzene-d5      | 35 - 114 |
| S4 | 2-Fluorobiphenyl     | 43 - 116 |
| S5 | 2,4,6-Tribromophenol | 10 - 123 |
| S6 | Terphenyl-d14        | 33 - 141 |

| Sample                               | File  | S1 | S2 | S3  | S4  | S5  | S6  |
|--------------------------------------|-------|----|----|-----|-----|-----|-----|
| 37191BLK                             | B4853 | 41 | 28 | 65  | 62  | 77  | 75  |
| 37191LCS                             | B4854 | 30 | 30 | 72  | 69  | 75  | 87  |
| 37191LCSD                            | B4855 | 36 | 26 | 59  | 52  | 82  | 69  |
| 92981-1                              | B4856 | 23 | 12 | 68  | 69  | 51  | 70  |
| 92981-2                              | B4857 | 37 | 29 | 71  | 74  | 95  | 79  |
| 92981-3                              | B4858 | 6  | 2  | 18  | 72  | 1   | 70  |
| ^^Note: RE-EXTRACT                   |       |    |    |     |     |     |     |
| 92981-4                              | B4859 | 22 | 32 |     | 66  | 122 | 80  |
| ^^Note: MATRIX EFFECT                |       |    |    |     |     |     |     |
| 92981-4D                             | B4905 | 23 | 22 | 63  | 64  | 54  | 62  |
| ^^Note: 1:10                         |       |    |    |     |     |     |     |
| 92981-5MSD                           | B4860 | 27 | 20 | 74  | 75  | 79  | 68  |
| ^^Note: aka 92981-1                  |       |    |    |     |     |     |     |
| 92981-6MS                            | B4861 | 22 | 17 | 77  | 80  | 74  | 78  |
| ^^Note: aka 92981-1                  |       |    |    |     |     |     |     |
| 92981-13                             | B4862 | 21 | 25 | 60  | 67  | 32  | 89  |
| 92981-15                             | B4863 | 26 | 20 | 53  | 53  | 44  | 73  |
| 92766-2D                             | A8592 |    |    | 162 | 153 |     | 132 |
| ^^Note: 1:10;PAH ONLY;MATRIX EFFTECT |       |    |    |     |     |     |     |
| 92982-5D                             | A8593 |    | 1  | 91  | 147 |     | 116 |
| ^^Note: 1:10;MATRIX EFFECT           |       |    |    |     |     |     |     |
| 92766-2                              | A8559 |    |    | 59  | 111 |     | 118 |
| ^^Note: PAH ONLY                     |       |    |    |     |     |     |     |
| 93076-1                              | A8560 |    |    | 73  | 132 |     | 69  |
| ^^Note: PAH ONLY                     |       |    |    |     |     |     |     |
| 93076-2                              | A8561 |    |    | 71  | 120 |     | 64  |
| ^^Note: PAH ONLY                     |       |    |    |     |     |     |     |

Matrix : Aqueous

Batch # 37191

Method : EPA 8270

## % Recovery Objectives

|    |                      |    |   |     |
|----|----------------------|----|---|-----|
| S1 | 2-Fluorophenol       | 21 | - | 100 |
| S2 | Phenol-d5            | 10 | - | 94  |
| S3 | Nitrobenzene-d5      | 35 | - | 114 |
| S4 | 2-Fluorobiphenyl     | 43 | - | 116 |
| S5 | 2,4,6-Tribromophenol | 10 | - | 123 |
| S6 | Terphenyl-d14        | 33 | - | 141 |

| Sample                        | File  | S1 | S2 | S3 | S4  | S5  | S6  |
|-------------------------------|-------|----|----|----|-----|-----|-----|
| 92982-5                       | A8567 |    |    | 83 | 107 |     | 66  |
| ^^Note: BN ONLY               |       |    |    |    |     |     |     |
| 92982-6                       | A8568 |    |    | 64 | 120 |     | 77  |
| ^^Note: BN ONLY;MATRIX EFFECT |       |    |    |    |     |     |     |
| 93137-4                       | A8676 | 47 | 14 | 88 | 89  | 93  | 108 |
| 93086-1                       | B4961 | 33 | 23 | 62 | 62  | 88  | 61  |
| 93086-1DUP                    | B4962 | 44 | 31 | 71 | 77  | 116 | 64  |
| 93086-2                       | B4963 | 30 | 22 |    |     | 25  |     |
| ^^Note: Acid only             |       |    |    |    |     |     |     |
| 93086-3                       | B4964 | 50 | 30 |    |     | 108 |     |
| ^^Note: Acid only             |       |    |    |    |     |     |     |
| 93086-4                       | B4965 | 58 | 35 |    |     | 111 |     |
| ^^Note: Acid only             |       |    |    |    |     |     |     |
| 93086-5                       | B4966 | 48 | 30 |    |     | 112 |     |
| ^^Note: Acid only             |       |    |    |    |     |     |     |
| 93086-6                       | B4967 | 6  | 12 |    |     | 62  |     |
| ^^Note: Acid only;RE-ANALYZE  |       |    |    |    |     |     |     |
| 93086-7                       | B4968 | 40 | 23 |    |     | 115 |     |
| ^^Note: Acid only             |       |    |    |    |     |     |     |
| 92981-3RR                     | B4969 | 2  | 1  | 75 | 82  | 3   | 86  |
| ^^Note: RE-ANALYZE            |       |    |    |    |     |     |     |
| 93086-6RA                     | B5012 | 7  | 9  |    |     | 60  |     |
| ^^Note: Acid only;RE-EXTRACT  |       |    |    |    |     |     |     |
| 92981-3RR RA                  | B5013 | 15 | 3  | 76 | 86  | 3   | 71  |
| ^^Note: Matrix interference   |       |    |    |    |     |     |     |

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Q.C. Information for Batch # 37191

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Blank Results Information  
Base Neutrals / Acids      Method : EPA 8270

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| Analyte               | Blank<br>Result | Detection<br>Limit |
|-----------------------|-----------------|--------------------|
| Cresols               | BDL             | 10                 |
| Pentachlorophenol     | BDL             | 25                 |
| 2,4,5-Trichlorophenol | BDL             | 25                 |
| 2,4,6-Trichlorophenol | BDL             | 10                 |
| 1,4-Dichlorobenzene   | BDL             | 10                 |
| 2,4-Dinitrotoluene    | BDL             | 10                 |
| Hexachlorobenzene     | BDL             | 10                 |
| Hexachlorobutadiene   | BDL             | 10                 |
| Hexachloroethane      | BDL             | 10                 |
| Nitrobenzene          | BDL             | 10                 |
| Pyridine              | BDL             | 10                 |

