QUARTERLY GROUNDWATER TREATMENT PERFORMANCE MONITORING REPORT Q3 2004 MOSS-AMERICAN SITE MILWAUKEE, WISCONSIN

Prepared for

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December 2004

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29 December 2004

Mr. Russell D. Hart (HSRW-6J)
Remedial Project Manager
U. S. Environmental Protection Agency
Region V
77 West Jackson Boulevard
Chicago, IL 60604

Work Order No. 02687.007.006
KMC Work Order No. 40-50-01-AKW-B

Re: Quarterly Groundwater Treatment Performance Monitoring Report, Q3 2004
Moss-American Site, Milwaukee, Wisconsin

Dear Mr. Hart:

On behalf of Kerr-McGee Chemical, LLC (KMC), Weston Solutions, Inc. (WESTON®), is submitting this report summarizing the results of the third quarter (Q3) 2004 groundwater monitoring event for the above-referenced project.

If you have any questions or require additional information regarding this submittal, please do not hesitate to call me at (847) 918-4142.

Very truly yours,

Weston Solutions, Inc.

Thomas P. Graan

Thomas P. Graan, Ph.D.
Principal Project Manager

TPG/tg

Attachments

cc: T. Wentland, WDNR
B. Amungwafor, WDNR

TABLE OF CONTENTS

Section	Title	Page
1	INTRODUCTION	1-1
2	ON-SITE GROUNDWATER MONITORING RESULTS	2-1
	2.1 Groundwater Elevation Measurements	2-1
	2.2. Groundwater Sample Analytical Results	2-3
	2.2.1 Field-Measured Parameters	2-3
	2.2.2 Laboratory Analyses	2-6
3	EVALUATION OF PILOT SCALE OPERATIONS	3-1
	3.1 Dissolved Oxygen	3-1
	3.2 Nutrients and pH	3-2
	3.3 Bacterial Populations	3-2
	3.4 Hydrogeology	3-3
	3.5 Site Modifications	3-3
4	REACH 1 GROUNDWATER MONITORING RESULTS	4-1
	4.1 Groundwater Sample Analytical Results	4-1
	4.2 Laboratory Analyses	4-2
5	REFERENCES	5-1

LIST OF FIGURES

Figure	Title	Page
1-1	Monitoring Well Locations Map	1-4
2-1	Groundwater Elevation Contour Map – 3rd Qtr 2004	2-11
2-2	Groundwater Elevation Contour Map – 2nd Qtr 2004	2-12
3-1	Comparison of Degrader Populations in Treatment Gates 1 and 2 Since Q1 2001	3-4
4-1	Reach 1 Monitoring Well Location Map	4-3

LIST OF TABLES

Table	Title	Page
2-1	Groundwater Elevation Measurements – Shallow and Containment Performance Monitoring Wells	2-13
2-2	Groundwater Elevation Measurements – Treatment Performance Monitoring Wells	2-14
2-3	Groundwater Elevation Measurements – Piezometer and Staff Gauge	2-15
2-4	Field Measured Parameters	2-16
2-5	Groundwater Sample Analytical Results	2-18
2-6	Concentration Trends in Groundwater Monitoring Wells	2-29
2-7	Groundwater Sample Analytical Results – Treatment Performance Monitoring Wells – Nutrient and Biological Parameters	2-31
3-1	Calculation of Carbon: Nitrogen: Phosphorous Ratios	3-5
4-1	Field-Measured Parameters – Reach 1 Monitoring Wells	4-3
4-2	Groundwater Sample Analytical Results	4-4
4-3	Reach 1 Monitoring Wells Samples	4-7

LIST OF APPENDICES

Appendix A September 2004 Groundwater Sample Analytical Results

SECTION 1
INTRODUCTION

In accordance with paragraph 4a of the Remedial Design/Remedial Action Statement of Work (RD/RA SOW), Kerr-McGee Chemical, LLC (KMC) is required to implement a groundwater monitoring program capable of detecting changes in chemical concentrations in the groundwater. KMC has directed Weston Solutions, Inc. (WESTON®) to perform this work. As previously agreed, the monitoring network currently includes seven shallow groundwater monitoring wells (MW-5S, MW-6S, MW-7S, MW-9S, MW-27S, MW-28S, and MW-29S). Additionally, the quarterly groundwater monitoring program includes sampling of the eight containment performance monitoring wells (MW-30S, MW-31S, MW-32S, MW-33S, MW-34S, MW-35S, MW-36S and MW-37S), which are screened in the shallow groundwater-bearing unit underlying the site. Nine piezometer wells (PZ-01, PZ-02, PZ-03, PZ-04, PZ-05, PZ-06, PZ-07, PZ-09, and PZ-10) and one staff gauge (SG-01) were installed in December 2002 to monitor groundwater movement. The locations of piezometers, the staff gauge, and the groundwater-monitoring wells that are included in the quarterly sampling program are indicated on Figure 1-1.

In addition, four shallow groundwater monitoring wells (MW-A, MW-B, MW-C and MW-D) were installed in September 2003 to monitor groundwater conditions between old and new river channels in the Reach 1 area. These four wells are sampled annually (during Q3 sampling events) in accordance with the annual groundwater monitoring program for the Reach 1 area. The details of Reach 1 groundwater monitoring are discussed further in Section 4.

Some wells that were previously part of the groundwater-monitoring network have been removed to facilitate soil remediation activities. TW-09, MW-8S, and MW-8I were removed during excavation activities and installation of the funnel-and-gate groundwater treatment system in 1999. Wells MW-4S and MW-4I were removed during early Q3 2001, and well TW-05 was removed in early Q4 2001 during the "hot spot" soil excavation and treatment process. Wells MW-20S and MW-20I were removed during Q3 2002 when the Little Menomonee River (LMR) diversion work took place.

As discussed in the Q2 2002 Quarterly Groundwater Treatment Performance Monitoring Report, some modifications were made to the sampling program. The first modification was the reduction of performance monitoring well sampling frequency. The treatment performance monitoring wells were originally sampled on a monthly basis, but sample data showed that minimal changes in site conditions were found on a monthly basis. Therefore a change in sampling frequency from monthly to quarterly was recommended. This recommendation was approved by the Wisconsin Department of Natural Resources (WDNR) and the United States Environmental Protection Agency (collectively "Agencies") and the monthly sampling program was discontinued after October 2002 sampling event. The second modification was the reduction of the groundwater monitoring program scope. It was proposed that some shallow monitoring wells (MW-3S, MW-10S, MW-13S, MW-25S, MW-26S, and MW-20S) and intermediate monitoring wells (MW-3I, MW-7I, MW-9I, and MW-20I) be removed from the groundwater monitoring program due to zero or few sample detections in these wells. The Agencies approved this recommendation, and the sampling of these wells was discontinued after the September (Q3) 2002 sampling event; however, per the Agencies' request, these wells were not abandoned. Instead these wells will be utilized to collect water level measurements for the production of more accurate quarterly groundwater potentiometric maps.

The Quality Assurance Project Plan for Installation of Groundwater Remedial System (QAPP) (WESTON, October 1999) requires KMC to implement a groundwater monitoring program capable of indicating groundwater chemistry before, during, and after treatment. In addition, the hydraulic gradient is calculated at each treatment gate and is used to estimate groundwater flow velocity through the treatment gate remediation system. The monitoring network includes six groundwater treatment gates (TG1 through TG6) with three treatment performance monitoring wells located at each groundwater treatment gate. The treatment performance monitoring wells include TG1-1, TG1-2, TG1-3, TG2-1, TG2-2, TG2-3, TG3-1, TG3-2, TG3-3, TG4-1, TG4-2, TG4-3, TG5-1, TG5-2, TG5-3, TG6-1, TG6-2, and TG6-3, and the locations are indicated on Figure 1-1.

In accordance with paragraph 4a (i) of the RD/RA SOW, the quarterly field measurement and analysis of groundwater samples collected from the shallow and containment performance groundwater monitoring wells include groundwater elevation, pH, temperature, turbidity, specific conductance, oxidation-reduction (redox) potential, and dissolved oxygen (DO). Required laboratory analyses include benzene, toluene, ethylbenzene, and xylene (BTEX collectively) and the following polynuclear aromatic hydrocarbon (PAH) compounds: acenaphthylene, acenaphthene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluorene, fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene.

In accordance with Addendum No. 1 to the QAPP (WESTON, May 2001), the quarterly field measurements for samples collected from the treatment performance monitoring wells include groundwater elevation, pH, temperature, turbidity, specific conductance, redox potential, and DO. Quarterly laboratory analyses required for the treatment performance wells include microbial enumeration, nitrate-nitrogen (NO_3-N), nitrite-nitrogen (NO_2-N), total Kjeldahl nitrogen (TKN), ammonia-nitrogen (NH_3-N), total phosphate-phosphorous (PO_4-P), orthophosphate (ORP), biochemical oxygen demand (BOD), chemical oxygen demand (COD), total organic carbon (TOC), BTEX, and the PAHs indicated in the above paragraph.

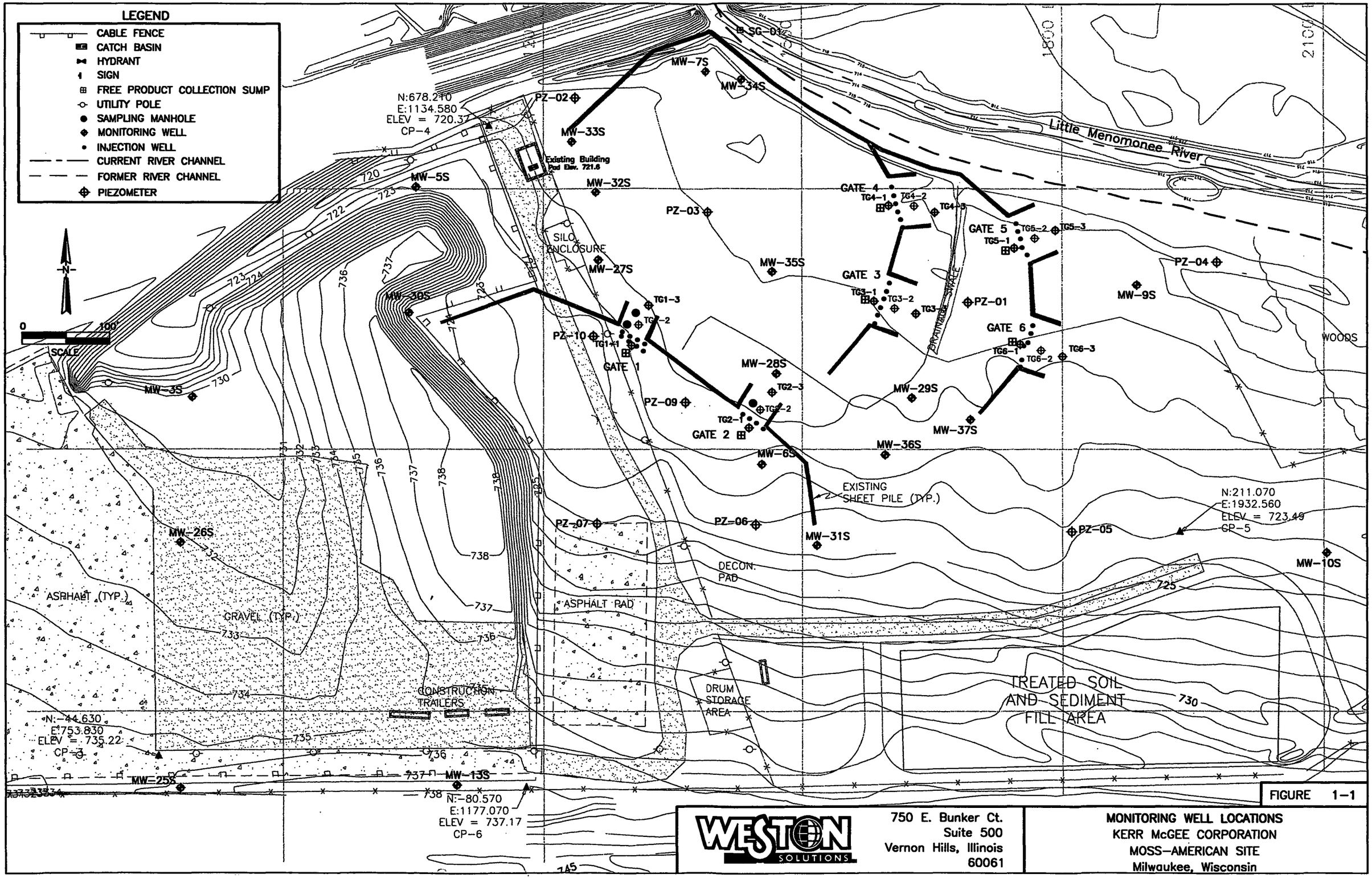

FIGURE 1-1

WESTON SOLUTIONS

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MONITORING WELL LOCATIONS
KERR McGEE CORPORATION
MOSS-AMERICAN SITE
Milwaukee, Wisconsin

SECTION 2
ON-SITE GROUNDWATER MONITORING RESULTS

The Q3 2004 groundwater-monitoring event at the Moss-American site was completed between 27 and 30 September 2004. Tasks completed during the field effort for this event included the collection of groundwater elevation and DO data from the shallow groundwater monitoring, containment performance monitoring, and treatment performance monitoring wells referenced in Section 1. Following groundwater elevation and DO measurements, groundwater samples were collected from all the shallow, containment performance, and treatment performance groundwater monitoring wells. The results of the Q3 2004 groundwater sampling event are described in the following subsections.

2.1 GROUNDWATER ELEVATION MEASUREMENTS

The depth to water was measured in each of the shallow groundwater monitoring, containment performance monitoring, treatment performance monitoring wells, and piezometers on 27 September 2004, prior to the commencement of groundwater sampling. These measurements were used to determine the elevation of the potentiometric surface within the shallow groundwater-bearing zone underlying the site. The water level measurements for the shallow groundwater monitoring and containment performance monitoring wells and calculated elevations are presented in Table 2-1. The groundwater level measurements and corresponding groundwater elevations, calculated hydraulic gradients across the treatment gates, and estimated groundwater flow velocities through the treatment gates are presented in Table 2-2. The groundwater levels for the piezometers and staff gauge are presented in Table 2-3. Figure 2-1 presents a potentiometric surface map of the shallow groundwater-bearing zone, based on the 27 September 2004 data. Figure 2-2 presents the potentiometric surface during Q2 2004. An evaluation of the Q3 2004 potentiometric surface map is presented below.

As shown in Figure 2-1, the groundwater within the shallow groundwater-bearing zone generally flows northeastward toward the LMR. In the topographically higher (western) portion of the site, the horizontal hydraulic gradient is relatively steep, at approximately 0.030 feet per foot (ft/ft) to

the northeast, as measured from the vicinity of MW-13S to PZ-07. The topography of the site levels out near the river, as does the potentiometric surface with a northerly hydraulic gradient of approximately 0.007 ft/ft, as measured from the vicinity of PZ-05 to PZ-04. The estimated hydraulic gradients within the treatment gates ranged from 0.000 to 0.0080 ft/ft (Table 2-2). The hydraulic gradient is relatively flat within the treatment gate area with an overall hydraulic gradient from TG1 to TG5 of approximately 0.0032 ft/ft in an easterly direction. The hydraulic gradients calculated in the vicinity of treatment gates, TG4, TG5 and TG6 are negative, contrary to the overall groundwater flow direction at the site.

The average velocity of groundwater flow within the shallow water-bearing zone can be calculated using the following equation:

$$v = Ki/n$$

where:

v = groundwater velocity

K = hydraulic conductivity (also referred to as the coefficient of permeability)

i = hydraulic gradient

n = porosity

Based on slug tests performed on wells installed during the remedial investigation (RI), the hydraulic conductivity of the deposits located on the topographically higher, western portion of the site were in the range of 1×10^{-5} to 1×10^{-6} centimeters per second (cm/s) (0.03 to 0.003 feet per day [ft/day]). Based on laboratory-performed hydraulic conductivity analyses conducted on material used to backfill areas of the site located along the LMR, the hydraulic conductivity of soils located in the topographically lower portion of the site within the funnel-and-gate remedial system is approximately 1×10^{-3} cm/s (3 ft/day). Using a hydraulic gradient of 0.030 ft/ft, an assumed effective porosity of 0.3, and a hydraulic conductivity of 0.03 ft/day, the groundwater flow velocity in the western portion of the site is calculated to be approximately 0.0030 ft/day. Near the river, using a hydraulic gradient of 0.007 ft/ft, a porosity of 0.3, and a hydraulic conductivity of 3 ft/day, the velocity of groundwater flow is calculated to be approximately 0.07

ft/day. The groundwater flow velocities within the treatment gates are estimated to range from 0.0000 ft/day to 0.0756 ft/day. The groundwater flow velocity through each treatment gate is presented in Table 2-2.

2.2 GROUNDWATER SAMPLE ANALYTICAL RESULTS

Groundwater samples were collected from a total of 33 shallow monitoring wells screened within the shallow groundwater-bearing unit. The shallow wells sampled include seven shallow groundwater monitoring wells (MW-5S, MW-6S, MW-7S, MW-9S, MW-27S, MW-28S, and MW-29S); eight containment performance monitoring wells (MW-30S, MW-31S, MW-32S, MW-33S, MW-34S, MW-35S, MW-36S and MW-37S); and 18 treatment performance monitoring wells (TG1-1, TG1-2, TG1-3, TG2-1, TG2-2, TG2-3, TG3-1, TG3-2, TG3-3, TG4-1, TG4-2, TG4-3, TG5-1, TG5-2, TG5-3, TG6-1, TG6-2, and TG6-3).