Sample Batch Information  
Base Neutrals / Acids      Method : EPA 8270

| Sample ID    | Preparation |      |    | Preparation<br>Notes | Analysis |      |     | Inst # |
|--------------|-------------|------|----|----------------------|----------|------|-----|--------|
|              | Date        | Time | By |                      | Date     | Time | By  |        |
| 37191BLK     | 03/19/98    | 0900 | JW |                      | 03/20/98 | 1635 | RAC | 5971   |
| 37191LCS     | 03/19/98    | 0900 | JW |                      | 03/20/98 | 1708 | RAC | 5971   |
| 37191LCSD    | 03/19/98    | 0900 | JW |                      | 03/20/98 | 1741 | RAC | 5971   |
| 92981-1      | 03/19/98    | 0900 | JW |                      | 03/20/98 | 1814 | RAC | 5971   |
| 92981-2      | 03/19/98    | 0900 | JW |                      | 03/20/98 | 1846 | RAC | 5971   |
| 92981-3      | 03/19/98    | 0900 | JW |                      | 03/20/98 | 1919 | RAC | 5971   |
| 92981-4      | 03/19/98    | 0900 | JW |                      | 03/20/98 | 1952 | RAC | 5971   |
| 92981-5MSD   | 03/19/98    | 0900 | JW | aka 92981-1          | 03/20/98 | 2025 | RAC | 5971   |
| 92981-6MS    | 03/19/98    | 0900 | JW | aka 92981-1          | 03/20/98 | 2058 | RAC | 5971   |
| 92981-13     | 03/19/98    | 0900 | JW |                      | 03/20/98 | 2131 | RAC | 5971   |
| 92981-15     | 03/19/98    | 0900 | JW |                      | 03/20/98 | 2204 | RAC | 5971   |
| 92982-5      | 03/19/98    | 0900 | JW | BN ONLY              | 03/20/98 | 2009 | RAC | 5970   |
| 92982-6      | 03/19/98    | 0900 | JW | BN ONLY              | 03/20/98 | 2043 | RAC | 5970   |
| 92766-2      | 03/20/98    | 0900 | TB |                      | 03/20/98 | 1538 | RAC | 5970   |
| 93076-1      | 03/20/98    | 0900 | JW |                      | 03/20/98 | 1612 | RAC | 5970   |
| 93076-2      | 03/20/98    | 0900 | JW |                      | 03/20/98 | 1645 | RAC | 5970   |
| 92981-4D     | / /         |      |    |                      | 03/22/98 | 2017 | RAC | 5971   |
| 92766-2D     | / /         |      |    |                      | 03/21/98 | 2041 | RAC | 5970   |
| 93082-5D     | / /         |      |    |                      | 03/21/98 | 2114 | RAC | 5970   |
| 93086-1      | 03/23/98    | 1030 | JW |                      | 03/26/98 | 1124 | RAC | 5971   |
| 93086-1DUP   | 03/23/98    |      |    |                      | 03/26/98 | 1159 | RAC | 5971   |
| 93086-2      | 03/23/98    | 1030 | JW | ACID ONLY            | 03/26/98 | 1235 | RAC | 5971   |
| 93086-3      | 03/23/98    | 1030 | JW | ACID ONLY            | 03/26/98 | 1310 | RAC | 5971   |
| 93086-4      | 03/23/98    | 1030 | JW | ACID ONLY            | 03/26/98 | 1346 | RAC | 5971   |
| 93086-5      | 03/23/98    | 1030 | JW | ACID ONLY            | 03/26/98 | 1422 | RAC | 5971   |
| 93086-6      | 03/23/98    | 1030 | JW | ACID ONLY            | 03/26/98 | 1458 | RAC | 5971   |
| 93086-7      | 03/23/98    | 1030 | JW | ACID ONLY            | 03/26/98 | 1534 | RAC | 5971   |
| 93137-4      | 03/24/98    | 1500 | JW |                      | 03/25/98 | 1945 | RAC | 5970   |
| 92981-3RR    | 03/24/98    | 1500 | JW |                      | 03/26/98 | 1610 | RAC | 5971   |
| 93086-6RA    | / /         |      |    |                      | 03/28/98 | 1052 | RAC | 5971   |
| 92981-3RR RA | / /         |      |    |                      | 03/28/98 | 1128 | RAC | 5971   |

Analytical Services Inc. Batch QC  
For Report Number :93137  
Volatile Organics

Matrix : Aqueous

Batch # 37198

Method : EPA 8260

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 1,1-Dichloroethene                 | 77         | 79          | 3         | 61 - 145           | 0 - 14       |
| Trichloroethene                    | 98         | 99          | 1         | 71 - 120           | 0 - 14       |
| Benzene                            | 94         | 90          | 4         | 76 - 127           | 0 - 11       |
| Toluene                            | 99         | 101         | 2         | 76 - 125           | 0 - 13       |
| Chlorobenzene                      | 96         | 98          | 2         | 75 - 130           | 0 - 13       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 1,1-Dichloroethene                  | 90         | 59          | 42        | 61 - 145           | 0 - 14       |
| Trichloroethene                     | 108        | 91          | 17        | 71 - 120           | 0 - 14       |
| Benzene                             | 107        | 96          | 11        | 76 - 127           | 0 - 11       |
| Toluene                             | 112        | 107         | 5         | 76 - 125           | 0 - 13       |
| Chlorobenzene                       | 115        | 101         | 13        | 75 - 130           | 0 - 13       |

Analytical Services Inc. Batch QC  
 Surrogate Recovery  
 Volatile Organics

Matrix : Aqueous

Batch # 37198

Method : EPA 8260

## % Recovery Objectives

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|    |                       |          |
|----|-----------------------|----------|
| S1 | 1,2-Dichloroethane-d4 | 76 - 119 |
| S2 | Toluene-d8            | 88 - 110 |
| S3 | Ethylbenzene-d10      | 75 - 115 |
| S4 | 4-Bromofluorobenzene  | 86 - 120 |

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| Sample        | File  | S1  | S2  | S3  | S4  | S5 | S6 |
|---------------|-------|-----|-----|-----|-----|----|----|
| <hr/>         |       |     |     |     |     |    |    |
| 37198BLK      | B4140 | 105 | 100 | 94  | 98  |    |    |
| 37198LCS      | B4095 | 97  | 98  | 94  | 96  |    |    |
| 37198LCSD     | B4096 | 97  | 103 | 102 | 101 |    |    |
| 92951-3MS     | B4150 | 105 | 99  | 101 | 106 |    |    |
| 92951-3MSD    | B4151 | 113 | 102 | 98  | 105 |    |    |
| 92888-1       | B4143 | 110 | 100 | 96  | 100 |    |    |
| 92888-1D1     | B4144 | 104 | 99  | 98  | 102 |    |    |
| ^^Note: DF=5  |       |     |     |     |     |    |    |
|               |       |     |     |     |     |    |    |
| 92951-1       | B4145 | 107 | 98  | 99  | 98  |    |    |
| 92951-2       | B4146 | 110 | 98  | 99  | 97  |    |    |
| 92951-3       | B4147 | 103 | 93  | 98  | 102 |    |    |
| 92951-4       | B4148 | 109 | 99  | 95  | 100 |    |    |
| 92951-5       | B4149 | 115 | 98  | 93  | 94  |    |    |
| 92951-3DUP    | B4152 | 114 | 95  | 97  | 104 |    |    |
| 92938         | A1838 | 105 | 102 | 101 | 102 |    |    |
| 92888-1D2     | A1845 | 101 | 102 | 100 | 107 |    |    |
| ^^Note: DF=50 |       |     |     |     |     |    |    |
|               |       |     |     |     |     |    |    |
| 92834         | A1844 | 99  | 104 | 103 | 102 |    |    |
| 92977-6       | A1840 | 105 | 104 | 100 | 99  |    |    |
| 93031-3       | A1841 | 100 | 97  | 102 | 100 |    |    |
| 92916-1       | A1846 | 101 | 99  | 101 | 96  |    |    |
| 92916-2       | A1847 | 100 | 105 | 102 | 102 |    |    |
| 92916-3       | A1848 | 103 | 104 | 101 | 103 |    |    |
| 92916-4       | A1849 | 103 | 97  | 99  | 103 |    |    |
| 92916-5       | A1850 | 106 | 95  | 100 | 104 |    |    |
| 92916-6       | A1851 | 107 | 92  | 104 | 101 |    |    |
| 92916-6D      | A1884 | 101 | 91  | 103 | 100 |    |    |
| ^^Note: DF=2  |       |     |     |     |     |    |    |
|               |       |     |     |     |     |    |    |
| 92766-2       | A1918 | 100 | 92  | 94  | 101 |    |    |
| 93137-3       | A1919 | 95  | 98  | 95  | 95  |    |    |
| 93137-4       | A1920 | 97  | 93  | 91  | 92  |    |    |
| 93077-1       | A1940 | 96  | 96  | 91  | 87  |    |    |

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Q.C. Information for Batch # 37198

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Blank Results Information  
Volatile Organics Method : EPA 8260

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| Analyte              | Blank<br>Result | Detection<br>Limit |
|----------------------|-----------------|--------------------|
| Benzene              | BDL             | 0.4                |
| Carbon tetrachloride | BDL             | 2.1                |
| Chloroform           | BDL             | 0.3                |
| Chlorobenzene        | BDL             | 0.4                |
| 1,2-Dichloroethane   | BDL             | 0.6                |
| 1,1-Dichloroethene   | BDL             | 1.2                |
| Methyl ethyl ketone  | BDL             | 1                  |
| Tetrachloroethene    | BDL             | 1.4                |
| Trichloroethene      | BDL             | 1                  |
| Vinyl chloride       | BDL             | 1.1                |

Sample Batch Information  
Volatile Organics Method : EPA 8260

| Sample ID  | Preparation |      |    | Preparation Notes | Analysis |      |     | Inst # |
|------------|-------------|------|----|-------------------|----------|------|-----|--------|
|            | Date        | Time | By |                   | Date     | Time | By  |        |
| 37198BLK   | /           | /    |    |                   | 03/19/98 | 0947 | TLW | VOA2   |
| 37198LCS   | /           | /    |    |                   | 03/17/98 | 1559 | RFA | VOA2   |
| 37198LCSD  | /           | /    |    |                   | 03/17/98 | 1623 | RFA | VOA2   |
| 92951-3MS  | /           | /    |    |                   | 03/19/98 | 1347 | TLW | VOA2   |
| 92951-3MSD | /           | /    |    |                   | 03/19/98 | 1411 | TLW | VOA2   |
| 92888-1    | /           | /    |    |                   | 03/19/98 | 1059 | TLW | VOA2   |
| 92888-1D1  | /           | /    |    |                   | 03/19/98 | 1123 | TLW | VOA2   |
| 92951-1    | /           | /    |    |                   | 03/19/98 | 1147 | TLW | VOA2   |
| 92951-2    | /           | /    |    |                   | 03/19/98 | 1211 | TLW | VOA2   |
| 92951-3    | /           | /    |    |                   | 03/19/98 | 1235 | TLW | VOA2   |
| 92951-4    | /           | /    |    |                   | 03/19/98 | 1259 | TLW | VOA2   |
| 92951-5    | /           | /    |    |                   | 03/19/98 | 1323 | TLW | VOA2   |
| 92951-3DUP | /           | /    |    |                   | 03/19/98 | 1435 | TLW | VOA2   |
| 92938      | /           | /    |    |                   | 03/20/98 | 0945 | RFA | VOA1   |
| 92888-1D2  | /           | /    |    |                   | 03/20/98 | 1244 | RFA | VOA1   |
| 92834      | /           | /    |    |                   | 03/20/98 | 1218 | RFA | VOA1   |
| 92977-6    | /           | /    |    |                   | 03/20/98 | 1036 | RFA | VOA1   |
| 93031-3    | /           | /    |    |                   | 03/20/98 | 1101 | RFA | VOA1   |
| 92916-1    | /           | /    |    |                   | 03/20/98 | 1310 | LLP | VOA1   |
| 92916-2    | /           | /    |    |                   | 03/20/98 | 1335 | LLP | VOA1   |
| 92916-3    | /           | /    |    |                   | 03/20/98 | 1401 | LLP | VOA1   |
| 92916-4    | /           | /    |    |                   | 03/20/98 | 1427 | LLP | VOA1   |
| 92916-5    | /           | /    |    |                   | 03/20/98 | 1452 | LLP | VOA1   |
| 92916-6    | /           | /    |    |                   | 03/20/98 | 1518 | LLP | VOA1   |
| 92916-6D   | /           | /    |    |                   | 03/23/98 | 1311 | RFA | VOA1   |
| 92766-2    | /           | /    |    |                   | 03/24/98 | 1110 | TLW | VOA1   |
| 93137-3    | /           | /    |    |                   | 03/24/98 | 1136 | TLW | VOA1   |
| 93137-4    | /           | /    |    |                   | 03/24/98 | 1202 | TLW | VOA1   |
| 93077-1    | /           | /    |    |                   | 03/24/98 | 2106 | RFA | VOA1   |



Analytical Services Inc. Batch QC  
 For Report Number :93137  
 Organochlorine Pesticides

Matrix : TCLP

Batch # 37371

Method : EPA 8081

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                | 91         | 82          | 11        | 32 - 127           | 0 - 40       |
| Heptachlor                         | 84         | 79          | 6         | 34 - 111           | 0 - 40       |
| Toxaphene                          | 99         | 107         | 7         | 25 - 160           | 0 - 40       |
| Heptachlor epoxide                 | 92         | 82          | 11        | 25 - 160           | 0 - 40       |
| Endrin                             | 68         | 68          | 1         | 30 - 147           | 0 - 40       |
| Chlordane                          | 83         | 81          | 2         | 25 - 160           | 0 - 40       |
| Methoxychlor                       | 70         | 73          | 5         | 25 - 160           | 0 - 40       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| BHC-gamma (Lindane)                 | 87         | 99          | 13        | 32 - 127           | 0 - 40       |
| Heptachlor                          | 88         | 100         | 13        | 34 - 111           | 0 - 40       |
| Toxaphene                           | 47         | 54          | 14        | 25 - 160           | 0 - 40       |
| Heptachlor epoxide                  | 94         | 105         | 11        | 25 - 160           | 0 - 40       |
| Endrin                              | 70         | 78          | 11        | 30 - 147           | 0 - 40       |
| Chlordane                           | 83         | 93          | 11        | 25 - 160           | 0 - 40       |
| Methoxychlor                        | 101        | 110         | 8         | 25 - 160           | 0 - 40       |

Analytical Services Inc. Batch QC

Surrogate Recovery

Organochlorine Pesticides

Matrix : TCLP

Batch # 37371

Method : EPA 8081

## % Recovery Objectives

|    |                      |          |
|----|----------------------|----------|
| S1 | Dibutylchlorendate   | 34 - 151 |
| S2 | Tetrachloro-m-xylene | 40 - 111 |
| S3 | Decachlorobiphenyl   | 24 - 153 |

| Sample     | File       | S1  | S2 | S3  | S4 | S5 | S6 |
|------------|------------|-----|----|-----|----|----|----|
| 93036      | 032598011F | 130 | 84 | 140 |    |    |    |
| 37371BLK   | 032598015F | 65  | 54 | 82  |    |    |    |
| 37371LCS   | 032598016F | 95  | 71 | 67  |    |    |    |
| 37371LCSD  | 032598017F | 93  | 67 | 68  |    |    |    |
| 93137-1    | 032598035F | 121 | 79 | 104 |    |    |    |
| 93137-2    | 032598036F | 126 | 83 | 104 |    |    |    |
| 93137-2MS  | 032598037F | 121 | 81 | 89  |    |    |    |
| 93137-2MSD | 032598038F | 121 | 86 | 94  |    |    |    |

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Blank Results Information  
Organochlorine Pesticides Method : EPA 8081

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| Analyte |                    | Blank<br>Result | Detection<br>Limit |
|---------|--------------------|-----------------|--------------------|
| D020    | Chlordane          | BDL             | 0.01               |
| D012    | Endrin             | BDL             | 0.001              |
| D031    | Heptachlor         | BDL             | 0.001              |
| D031    | Heptachlor epoxide | BDL             | 0.001              |
| D013    | Lindane            | BDL             | 0.01               |
| D014    | Methoxychlor       | BDL             | 0.5                |
| D015    | Toxaphene          | BDL             | 0.05               |