In addition to the investigative groundwater samples collected, four sample duplicate, two matrix spike/matrix spike duplicate (MS/MSD), and four field blank (identified by an FB prefix) samples were collected for quality assurance/quality control (QA/QC) purposes. Trip blanks accompanied each cooler of sample containers from the laboratory to the site and were shipped back to the laboratory within each cooler containing volatile organic compound (VOC) samples.

All groundwater samples were field screened and laboratory analyzed for the parameters indicated in Section 1.

2.2.1 Field-Measured Parameters

The groundwater samples were measured in the field for pH, specific conductance, temperature, redox potential, DO, and turbidity. The field parameters were collected using a YSI 556 portable water quality meter and a HS Scientific DRT-15CE turbidimeter. Downhole DO readings were collected from each monitoring well prior to purging the well for groundwater sample collection. The groundwater pH, redox potential, specific conductance, temperature, and turbidity were monitored during well purging prior to sampling. The final (stabilized) values for these

measurements prior to sample collection are presented in Table 2-4. Water quality parameter measurements were not collected from well TG1-1 and MW-34S due to the presence of sheen on the purge water during Q3 2004.

2.2.1.1 pH

The pH of the groundwater samples collected during Q3 2004 ranged from 6.25 to 7.62 pH standard units (S.U.). Except for a few wells with slightly lower pH (below 6.5), the pH readings in most of the wells were near-neutral (7.0 S.U.) conditions. pH is an important factor in determining the feasibility of bioremediation of contaminants in the site groundwater because biological systems typically function only in narrow pH ranges (typically 6.5 to 8.5 S.U.) and because microbial growth rates are pH dependent.

2.2.1.2 Redox Potential

The redox potentials of the groundwater samples collected at the site during Q3 2004 ranged from 94.8 to 233.9 millivolts (mV). Redox potential indicates the capability of the groundwater to promote chemical oxidation-reduction processes that consume organic matter and ultimately oxidize organic compounds. Microorganisms typically act as catalysts in oxidation reactions, and as such, the redox potential indicates the potential for the groundwater to oxidize the contaminants present.

Since environmental systems are typically not in equilibrium, the redox potential is used as a gross indicator of the state of oxidation-reduction in the system. Oxidation-reduction rates in the system are greater as the redox potential increases in magnitude. A positive redox potential typically indicates conditions where oxidized ionic species (i.e., NO_3^-, SO_4^{2-}, and Fe^{3+}) predominate in comparison to their reduced counterparts (NH_4^+, S^{2-}, and Fe^{2+}, respectively). Once DO is removed from water (i.e., via biodegradation of organics), oxidized ionic species

become electron acceptors in redox processes. As the processes continue under anaerobic conditions, the reduced ionic species concentration increases, resulting in an overall decrease of the water's redox potential.

2.2.1.3 Dissolved Oxygen

DO levels for the groundwater samples collected during Q3 2004 ranged from 0.29 to 1.84 milligrams per liter (mg/L). Overall, the DO readings indicate the presence of low levels of oxygen in the water, and the system as a whole is considered to be generally under suboxic conditions. DO promotes the growth of aerobic and facultative bacteria and the production of readily assimilated nutrients. All of these factors are required to facilitate the oxidation reaction responsible for removing the contaminants from the groundwater under aerobic conditions.

2.2.1.4 Specific Conductance

The specific conductance, or conductivity, of the groundwater samples collected during Q3 2004 ranged from 0.534 to 1.453 micromhos per centimeter (umho/cm). Conductivity of water is a measure of the ability of the solution to carry an electrical current that is transported by ions in the solution; therefore, conductivity is used as an indicator of the total dissolved solids (TDS) present in a water sample. As the dissolved solids content of a solution increases, the capacity for the water to transmit electrical current increases. Although conductivity is a measure of the aggregate dissolved solids in the water it may be correlated to the readily available nutrient levels in the water, since TDS include nitrate, nitrite, ammonium, and phosphate ions.

2.2.1.5 Temperature

Groundwater temperatures ranged from 12.07 to 17.91 degrees Celsius (°C) during Q3 2004. Temperature is an extremely important factor in bioremediation because microbial growth rates are greatly dependent upon temperature.

2.2.1.6 Turbidity

Turbidity ranged from 1.67 to 118 nephelometric turbidity units (NTU) during Q3 2004. Turbidity is a measure of the clarity of water and is used as an indicator of the solids present in a water sample and overall water quality.

2.2.2 Laboratory Analyses

The results of the laboratory analyses performed on the groundwater samples collected during September 2004 are provided in Appendix A. A discussion of the results of the laboratory analyses performed on the groundwater samples are presented in the following subsections.

2.2.2.1 Laboratory Analyses for BTEX and PAH

Each groundwater sample collected during the September 2004 sampling event was analyzed for BTEX and PAH compounds. The results of these analyses are presented and compared to WDNR Preventive Action Limits (PALs) and Enforcement Standards (ESs) in Table 2-5. Table 2-5 identifies parameters detected at concentrations exceeding their respective PALs (shown as shaded values). Parameters with concentrations exceeding both PALs and ESs are presented as shaded and bolded values in Table 2-5. Exceedences are summarized in the following paragraphs. The laboratory reports that included BTEX and PAH analyses results are provided as Appendix A.

Groundwater Sample Results

As shown in Table 2-5, benzene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, fluoranthene, fluorene, naphthalene, and pyrene were detected at concentrations exceeding their respective PALs and/or ESs in the groundwater samples collected from the shallow monitoring well network. The results are as follows:

WDNR PAL Exceedences

- Benzene was detected at concentrations exceeding the PAL of 0.5 micrograms per liter (µg/L) in the groundwater samples collected from wells MW-7S and MW-34S.
- Benzo(a)pyrene was detected at concentrations exceeding the PAL of 0.02 µg/L in the groundwater samples collected from wells MW-34S, TG1-1, and TG1-2.
- Benzo(b)fluoranthene was detected at concentrations exceeding the PAL of 0.02 µg/L in the groundwater samples collected from wells MW-34S and TG1-1.
- Chrysene was detected at concentrations exceeding the PAL of 0.02 µg/L in the groundwater samples collected from wells MW-34S and TG1-1.
- Fluoranthene was detected at concentrations exceeding the PAL of 80 µg/L in the groundwater samples collected from wells MW-34S and TG1-1.
- Fluorene was detected at concentrations exceeding the PAL of 80 µg/L in the groundwater samples collected from wells MW-34S and TG1-1.
- Naphthalene was detected at concentrations exceeding the PAL of 8 µg/L in the groundwater samples from wells MW-7S, MW-33S, MW-34S, TG1-1, and TG1-2.
- Pyrene was detected at concentrations exceeding the PAL of 50 µg/L in the groundwater samples collected from wells MW-34S and TG1-1.

WDNR ES Exceedences

- Benzene was detected at concentrations exceeding the ES of 5 µg/L in the groundwater sample collected from well MW-34S.
- Benzo(a)pyrene was detected at concentrations exceeding the ES of 0.2 µg/L in the groundwater samples collected from wells MW-34S, and TG1-1.
- Benzo(b)fluoranthene was detected at concentrations exceeding the ES of 0.2 µg/L in the groundwater samples collected from wells MW-34S, and TG1-1.
- Chrysene was detected at concentrations exceeding the ES of 0.2 µg/L in the groundwater samples collected from wells MW-34S, and TG1-1.
- Fluoranthene was detected at concentrations exceeding the ES of 400 µg/L in the groundwater samples collected from wells MW-34S, and TG1-1.

- Fluorene was detected at concentrations exceeding the ES of 400 µg/L in the groundwater samples collected from wells MW-34S, and TG1-1.

- Naphthalene was detected at concentrations exceeding the ES of 40 µg/L in the groundwater samples collected from wells MW-7S, MW-33S, MW-34S, and TG1-1.

- Pyrene was detected at concentrations exceeding the ES of 250 µg/L in the groundwater samples collected from wells MW-34S, and TG1-1.

The plume boundary is primarily in an area encompassing five shallow monitoring wells (MW-7S, MW-33S, MW-34S, TG1-1, and TG1-2). The majority of PAL and ES exceedences are associated with wells MW-34S and TG1-1 in which free product has historically been observed. In general, PAH concentrations measured in groundwater samples collected from the rest of the site were at relatively low levels with a few PAL/ES exceedences. Based on these detected concentrations, the contaminant plume generally demonstrates a northeasterly trend, as indicated in Figure 2-1, similar to the previous 23 quarterly groundwater sampling events.

Overall, the lateral extent of the groundwater contaminant plume is considerably smaller than in previous years of groundwater sampling. Little change in the contaminant plume size was observed in the past four quarters.

A summary of the concentration of contaminants at wells that have regularly exceeded PALs and/or ESs during the last 12 quarters (3 years) is presented in Table 2-6. Levels of benzene, naphthalene, fluorene, and benzo(a)pyrene fluctuate over wide ranges in these wells without a common pattern. However, these constituents have shown an overall decreasing or constant trend in monitoring wells MW-7S and MW-35S. Well MW-7S has shown a decreasing trend for benzene and benzo(a)pyrene. Although benzene and benzo(a)pyrene concentrations in MW-33S have remained at low levels, fluorene and naphthalene levels have fluctuated over the past 12 quarters. Well MW-34S has shown overall fluctuating levels in benzene, naphthalene, fluorene, and benzo(a)pyrene. Well MW-34S did not contain a measurable amount of free product during Q3 2004; however, trace of free product was noted during purging of MW-34S. Varying levels of free product have been found in MW-34S in the recent past. This correlates with the elevated levels of constituents found in MW-34S. The benzene concentrations detected in TG1-1 show a decreasing trend; however, fluctuating concentrations of naphthalene, fluorene, and

benzo(a)pyrene have been detected since this well was first sampled in Q3 2000. These fluctuating concentrations could be due to the presence of free product which has historically been observed in well TG1-1.

2.2.2.2 Laboratory Analyses for Treatment Performance Monitoring

The groundwater samples collected from the treatment performance monitoring wells were analyzed for microbial enumeration, NO_3-N, NO_2-N, TKN, NH_3-N, PO_4-P, ORP, BOD, COD, TOC, BTEX, and PAHs. The analytical results for microbial enumeration, NO_3-N, NO_2-N, TKN, NH_3-N, PO_4-P, ORP, BOD, COD, and TOC are presented in Table 2-7. The analytical results for the treatment performance monitoring groundwater samples are summarized below. The laboratory reports of nutrient and microbial analyses are also included in Appendix A.

Nitrogen and Phosphorous Compounds

NO_3-N and NO_2-N were not detected at or above the detection limits. TKN results include non-detect results and detections with concentrations ranging from 0.65 to 2.1 mg/L. NH_3-N results include non-detect results and detections with concentrations ranging from 0.2 to 1.8 mg/L. Overall, nitrogen compound concentrations are at relatively low levels; however, previous sample results have indicated that NH_3-N is typically an order of magnitude greater than NO_3-N concentrations and approximately two orders or magnitude greater than NO_2-N.

PO_4-P results include non-detect results and detections with concentrations ranging from 0.24 to 0.31 mg/L. ORP results include non-detect results and detections with concentration ranging from 0.01 and 0.018 mg/L. From the ratio between carbon, nitrogen and phosphorous, a beneficial level of PO_4-P was not found in any of the treatment gates during Q3 2004. ORP levels were also minimal in many of the gates for Q3 2004.

BOD, COD, and TOC

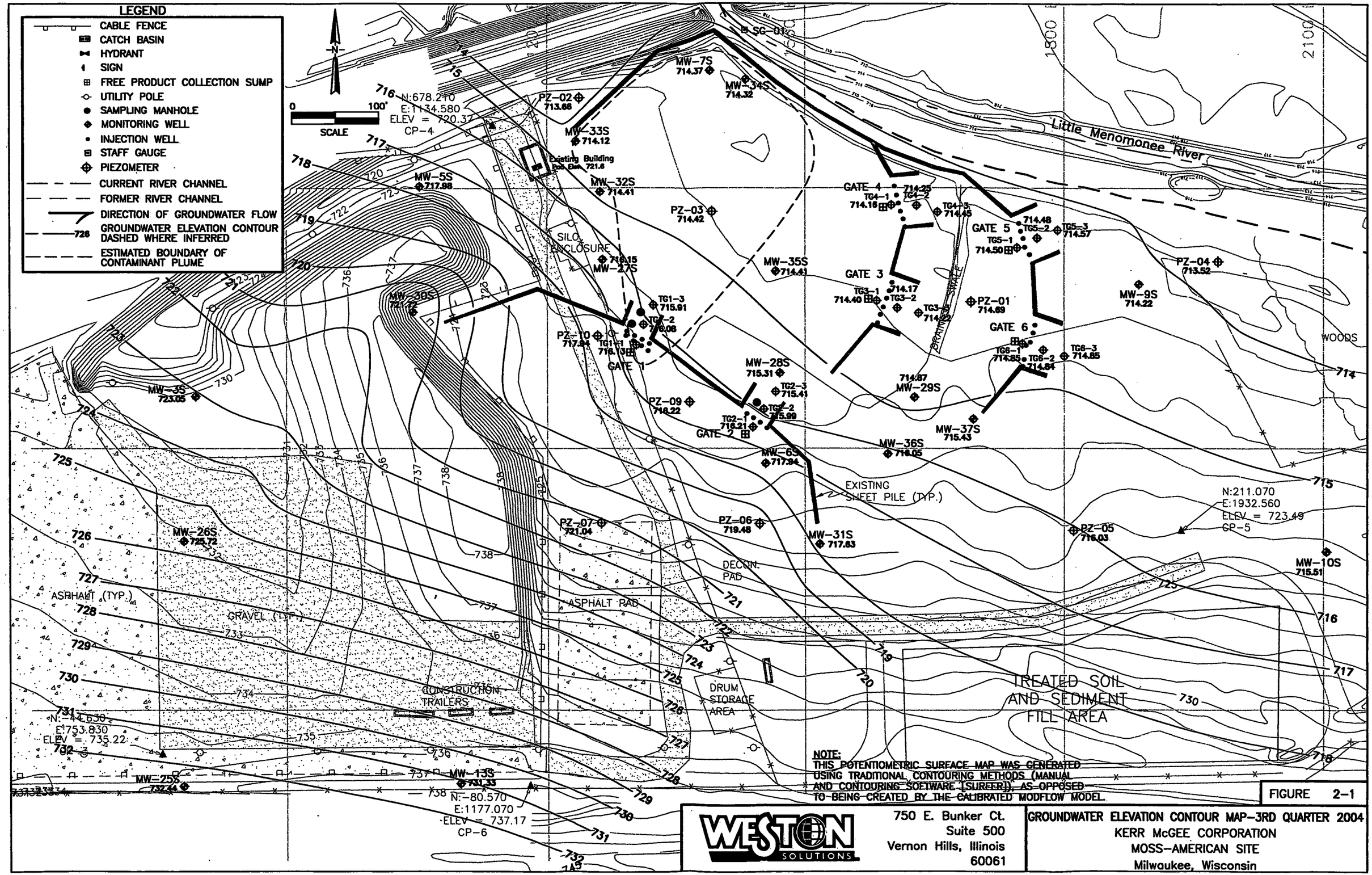
BOD concentrations for the samples collected throughout the treatment system range from non-detect to 7.1 mg/L. COD concentrations for the samples collected throughout the treatment system ranged from 7 to 57.6 mg/L. TOC concentrations for the samples collected throughout the treatment system ranged from 3 to 14.1 mg/L. As expected, the treatment gate wells indicate less BOD compared to COD. COD indicates the presence of constituents that exert an oxygen demand, including carbon compounds such as the site contaminants in the groundwater, and other constituents such as ammonia, sulfurous compounds; and biological material such humic acids and detritus. A significant portion of oxygen demand exerted by the constituents measured in the COD test may not be readily biodegradable and would typically exert the oxygen demand over an extended time period. The oxygen demand exerted by the constituents the COD analysis detected is catalyzed chemically and thermally. The low BOD indicates low concentrations of material that is readily biodegradable and/or quickly oxidized.

Microbial Enumeration

The total microbial populations for TG1 and TG2 ranged from 8.7×10^2 to 2.9×10^4 colony forming units per milliliter (CFU/mL) during Q3 2004. The total microbial populations for TG3 and TG4 ranged from 1.2×10^2 to 6.1×10^5 CFU/mL during Q3 2004. The total microbial populations for TG5 and TG6 ranged from 7.0×10^2 to 1.4×10^5 CFU/mL during Q3 2004.

The result of degrader microbial population analysis for TG1 and TG2 ranged from non-detect to 4.0×10^2 CFU/mL during Q3 2004. The degrader microbial populations for TG3 and TG4 ranged from non-detect to 4.0×10^4 CFU/mL during Q3 2004. The degrader microbial populations for TG5 and TG6 ranged from non-detect to 1.3×10^3 CFU/mL during Q3 2004.

Due to a problem with shipment, the microbial samples collected from TG4-1, TG4-2, TG4-3, TG5-1, TG5-2 and TG5-3 arrived at the analytical laboratory at a warmer temperature and after the holding time has passed. Therefore these values are qualified as estimated values in Table 2-7.



NOTE:
THIS POTENTIOMETRIC SURFACE MAP WAS GENERATED USING TRADITIONAL CONTOURING METHODS (MANUAL AND CONTOURING SOFTWARE [SURFER]), AS OPPOSED TO BEING CREATED BY THE CALIBRATED MODFLOW MODEL.

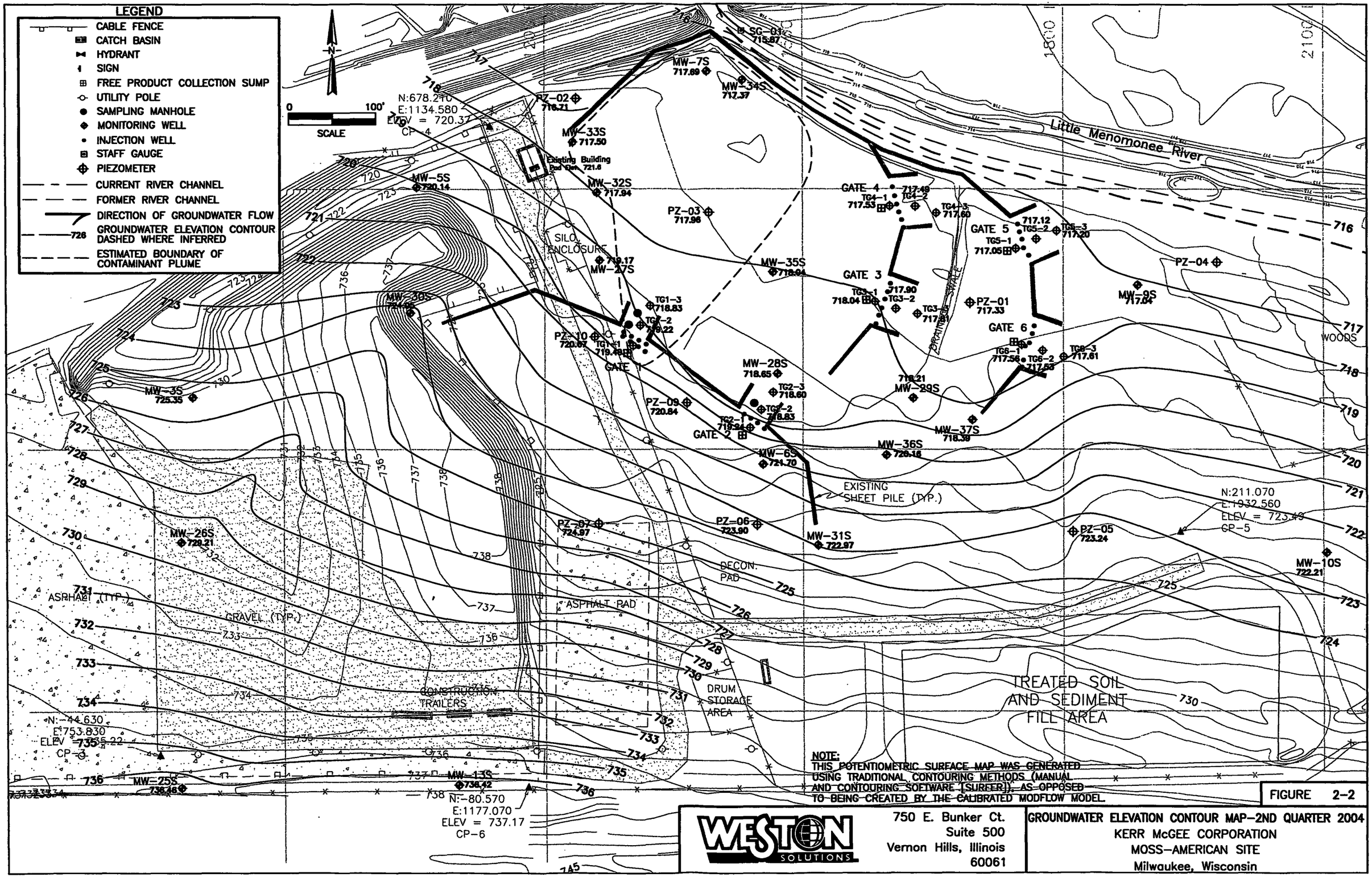
FIGURE 2-1

WESTON SOLUTIONS

750 E. Bunker Ct.
Suite 500
Vernon Hills, Illinois
60061

GROUNDWATER ELEVATION CONTOUR MAP-3RD QUARTER 2004
KERR McGEE CORPORATION
MOSS-AMERICAN SITE
Milwaukee, Wisconsin

J:\C\D93\0000\00303.dwg



NOTE:
THIS POTENTIOMETRIC SURFACE MAP WAS GENERATED USING TRADITIONAL CONTOURING METHODS (MANUAL AND CONTOURING SOFTWARE [SURFER]), AS OPPOSED TO BEING CREATED BY THE CALIBRATED MODFLOW MODEL.

FIGURE 2-2

WESTON SOLUTIONS

750 E. Bunker Ct.
Suite 500
Vernon Hills, Illinois
60061

GROUNDWATER ELEVATION CONTOUR MAP–2ND QUARTER 2004
KERR McGEE CORPORATION
MOSS–AMERICAN SITE
Milwaukee, Wisconsin

Table 2-1

Groundwater Elevation Measurements
Shallow and Containment Performance Monitoring Wells
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2004

Well ID	Ground Elevation	TOC Elevation	Depth to Water	GW Elevation	Product Thickness
MW-3S	729.71	731.45	8.40	723.05	None Detected
MW-5S	723.41	724.63	6.65	717.98	
MW-6S	723.11	725.24	7.30	717.94	
MW-7S	719.47	721.59	7.22	714.37	
MW-9S	719.15	721.66	7.44	714.22	
MW-10S	723.95	726.76	11.25	715.51	
MW-13S	737.73	738.58	7.25	731.33	
MW-25S	736.95	739.19	6.75	732.44	
MW-26S	732.31	731.87	6.15	725.72	
MW-27S	720.57	723.10	6.95	716.15	
MW-28S	719.64	722.13	6.82	715.31	
MW-29S	719.51	722.17	7.30	714.87	
MW-30S	725.35	727.34	5.62	721.72	
MW-31S	725.29	725.31	7.68	717.63	
MW-32S	719.68	722.79	8.38	714.41	
MW-33S	719.25	721.81	7.69	714.12	
MW-34S	718.97	721.52	7.2	714.32	Trace
MW-35S	718.14	721.75	7.34	714.41	None Detected
MW-36S	720.41	723.21	7.16	716.05	
MW-37S	721.33	723.30	7.87	715.43	

Notes:

All values in feet.

All elevation measurements are with respect to Mean Sea Level (MSL).

TOC = Top of well casing.

GW = Groundwater.

Depth to groundwater was measured on 27 September 2004

Table 2-3

Groundwater Elevation Measurements
Piezometer and Staff Guage
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2004

Well ID	Ground Elevation	TOC Elevation	Depth to Water	Water Elevation	Product Thickness
Groundwater					
PZ-01	718.04	721.05	6.36	714.69	None Detected
PZ-02	718.89	721.84	8.18	713.66	
PZ-03	719.00	722.09	7.67	714.42	
PZ-04	717.30	720.22	6.70	713.52	
PZ-05	724.34	727.43	11.40	716.03	
PZ-06	724.62	727.79	8.31	719.48	
PZ-07	725.78	728.72	7.68	721.04	
PZ-09	721.12	724.08	7.86	716.22	
PZ-10	722.04	725.05	7.11	717.94	
Surface Water					
SG-01	716.22	-	NM		

Notes:
All values in feet.
All elevation measurements are with respect to Mean Sea Level (MSL).
TOC = Top of well casing.
GW = Groundwater.
NM = Not Measured
Depth to groundwater was measured on 27 September 2004

Table 2-4

Field-Measured Parameters
Shallow Groundwater and Containment Performance Monitoring Wells
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2004

StationName	pH (Standard Units)	Specific Conductance (mohm/cm)	Temperature (Deg C)	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
MW-5S	6.69	0.748	12.07	94.8	0.43	3.46
MW-6S	7.62	0.534	15.3	230.8	0.56	118
MW-7S	6.79	0.701	13.52	233.7	0.8	1.9
MW-9S	6.56	0.657	14.86	145	0.7	9.1
MW-27S	6.83	0.929	15.2	230.1	1.56	13.8
MW-28S	6.96	0.997	16.28	228.7	0.6	4.99
MW-29S	7.03	0.585	16.42	231	0.59	5.37
MW-30S	6.24	1.453	13.63	94.1	0.25	1.67
MW-31S	7.61	0.58	16.22	230.1	0.37	26.7
MW-32S	6.57	0.895	16.94	230.1	0.61	6.85
MW-33S	6.6	1.066	15.65	231.6	1.32	4.38
MW-35S	6.66	1.31	16.59	229.1	0.41	28.1
MW-36S	7.13	0.535	15.52	232.2	0.51	12.31
MW-37S	7.37	0.575	15.78	231.6	0.32	5.7

Table 2-4 (Continued)

Field-Measured Parameters
Treatment Performance Monitoring Wells
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2004

StationName	pH (Standard Units)	Specific Conductance (mohm/cm)	Temperature (Deg C)	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
TG1-2	6.5	0.962	16.8	228.6	1.04	11.1
TG1-3	6.6	0.974	17.21	228.9	0.62	6.71
TG2-1	6.69	0.913	14.29	229.6	0.23	4.5
TG2-2	6.47	0.765	15.12	230	0.31	6.43
TG2-3	6.33	0.934	15.82	230	0.49	2.19
TG3-1	7.18	0.999	17.49	230.9	1.2	3.1
TG3-2	7.51	0.717	17.91	230.8	0.57	9.8
TG3-3	7.22	0.801	17.5	230.2	0.46	7.61
TG4-1	6.42	0.661	16.93	146.9	0.39	5.9
TG4-2	6.29	0.731	17.17	145.6	0.26	33.9
TG4-3	6.52	0.73	16.1	144.9	0.3	7.3
TG5-1	6.77	0.683	16.78	145.3	1.84	10.9
TG5-2	6.57	0.668	16.89	146	0.29	12.3
TG5-3	7.17	0.639	15.64	143.1	1.01	69.8
TG6-1	6.8	0.96	16.58	232.3	0.42	3.12
TG6-2	7	1.078	15.9	233.9	0.36	9.98
TG6-3	6.83	1.052	16.07	233.9	0.73	7.98

Notes:
S - Shallow well.
TG - Treatment gate performance monitoring well.
NA - Not applicable; monitoring well is only sampled for DO and depth to groundwater..
NM - Not measured due frozen conditions or free product in well.
mohm/cm - milliohm per centimeter
Deg C - Degrees Celcius
mV - millivolt
mg/L - milligram per liter
NTU - Nephelometric Turbidity unit

Table 2-5

Groundwater Sample Analytical Results
Shallow Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2004

Sample ID	MA3-MW5S-092704-2	MA3-MW6S-092904-11	MA3-MW7S-092904-12	MA3-MW9S-092804-8	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/27/2004	9/29/2004	9/29/2004	9/28/2004		
Units of measure	ug/l	ug/l	ug/l	ug/l		
Parameter						
VOCS						
Benzene	0.2 U	0.2 U	2.2 J	0.2 U	0.5	5
Ethylbenzene	0.2 U	0.2 U	16	0.2 U	140	700
Toluene	0.2 U	0.2 U	1 U	0.2 U	68.6	343
Total Xylenes	0.6 U	0.6 U	26	0.6 U	124	650
PAHS						
Acenaphthene	1.6 U	1.6 U	44	1.7 U	NA	NA
Acenaphthylene	1.6 U	1.6 U	40	1.7 U	NA	NA
Anthracene	0.04 U	0.04 U	0.04 U	0.042 U	600	3000
Benzo(a)anthracene	0.02 U	0.02 U	0.02 U	0.021 U	NA	NA
Benzo(a)pyrene	0.02 U	0.02 U	0.02 U	0.021 U	0.02	0.2
Benzo(b)fluoranthene	0.04 U	0.04 U	0.04 U	0.042 U	0.02	0.2
Benzo(g,h,i)perylene	0.099 U	0.099 U	0.1 U	0.11 U	NA	NA
Benzo(k)fluoranthene	0.02 U	0.02 U	0.02 U	0.021 U	NA	NA
Chrysene	0.079 U	0.079 U	0.08 U	0.084 U	0.02	0.2
Dibenz(a,h)anthracene	0.04 U	0.04 U	0.04 U	0.042 U	NA	NA
Fluoranthene	0.04 U	0.04 U	0.04 U	0.042 U	80	400
Fluorene	0.18 U	0.18 U	7.8	0.19 U	80	400
Indeno(1,2,3-cd)pyrene	0.079 U	0.079 U	0.08 U	0.084 U	NA	NA
Naphthalene	1.6 U	1.6 U	2700	1.7 U	8	40
Phenanthrene	0.079 U	0.079 U	0.11 J	0.084 U	NA	NA
Pyrene	0.18 U	0.18 U	0.18 U	0.19 U	50	250

Table 2-5 (Continued)

Groundwater Sample Analytical Results
Shallow Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2004

Sample ID	MA3-MW27S-093004-9	MA3-MW28S-093004-4	MA3-MW29S-092904-7	MA3-MW30S-092704-3	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/30/2004	9/30/2004	9/29/2004	9/27/2004		
Units of measure	ug/l	ug/l	ug/l	ug/l		
Parameter						
VOCS						
Benzene	0.2 U	0.2 U	0.2 U	0.2 U	0.5	5
Ethylbenzene	0.2 U	0.2 U	0.2 U	0.2 U	140	700
Toluene	0.2 U	0.2 U	0.2 U	0.2 U	68.6	343
Total Xylenes	0.6 U	0.6 U	0.6 U	0.6 U	124	650
PAHS						
Acenaphthene	1.7 U	1.7 U	1.8 U	1.6 U	NA	NA
Acenaphthylene	1.7 U	1.7 U	1.8 U	1.6 U	NA	NA
Anthracene	0.043 U	0.042 U	0.044 U	0.041 U	600	3000
Benzo(a)anthracene	0.022 U	0.021 U	0.022 U	0.02 U	NA	NA
Benzo(a)pyrene	0.022 U	0.021 U	0.022 U	0.02 U	0.02	0.2
Benzo(b)fluoranthene	0.043 U	0.042 U	0.044 U	0.041 U	0.02	0.2
Benzo(g,h,i)perylene	0.11 U	0.1 U	0.11 U	0.1 U	NA	NA
Benzo(k)fluoranthene	0.022 U	0.021 U	0.022 U	0.02 U	NA	NA
Chrysene	0.086 U	0.084 U	0.088 U	0.082 U	0.02	0.2
Dibenz(a,h)anthracene	0.043 U	0.042 U	0.044 U	0.041 U	NA	NA
Fluoranthene	0.043 U	0.042 U	0.044 U	0.041 U	80	400
Fluorene	0.19 U	0.19 U	0.2 U	0.18 U	80	400
Indeno(1,2,3-cd)pyrene	0.086 U	0.084 U	0.088 U	0.082 U	NA	NA
Naphthalene	1.7 U	1.7 U	1.8 U	1.6 U	8	40
Phenanthrene	0.086 U	0.084 U	0.088 U	0.082 U	NA	NA
Pyrene	0.19 U	0.19 U	0.2 U	0.18 U	50	250

Table 2-5 (Continued)

Groundwater Sample Analytical Results
Containment Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2004

Sample ID	MA3-MW31S-092904-10	MA3-MW32S-093004-11	MA3-MW33S-093004-10	MA3-MW34S-092904-13	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/29/2004	9/30/2004	9/30/2004	9/29/2004		
Units of measure	ug/l	ug/l	ug/l	ug/l		
Parameter						
VOCS						
Benzene	0.2 U	0.2 U	1 U	7.1 J	0.5	5
Ethylbenzene	0.2 U	0.2 U	7	25	140	700
Toluene	0.2 U	0.2 U	1 U	2.1 J	68.6	343
Total Xylenes	0.6 U	0.6 U	11 J	72	124	650
PAHS						
Acenaphthene	1.6 U	1.6 U	160	2200 J	NA	NA
Acenaphthylene	1.6 U	1.6 U	31 U	230 J	NA	NA
Anthracene	0.041 U	0.039 U	0.38	600 J	600	3000
Benzo(a)anthracene	0.021 U	0.02 U	0.021 U	410 J	NA	NA
Benzo(a)pyrene	0.021 U	0.02 U	0.021 U	140 J	0.02	0.2
Benzo(b)fluoranthene	0.041 U	0.039 U	0.042 U	140 J	0.02	0.2
Benzo(g,h,i)perylene	0.1 U	0.098 U	0.1 U	58 J	NA	NA
Benzo(k)fluoranthene	0.021 U	0.02 U	0.021 U	80 J	NA	NA
Chrysene	0.082 U	0.079 U	0.084 U	380 J	0.02	0.2
Dibenz(a,h)anthracene	0.041 U	0.039 U	0.042 U	30 UJ	NA	NA
Fluoranthene	0.041 U	0.039 U	0.042 U	2500 J	80	400
Fluorene	0.19 U	0.18 U	59	2100 J	80	400
Indeno(1,2,3-cd)pyrene	0.082 U	0.079 U	0.084 U	29 J	NA	NA
Naphthalene	1.6 U	1.6 U	970	11000 J	8	40
Phenanthrene	0.082 U	0.079 U	12	5700 J	NA	NA
Pyrene	0.19 U	0.18 U	0.19 U	2000 J	50	250