Q.C. Information for Batch # 37371

Printed: 03/30/98 15:55:36

Sample Batch Information  
Organochlorine Pesticides Method : EPA 8081

| Sample ID  | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst # |
|------------|-------------|------|-------|----------------------|----------|------|-----|--------|
|            | Date        | Time | By    |                      | Date     | Time | By  |        |
| 37371BLK   | 03/24/98    | 1400 | JW/TB |                      | 03/25/98 | 0748 | JQZ | GC-3   |
| 37371LCS   | 03/25/98    | 1400 | JW    |                      | 03/25/98 | 0812 | JQZ | GC-3   |
| 37371LCSD  | 03/25/98    | 1400 | JW    |                      | 03/25/98 | 0836 | JQZ | GC-3   |
| 93036      | 03/24/98    | 1400 | JW/TB |                      | 03/25/98 | 0612 | JQZ | GC-3   |
| 93137-1    | 03/25/98    | 1400 | JW    |                      | 03/25/98 | 1612 | JQZ | GC-3   |
| 93137-2    | 03/25/98    | 1400 | JW    |                      | 03/25/98 | 1612 | JQZ | GC-3   |
| 93137-2MS  | 03/25/98    | 1400 | JW    |                      | 03/25/98 | 1700 | JQZ | GC-3   |
| 93137-2MSD | 03/25/98    | 1400 | JW    |                      | 03/25/98 | 1726 | JQZ | GC-3   |

Analytical Services Inc. Batch QC  
For Report Number :93137  
Chlorinated Herbicides

Matrix : TCLP

Batch # 37403

Method : EPA 8151

| Lab Control Information<br>Analyte  | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                               | 64         | 60          | 6         | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 70         | 70          | 0         | 40 - 140           | 0 - 40       |
| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
| 2,4-D                               | 28         | 86          | 102       | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 28         | 92          | 107       | 40 - 140           | 0 - 40       |

## Analytical Services Inc. Batch QC

Surrogate Recovery

Chlorinated Herbicides

Matrix : TCLP

Batch # 37403

Method : EPA 8151

## % Recovery Objectives

|           |            | S1 | DCAA |    | 18 - 163 |    |    |
|-----------|------------|----|------|----|----------|----|----|
| Sample    | File       | S1 | S2   | S3 | S4       | S5 | S6 |
| 37403BLK  | 032698027F | 56 |      |    |          |    |    |
| 37403LCS  | 032698028F | 74 |      |    |          |    |    |
| 37403LCSD | 032698029F | 68 |      |    |          |    |    |
| 93036     | 032698030F | 74 |      |    |          |    |    |
| 93036MS   | 032698031F | 30 |      |    |          |    |    |
| 93036MSD  | 032698032F | 88 |      |    |          |    |    |
| 93137-1   | 032798032F | 68 |      |    |          |    |    |
| 93137-2   | 032798033F | 76 |      |    |          |    |    |

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Blank Results Information  
Chlorinated Herbicides      Method : EPA 8151

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| Analyte |                 | Blank<br>Result | Detection<br>Limit |
|---------|-----------------|-----------------|--------------------|
| D016    | 2,4-D           | BDL             | 0.05               |
| D017    | 2,4,5-TP Silvex | BDL             | 0.1                |

Q.C. Information for Batch # 37403

Printed: 03/30/98 15:55:36

Sample Batch Information  
Chlorinated Herbicides Method : EPA 8151

| Sample ID | Preparation |      |       | Preparation<br>Notes | Analysis |      |     | Inst # |
|-----------|-------------|------|-------|----------------------|----------|------|-----|--------|
|           | Date        | Time | By    |                      | Date     | Time | By  |        |
| 37403BLK  | 03/25/98    | 0905 | DH    |                      | 03/26/98 | 1232 | JQZ | GC-1   |
| 37403LCS  | 03/25/98    | 0905 | DH    |                      | 03/26/98 | 1301 | JQZ | GC-1   |
| 37403LCSD | 03/25/98    | 0905 | DH    |                      | 03/26/98 | 1330 | JQZ | GC-1   |
| 93036     | 03/25/98    | 0905 | DH    |                      | 03/26/98 | 1417 | JQZ | GC-1   |
| 93036MS   | 03/25/98    | 0905 | DH    |                      | 03/26/98 | 1449 | JQZ | GC-1   |
| 93036MSD  | 03/25/98    | 0905 | DH    |                      | 03/26/98 | 1545 | JQZ | GC-1   |
| 93137-1   | 03/26/98    | 1800 | TB/DY |                      | 03/27/98 | 1136 | JQZ | GC-1   |
| 93137-2   | 03/26/98    | 1800 | TB/DY |                      | 03/27/98 | 1204 | JQZ | GC-1   |



Analytical Services Inc. Batch QC  
For Report Number :93137  
Chlorinated Herbicides

Matrix : Aqueous

Batch # 37428

Method : EPA 8151 / 615

| Lab Control Information<br>Analyte  | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| 2,4-D                               | 73         | 85          | 16        | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 93         | 119         | 25        | 40 - 140           | 0 - 40       |
| 2,4,5-T                             | 103        | 130         | 23        | 40 - 140           | 0 - 40       |
| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
| 2,4-D                               | 59         | 80          | 31        | 40 - 140           | 0 - 40       |
| 2,4,5-TP (Silvex)                   | 134        | 149         | 11        | 40 - 140           | 0 - 40       |
| 2,4,5-T                             | 106        | 202         | 62        | 40 - 140           | 0 - 40       |

Analytical Services Inc. Batch QC

Surrogate Recovery

Chlorinated Herbicides

Matrix : Aqueous

Batch # 37428

Method : EPA 8151 / 615

## % Recovery Objectives

|            |            | S1 | DCAA |    | 20 - 160 |    |    |
|------------|------------|----|------|----|----------|----|----|
| Sample     | File       | S1 | S2   | S3 | S4       | S5 | S6 |
| 37428BLK   | 032798043F | 53 |      |    |          |    |    |
| 37428LCS   | 032798044F | 75 |      |    |          |    |    |
| 37428LCSD  | 032798045F | 81 |      |    |          |    |    |
| 93137-4    | 032798046F | 85 |      |    |          |    |    |
| 93137-4MS  | 032798047F | 56 |      |    |          |    |    |
| 93137-4MSD | 032798048F | 82 |      |    |          |    |    |

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Q.C. Information for Batch # 37428      Printed: 03/30/98 15:55:37      Page 28

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Blank Results Information  
Chlorinated Herbicides      Method : EPA 8151 / 615

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| Analyte  | Blank<br>Result | Detection<br>Limit |
|----------|-----------------|--------------------|
| 2,4-D    | BDL             | 5.0                |
| 2,4,5-TP | BDL             | 10                 |

Q.C. Information for Batch # 37428

Printed: 03/30/98 15:55:37

Sample Batch Information  
Chlorinated Herbicides Method : EPA 8151 / 615

| Sample ID   | Preparation |      |        | Preparation<br>Notes | Analysis |      |     | Inst # |
|-------------|-------------|------|--------|----------------------|----------|------|-----|--------|
|             | Date        | Time | By     |                      | Date     | Time | By  |        |
| 37428BLK    | 03/26/98    | 0925 | DH     |                      | 03/27/98 | 1807 | JQZ | GC-1   |
| 37428LCS    | 03/26/98    | 0925 | DH     |                      | 03/27/98 | 1835 | JQZ | GC-1   |
| 37428LCSD   | 03/26/98    | 0925 | DH     |                      | 03/27/98 | 1903 | JQZ | GC-1   |
| 93137-4     | 03/26/98    | 0925 | DH     |                      | 03/27/98 | 1930 | JQZ | GC-1   |
| 93137-4MS   | 03/26/98    | 0925 | DH     |                      | 03/27/98 | 1958 | JQZ | GC-1   |
| 93137-4MSD  | 03/26/98    | 0925 | DH     |                      | 03/27/98 | 2026 | JQZ | GC-1   |
| 93207-8     | 03/27/98    | 0925 | DH     |                      | /        | /    |     |        |
| 93207-9     | 03/27/98    | 0925 | DH     |                      | /        | /    |     |        |
| 93207-10    | 03/27/98    | 0925 | DH     |                      | /        | /    |     |        |
| 93207-11    | 03/26/98    | 0925 | DH     |                      | /        | /    |     |        |
| 93207-11DUP | 03/26/98    | 0925 | DH     |                      | /        | /    |     |        |
| 93207-12    | 03/26/98    | 1600 | KLF/DH |                      | /        | /    |     |        |
| 93207-13    | 03/26/98    | 1600 | KLF/DH |                      | /        | /    |     |        |
| 93207-14    | 03/26/98    | 1600 | KLF/DH |                      | /        | /    |     |        |
| 93256-13    | 03/27/98    | 1500 | DH     |                      | /        | /    |     |        |
| 93212-1     | 03/27/98    | 1500 | DH     |                      | /        | /    |     |        |
| 93212-2     | 03/27/98    | 1500 | DH     |                      | /        | /    |     |        |
| 93212-3     | 03/27/98    | 1500 | DH     |                      | /        | /    |     |        |
| 93212-4     | 03/27/98    | 1500 | DH     |                      | /        | /    |     |        |
| 93212-5     | 03/27/98    | 1500 | DH     |                      | /        | /    |     |        |
| 93212-6     | 03/27/98    | 1500 | DH     |                      | /        | /    |     |        |
| 93212-7     | 03/27/98    | 1500 | DH     |                      | /        | /    |     |        |
| 93212-8     | 03/27/98    | 1500 | DH     |                      | /        | /    |     |        |
| 93212-9     | 03/27/98    | 1500 | DH     |                      | /        | /    |     |        |
| 93207-11DUP | 03/27/98    | 1500 | DH     |                      | /        | /    |     |        |