Table 2-5 (Continued)

Groundwater Sample Analytical Results
Containment Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2004

Sample ID	MA3-MW35S-093004-5	MA3-MW36S-092904-9	MA3-MW37S-092904-8	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater		
Sample Date	9/30/2004	9/29/2004	9/29/2004		
Units of measure	ug/l	ug/l	ug/l		
Parameter					
VOCS					
Benzene	0.2 U	0.2 U	0.2 U	0.5	5
Ethylbenzene	0.2 U	0.2 U	0.2 U	140	700
Toluene	0.2 U	0.2 U	0.2 U	68.6	343
Total Xylenes	0.6 U	0.6 U	0.6 U	124	650
PAHS					
Acenaphthene	4 J	1.6 U	1.7 U	NA	NA
Acenaphthylene	1.7 U	1.6 U	1.7 U	NA	NA
Anthracene	0.14 J	0.041 U	0.043 U	600	3000
Benzo(a)anthracene	0.034 J	0.02 U	0.022 U	NA	NA
Benzo(a)pyrene	0.021 U	0.02 U	0.022 U	0.02	0.2
Benzo(b)fluoranthene	0.042 U	0.041 U	0.043 U	0.02	0.2
Benzo(g,h,i)perylene	0.1 U	0.1 U	0.11 U	NA	NA
Benzo(k)fluoranthene	0.021 U	0.02 U	0.022 U	NA	NA
Chrysene	0.083 U	0.081 U	0.087 U	0.02	0.2
Dibenz(a,h)anthracene	0.042 U	0.041 U	0.043 U	NA	NA
Fluoranthene	0.87	0.05 J	0.043 U	80	400
Fluorene	1.3	0.18 U	0.2 U	80	400
Indeno(1,2,3-cd)pyrene	0.083 U	0.081 U	0.087 U	NA	NA
Naphthalene	1.7 U	1.6 U	1.7 U	8	40
Phenanthrene	0.083 U	0.1 J	0.087 U	NA	NA
Pyrene	0.52 J	0.18 U	0.2 U	50	250

Table 2-5 (Continued)

Groundwater Sample Analytical Results
Treatment Performance Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2004

Sample ID	MA3-TG1-1-093004-6	MA3-TG1-2-093004-7	MA3-TG1-3-093004-8	MA3-TG2-1-093004-3	MA3-TG2-2-093004-2	MA3-TG2-3-093004-1	WDNR	WDNR
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	PAL	ES
Sample Date	9/30/2004	9/30/2004	9/30/2004	9/30/2004	9/30/2004	9/30/2004	(ug/L)	(ug/L)
Units of measure	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l		
Parameter								
VOCS								
Benzene	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5	5
Ethylbenzene	29	0.2 J	0.2 U	0.2 U	0.2 U	0.2 U	140	700
Toluene	2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	68.6	343
Total Xylenes	41	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	124	650
PAHS								
Acenaphthene	1100	27	1.7 J	1.7 U	1.7 U	1.6 U	NA	NA
Acenaphthylene	92 J	1.7 U	1.6 U	1.7 U	1.7 U	1.6 U	NA	NA
Anthracene	200	0.69	0.069 J	0.041 U	0.042 U	0.041 U	600	3000
Benzo(a)anthracene	150	0.07 J	0.02 U	0.021 U	0.021 U	0.02 U	NA	NA
Benzo(a)pyrene	56	0.031 J	0.02 U	0.021 U	0.021 U	0.02 U	0.02	0.2
Benzo(b)fluoranthene	53	0.044 U	0.041 U	0.041 U	0.042 U	0.041 U	0.02	0.2
Benzo(g,h,i)perylene	23	0.11 U	0.1 U	0.1 U	0.1 U	0.1 U	NA	NA
Benzo(k)fluoranthene	32	0.022 U	0.02 U	0.021 U	0.021 U	0.02 U	NA	NA
Chrysene	120	0.087 U	0.082 U	0.083 U	0.083 U	0.082 U	0.02	0.2
Dibenz(a,h)anthracene	12 U	0.044 U	0.041 U	0.041 U	0.042 U	0.041 U	NA	NA
Fluoranthene	850	1.9	0.23	0.041 U	0.043 J	0.041 U	80	400
Fluorene	800	14	0.76 J	0.19 U	0.19 U	0.18 U	80	400
Indeno(1,2,3-cd)pyrene	11 U	0.087 U	0.082 U	0.083 U	0.083 U	0.082 U	NA	NA
Naphthalene	3200	15	1.6 U	1.7 U	1.7 U	1.6 U	8	40
Phenanthrene	1900	3.9	0.12 J	0.083 U	0.083 U	0.082 U	NA	NA
Pyrene	690	1.2	0.18 U	0.19 U	0.19 U	0.18 U	50	250

Table 2-5 (Continued)

Groundwater Sample Analytical Results
Treatment Performance Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2004

Sample ID	MA3-TG3-1-092904-4	MA3-TG3-2-092904-5	MA3-TG3-3-092904-6	MA3-TG4-1-092804-1	MA3-TG4-2-092804-2	MA3-TG4-3-092804-3	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/29/2004	9/29/2004	9/29/2004	9/28/2004	9/28/2004	9/28/2004		
Units of measure	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l		
Parameter								
VOCS								
Benzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5	5
Ethylbenzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	140	700
Toluene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	68.6	343
Total Xylenes	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	124	650
PAHS								
Acenaphthene	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U	NA	NA
Acenaphthylene	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U	NA	NA
Anthracene	0.04 U	0.041 U	0.039 U	0.042 U	0.041 U	0.04 U	600	3000
Benzo(a)anthracene	0.02 U	0.021 U	0.02 U	0.021 U	0.02 U	0.02 U	NA	NA
Benzo(a)pyrene	0.02 U	0.021 U	0.02 U	0.021 U	0.02 U	0.02 U	0.02	0.2
Benzo(b)fluoranthene	0.04 U	0.041 U	0.039 U	0.042 U	0.041 U	0.04 U	0.02	0.2
Benzo(g,h,i)perylene	0.1 U	0.1 U	0.098 U	0.1 U	0.1 U	0.1 U	NA	NA
Benzo(k)fluoranthene	0.02 U	0.021 U	0.02 U	0.021 U	0.02 U	0.02 U	NA	NA
Chrysene	0.081 U	0.082 U	0.078 U	0.083 U	0.082 U	0.08 U	0.02	0.2
Dibenz(a,h)anthracene	0.04 U	0.041 U	0.039 U	0.042 U	0.041 U	0.04 U	NA	NA
Fluoranthene	0.04 U	0.041 U	0.092 J	0.042 U	0.26	0.04 U	80	400
Fluorene	0.18 U	0.74 J	0.18 U	0.19 U	0.23 J	0.18 U	80	400
Indeno(1,2,3-cd)pyrene	0.081 U	0.082 U	0.078 U	0.083 U	0.082 U	0.08 U	NA	NA
Naphthalene	1.6 U	1.6 U	1.6 U	1.7 U	1.6 U	1.6 U	8	40
Phenanthrene	0.081 U	0.082 U	0.078 U	0.083 U	0.082 U	0.08 U	NA	NA
Pyrene	0.18 U	0.19 U	0.18 U	0.19 U	0.19 J	0.18 U	50	250

Table 2-5 (Continued)

Groundwater Sample Analytical Results
Treatment Performance Monitoring Well Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2004

Sample ID	MA3-TG5-1-092804-4	MA3-TG5-2-092804-5	MA3-TG5-3-092804-7	MA3-TG6-1-092904-1	MA3-TG6-2-092904-2	MA3-TG6-3-092904-3	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/28/2004	9/28/2004	9/28/2004	9/29/2004	9/29/2004	9/29/2004		
Units of measure	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l		
Parameter								
VOCS								
Benzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5	5
Ethylbenzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	140	700
Toluene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	68.6	343
Total Xylenes	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	124	650
PAHS								
Acenaphthene	1.5 U	1.6 U	1.7 U	1.6 U	1.5 U	1.7 U	NA	NA
Acenaphthylene	1.5 U	1.6 U	1.7 U	1.6 U	1.5 U	1.7 U	NA	NA
Anthracene	0.039 U	0.041 U	0.043 U	0.041 U	0.038 U	0.042 U	600	3000
Benzo(a)anthracene	0.019 U	0.021 U	0.021 U	0.021 U	0.019 U	0.021 U	NA	NA
Benzo(a)pyrene	0.019 U	0.023 J	0.021 U	0.021 U	0.019 U	0.021 U	0.02	0.2
Benzo(b)fluoranthene	0.039 U	0.041 U	0.043 U	0.041 U	0.038 U	0.042 U	0.02	0.2
Benzo(g,h,i)perylene	0.097 U	0.1 U	0.11 U	0.1 U	0.095 U	0.11 U	NA	NA
Benzo(k)fluoranthene	0.019 U	0.021 U	0.021 U	0.021 U	0.019 U	0.021 U	NA	NA
Chrysene	0.077 U	0.082 U	0.085 U	0.082 U	0.076 U	0.084 U	0.02	0.2
Dibenz(a,h)anthracene	0.039 U	0.041 U	0.043 U	0.041 U	0.038 U	0.042 U	NA	NA
Fluoranthene	0.039 U	0.075 J	0.045 J	0.046 J	0.091 J	0.058 J	80	400
Fluorene	0.17 U	0.18 U	0.19 U	0.19 U	0.17 U	0.19 U	80	400
Indeno(1,2,3-cd)pyrene	0.077 U	0.082 U	0.085 U	0.082 U	0.076 U	0.084 U	NA	NA
Naphthalene	1.5 U	1.6 U	1.7 U	1.6 U	1.5 U	1.7 U	8	40
Phenanthrene	0.077 U	0.082 U	0.085 U	0.082 U	0.076 U	0.084 U	NA	NA
Pyrene	0.17 U	0.18 U	0.19 U	0.19 U	0.17 U	0.19 U	50	250

Table 2-5 (Continued)

Groundwater Sample Analytical Results
Duplicate Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2004

Sample ID	MA3-TG2-1-093004-3-DP	MA3-MWC-092704-1-DP	MA3-MWD-092804-9-DP	MA3-MW32S-093004-11-DP	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/30/2004	9/27/2004	9/28/2004	9/30/2004		
Units of measure	ug/l	ug/l	ug/l	ug/l		
Parameter						
VOCS						
Benzene	0.2 U	0.2 U	0.2 U	0.2 U	0.5	5
Ethylbenzene	0.2 U	0.2 U	0.2 U	0.2 U	140	700
Toluene	0.2 U	0.2 U	0.2 U	0.2 U	68.6	343
Total Xylenes	0.6 U	0.6 U	0.6 U	0.6 U	124	650
PAHS						
Acenaphthene	1.7 U	1.7 U	1.6 U	1.6 U	NA	NA
Acenaphthylene	1.7 U	1.7 U	1.6 U	1.6 U	NA	NA
Anthracene	0.043 U	0.041 U	0.041 U	0.04 U	600	3000
Benzo(a)anthracene	0.021 U	0.021 U	0.02 U	0.02 U	NA	NA
Benzo(a)pyrene	0.021 U	0.021 U	0.02 U	0.02 U	0.02	0.2
Benzo(b)fluoranthene	0.043 U	0.041 U	0.041 U	0.04 U	0.02	0.2
Benzo(g,h,i)perylene	0.11 U	0.1 U	0.1 U	0.099 U	NA	NA
Benzo(k)fluoranthene	0.021 U	0.021 U	0.02 U	0.02 U	NA	NA
Chrysene	0.085 U	0.083 U	0.081 U	0.079 U	0.02	0.2
Dibenz(a,h)anthracene	0.043 U	0.041 U	0.041 U	0.04 U	NA	NA
Fluoranthene	0.043 U	0.041 U	0.041 U	0.04 U	80	400
Fluorene	0.19 U	0.19 U	0.18 U	0.18 U	80	400
Indeno(1,2,3-cd)pyrene	0.085 U	0.083 U	0.081 U	0.079 U	NA	NA
Naphthalene	1.7 U	1.7 U	1.6 U	1.6 U	8	40
Phenanthrene	0.085 U	0.083 U	0.081 U	0.079 U	NA	NA
Pyrene	0.19 U	0.19 U	0.18 U	0.18 U	50	250

Table 2-5 (Continued)

Groundwater Sample Analytical Results
Field Blank Samples
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2004

Sample ID	MA3-FB-092804-1	MA3-FB-092804-2	MA3-FB-093004-1	MA3-FB-093004-2	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/28/2004	9/28/2004	9/30/2004	9/30/2004		
Units of measure	ug/l	ug/l	ug/l	ug/l		
Parameter						
VOCS						
Benzene	0.2 U	0.2 U	0.2 U	0.2 U	0.5	5
Ethylbenzene	0.2 U	0.2 U	0.2 U	0.2 U	140	700
Toluene	0.2 U	0.2 U	0.2 U	0.2 U	68.6	343
Total Xylenes	0.6 U	0.6 U	0.6 U	0.6 U	124	650
PAHS						
Acenaphthene	1.7 U	1.8 U	1.8 U	1.9 U	NA	NA
Acenaphthylene	1.7 U	1.8 U	1.8 U	1.9 U	NA	NA
Anthracene	0.043 U	0.044 U	0.044 U	0.047 U	600	3000
Benzo(a)anthracene	0.021 U	0.022 U	0.022 U	0.023 U	NA	NA
Benzo(a)pyrene	0.021 U	0.022 U	0.022 U	0.023 U	0.02	0.2
Benzo(b)fluoranthene	0.043 U	0.044 U	0.044 U	0.047 U	0.02	0.2
Benzo(g,h,i)perylene	0.11 U	0.11 U	0.11 U	0.12 U	NA	NA
Benzo(k)fluoranthene	0.021 U	0.022 U	0.022 U	0.023 U	NA	NA
Chrysene	0.085 U	0.089 U	0.088 U	0.094 U	0.02	0.2
Dibenz(a,h)anthracene	0.043 U	0.044 U	0.044 U	0.047 U	NA	NA
Fluoranthene	0.043 U	0.044 U	0.044 U	0.047 U	80	400
Fluorene	0.19 U	0.2 U	0.2 U	0.21 U	80	400
Indeno(1,2,3-cd)pyrene	0.085 U	0.089 U	0.088 U	0.094 U	NA	NA
Naphthalene	1.7 U	1.8 U	1.8 U	1.9 U	8	40
Phenanthrene	0.085 U	0.089 U	0.088 U	0.094 U	NA	NA
Pyrene	0.19 U	0.2 U	0.2 U	0.21 U	50	250

Table 2-5 (Continued)

Groundwater Sample Analytical Results
Trip Blank Samples and Table Notes
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2004

Sample ID	MA3-TB	Trip_Blank	MA3-TB	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater		
Sample Date	9/28/2004	9/29/2004	9/30/2004		
Units of measure	ug/l	ug/l	ug/l		
Parameter					
VOCS					
Benzene	0.2 U	0.2 U	0.2 U	0.5	5
Ethylbenzene	0.2 U	0.2 U	0.2 U	140	700
Toluene	0.2 U	0.2 U	0.2 U	68.6	343
Total Xylenes	0.6 U	0.6 U	0.6 U	124	650

U-Constituent not detected. Detection limit indicated.
J-Estimated concentration.
VOC-Volatile Organic Compound.
PAH-Polynuclear Aromatic Hydrocarbon.
PAL-Wisconsin Department of Natural Resources (WDNR) Preventative Action Limit.
ES-Enforcement Standard (WDNR).
NA-Not Applicable. PAL or ES not available for this parameter.
NS-Not sampled due to frozen conditions.
Shaded values indicate concentration exceeding PAL.
Shaded and bold values indicate concentration exceeding PAL and ES.