Analytical Services Inc. Batch QC  
For Report Number :93137  
Volatile Organics

Matrix : TCLP

Batch # 37434

Method : EPA 8260

| Lab Control Information<br>Analyte | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Benzene                            | 97         | 98          | 1         | 90 - 115           | 0 - 13       |
| Carbon tetrachloride               | 106        | 105         | 2         | 55 - 115           | 0 - 15       |
| Chlorobenzene                      | 96         | 100         | 4         | 87 - 109           | 0 - 10       |
| Chloroform                         | 103        | 99          | 3         | 55 - 115           | 0 - 15       |
| 1,2-Dichloroethane                 | 103        | 102         | 2         | 90 - 115           | 0 - 13       |
| 1,1-Dichloroethene                 | 99         | 94          | 5         | 55 - 111           | 0 - 15       |
| MEK (2-Butanone)                   | 103        | 109         | 5         | 55 - 115           | 0 - 15       |
| Tetrachloroethene                  | 99         | 101         | 2         | 55 - 115           | 0 - 15       |
| Trichloroethene                    | 104        | 104         | 0         | 78 - 110           | 0 - 11       |
| Vinyl chloride                     | 103        | 89          | 15        | 55 - 115           | 0 - 15       |

| Matrix Spike Information<br>Analyte | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-------------------------------------|------------|-------------|-----------|--------------------|--------------|
| Benzene                             | 88         | 90          | 3         | 90 - 115           | 0 - 13       |
| Carbon tetrachloride                | 96         | 100         | 4         | 55 - 115           | 0 - 15       |
| Chlorobenzene                       | 93         | 100         | 7         | 87 - 109           | 0 - 10       |
| Chloroform                          | 96         | 98          | 2         | 55 - 115           | 0 - 15       |
| 1,2-Dichloroethane                  | 97         | 98          | 2         | 90 - 115           | 0 - 13       |
| 1,1-Dichloroethene                  | 85         | 87          | 3         | 55 - 111           | 0 - 15       |
| MEK (2-Butanone)                    | 86         | 87          | 1         | 55 - 115           | 0 - 15       |
| Tetrachloroethene                   | 93         | 98          | 5         | 55 - 115           | 0 - 15       |
| Trichloroethene                     | 97         | 98          | 1         | 78 - 110           | 0 - 11       |
| Vinyl chloride                      | 88         | 93          | 6         | 55 - 115           | 0 - 15       |

Analytical Services Inc. Batch QC  
Surrogate Recovery  
Volatile Organics

Matrix : TCLP

Batch # 37434

Method : EPA 8260

## % Recovery Objectives

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|    |                       |          |
|----|-----------------------|----------|
| S1 | 1,2-Dichloroethane-d4 | 76 - 119 |
| S2 | Toluene-d8            | 88 - 110 |
| S3 | Ethylbenzene-d10      | 75 - 115 |
| S4 | 4-Bromofluorobenzene  | 86 - 115 |

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| Sample     | File  | S1  | S2  | S3  | S4  | S5 | S6 |
|------------|-------|-----|-----|-----|-----|----|----|
| 37434BLK   | B4321 | 106 | 101 | 103 | 105 |    |    |
| 37434LCS   | B4336 | 101 | 106 | 105 | 106 |    |    |
| 37434LCSD  | B4337 | 105 | 100 | 107 | 110 |    |    |
| 93137-1    | B4332 | 104 | 100 | 103 | 99  |    |    |
| 93137-1MS  | B4338 | 108 | 104 | 101 | 105 |    |    |
| 93137-1MSD | B4339 | 105 | 105 | 103 | 114 |    |    |
| 93137-2    | B4333 | 106 | 105 | 101 | 109 |    |    |
| 93137-1DUP | B4341 | 110 | 105 | 100 | 110 |    |    |

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Blank Results Information  
Volatile Organics Method : EPA 8260

| Analyte |                      | Blank<br>Result | Detection<br>Limit |
|---------|----------------------|-----------------|--------------------|
| D018    | Benzene              | BDL             | 0.02               |
| D019    | Carbon tetrachloride | BDL             | 0.02               |
| D021    | Chlorobenzene        | BDL             | 0.02               |
| D022    | Chloroform           | BDL             | 0.02               |
| D028    | 1,2-Dichloroethane   | BDL             | 0.02               |
| D029    | 1,1-Dichloroethene   | BDL             | 0.02               |
| D035    | Methyl ethyl ketone  | BDL             | 0.5                |
| D039    | Tetrachloroethene    | BDL             | 0.02               |
| D040    | Trichloroethene      | BDL             | 0.02               |
| D043    | Vinyl chloride       | BDL             | 0.02               |

Sample Batch Information  
Volatile Organics Method : EPA 8260

| Sample ID  | Preparation |         | Preparation<br>Notes | Analysis |         |     | Inst # |
|------------|-------------|---------|----------------------|----------|---------|-----|--------|
|            | Date        | Time By |                      | Date     | Time By |     |        |
| 37434BLK   | /           | /       |                      | 03/26/98 | 0758    | LLP | VOA2   |
| 37434LCS   | /           | /       |                      | 03/26/98 | 1609    | LLP | VOA2   |
| 37434LCSD  | /           | /       |                      | 03/26/98 | 1633    | LLP | VOA2   |
| 93137-1    | /           | /       |                      | 03/26/98 | 1409    | LLP | VOA2   |
| 93137-1MS  | /           | /       |                      | 03/26/98 | 1657    | LLP | VOA2   |
| 93137-1MSD | /           | /       |                      | 03/26/98 | 1721    | LLP | VOA2   |
| 93137-2    | /           | /       |                      | 03/26/98 | 1432    | LLP | VOA2   |
| 93137-1DUP | /           | /       |                      | 03/26/98 | 1808    | LLP | VOA2   |



Analytical Services Inc. Batch QC  
For Report Number :93137

## QC Batch General Information

| Batch Number                                           | Analyte   | Analysis Method | Matrix   | Blank Result | Prep. Method |
|--------------------------------------------------------|-----------|-----------------|----------|--------------|--------------|
| 36799                                                  | React S2  | EPA 7.3.4.2     | Aq/Soil  | < 5.0000     |              |
| 37039                                                  | Hg        | EPA 7470        | Aqueous  | < 0.0002     |              |
| 37041                                                  | Hg        | EPA 7470        | TCLP     | < 0.0002     |              |
| 37249                                                  | Ag        | EPA 6010        | Aqueous  | < 0.0100     |              |
| ^^Note : BATCH PASSES ON LCS/LCSD/MS/MSD               |           |                 |          |              |              |
| 37249                                                  | As        | EPA 6010        | Aqueous  | < 0.0100     |              |
| 37249                                                  | Ba        | EPA 6010        | Aqueous  | < 0.0100     |              |
| 37249                                                  | Cd        | EPA 6010        | Aqueous  | < 0.0050     |              |
| 37249                                                  | Cr        | EPA 6010        | Aqueous  | < 0.0050     |              |
| 37249                                                  | Pb        | EPA 6010        | Aqueous  | < 0.0050     |              |
| 37249                                                  | Se        | EPA 6010        | Aqueous  | < 0.0100     |              |
| 37253                                                  | Ag        | EPA 6010        | TCLP     | < 0.0100     |              |
| 37253                                                  | As        | EPA 6010        | TCLP     | < 0.0300     |              |
| 37253                                                  | Ba        | EPA 6010        | TCLP     | < 0.1000     |              |
| ^^Note : BATCH PASSES ON LCS/LCSD/MS/PDS - DL ADJUSTED |           |                 |          |              |              |
| 37253                                                  | Cd        | EPA 6010        | TCLP     | < 0.0100     |              |
| 37253                                                  | Cr        | EPA 6010        | TCLP     | < 0.0100     |              |
| ^^Note : BATCH PASSES ON LCS/LCSD/PDS                  |           |                 |          |              |              |
| 37253                                                  | Pb        | EPA 6010        | TCLP     | < 0.0250     |              |
| ^^Note : BATCH PASSES ON LCS/LCSD/MS/PDS               |           |                 |          |              |              |
| 37253                                                  | Se        | EPA 6010        | TCLP     | < 0.0400     |              |
| 37349                                                  | Ign       | EPA 1010        | Aq/Solid | 0.0000       |              |
| 37375                                                  | pH        | EPA 9040        | Aqueous  | 0.0000       |              |
| 37375                                                  | pH        | EPA 9045        | Soil     | 0.0000       |              |
| 37412                                                  | React. CN | EPA 7.3.3.2     | Aq/Soil  | < 1.0000     |              |

## Lab Control Information

| Batch Number | Analyte  | Method      | LC %Rec | LCD %Rec | LC RPD | %Recovery Range | RPD Range |
|--------------|----------|-------------|---------|----------|--------|-----------------|-----------|
| 36799        | React S2 | EPA 7.3.4.2 | 102     | 102      | 0      | 60 - 140        | 0 - 40    |
| 37039        | Hg       | EPA 7470    | 104     | 104      | 0      | 76 - 124        | 0 - 20    |
| 37041        | Hg       | EPA 7470    | 95      | 100      | 5      | 76 - 124        | 0 - 20    |
| 37249        | Ag       | EPA 6010    | 98      | 110      | 12     | 76 - 124        | 0 - 20    |
| 37249        | As       | EPA 6010    | 79      | 90       | 13     | 76 - 124        | 0 - 20    |
| 37249        | Ba       | EPA 6010    | 79      | 89       | 12     | 76 - 124        | 0 - 20    |
| 37249        | Cd       | EPA 6010    | 88      | 85       | 3      | 76 - 124        | 0 - 20    |
| 37249        | Cr       | EPA 6010    | 85      | 82       | 4      | 76 - 124        | 0 - 20    |
| 37249        | Pb       | EPA 6010    | 76      | 86       | 12     | 76 - 124        | 0 - 20    |
| 37249        | Se       | EPA 6010    | 80      | 90       | 12     | 76 - 124        | 0 - 20    |

Analytical Services Inc. Batch QC  
For Report Number :93137

## Lab Control Information

| Batch<br>Number | Analyte   | Method      | LC<br>%Rec | LCD<br>%Rec | LC<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-----------------|-----------|-------------|------------|-------------|-----------|--------------------|--------------|
| 37253           | Ag        | EPA 6010    | 83         | 84          | 1         | 76 - 124           | 0 - 20       |
| 37253           | As        | EPA 6010    | 85         | 90          | 6         | 76 - 124           | 0 - 20       |
| 37253           | Ba        | EPA 6010    | 76         | 80          | 5         | 76 - 124           | 0 - 20       |
| 37253           | Cd        | EPA 6010    | 80         | 84          | 5         | 76 - 124           | 0 - 20       |
| 37253           | Cr        | EPA 6010    | 89         | 89          | 0         | 76 - 124           | 0 - 20       |
| 37253           | Pb        | EPA 6010    | 77         | 82          | 6         | 76 - 124           | 0 - 20       |
| 37253           | Se        | EPA 6010    | 85         | 90          | 6         | 76 - 124           | 0 - 20       |
| 37375           | pH        | EPA 9040    | 100        | 100         | 0         | 80 - 120           | 0 - 20       |
| 37375           | pH        | EPA 9045    | 100        | 100         | 0         | 80 - 120           | 0 - 20       |
| 37412           | React. CN | EPA 7.3.3.2 | 100        | 101         | 1         | 75 - 125           | 0 - 30       |

## Matrix Spike Information

| Batch<br>Number | Analyte | Method   | MS<br>%Rec | MSD<br>%Rec | MS<br>RPD | %Recovery<br>Range | RPD<br>Range |
|-----------------|---------|----------|------------|-------------|-----------|--------------------|--------------|
| 37039           | Hg      | EPA 7470 | 98         | 101         | 3         | 76 - 124           | 0 - 20       |
| 37241           | Hg      | EPA 7470 | 89         | 94          | 5         | 76 - 124           | 0 - 20       |
| 37249           | Ag      | EPA 6010 | 120        | 110         | 9         | 76 - 124           | 0 - 20       |
| 37249           | As      | EPA 6010 | 96         | 92          | 4         | 76 - 124           | 0 - 20       |
| 37249           | Ba      | EPA 6010 | 95         | 91          | 4         | 76 - 124           | 0 - 20       |
| 37249           | Cd      | EPA 6010 | 90         | 86          | 5         | 76 - 124           | 0 - 20       |
| 37249           | Cr      | EPA 6010 | 88         | 84          | 5         | 76 - 124           | 0 - 20       |
| 37249           | Pb      | EPA 6010 | 91         | 88          | 3         | 76 - 124           | 0 - 20       |
| 37249           | Se      | EPA 6010 | 96         | 92          | 4         | 76 - 124           | 0 - 20       |
| 37253           | Ag      | EPA 6010 | 85         | 78          | 9         | 76 - 124           | 0 - 20       |
| 37253           | As      | EPA 6010 | 88         | 82          | 7         | 76 - 124           | 0 - 20       |
| 37253           | Ba      | EPA 6010 | 77         | 70          | 10        | 76 - 124           | 0 - 20       |
| 37253           | Cd      | EPA 6010 | 82         | 76          | 8         | 76 - 124           | 0 - 20       |
| 37253           | Cr      | EPA 6010 | 74         | 69          | 7         | 76 - 124           | 0 - 20       |
| 37253           | Pb      | EPA 6010 | 78         | 75          | 4         | 76 - 124           | 0 - 20       |
| 37253           | Se      | EPA 6010 | 87         | 82          | 6         | 76 - 124           | 0 - 20       |

Analytical Services Inc. Batch QC  
For Report Number :93137

## Post Digestion Spike Information

| Batch<br>Number | Analyte | Method   | PDS<br>%Rec | %Recovery<br>Range |
|-----------------|---------|----------|-------------|--------------------|
| 37249           | Ag      | EPA 6010 | 62          | 76 - 124           |
| 37249           | As      | EPA 6010 | 110         | 76 - 124           |
| 37249           | Ba      | EPA 6010 | 92          | 76 - 124           |
| 37249           | Cd      | EPA 6010 | 95          | 76 - 124           |
| 37249           | Cr      | EPA 6010 | 90          | 76 - 124           |
| 37249           | Pb      | EPA 6010 | 93          | 76 - 124           |
| 37249           | Se      | EPA 6010 | 100         | 76 - 124           |
| 37253           | Ag      | EPA 6010 | 110         | 76 - 124           |
| 37253           | As      | EPA 6010 | 92          | 76 - 124           |
| 37253           | Ba      | EPA 6010 | 76          | 76 - 124           |
| 37253           | Cd      | EPA 6010 | 82          | 76 - 124           |
| 37253           | Cr      | EPA 6010 | 76          | 76 - 124           |
| 37253           | Pb      | EPA 6010 | 82          | 76 - 124           |
| 37253           | Se      | EPA 6010 | 92          | 76 - 124           |