Table 2-6

Concentration Trends in Groundwater Monitoring Wells
Fourth Quarter 2001 through Third Quarter 2004
Moss-American Site
Milwaukee, Wisconsin

	MW-7S	MW-32S	MW-33S	MW-34S	MW-35S	TG1-1
Benzene (ug/L)						
Fourth Quarter (December '01)	7.70 J	0.20 U	1.00 U	6.10 J	0.20 U	5.7
First Quarter (March '02)	3.6 J	0.20 U	1.00 U	8.9 J	0.20 U	4.3 J
Second Quarter (June '02)	0.43 J	0.20 U	2 J	12	0.20 U	3.2 J
Third Quarter (September '02)	5 U	0.20 U	4 UJ	10 UJ	0.20 U	1.3
Fourth Quarter (December '02)	4 U	0.20 U	2 U	5.6 J	0.20 U	4.9 J
First Quarter (March '03)	2.9 J	0.20 U	1.0 U	6.4 J	0.20 U	2.7 J
Second Quarter (June '03)	2.4 J	0.2 U	2 U	15 J	0.2 U	1.4 J
Third Quarter (September '03)	10 U	0.2 U	0.3 J	10 U	0.2 U	2 U
Fourth Quarter (December '03)	2.3 J	0.2 U	0.2 U	6.6	0.2 U	1 U
First Quarter (March '04)	4 U	0.2 U	4 J	5.7 J	0.2 U	1.5
Second Quarter (June '04)	2 U	0.2 U	1 U	7.8 J	0.2 U	1 U
Third Quarter (September '04)	2.2 J	0.2 U	1 U	7.1 J	0.2 U	2 U
Naphthalene (ug/L)						
Fourth Quarter (December '01)	3,300	1.00 U	2,100	6,700	1.00 U	2,600
First Quarter (March '02)	2,100	1.00 U	2,200	5,400	1.00 U	2,400
Second Quarter (June '02)	3,000	1.00 U	2,900	6,100	0.90 U	1,500
Third Quarter (September '02)	4,000	1.00 U	2,700	7,000	1.00 U	1,200
Fourth Quarter (December '02)	2,800	1.0 U	2,100	5,300	1.00 U	8,900
First Quarter (March '03)	2,800	1.0 U	2,300	6,100	1.00 U	1,900
Second Quarter (June '03)	3,400	1.2 U	2,500	6,100	1.2 U	1,300 J
Third Quarter (September '03)	3,800	1.3 U	2,600	5,000	1.2 U	5,800
Fourth Quarter (December '03)	3,000	1.4 U	58 J	6,500 J	1.3 U	1,500
First Quarter (March '04)	2,500	1.4 UJ	660 J	7,400	1.4 U	2,200
Second Quarter (June '04)	2,700	1.6 U	600	6,800	1.5 U	1,500
Third Quarter (September '04)	2,700	1.6 U	970	11,000 J	1.7 U	3,200

Table 2-6 (Continued)

Concentration Trends in Groundwater Monitoring Wells
Fourth Quarter 2001 through Third Quarter 2004
Moss-American Site
Milwaukee, Wisconsin

	MW-7S	MW-32S	MW-33S	MW-34S	MW-35S	TG1-1
Fluorene (ug/L)						
Fourth Quarter (December '01)	11	0.20 U	32	320	0.20 U	80
First Quarter (March '02)	8.0	0.20 U	37	80	0.20 U	270
Second Quarter (June '02)	7	0.20 U	50	120	0.20 U	70
Third Quarter (September '02)	11	0.20 U	60	130	0.20 U	330
Fourth Quarter (December '02)	11	0.20 UJ	59.0 J	170 J	0.20 UJ	3,400J
First Quarter (March '03)	9.5	1.9	62	150	0.20 U	230
Second Quarter (June '03)	8	0.17 U	72	84	0.18 U	170 J
Third Quarter (September '03)	11	0.19 U	88	86	0.18 U	2,400
Fourth Quarter (December '03)	8	0.18 U	0.84 J	180 J	0.17 U	150
First Quarter (March '04)	7	0.18 UJ	13	470	0.21 J	160
Second Quarter (June '04)	6.9	0.17 U	19	280	0.19 J	150
Third Quarter (September '04)	7.8	0.18 U	59	2100 J	1.3	800
Benzo(a) pyrene (ug/L)						
Fourth Quarter (December '01)	0.02 U	0.02 U	0.02 U	19	0.030 J	0.050 J
First Quarter (March '02)	0.02 U	0.02 U	0.02 U	0.2	0.020 U	23
Second Quarter (June '02)	0.02 J	0.02 U	0.02 U	4	0.02 U	0.05 J
Third Quarter (September '02)	0.20 U	0.02 U	0.02 U	0.78	0.02 U	25
Fourth Quarter (December '02)	0.20 U	0.02 UJ	0.02 UJ	5.6 J	0.02 UJ	290J
First Quarter (March '03)	0.20 U	0.02 U	0.02 U	3.2	0.02 U	15
Second Quarter (June '03)	0.02 U	0.02 U	0.02 U	0.18	0.02 U	7.9 J
Third Quarter (September '03)	0.022 U	0.29 J	0.021 U	0.047 J	0.02 U	190
Fourth Quarter (December '03)	0.019 U	0.02 U	0.02 U	5.9 J	0.028 J	5.9
First Quarter (March '04)	0.019 U	0.02 UJ	0.02 UJ	29	0.02 U	6.2
Second Quarter (June '04)	0.019 U	0.019 U	0.019 U	17	0.022 J	5.1
Third Quarter (September '04)	0.02 U	0.02 U	0.021 U	140 J	0.021 U	56

U - Constituent not detected; method detection limit (MDL) of the analysis reported.
J - Estimated concentration.
ug/L - Micrograms per liter.

Table 2-7

Groundwater Sample Analytical Results
Treatment Performance Monitoring Wells- Nutrient and Biological Parameters
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2004

	Sample Identification					
Parameter (mg/L)	TG1-1	TG1-2	TG1-3	TG2-1	TG2-2	TG2-3
Kjeldahl nitrogen	1.8	1.4	1.6	0.5 U	0.5 U	0.99 J
Nitrite	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
Nitrate (as N)	0.2 U	0.2 U	0.04 U	0.04 U	0.04 U	0.04 U
Ammonia Nitrogen	1.6	0.11 U	1.2	0.11 U	0.73 J	0.11 U
Ortho-Phosphate as P	0.01 U	0.011 J	0.01 U	0.01 U	0.01 U	0.01 U
Biochemical oxygen demand	7.1	5 U	6.9	1.9 U	3.2 U	4.6 U
Total Organic Carbon	11.8	13	13	3.5	3	8.9
Total Phosphorus as PO4 water	0.12 U	0.15 J	0.24	0.12 U	0.12 U	0.31
Chemical oxygen demand	57.6	33.1	30.4	7 J	7.4 J	20.2
Total Microbial Population (mean) (cfu/mL)	870	29,000	4,000	900	8,700	4,100
Degrader Microbial Population (mean) (cfu/mL)	20	400	10	10 U	20	10

	Sample Identification					
Parameter (mg/L)	TG3-1	TG3-2	TG3-3	TG4-1	TG4-2	TG4-3
Kjeldahl nitrogen	0.65 J	0.91 J	1.8	0.82 J	1.1	1.2
Nitrite	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
Nitrate (as N)	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Ammonia Nitrogen	0.11 U	0.11 U	1.8	0.11 U	0.87 J	0.37 J
Ortho-Phosphate as P	0.01 U	0.01 U	0.018 J	0.01 J	0.012 J	0.01 U
Biochemical oxygen demand	1.4 U	3.4 U	5.6	2.1 U	2.9 U	1.7 U
Total Organic Carbon	9.4	8.2	12.2	7.2	10.4	10
Total Phosphorus as PO4 water	0.6 U	0.6 U	0.12 U	0.24	0.12 U	0.12 U
Chemical oxygen demand	23.2	20	32	18	27.6	25.6
Total Microbial Population (mean) (cfu/mL)	4.2E+03	4.2E+02	1.2E+02	6.1E+05 J	6.0E+03 J	1.4E+05 J
Degrader Microbial Population (mean) (cfu/mL)	5.0E+02	10 U	10 U	4.0E+04 J	10 UJ	1.2E+04 J

	Sample Identification					
Parameter (mg/L)	TG5-1	TG5-2	TG5-3	TG6-1	TG6-2	TG6-3
Kjeldahl nitrogen	0.5 U	0.9 J	0.91 J	2.1	1.3	0.89 J
Nitrite	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
Nitrate (as N)	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U
Ammonia Nitrogen	0.2 J	0.92 J	0.71 J	1.8	0.46 J	0.96 J
Ortho-Phosphate as P	0.017 J	0.01 U	0.012 J	0.012 J	0.01 U	0.011 J
Biochemical oxygen demand	2 U	1.9 U	1.9 U	2.9 U	1.8 U	1.4 U
Total Organic Carbon	4.9	7.3	7	14.1	9.8	8.3
Total Phosphorus as PO4 water	0.12 U	0.12 U	0.12 U	0.6 U	0.12 U	0.6 U
Chemical oxygen demand	12	18	16.4	32.8	25.2	21.2
Total Microbial Population (mean) (cfu/mL)	4.1E+04 J	1.4E+05 J	9.2E+03 J	7.0E+02	7.9E+03	1.2E+03
Degrader Microbial Population (mean) (cfu/mL)	1.0E+03 J	20 J	1.3E+03 J	10 U	10 U	10

U-Constituent not detected. Detection limit indicated.
J-Estimated concentration.

SECTION 3
EVALUATION OF PILOT SCALE OPERATIONS

Augmentation of the groundwater treatment system was initiated in October 2000 by injecting air at the treatment gates. In late June 2001, nutrient addition was initiated at TG1 using a solution containing potassium nitrate (KNO_3) and potassium phosphate ($KHPO_4$). System modifications were proposed in the Q2 2002 Quarterly Groundwater Treatment Performance Monitoring Report and are discussed in this section. Information regarding system performance is also presented.

3.1 DISSOLVED OXYGEN

DO levels remained slightly elevated in most of the wells during Q3 2004. During the previous sampling in Q1 2004, the DO concentrations in many of the wells exceeded 1.0 mg/L, which was attributed to an unusually large volume of precipitation prior to Q1 2004 that could infiltrate and provide oxygenated water to the groundwater system. The concentrations of DO exceeded 1.0 in wells in MW-27S, MW-33S, TG1-2, TG3-1 and TG5-1 during Q3 2004. It appears that the DO concentrations are potentially still dropping from the higher concentrations observed in Q1 2004, and are expected to return to normal.

$N\text{-}NO_3$ and $N\text{-}NO_2$ were not detected in any treatment performance wells. This indicates that nitrogen is primarily present in its reduced state, and a reducing environment exists in the wells. Nitrogen data were not collected for the shallow monitoring wells.

Well packers were installed in the TG5 injection wells in June 2000; however, no discernable change in the DO levels had been observed in the TG5 wells until Q1 and Q2 2003. KMC/WESTON attempted to install inflatable bladder packers in TG1 and TG2 injection wells in August 2001. However, the packers could not be properly installed due to the injection well configuration.

KMC/WESTON will continue to evaluate alternatives for air introduction into the treatment gates.

3.2 NUTRIENTS AND pH

Nutrient injection was discontinued at gate area TG1 as a part of the site modifications recommended in the Q2 2002 Monitoring Report. This took place at the end of October 2002, after the Agencies granted approval. However, nutrient and contaminant levels will still be monitored.

Recommended guidelines for bioremediation of contaminants in site groundwater include a pH range of 5.5 to 8.5 S.U. and a minimum carbon-nitrogen-phosphorous (C:N:P) ratio of 100:14:1. The range of pH values measured in the treatment performance monitoring wells (6.29 to 7.51 S.U.) is sufficient to facilitate biological activity. Table 3-1 contains calculated C:N:P ratios for each of the treatment performance monitoring wells. During Q3 2004, the treatment performance monitoring wells did not exhibit the desired C:N:P ratio of 100:14:1. Nitrogen and phosphorous appear to be the limiting nutrients at the site.

3.3 BACTERIAL POPULATIONS

Total bacterial counts in the performance monitoring wells decreased in some wells while the counts increased in other wells during Q3 2004 when compared to Q2 2004 counts. The degrader bacterial counts showed similar trends to the total bacterial counts. Figure 3-1 compares the degrader populations in TG1 and TG2 since Q1 2001. As indicated in Figure 3-1, there has been a trend of general decrease in the degrader bacterial population levels in TG1 and TG2 since Q1 2001. It is not known what the cause of this bacterial decrease is at the site. However, this decrease in degrader bacterial population needs to be closely monitored so that actions to augment the degrader population can be implemented as necessary.

3.4 HYDROGEOLOGY

KMC/WESTON identified a potential concern associated with the site hydrogeology in the Q2 2001 Monitoring Report. This concern is primarily based on the premise that low flow conditions may cause anoxic conditions and may inhibit KMC/WESTON's ability to introduce nutrients and other additives at an optimum level due to poor dispersion from the injection point. Low flow conditions are apparent based on the hydraulic gradient and flow velocities derived. A low flow velocity may be indirectly beneficial as a longer residence time in the treatment gate may allow for more effective biodegradation. No significant change was observed in relation to site hydrogeology during Q3 2004.

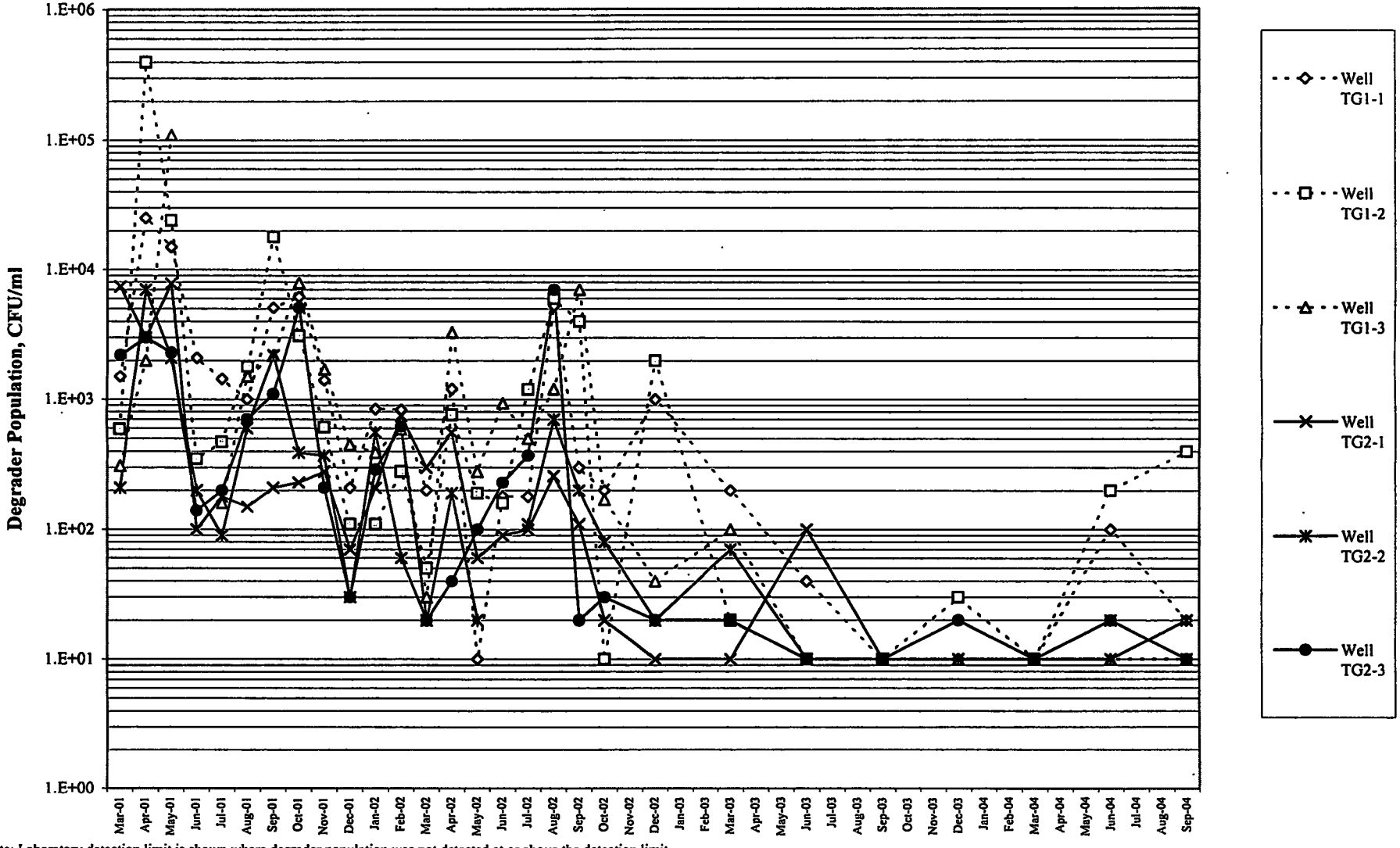
3.5 SITE MODIFICATIONS

Per the Q2 2002 Monitoring Report recommendations, modifications have been made to the system at the site. In October 2002, the performance monitoring well sampling frequency and scope reductions went into effect following the Agencies' approval. Groundwater sampling was revised to a quarterly sampling regime instead of a monthly sampling regime. Also, shallow monitoring wells MW-3S, MW-10S, MW-13S, MW-25S, MW-26S, and MW-20S as well as intermediate wells MW-3I, MW-7I, MW-9I, and MW-20I were removed from the groundwater monitoring program. However, these wells were not abandoned, per WDNR's request. Water levels will continue to be gathered from these wells on a quarterly basis to assist with the production of the groundwater elevation contour map. Nutrient injection at gate TG1 was also discontinued.

The hydrogeologic investigation proposed in the Q2 2002 Monitoring Report took place in December 2002. This work included the installation of nine piezometers (PZ-01 thru PZ-07, PZ-09, and PZ-10) as well as a staff gauge (SG-1). Records were updated with this information, and used to prepare the groundwater elevation contour map for this quarter.

Figure 3-1

Comparison of Degrader Populations in Treament Gates 1 and 2 since Q2 2001
Moss-American Site
Milwaukee, Wisconsin



Note: Laboratory detection limit is shown where degrader population was not detected at or above the detection limit.