## Unspiked Sample Duplicate Information

| Batch<br>Number | Analyte  | Method      | Sample 1<br>RPD | Sample 2<br>RPD | RPD<br>Range |
|-----------------|----------|-------------|-----------------|-----------------|--------------|
| 36799           | React S2 | EPA 7.3.4.2 | 0               | 0               | 0 - 40       |
| 37349           | Ign      | EPA 1010    | 0               |                 | 0 - 20       |
| 37375           | pH       | EPA 9040    | 0               |                 | 0 - 20       |
| 37375           | pH       | EPA 9045    | 0               |                 | 0 - 20       |

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Sample Batch Information  
Analysis : React S2

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| Sample ID | Tag | Preparation |      |    | Preparation | Analysis |      |    | Inst |
|-----------|-----|-------------|------|----|-------------|----------|------|----|------|
|           |     | Date        | Time | By | Notes       | Date     | Time | By |      |
| 36799BLK  |     | 03/04/98    | 1000 | JN |             | 03/04/98 | 1110 | JN |      |
| 36799LCS  |     | 03/04/98    | 1000 | JN |             | 03/04/98 | 1110 | JN |      |
| 36799LCSD |     | 03/04/98    | 1000 | JN |             | 03/04/98 | 1110 | JN |      |
| 92362     |     | 03/04/98    | 1030 | JN |             | 03/04/98 | 1110 | JN |      |
| 92362DUP  |     | 03/04/98    | 1030 | JN |             | 03/04/98 | 1110 | JN |      |
| 92265     |     | 03/04/98    | 1030 | JN |             | 03/04/98 | 1110 | JN |      |
| 92552     |     | 03/06/98    | 1100 | JN |             | 03/06/98 | 1145 | JN |      |
| 92552DUP  |     | 03/06/98    | 1100 | JN |             | 03/06/98 | 1145 | JN |      |
| 92556-2   |     | 03/06/98    | 1100 | JN |             | 03/06/98 | 1145 | JN |      |
| 92671     |     | 03/10/98    | 1010 | JN |             | 03/10/98 | 1100 | JN |      |
| 92661     |     | 03/10/98    | 1010 | JN |             | 03/10/98 | 1100 | JN |      |
| 92892     |     | 03/19/98    | 0855 | JN |             | 03/19/98 | 1200 | JN |      |
| 92852-1   |     | 03/19/98    | 0855 | JN |             | 03/19/98 | 1200 | JN |      |
| 92837-1   |     | 03/19/98    | 0855 | JN |             | 03/19/98 | 1200 | JN |      |
| 92837-2   |     | 03/19/98    | 0855 | JN |             | 03/19/98 | 1200 | JN |      |
| 93150     |     | 03/24/98    | 1000 | JN |             | 03/24/98 | 1130 | JN |      |
| 93036     |     | 03/25/98    | 1000 | JN |             | 03/25/98 | 1530 | JN |      |
| 93137-1   |     | 03/25/98    | 1000 | JN |             | 03/25/98 | 1530 | JN |      |
| 93137-2   |     | 03/25/98    | 1000 | JN |             | 03/25/98 | 1530 | JN |      |
| 93137-4   |     | 03/25/98    | 1000 | JN |             | 03/25/98 | 1530 | JN |      |

Sample Batch Information  
Analysis : Hg

| Sample ID   | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|-------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|             |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 37039BLANK  | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1254 | FBS | HG1  |
| 37039LCS    | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1257 | FBS | HG1  |
| 37039LCSD   | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1259 | FBS | HG1  |
| 93207-14MS  | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1301 | FBS | HG1  |
| 93207-14MSD | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1304 | FBS | HG1  |
| 93207-8DUP  | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1306 | FBS | HG1  |
| 93086-3     | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1334 | FBS | HG1  |
| 93110-1     | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1353 | FBS | HG1  |
| 93112       | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1355 | FBS | HG1  |
| 93115       | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1351 | FBS | HG1  |
| 93137-4     | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1402 | FBS | HG1  |
| 93163       | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1358 | FBS | HG1  |
| 93164       | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1400 | FBS | HG1  |
| 93207-8     | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1311 | FBS | HG1  |
| 93207-9     | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1313 | FBS | HG1  |
| 93207-10    | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1315 | FBS | HG1  |
| 93207-11    | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1322 | FBS | HG1  |
| 93207-12    | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1325 | FBS | HG1  |
| 93207-13    | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1327 | FBS | HG1  |
| 93207-14    | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1308 | FBS | HG1  |
| 93086-1     | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1330 | FBS | HG1  |
| 93086-2     | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1332 | FBS | HG1  |
| 93086-4     | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1336 | FBS | HG1  |
| 93086-5     | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1339 | FBS | HG1  |
| 93086-6     | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1341 | FBS | HG1  |
| 93086-7     | HG  | 03/25/98    | 0805 | FBS |                      | 03/25/98 | 1343 | FBS | HG1  |

Q.C. Information for Batch # 37041

For Report Number :93137

Sample Batch Information  
Analysis : Hg

| Sample ID  | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|            |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 37041BLANK | HG  | 03/26/98    | 0630 | FBS |                      | 03/26/98 | 0933 | FBS | HG1  |
| 37041LCS   | HG  | 03/26/98    | 0630 | FBS |                      | 03/26/98 | 0935 | FBS | HG1  |
| 37041LCSD  | HG  | 03/26/98    | 0630 | FBS |                      | 03/26/98 | 0938 | FBS | HG1  |
| 93137-1MS  | HG  | 03/26/98    | 0630 | FBS |                      | 03/26/98 | 0940 | FBS | HG1  |
| 93137-1MSD | HG  | 03/26/98    | 0630 | FBS |                      | 03/26/98 | 0942 | FBS | HG1  |
| 93137-1DUP | HG  | 03/26/98    | 0630 | FBS |                      | 03/26/98 | 0945 | FBS | HG1  |
| 93137-1    | HG  | 03/26/98    | 0630 | FBS |                      | 03/26/98 | 0947 | FBS | HG1  |
| 93137-2    | HG  | 03/26/98    | 0630 | FBS |                      | 03/26/98 | 0949 | FBS | HG1  |
| 93152      | HG  | 03/26/98    | 0630 | FBS |                      | 03/26/98 | 0952 | FBS | HG1  |

Q.C. Information for Batch # 37249

For Report Number :93137

Sample Batch Information  
Analysis : Ag, As, Ba, Cd, Cr, Pb, Se

| Sample ID  | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|            |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 37249BLANK |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 1720 | MAB | ICP2 |
| 37249LCS   |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 1723 | MAB | ICP2 |
| 37249LCSD  |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 1727 | MAB | ICP2 |
| 92981-8MS  |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 1731 | MAB | ICP2 |
| 92981-9MSD |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 1735 | MAB | ICP2 |
| 93086-4PDS |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 1739 | MAB | ICP2 |
| 93086-4DUP |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 1754 | MAB | ICP2 |
| 92981-10   |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 1855 | MAB | ICP2 |
| 92981-11   |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 1859 | MAB | ICP2 |
| 92981-12   |     | 03/25/98    | 0920 | KSP | AKA 92982-5          | 03/25/98 | 1933 | MAB | ICP2 |
| 92981-14   |     | 03/25/98    | 0920 | KSP | AKA 92982-8          | 03/25/98 | 1937 | MAB | ICP2 |
| 92981-15   |     | 03/25/98    | 0920 | KSP | AKA 92982-9          | 03/25/98 | 1940 | MAB | ICP2 |
| 92981-7    |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 1929 | MAB | ICP2 |
| 92981-8    |     | 03/25/98    | 0920 | KSP | AKA 92982-4          | 03/25/98 | 1742 | MAB | ICP2 |
| 92981-9    |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 1746 | MAB | ICP2 |
| 93086-1    |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 1944 | MAB | ICP2 |
| 93086-2    |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 1948 | MAB | ICP2 |
| 93086-3    |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 1952 | MAB | ICP2 |
| 93086-4    |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 1750 | MAB | ICP2 |
| 93086-5    |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 2003 | MAB | ICP2 |
| 93137-4    |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 2026 | MAB | ICP2 |
| 93123-3    |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 2030 | MAB | ICP2 |
| 93086-1D   |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 2007 | MAB | ICP2 |
| 93086-2D   |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 2011 | MAB | ICP2 |
| 93086-3D   |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 2015 | MAB | ICP2 |
| 93086-4D   |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 2019 | MAB | ICP2 |
| 93086-5D   |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 2022 | MAB | ICP2 |
| QC BLANK   |     | 03/25/98    | 0920 | KSP | TRACE                | 03/25/98 | 2034 | MAB | ICP2 |