Table 3-1

Calculation of Carbon:Nitrogen:Phosphorous Ratios
Treatment Performance Monitoring Wells
Moss-American Site
Milwaukee, Wisconsin
Third Quarter 2004

Well	Carbon[1], mg/L	Total Nitrogen[2], mg/L	Phosphorous[3], mg/L	C-N-P Ratio (100-14-1 desired)		
TG1-1	11.8	1.6	ND	100	13.56	0.00
TG1-2	13	ND	0.011	100	0.00	0.08
TG1-3	13	1.2	ND	100	9.23	0.00
TG2-1	3.5	ND	ND	100	0.00	0.00
TG2-2	3	0.73	ND	100	24.33	0.00
TG2-3	8.9	ND	ND	100	0.00	0.00
TG3-1	9.4	ND	ND	100	0.00	0.00
TG3-2	8.20	ND	ND	100	0.00	0.00
TG3-3	12.2	1.8	0.018	100	14.75	0.15
TG4-1	7.2	ND	0.01	100	0.00	0.14
TG4-2	10.4	0.87	0.012	100	8.37	0.12
TG4-3	10	0.37	ND	100	3.70	0.00
TG5-1	4.90	0.20	0.02	100	4.08	0.35
TG5-2	7.3	0.92	ND	100	12.60	0.00
TG5-3	7	0.71	0.012	100	10.14	0.17
TG6-1	14.10	1.80	0.01	100	12.77	0.09
TG6-2	9.8	0.46	ND	100	4.69	0.00
TG6-3	8.3	0.96	0.011	100	11.57	0.13
Site Average	9.00	0.60	0.01	100	6.67	0.14

1 - Carbon measured as Total Organic Carbon (non-purgable).
2 - Nitrogen measured as NH_3-N, NO_2-N, and NO_3-N.
3 - Phosphorous measured as phosphate (PO_4-P).
ND - Constituent not detected.

Shaded values indicate values at or above desired quantity.

SECTION 4
REACH 1 GROUNDWATER MONITORING RESULTS

The September 2004 groundwater-monitoring event included the annual sampling event at the Reach 1 monitoring network at the Moss-American site. The Reach 1 monitoring wells include MW-A, MW-B, MW-C and MW-D, and are shown in Figure 4-1. The first Reach 1 monitoring well sampling occurred in September 2003 during on-site Q3 2003 groundwater sampling event. Similar to the on-site wells, groundwater elevation and DO data were collected from the Reach 1 wells prior to sampling each monitoring well. The results of the annual Reach 1 groundwater sampling event are described in the following subsections.

4.1 GROUNDWATER SAMPLE ANALYTICAL RESULTS

Groundwater samples were collected from a total of four Reach 1 groundwater monitoring wells: MW-A, MW-B, MW-C and MW-D.

Quality control samples were collected in conjunction with the on-site groundwater monitoring network sampling effort and the results of quality control sample analytical results are shown in Table 2-5.

4.1.1 Field-Measured Parameters

The groundwater samples were measured in the field for pH, specific conductance, temperature, redox potential, DO, and turbidity. The field parameters were collected using a YSI 556 portable water quality meter and a HS Scientific DRT-15CE turbidimeter. Downhole DO readings were collected from each monitoring well prior to purging the well for groundwater sample collection. The groundwater pH, redox potential, specific conductance, temperature, and turbidity were monitored during well purging prior to sampling. The final (stabilized) values for these measurements prior to sample collection are presented in Table 4-1.

4.1.2 Laboratory Analyses

Each groundwater sample collected from the Reach 1 monitoring well network during the September 2004 sampling event was analyzed for BTEX and PAH compounds. The results of these analyses are presented and compared to WDNR Preventive Action Limits (PALs) and Enforcement Standards (ESs) in Table 4-2. The only constituent detected was toluene in MW-B at a concentration of 0.2 ug/L, which is significantly below the PAL of 68.6 ug/L. PAHs were not detected in any of the samples collected from Reach 1 monitoring wells. As shown in Table 4-3, toluene was not detected in the MW-B sample collected in September 2003. Table 4-3 also shows the detection of anthracene at concentrations of 0.05 and 0.054 ug/L in monitoring wells MW-B and MW-D, respectively. However, anthracene was not detected in any of the samples during the September 2004 sampling event. Based on the above observations, the Reach 1 monitoring wells do not show chemical impacts and continue to demonstrate effectiveness of the remedy. The results of the laboratory analyses performed on the Reach 1 groundwater samples collected during September 2004 are provided in Appendix A.

Monitoring wells for Reaches 2 and 3 were installed in mid-December 2004.

0 400'
SCALE

LEGEND

—— – —— CURRENT (NEW) CHANNEL

—— – —— OLD CHANNEL

◆ MONITORING WELLS

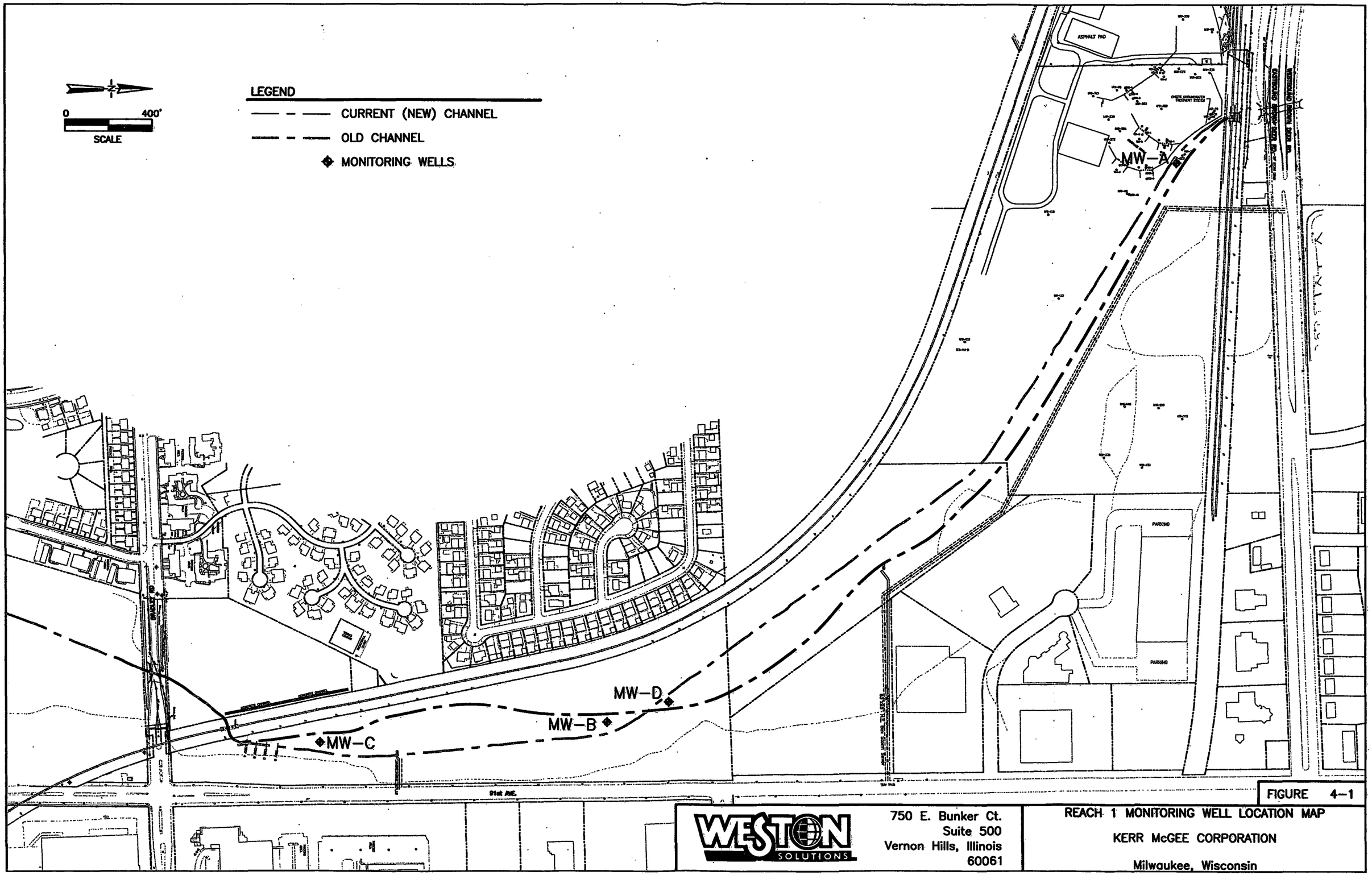


FIGURE 4–1

WESTON SOLUTIONS

750 E. Bunker Ct.
Suite 500
Vernon Hills, Illinois
60061

REACH 1 MONITORING WELL LOCATION MAP

KERR McGEE CORPORATION

Milwaukee, Wisconsin

Table 4-1

Field-Measured Parameters
Reach 1 Monitoring Wells
Moss-American Site
Milwaukee, Wisconsin
September 2004

Sample ID	pH (Standard Units)	Specific Conductance (mohm/cm)	Temperature (Deg C)	Redox Potential (mV)	Dissolved Oxygen (mg/L)	Turbidity (NTU)
MW-A	6.87	0.675	16.01	144	0.4	1.2
MW-B	6.82	1.108	15.07	143.8	0.27	15.6
MW-C	6.03	0.806	13.74	97.2	0.55	19.47
MW-D	6.87	1.169	14.74	146.7	0.35	17.1

Table 4-2 (Continued)

Groundwater Sample Analytical Results
Reach 1 Monitoring Wells
Moss-American Site
Milwaukee, Wisconsin
September 2004

Sample ID	MA3-MWA-092804-6	MA3-MWB-092804-10	MA3-MWC-092704-1	MA3-MWD-092804-9	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date	9/28/2004	9/28/2004	9/27/2004	9/28/2004		
Units of measure	ug/l	ug/l	ug/l	ug/l		
Parameter						
VOCS						
Benzene	0.2 U	0.2 U	0.2 U	0.2 U	0.5	5
Ethylbenzene	0.2 U	0.2 U	0.2 U	0.2 U	140	700
Toluene	0.2 U	0.2 J	0.2 U	0.2 U	68.6	343
Total Xylenes	0.6 U	0.6 U	0.6 U	0.6 U	124	650
PAHS						
Acenaphthene	1.7 U	1.7 U	1.6 U	1.6 U	NA	NA
Acenaphthylene	1.7 U	1.7 U	1.6 U	1.6 U	NA	NA
Anthracene	0.042 U	0.042 U	0.04 U	0.04 U	600	3000
Benzo(a)anthracene	0.021 U	0.021 U	0.02 U	0.02 U	NA	NA
Benzo(a)pyrene	0.021 U	0.021 U	0.02 U	0.02 U	0.02	0.2
Benzo(b)fluoranthene	0.042 U	0.042 U	0.04 U	0.04 U	0.02	0.2
Benzo(g,h,i)perylene	0.11 U	0.1 U	0.1 U	0.1 U	NA	NA
Benzo(k)fluoranthene	0.021 U	0.021 U	0.02 U	0.02 U	NA	NA
Chrysene	0.084 U	0.084 U	0.08 U	0.081 U	0.02	0.2
Dibenz(a,h)anthracene	0.042 U	0.042 U	0.04 U	0.04 U	NA	NA
Fluoranthene	0.042 U	0.042 U	0.04 U	0.04 U	80	400
Fluorene	0.19 U	0.19 U	0.18 U	0.18 U	80	400
Indeno(1,2,3-cd)pyrene	0.084 U	0.084 U	0.08 U	0.081 U	NA	NA
Naphthalene	1.7 U	1.7 U	1.6 U	1.6 U	8	40
Phenanthrene	0.084 U	0.084 U	0.08 U	0.081 U	NA	NA
Pyrene	0.19 U	0.19 U	0.18 U	0.18 U	50	250

Table 4-2 (Continued)

Groundwater Sample Analytical Results
Table Notes
Moss-American Site
Milwaukee, Wisconsin
September 2004

U-Constituent not detected. Detection limit indicated.
J-Estimated concentration.
VOC-Volatile Organic Compound.
PAH-Polynuclear Aromatic Hydrocarbon.
PAL-Wisconsin Department of Natural Resources (WDNR) Preventative Action Limit.
ES-Enforcement Standard (WDNR).
NA-Not Applicable. PAL or ES not available for this parameter.
NS-Not sampled due to frozen conditions.
Shaded values indicate concentration exceeding PAL.
Shaded and bold values indicate concentration exceeding PAL and ES.

Table 4-3

Groundwater Sample Analytical Results
Reach 1 Monitoring Wells Samples
Moss-American Site
Milwaukee, Wisconsin
September 2003

Sample ID:	MA3-MW-A-260903-12	MA3-MWB-250903-08	MA3-MWC-250903-07	MA3-MWD-250903-09	WDNR PAL (ug/L)	WDNR ES (ug/L)
Sample Matrix:	Groundwater	Groundwater	Groundwater	Groundwater		
Sample Date:	9/26/2003	9/25/2003	9/25/2003	9/25/2003		
Units of Measure:	ug/L	ug/L	ug/L	ug/L		
Parameters						
VOCs						
Benzene	0.2 U	0.2 U	0.2 U	0.2 U	0.5	5
Ethylbenzene	0.2 U	0.2 U	0.2 U	0.2 U	140	700
Toluene	0.2 U	0.2 U	0.2 U	0.2 U	68.6	343
Total Xylenes	0.6 U	0.6 U	0.6 U	0.6 U	124	650
PAHs						
Acenaphthene	1.6 U	1.6 U	1.6 U	1.8 U	NA	NA
Acenaphthylene	1.6 U	1.6 U	1.6 U	1.8 U	NA	NA
Anthracene	0.041 U	0.05 J	0.041 U	0.054 J	600	3000
Benzo(a)anthracene	0.02 U	0.02 U	0.02 U	0.022 U	NA	NA
Benzo(a)pyrene	0.02 U	0.02 U	0.02 U	0.022 U	0.02	0.2
Benzo(b)fluoranthene	0.041 U	0.041 U	0.041 U	0.044 U	0.02	0.2
Benzo(g,h,i)perylene	0.1 U	0.1 U	0.1 U	0.11 U	NA	NA
Benzo(k)fluoranthene	0.02 U	0.02 U	0.02 U	0.022 U	NA	NA
Chrysene	0.081 U	0.082 U	0.081 U	0.089 U	0.02	0.2
Dibenz(a,h)anthracene	0.041 U	0.041 U	0.041 U	0.044 U	NA	NA
Fluoranthene	0.041 U	0.041 U	0.041 U	0.044 U	80	400
Fluorene	0.18 U	0.18 U	0.2 UJ	0.2 U	80	400
Indeno(1,2,3-cd)pyrene	0.081 U	0.082 U	0.081 U	0.089 U	NA	NA
Naphthalene	1.2 U	1.2 U	1.2 U	1.3 U	8	40
Phenanthrene	0.081 U	0.082 U	0.081 U	0.089 U	NA	NA
Pyrene	0.18 U	0.18 U	0.18 U	0.2 U	50	250

Table 4-3 (Continued)

Groundwater Sample Analytical Results
Table Notes
Moss-American Site
Milwaukee, Wisconsin
September 2003

U-Constituent not detected. Detection limit indicated.
J-Estimated concentration.
VOC-Volatile Organic Compound.
PAH-Polynuclear Aromatic Hydrocarbon.
PAL-Wisconsin Department of Natural Resources (WDNR) Preventative Action Limit.
ES-Enforcement Standard (WDNR).
NA-Not Applicable. PAL or ES not available for this parameter.
NS-Not sampled due to frozen conditions.
Shaded values indicate concentration exceeding PAL.
Shaded and bold values indicate concentration exceeding PAL and ES.

SECTION 5

REFERENCES

Weston Solutions, Inc. (WESTON). 1999. *Quality Assurance Project Plan for Installation of Groundwater Remedial System.* October 1999.

WESTON. 2001. *Quality Assurance Project Plan for Installation of Groundwater Remedial System Addendum No.1.* May 2001.

APPENDIX A

SEPTEMBER 2004 GROUNDWATER SAMPLE ANALYTICAL RESULTS

Kerr-McGee
Moss American site
Milwaukee, Wisconsin
SDG# KMA58

water samples – BTEX

1. Holding Times:

Lab ID	Client ID MA3-	Sample Date	Analysis Date
4362628	MW-30S	9/27/04	9/29/04
4362629	MW-5S	9/27/04	9/29/04
4362630	MW-C	9/27/04	9/29/04
4362631	MW-CDP	9/27/04	9/29/04
4363320	FB	9/28/04	10/1/04
4363321	FB	9/28/04	10/1/04
4363322	MW9S	9/28/04	10/1/04
4363323	MWA	9/28/04	10/2/04
4363324	MWB	9/28/04	10/1/04
4363327	MWD	9/28/04	10/2/04
4363328	MWD-DP	9/28/04	10/2/04
4363329	TG4-1	9/28/04	10/2/04
4363330	TG4-2	9/28/04	10/2/04
4363331	TG4-3	9/28/04	10/2/04
4363332	TG5-1	9/28/04	10/2/04
4363333	TG5-2	9/28/04	10/2/04
4363334	TG5-3	9/28/04	10/2/04
4363335	TB	9/28/04	10/1/04

All samples were analyzed and extracted within the required holding times.

2. Method Blank:

Five method blanks were associated with the BTEX samples (BLK2048, 2049, 2051, 2052, and 2053). All blanks were free of contamination.

3. Initial and Continuing Calibration:

For the BTEX samples, all initial and continuing calibration criteria appears to have been achieved. No deficiencies were noted in the laboratory narrative.

4. Surrogate Recovery-:

The surrogate recoveries for the BTEX surrogate (TFT) were all within required QC limits.

5. Matrix Spike/Matrix Spike Duplicate (MS/MSD):

Sample MWB was designated as the MS/MDSD. All recoveries were within required control limits.

6. Laboratory Control Sample:

Two LCS were associated with the samples. All laboratory control sample results were acceptable.

7. Trip Blanks:

The trip blank results were non-detect. All results are acceptable.