Q.C. Information for Batch # 37253

For Report Number :93137

Sample Batch Information  
Analysis : Ag, As, Ba, Cd, Cr, Pb, Se

| Sample ID   | Tag | Preparation |      |     | Preparation<br>Notes | Analysis |      |     | Inst |
|-------------|-----|-------------|------|-----|----------------------|----------|------|-----|------|
|             |     | Date        | Time | By  |                      | Date     | Time | By  |      |
| 37253BLANK  |     | 03/26/98    | 0910 | DCM | TCLP                 | 03/26/98 | 1155 | MLR | ICP2 |
| 37253LCS    |     | 03/26/98    | 0910 | DCM | TCLP                 | 03/26/98 | 1159 | MLR | ICP2 |
| 37253LCSD   |     | 03/26/98    | 0910 | DCM | TCLP                 | 03/26/98 | 1203 | MLR | ICP2 |
| 92886AT2MS  |     | 03/26/98    | 0910 | DCM | TCLP                 | 03/26/98 | 1207 | MLR | ICP2 |
| 92886AT2MSD |     | 03/26/98    | 0910 | DCM | TCLP                 | 03/26/98 | 1211 | MLR | ICP2 |
| 93152PDS    |     | 03/26/98    | 0910 | DCM | TCLP                 | 03/26/98 | 1215 | MLR | ICP2 |
| 93152DUP    |     | 03/26/98    | 0910 | DCM | TCLP                 | 03/26/98 | 1219 | MLR | ICP2 |
| 92886AT2    |     | 03/26/98    | 0910 | DCM | TCLP                 | 03/26/98 | 1223 | MLR | ICP2 |
| 93137-1     |     | 03/26/98    | 0910 | DCM | TCLP                 | 03/26/98 | 1232 | MLR | ICP2 |
| 93137-2     |     | 03/26/98    | 0910 | DCM | TCLP                 | 03/26/98 | 1244 | MLR | ICP2 |
| 93152       |     | 03/26/98    | 0910 | DCM | TCLP                 | 03/26/98 | 1227 | MLR | ICP2 |
| LCD1        |     | 03/26/98    | 0910 | DCM | TCLP                 | 03/26/98 | 1248 | MLR | ICP2 |
| LCD1        |     | 03/26/98    | 0910 | DCM | TCLP                 | 03/26/98 | 1252 | MLR | ICP2 |



Sample Batch Information  
Analysis : Ign

| Sample ID  | Tag | Preparation |      |    | Preparation | Analysis |      |    | Inst |
|------------|-----|-------------|------|----|-------------|----------|------|----|------|
|            |     | Date        | Time | By | Notes       | Date     | Time | By |      |
| 37349CALCK |     | /           | /    |    |             | 03/23/98 | 1700 | nl |      |
| 93030-5    |     | /           | /    |    |             | 03/23/98 | 1700 | nl |      |
| 93030-6    |     | /           | /    |    |             | 03/23/98 | 1700 | nl |      |
| 93030-7    |     | /           | /    |    |             | 03/23/98 | 1700 | nl |      |
| 93030-8    |     | /           | /    |    |             | 03/23/98 | 1700 | nl |      |
| 93030-5DUP |     | /           | /    |    |             | 03/23/98 | 1700 | nl |      |
| 93137-1    |     | /           | /    |    |             | 03/25/98 | 1235 | NL |      |
| 93137-2    |     | /           | /    |    |             | 03/25/98 | 1235 | NL |      |

Q.C. Information for Batch # 37375

For Report Number :93137

Sample Batch Information  
Analysis : pH, pH

| Sample ID   | Tag | Preparation<br>Date | Preparation<br>Time By | Preparation<br>Notes | Analysis<br>Date | Analysis<br>Time By | Inst |
|-------------|-----|---------------------|------------------------|----------------------|------------------|---------------------|------|
| 37375CALCHK |     | / /                 |                        |                      | 03/27/98         | 1800 JN             | 410A |
| 37375LCS    |     | / /                 |                        |                      | 03/27/98         | 1800 JN             | 410A |
| 37375LCSD   |     | / /                 |                        |                      | 03/27/98         | 1800 JN             | 410A |
| 93189       |     | / /                 |                        |                      | 03/27/98         | 1800 JN             | 410A |
| 93192-2     |     | / /                 |                        |                      | 03/27/98         | 1800 JN             | 410A |
| 93184       |     | / /                 |                        |                      | 03/27/98         | 1800 JN             | 410A |
| 93173       |     | / /                 |                        |                      | 03/27/98         | 1800 JN             | 410A |
| 93137-1     |     | / /                 |                        |                      | 03/27/98         | 1800 JN             | 410A |
| 93137-2     |     | / /                 |                        |                      | 03/27/98         | 1800 JN             | 410A |
| 93137-4     |     | / /                 |                        |                      | 03/27/98         | 1800 JN             | 410A |
| 93204       |     | / /                 |                        |                      | 03/27/98         | 1800 JN             | 410A |
| 93207-16    |     | / /                 |                        |                      | 03/27/98         | 1800 JN             | 410A |
| 93207-16DUP |     | / /                 |                        |                      | 03/27/98         | 1800 JN             | 410A |
| 93199       |     | / /                 |                        |                      | 03/27/98         | 1600 JN             | 410A |

Q.C. Information for Batch # 37412

For Report Number :93137

Sample Batch Information  
Analysis : React. CN

| Sample ID | Tag | Preparation |         | Preparation<br>Notes | Analysis |      |    | Inst  |
|-----------|-----|-------------|---------|----------------------|----------|------|----|-------|
|           |     | Date        | Time By |                      | Date     | Time | By |       |
| 37412BLK  |     | 03/26/98    | LH      | MIDI-DIST            | 03/26/98 | 1230 | LH | GENE5 |
| 37412LCS  |     | 03/26/98    | LH      | MIDI-DIST            | 03/26/98 | 1230 | LH | GENE5 |
| 37412LCSD |     | 03/26/98    | LH      | MIDI-DIST            | 03/26/98 | 1230 | LH | GENE5 |
| 37412CAL5 |     | 03/26/98    | LH      | MIDI-DIST            | 03/26/98 | 1230 | LH | GENE5 |
| 93137-1   |     | 03/26/98    | LH      | MIDI-DIST            | 03/26/98 | 1230 | LH | GENE5 |
| 93137-2   |     | 03/26/98    | LH      | MIDI-DIST            | 03/26/98 | 1230 | LH | GENE5 |
| 93137-4   |     | 03/26/98    | LH      | MIDI-DIST            | 03/26/98 | 1230 | LH | GENE5 |
| 93036     |     | 03/26/98    | LH      | MIDI-DIST            | 03/26/98 | 1230 | LH | GENE5 |



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**ADMINISTRATIVE RECORD**

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