8. Field Blanks:

Two field blanks were in this batch. All BTEX results were non-detect. All results are acceptable.

9. Field Duplicates:

Samples MWC/C DP and MWD/D DP are field duplicates. Results show good correlation.

Water Samples – Polynuclear Aromatic Hydrocarbons (PAHs by HPLC)

1. Holding Times:

Lab ID	Client ID	Sample Date	Extraction Date	Analysis Date
4362628	MW-30S	9/27/04	10/1/04	10/2/04
4362629	MW-5S	9/27/04	10/1/04	10/2/04
4362630	MW-C	9/27/04	10/1/04	10/2/04
4362631	MW-CDP	9/27/04	10/1/04	10/2/04
4363320	FB	9/28/04	10/1/04	10/2/04
4363321	FB	9/28/04	10/1/04	10/2/04
4363322	MW9S	9/28/04	10/1/04	10/2/04
4363323	MWA	9/28/04	10/1/04	10/2/04
4363324	MWB	9/28/04	10/1/04	10/2/04
4363327	MWD	9/28/04	10/1/04	10/3/04
4363328	MWD-DP	9/28/04	10/1/04	10/3/04
4363329	TG4-1	9/28/04	10/1/04	10/3/04
4363330	TG4-2	9/28/04	10/1/04	10/3/04
4363331	TG4-3	9/28/04	10/1/04	10/3/04
4363332	TG5-1	9/28/04	10/1/04	10/3/04
4363333	TG5-2	9/28/04	10/1/04	10/3/04
4363334	TG5-3	9/28/04	10/1/04	10/3/04

All samples were analyzed and extracted within the required holding times.

2. Method Blank:

One method blanks was associated with the samples (SBLKF2742). The method blank results were free of contamination.

3. Initial and Continuing Calibration:

Calibration results were acceptable.

4. Surrogate Recovery:

All surrogate recoveries were within required control limits.

5. Matrix Spike/Matrix Spike Duplicate:

Matrix QC was performed on sample MWB. All recoveries and RPDs were within required control limits.

6. Laboratory Control Sample:

One LCS was associated with the samples. All LCS recoveries were within required control limits.

7. Field Blanks:

Two field blanks were analyzed with this set. The field blank results were non-detect.

8. Field Duplicates:

Samples MWC/C DP and MWD/D DP are field duplicates. Results show good correlation.

Data reviewed by: T. Balla Date: 11/15/04

Sample Reference List for SDG Number KMA58
with a Data Package Type of I

07802 - Kerr-McGee Corporation
Moss American Site - WI

Lab Sample Number	Lab Sample Code	Client Sample Description				
4362628	W30S3	MA3-MW-30S	MA3-MW30S-092704-3	Groundwater	1-092704	02687.007.006.0001
4362629	MW5S2	MA3-MW-5S	MA3-MW5S-092704-2	Groundwater	1-092704	02687.007.006.0001
4362630	MWC-1	MA3-MW-C	MA3-MWC-092704-1	Groundwater	1-092704	02687.007.006.0001
4362631	MWC1D	MA3-MWC-DP	MA3-MWC-092704-1-DP	Groundwater	1-092704	02687.007.006.0001
4363320	3FB-1	MA3-FB	MA3-FB-092804-1	Water	5,6-092804	02687.007.006.0001
4363321	3FB-2	MA3-FB	MA3-FB-092804-2	Water	5-092804	02687.007.006.0001
4363322	MW9S8	MA3-MW9S	MA3-MW9S-092804-8	Groundwater	2,5-092804	02687.007.006.0001
4363323	MWA-6	MA3-MWA	MA3-MWA-092804-6	Groundwater	1,5-092804	02687.007.006.0001
4363324	MWB10	MA3-MWB	MA3-MWB-092804-10	Groundwater	1,5-092804	02687.007.006.0001
4363325	MWB10	MA3-MWB	MA3-MWB-092804-10-MS	Groundwater	1,5-092804	02687.007.006.0001
4363326	MWB10	MA3-MWB	MA3-MWB-092804-10-MSD	Groundwater	1,5-092804	02687.007.006.0001
4363327	MWD-9	MA3-MWD	MA3-MWD-092804-9	Groundwater	5,6-092804	02687.007.006.0001
4363328	MWD9D	MA3-MWD	MA3-MWD-092804-9-DP	Groundwater	5,6-092804	02687.007.006.0001
4363329	TG4-1	MA3-TG4-1	MA3-TG4-1-092804-1	Groundwater	5,6-092804	02687.007.006.0001
4363330	TG4-2	MA3-TG4-2	MA3-TG4-2-092804-2	Groundwater	1,3,5-092804	02687.007.006.0001
4363331	TG4-3	MA3-TG4-3	MA3-TG4-3-092804-3	Groundwater	3,5-092804	02687.007.006.0001
4363332	TG5-1	MA3-TG5-1	MA3-TG5-1-092804-4	Groundwater	2,3,5-092804	02687.007.006.0001
4363333	TG5-2	MA3-TG5-2	MA3-TG5-2-092804-5	Groundwater	2,3,5-092804	02687.007.006.0001
4363334	TG5-3	MA3-TG5-3	MA3-TG5-3-092804-7	Groundwater	2,5-092804	02687.007.006.0001
4363335	MA-TB	MA3-TB	MA3-TB	Water	NA	02687.007.006.0001

7802 913862 4362628-31

COC ID: COC1-092704

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT: Standard

Contact Name: Tom Graan
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	SW846 8021B-BTEX	SW846 8310-PAHS								
						Filtered									
						Container	40 ml Vials	1-L Amber							
						Preservative	HCl	N/A							
	MA3-MW30S-092704-3	G		N	9/27/2004 18:45	3	2								
	MA3-MW5S-092704-2	G		N	9/27/2004 18:30	3	2								
	MA3-MWC-092704-1	G		N	9/27/2004 14:45	3	2								
	MA3-MWC-092704-1-DP	G		N	9/27/2004 14:45	3	2								

Remarks/Comments

COOLER TEMP SHOWN IS FROM LL DOCUMENTATION LOG. GW 10/4/04

Sampled By: Mike Castillo

Lab Use Only

Temp of Cooler when Received, C: 1 6 | 2 | 3 | 4 | 5

COC Tape was present on outer package (Y) N
COC Tape was unbroken on outer package (Y) N
COC Tape ws present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition (Y) N
Labels indicate Properly Preserved (Y) N
Received within Holding Time (Y) N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
	9-27-04/20:00						
						Kevin Stanley	9-28-04 0935

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration Receipt Documentation Log

(Kerr mcGee) (IL)

Client/Project: Weston Solutions Inc **Shipping Container Sealed:** (Y) / N

Date of Receipt: 9-28-04 **Custody Seal Present:** (Y) / N

Time of Receipt: 0935 **Custody Seal Intact:** (Y) / N / NA

Source Code: 50-1 **Package:** Chilled / Not Chilled

Unpacker Emp. No.: 1255

Temperature of Shipping Containers	
#1	#2
Thermometer ID: 8886	Thermometer ID:
Temp.: 6.°	Temp.:
(Temp. Bottle) / Surface Temp.	Temp. Bottle / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose / (Bagged)	Ice Present? Y / N Loose / Bagged
#3	#4
Thermometer ID:	Thermometer ID:
Temp.:	Temp.:
Temp. Bottle / Surface Temp.	Temp. Bottle / Surface Temp.
Wet Ice / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? Y / N Loose / Bagged	Ice Present? Y / N Loose / Bagged

Paperwork Discrepancy/Unpacking Problems: MA3-MWC-092704-1 (diff times IDP(" ")

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
Kathy Bentley	9-28-04	1130	Unpacking
Annelise Hutchison	9/28/04	1200	(Place in Storage) or Entry
Annelise Hutchison	9/28/04	1312	Remove from Storage (Entry)
			Place in Storage or Entry
			Entry

0003

7802 914023 43633 20-35

COC ID: COC3-092804

Chain of Custody Record

WESTON

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT:

Contact Name: Tom Grean
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 350.2-NH3	SW846 8310-PAHS	TKN, TP PO4,COD							
						Filtered									
						Container	1-L Glass	1-L Amber	1-L Glass						
						Preservative	N/A	N/A	N/A						
	MA3-TG4-2-092804-2	G		N	9/28/2004 10:30	1		1							
	MA3-TG4-3-092804-3	G		N	9/28/2004 10:40	1	2	1							
	MA3-TG5-1-092804-4	G		N	9/28/2004 12:15	1		1							
	MA3-TG5-2-092804-5	G		N	9/28/2004 12:20		2								

Remarks/Comments
COOLER TEMPS SHOWN ARE FROM LLL DOCUMENTATION
LOG. GAF 10/4/04

Sampled By M. Pihl

Lab Use Only
Temp of Cooler when Received, C
1: 3.8 | 2: 3.5 | 3: 2.5 | 4: 9.0 | 5: 4.7

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition Y N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[illegible]	9/28/04 1100						
						[illegible]	9-29-04 0930

7802 914023 4363320-35

COC ID: COC5-092804

Chain of Custody Record

WESTON

Client	Kerr McGee		
Site Name	Moss American	Contact Name	Tom Graan
W. O.	02887.007.008.0001	Contact Phone No.	847-918-4142
Lab	LANCASTER LABS	Lab Contact	C. SWEIGART
TAT		Lab Phone	717-856-2308 X1527

	EPA 353.2-NO2 &NO3	EPA 353.2-NO2 &NO3	EPA 365.3-ORTHO P, EPA 405.1-BOD	EPA 415.1-TOC	SW846 8021B-BTEX	SW846 8310-PAHS				
Filtered										
Container	40 ml Vials	40 ml Vials	500-ml Poly	250 ml Glass	40 ml Vials	1-L Amber				
Preservative	H2SO4	N/A	N/A	N/A	HCl	N/A				

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 353.2-NO2 &NO3 (H2SO4)	EPA 353.2-NO2 &NO3 (N/A)	EPA 365.3-ORTHO P, EPA 405.1-BOD	EPA 415.1-TOC	SW846 8021B-BTEX	SW846 8310-PAHS				
	MA3-FB-092804-1	G		N	9/28/2004 15:00					3					
	MA3-FB-092804-2	G		N	9/28/2004 17:30					3	2				
	MA3-MW9S-092804-8	G		N	9/28/2004 13:15					3					
	MA3-MWA-092804-6	G		N	9/28/2004 12:30					3					
	MA3-MWB-092804-10	G		N	9/28/2004 16:10					3					
	MA3-MWB-092804-10-MSD	G		Y	9/28/2004 16:10					6					
	MA3-MWD-092804-9	G		N	9/28/2004 16:00					3					
	MA3-MWD-092804-9-DP	G		N	9/28/2004 16:00					3					
	MA3-TG4-1-092804-1	G		N	9/28/2004 10:20	1	1	1	1	3					
	MA3-TG4-2-092804-2	G		N	9/28/2004 10:30	1	1	1	1	3					
	MA3-TG4-3-092804-3	G		N	9/28/2004 10:40	1	1	1	1	3					
	MA3-TG5-1-092804-4	G		N	9/28/2004 12:15	1	1	1	1	3					
	MA3-TG5-2-092804-5	G		N	9/28/2004 12:20	1	1	1	1	3					
	MA3-TG5-3-092804-7	G		N	9/28/2004 13:10	1	1	1	1	3					

Remarks/Comments

COOLER TEMPS SHOWN ARE FROM LLI DOCUMENTATION LOG. OAF 10/4/04

Sampled By [illegible signature]

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5
3.8	3.5	2.5	9.0	4.7

COC Tape was present on outer package Y N

COC Tape was unbroken on outer package Y N

COC Tape was present on sample Y N

COC Tape was unbroken on sample Y N

Received in good condition Y N

Labels Indicate Properly Preserved Y N

Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[illegible signature]	9/28/04 1900						
						[illegible signature]	9-29-04 0930

(2)

7802 914023 4363320-35

COC ID: COC2-092804

Chain of Custody Record

WESTON

Client Kerr McGee

Site Name Mossa American | Contact Name Tom Graan

W. O. 02687.007.006.0001 | Contact Phone No. 847-918-4142

Lab LANCASTER LABS | Lab Contact C. SWEIGART

TAT | Lab Phone 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 350.2-NH3	SW846 8310-PAHS	TKN, TP PO4, COD							
						Filtered									
						Container	1-L Glass	1-L Amber	1-L Glass						
						Preservative	N/A	N/A	N/A						
	MA3-MW95-092804-8	G		N	9/28/2004 13:15		2								
	MA3-TG5-1-092804-4	G		N	9/28/2004 12:15		2								
	MA3-TG5-2-092804-5	G		N	9/28/2004 12:20	1		1							
	MA3-TG5-3-092804-7	G		N	9/28/2004 13:10	1	2	1							

Remarks/Comments

COOLER TEMPS SHOWN ARE FROM LL DOCUMENTATION LOG. GAF 10/4/04

Sampled By M. Pihl

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5
3.8	3.5	2.5	9.0	4.7

COC Tape was present on outer package Y N

COC Tape was unbroken on outer package Y N

COC Tape ws present on sample Y N

COC Tape was unbroken on sample Y N

Received in good condition Y N

Labels indicate Properly Preserved Y N

Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[illegible]	9/28/04 1900					[illegible]	9-29-04 0930

7802 914023 4363320-35

Chain of Custody Record

WESTON SOLUTIONS

Page 1 of 1

COC ID: COC1-092804

Client: Kerr McGee

Site Name: Moss American | Contact Name: Tom Green

W. O.: 02687.007.006.0001 | Contact Phone No.: 847-918-4142

Lab: LANCASTER LABS | Lab Contact: C. SWEIGART

TAT: PER QUOTE | Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	SW846 8310-PAHS									
						Filtered									
						Container	1-L Amber								
						Preservative	N/A								
J	MA3-MWA-092804-6	G		N	9/28/2004 12:30	2									
J	MA3-MWB-092804-10	G		N	9/28/2004 16:10	2									
J	MA3-MWB-092804-10-MSD	G		Y	9/28/2004 16:10	4									
J	MA3-TG4-3-092804-2	G		N	9/28/2004 10:30	2									

Remarks/Comments

COOLER TEMPS SHOWN ARE FROM LL1 DOCUMENTATION LOC. GAF 10/4/04

Sampled By M. Pihl

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5
3.8	3.5	2.5	9.0	4.7

COC Tape was present on outer package Y N

COC Tape was unbroken on outer package Y N

COC Tape was present on sample Y N

COC Tape was unbroken on sample Y N

Received in good condition Y N

Labels indicate Properly Preserved Y N

Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[illegible]	9-28-04/1700						
						[illegible]	9-29-04 0930

7802 914023 4363320-35

COC ID: COC8-092804

Chain of Custody Record

WESTON

Page 1 of 1

Client: Kerr McGee
Site Name: Mesa American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT:

Contact Name: Tom Graan
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 350.2-NH3	SW846 8310-PAHS	TKN, TP P04,COD							
						Filtered									
						Container	1-L Glass	1-L Amber	1-L Glass						
						Preservative	N/A	N/A	N/A						
J	MAJ-FB-092804-1	G		N	9/28/2004 15:00		2								
J	MAJ-MWD-092804-9	G		N	9/28/2004 16:00		2								
J	MAJ-MWD-092804-9-DP	G		N	9/28/2004 16:00		2								
J	MAJ-TG4-1-092804-1	G		N	9/28/2004 10:20	1	2	1							

Remarks/Comments
COOLER TEMPS SHOWN ARE FROM LLI DOCUMENTATION
LOG 10/4/04 CAF

Sampled By M.Pirl

Lab Use Only
Temp of Cooler when Received, C
1: 3.6 | 2: 3.5 | 3: 2.5 | 4: 9.0 | 5: 4.7

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N
Received in good condition Y N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
Warschal	9/29/04 1900						
							9-29-04 0830

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration
Receipt Documentation Log

Client/Project: Kerr McGee LLJ

Date of Receipt: 09-29-04

Time of Receipt: 0930

Source Code: 50-1

Shipping Container Sealed: (Y) / N

Custody Seal Present: (Y) / N

Custody Seal Intact: (Y) / N / NA

Package: (Chilled) / Not Chilled

Unpacker Emp. No.: 1683

Temperature of Shipping Containers	
#1 5	#2
Thermometer ID: 8917	Thermometer ID:
Temp.: 4.7°C	Temp.:
(Temp. Bottle) / Surface Temp.	Temp. Bottle / Surface Temp.
Wet Ice / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose / (Bagged)	Ice Present? Y / N Loose / Bagged
#3	#4
Thermometer ID:	Thermometer ID:
Temp.:	Temp.:
Temp. Bottle / Surface Temp.	Temp. Bottle / Surface Temp.
Wet Ice / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? Y / N Loose / Bagged	Ice Present? Y / N Loose / Bagged

Paperwork Discrepancy/Unpacking Problems:

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
[signature]	9-29-04	1010	Unpacking
[signature]	9/29/04	1035	Place in Storage or (Entry)
			Remove from Storage
			Place in Storage or Entry
			Entry

2174.01

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

734-367-7900

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 913862. Samples arrived at the laboratory on Tuesday, September 28, 2004. The PO# for this group is ZAKW1KEOK0A90089.

Client Description			Lancaster Labs Number
MA3-MW-30S	MA3-MW30S-092704-3	Groundwater	4362628
MA3-MW-5S	MA3-MW5S-092704-2	Groundwater	4362629
MA3-MW-C	MA3-MWC-092704-1	Groundwater	4362630
MA3-MWC-DP	MA3-MWC-092704-1-DP	Groundwater	4362631

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO	Weston Solutions, Inc.	Attn: Mr. Tom Graan
1 COPY TO	Kerr-McGee Corporation	Attn: Mr. Roy Widmann
1 COPY TO	Data Package Group	

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Questions? Contact your Client Services Representative
Carrie A Fleming at (717) 656-2300.

Respectfully Submitted,

Michele A. Jarosick
Senior Chemist, Coordinator

8816

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4362628

MA3-MW-30S MA3-MW30S-092704-3 Groundwater
1-092704 02687.007.006.0001
Moss American Site - WI
Collected:09/27/2004 18:45 by MC

Account Number: 07802

Submitted: 09/28/2004 09:35
Reported: 10/12/2004 at 12:47
Discard: 11/27/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

W30S3 SDG#: KMA58-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.082	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.041	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.041	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.041	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.041	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.082	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.082	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/29/2004 15:02	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/02/2004 18:34	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/29/2004 15:02	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4362628

MA3-MW-30S MA3-MW30S-092704-3 Groundwater
1-092704 02687.007.006.0001
Moss American Site - WI
Collected:09/27/2004 18:45 by MC

Account Number: 07802

Submitted: 09/28/2004 09:35
Reported: 10/12/2004 at 12:47
Discard: 11/27/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

W30S3 SDG#: KMA58-01

9818

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4362629

MA3-MW-5S MA3-MW5S-092704-2 Groundwater
1-092704 02687.007.006.0001
Moss American Site - WI
Collected:09/27/2004 18:30 by MC

Account Number: 07802

Submitted: 09/28/2004 09:35
Reported: 10/12/2004 at 12:47
Discard: 11/27/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MW5S2 SDG#: KMA58-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.079	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.079	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.099	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.079	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/29/2004 20:48	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/02/2004 19:13	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/29/2004 20:48	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1

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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4362629

MA3-MW-5S MA3-MW5S-092704-2 Groundwater
1-092704 02687.007.006.0001
Moss American Site - WI
Collected:09/27/2004 18:30 by MC

Account Number: 07802

Submitted: 09/28/2004 09:35
Reported: 10/12/2004 at 12:47
Discard: 11/27/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MW5S2 SDG#: KMA58-02

8828

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PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4362630

MA3-MW-C MA3-MWC-092704-1 Groundwater
1-092704 02687.007.006.0001
Moss American Site - WI
Collected:09/27/2004 14:45 by MC

Account Number: 07802

Submitted: 09/28/2004 09:35
Reported: 10/12/2004 at 12:47
Discard: 11/27/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MWC-1 SDG#: KMA58-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/29/2004 21:27	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/02/2004 19:51	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/29/2004 21:27	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4362630

MA3-MW-C MA3-MWC-092704-1 Groundwater
1-092704 02687.007.006.0001
Moss American Site - WI
Collected:09/27/2004 14:45 by MC

Account Number: 07802

Submitted: 09/28/2004 09:35
Reported: 10/12/2004 at 12:47
Discard: 11/27/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MWC-1 SDG#: KMA58-03

6822

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4362631

MA3-MWC-DP MA3-MWC-092704-1-DP Groundwater
1-092704 02687.007.006.0001
Moss American Site - WI
Collected:09/27/2004 14:45 by MC

Account Number: 07802

Submitted: 09/28/2004 09:35
Reported: 10/12/2004 at 12:47
Discard: 11/27/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MWC1D SDG#: KMA58-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.083	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.041	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.041	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.041	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.041	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.083	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.083	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	09/29/2004 22:06	Victoria M Martell	1

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

MEMBER ACIL

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4362631

MA3-MWC-DP MA3-MWC-092704-1-DP Groundwater
1-092704 02687.007.006.0001
Moss American Site - WI
Collected:09/27/2004 14:45 by MC Account Number: 07802

Submitted: 09/28/2004 09:35 Kerr-McGee Corporation
Reported: 10/12/2004 at 12:47 PO Box 3048
Discard: 11/27/2004 Livonia MI 48150

MWC1D SDG#: KMA58-04

00774	PAH's in Water by HPLC	SW-846 8310	1	10/02/2004 20:30	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	09/29/2004 22:06	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1

8824

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ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

734-367-7900

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 914023. Samples arrived at the laboratory on Wednesday, September 29, 2004. The PO# for this group is ZAKW1KEOK0A90089.

Client Description			Lancaster Labs Number
MA3-FB	MA3-FB-092804-1	Water	4363320
MA3-FB	MA3-FB-092804-2	Water	4363321
MA3-MW9S	MA3-MW9S-092804-8	Groundwater	4363322
MA3-MWA	MA3-MWA-092804-6	Groundwater	4363323
MA3-MWB	MA3-MWB-092804-10	Groundwater	4363324
MA3-MWB	MA3-MWB-092804-10-MS	Groundwater	4363325
MA3-MWB	MA3-MWB-092804-10-MSD	Groundwater	4363326
MA3-MWD	MA3-MWD-092804-9	Groundwater	4363327
MA3-MWD	MA3-MWD-092804-9-DP	Groundwater	4363328
MA3-TG4-1	MA3-TG4-1-092804-1	Groundwater	4363329
MA3-TG4-2	MA3-TG4-2-092804-2	Groundwater	4363330
MA3-TG4-3	MA3-TG4-3-092804-3	Groundwater	4363331
MA3-TG5-1	MA3-TG5-1-092804-4	Groundwater	4363332
MA3-TG5-2	MA3-TG5-2-092804-5	Groundwater	4363333
MA3-TG5-3	MA3-TG5-3-092804-7	Groundwater	4363334
MA3-TB	MA3-TB	Water	4363335

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO	Weston Solutions, Inc.	Attn: Mr. Tom Graan
1 COPY TO	Kerr-McGee Corporation	Attn: Mr. Roy Widmann
1 COPY TO	Data Package Group	

8825

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Questions? Contact your Client Services Representative
Carrie A Fleming at (717) 656-2300.

Respectfully Submitted,

Michele M. Turner

Michele M. Turner
Manager

0026

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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363320

MA3-FB MA3-FB-092804-1 Water
5,6-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 15:00 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:09
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3FB-1 SDG#: KMA58-05FB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.085	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.043	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.043	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.043	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.043	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.085	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.085	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/01/2004 21:38	Victoria M Martell	1

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Lancaster Laboratories Sample No. WW 4363320

MA3-FB MA3-FB-092804-1 Water
5,6-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 15:00 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:09
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3FB-1 SDG#: KMA58-05FB

00774	PAH's in Water by HPLC	SW-846 8310	1	10/02/2004 22:25	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/01/2004 21:38	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1

6828

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2425 New Holland Pike
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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363321

MA3-FB MA3-FB-092804-2 Water
5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 17:30 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:09
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3FB-2 SDG#: KMA58-06FB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.8	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.8	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.8	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.089	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.044	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.044	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.022	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.044	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.022	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.044	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.089	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.089	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.022	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/01/2004 22:17	Victoria M Martell	1

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
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MEMBER ACIL

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363321

MA3-FB MA3-FB-092804-2 Water
5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 17:30 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:09
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3FB-2 SDG#: KMA58-06FB

00774	PAH's in Water by HPLC	SW-846 8310	1	10/02/2004 23:04	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/01/2004 22:17	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1

0838

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363322

MA3-MW9S MA3-MW9S-092804-8 Groundwater
2,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 13:15 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:09
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MW9S8 SDG#: KMA58-07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.084	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.042	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.042	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.042	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.042	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.084	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.084	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/01/2004 23:36	Victoria M Martell	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363322

MA3-MW9S MA3-MW9S-092804-8 Groundwater
2,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 13:15 by MP Account Number: 07802

Submitted: 09/29/2004 09:30 Kerr-McGee Corporation
Reported: 10/13/2004 at 13:09 PO Box 3048
Discard: 11/28/2004 Livonia MI 48150

MW9S8 SDG#: KMA58-07

00774	PAH's in Water by HPLC	SW-846 8310	1	10/02/2004 23:43	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/01/2004 23:36	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1

8832

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363323

MA3-MWA MA3-MWA-092804-6 Groundwater
1,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 12:30 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:09
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MWA-6 SDG#: KMA58-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.084	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.042	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.042	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.042	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.042	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.084	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.084	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/02/2004 00:16	Victoria M Martell	1

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Lancaster, PA 17605-2425
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Lancaster Laboratories Sample No. WW 4363323

MA3-MWA MA3-MWA-092804-6 Groundwater
1,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 12:30 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:09
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MWA-6 SDG#: KMA58-08

00774	PAH's in Water by HPLC	SW-846 8310	1	10/03/2004 00:21	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/02/2004 00:16	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1

0034

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2425 New Holland Pike
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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363324

MA3-MWB MA3-MWB-092804-10 Groundwater
1,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 16:10 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:09
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MWB10 SDG#: KMA58-09BKG

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.2	ug/l	1
00777	Toluene	108-88-3	0.2	J	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.084	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.042	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.042	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.042	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.042	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.084	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.084	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.021	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/01/2004 15:04	Victoria M Martell	1

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Lancaster Laboratories, Inc.
2425 New Holland Pike
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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363324

MA3-MWB MA3-MWB-092804-10 Groundwater
1,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 16:10 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:09
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MWB10 SDG#: KMA58-09BKG

00774	PAH's in Water by HPLC	SW-846 8310	1	10/02/2004 16:38	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/01/2004 15:04	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1

0036

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363325

MA3-MWB MA3-MWB-092804-10-MS Groundwater
1,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 16:10 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:09
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MWB10 SDG#: KMA58-09MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	22.	0.2	ug/l	1
00777	Toluene	108-88-3	22.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	21.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	64.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	170.	1.8	ug/l	1
00782	Acenaphthylene	208-96-8	180.	1.8	ug/l	1
00783	Acenaphthene	83-32-9	180.	1.8	ug/l	1
00784	Fluorene	86-73-7	19.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	5.9	0.090	ug/l	1
00789	Anthracene	120-12-7	3.0	0.045	ug/l	1
00807	Fluoranthene	206-44-0	2.9	0.045	ug/l	1
00811	Pyrene	129-00-0	18.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	1.4	0.022	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	1.1	0.045	ug/l	1
00823	Benzo(a)pyrene	50-32-8	1.5	0.022	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	2.7	0.045	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	5.5	0.090	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	10.	0.11	ug/l	1
07409	Chrysene	218-01-9	5.5	0.090	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	1.2	0.022	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/01/2004 15:43	Victoria M Martell	1

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Lancaster Laboratories Sample No. WW 4363325

MA3-MWB MA3-MWB-092804-10-MS Groundwater
1,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 16:10 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:09
Discard: 11/28/2004

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Livonia MI 48150

MWB10 SDG#: KMA58-09MS

00774	PAH's in Water by HPLC	SW-846 8310	1	10/02/2004 17:17	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/01/2004 15:43	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1

0838

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Lancaster Laboratories Sample No. WW 4363326

MA3-MWB MA3-MWB-092804-10-MSD Groundwater
1,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 16:10 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:09
Discard: 11/28/2004

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MWB10 SDG#: KMA58-09MSD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	22.	0.2	ug/l	1
00777	Toluene	108-88-3	22.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	22.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	65.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	170.	1.8	ug/l	1
00782	Acenaphthylene	208-96-8	180.	1.8	ug/l	1
00783	Acenaphthene	83-32-9	180.	1.8	ug/l	1
00784	Fluorene	86-73-7	19.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	6.0	0.091	ug/l	1
00789	Anthracene	120-12-7	3.0	0.045	ug/l	1
00807	Fluoranthene	206-44-0	2.8	0.045	ug/l	1
00811	Pyrene	129-00-0	18.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	1.4	0.023	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	1.2	0.045	ug/l	1
00823	Benzo(a)pyrene	50-32-8	1.5	0.023	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	2.8	0.045	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	5.7	0.091	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	10.	0.11	ug/l	1
07409	Chrysene	218-01-9	5.6	0.091	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	1.2	0.023	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/01/2004 16:22	Victoria M Martell 2439	1

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Lancaster Laboratories Sample No. WW 4363326

MA3-MWB MA3-MWB-092804-10-MSD Groundwater
1,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 16:10 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:09
Discard: 11/28/2004

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MWB10 SDG#: KMA58-09MSD

00774	PAH's in Water by HPLC	SW-846 8310	1	10/02/2004 17:55	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/01/2004 16:22	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1

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Lancaster Laboratories Sample No. WW 4363327

MA3-MWD MA3-MWD-092804-9 Groundwater
5,6-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 16:00 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:09
Discard: 11/28/2004

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MWD-9 SDG#: KMA58-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.081	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.081	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.081	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/02/2004 00:55	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/03/2004 01:00	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/02/2004 00:55	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1

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Lancaster Laboratories Sample No. WW 4363327

MA3-MWD MA3-MWD-092804-9 Groundwater
5,6-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 16:00 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:09
Discard: 11/28/2004

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MWD-9 SDG#: KMA58-10

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363328

MA3-MWD MA3-MWD-092804-9-DP Groundwater
5,6-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 16:00 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:10
Discard: 11/28/2004

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MWD9D SDG#: KMA58-11FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.081	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.041	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.041	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.041	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.041	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.081	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.081	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/02/2004 01:34	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/03/2004 01:38	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/02/2004 01:34	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1

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Lancaster Laboratories Sample No. WW 4363328

MA3-MWD MA3-MWD-092804-9-DP Groundwater
5,6-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 16:00 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:10
Discard: 11/28/2004

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MWD9D SDG#: KMA58-11FD

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Lancaster Laboratories Sample No. WW 4363329

MA3-TG4-1 MA3-TG4-1-092804-1 Groundwater
5,6-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 10:20 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:10
Discard: 11/28/2004

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TG4-1 SDG#: KMA58-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	0.82 J	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	N.D.	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	0.010 J	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	2.1	mg/l	1
00273	Total Organic Carbon	n.a.	7.2	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.24	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	18.0	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.083	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.042	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.042	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.042	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.042	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.083	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.083	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

2045

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Lancaster Laboratories Sample No. WW 4363329

MA3-TG4-1 MA3-TG4-1-092804-1 Groundwater
5,6-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 10:20 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:10
Discard: 11/28/2004

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TG4-1 SDG#: KMA58-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	2	10/06/2004 10:10	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/29/2004 19:37	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 13:16	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/29/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/29/2004 23:10	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/29/2004 19:43	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	09/29/2004 19:08	Michelle A Bolton	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 11:52	Kyle W Eckenroad	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/02/2004 04:11	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/03/2004 02:17	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/02/2004 04:11	Victoria M Martell	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	10/01/2004 14:15	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/30/2004 08:00	Choon Y Tian	1

0846

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Lancaster Laboratories Sample No. WW 4363330

MA3-TG4-2 MA3-TG4-2-092804-2 Groundwater
1,3,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 10:30 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:10
Discard: 11/28/2004

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Livonia MI 48150

TG4-2 SDG#: KMA58-13

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.1		0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.87	J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	0.012	J	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.		2.9	mg/l	1
00273	Total Organic Carbon	n.a.	10.4		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.		0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	27.6		2.1	mg/l	1
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		1.6	ug/l	1
00784	Fluorene	86-73-7	0.23	J	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.082	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.041	ug/l	1
00807	Fluoranthene	206-44-0	0.26		0.041	ug/l	1
00811	Pyrene	129-00-0	0.19	J	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.041	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.041	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.082	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.082	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.020	ug/l	1

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Lancaster Laboratories Sample No. WW 4363330

MA3-TG4-2 MA3-TG4-2-092804-2 Groundwater
1,3,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 10:30 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:10
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG4-2 SDG#: KMA58-13

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	2	10/06/2004 10:11	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/29/2004 19:38	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 13:17	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/29/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/29/2004 23:10	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/29/2004 19:43	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	09/29/2004 19:16	Michelle A Bolton	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 11:53	Kyle W Eckenroad	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/02/2004 04:50	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/03/2004 02:55	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/02/2004 04:50	Victoria M Martell	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	10/01/2004 14:15	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/30/2004 08:00	Choon Y Tian	1

2848

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363331

MA3-TG4-3 MA3-TG4-3-092804-3 Groundwater
3,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 10:40 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:10
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
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TG4-3 SDG#: KMA58-14

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.2		0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.37	J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.		1.7	mg/l	1
00273	Total Organic Carbon	n.a.	10.		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.		0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	25.6		2.1	mg/l	1
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.020	ug/l	1

8849

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363331

MA3-TG4-3 MA3-TG4-3-092804-3 Groundwater
3,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 10:40 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:10
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG4-3 SDG#: KMA58-14

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	2	10/06/2004 10:12	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/29/2004 19:39	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 13:18	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/29/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/29/2004 23:10	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/29/2004 19:43	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	09/29/2004 19:24	Michelle A Bolton	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 11:54	Kyle W Eckenroad	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/02/2004 05:30	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/03/2004 03:34	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/02/2004 05:30	Victoria M Martell	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	10/01/2004 14:15	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/30/2004 08:00	Choon Y Tian	1

0858

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Lancaster Laboratories Sample No. WW 4363332

MA3-TG5-1 MA3-TG5-1-092804-4 Groundwater
2,3,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 12:15 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:10
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG5-1 SDG#: KMA58-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	N.D.	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.20 J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	0.017 J	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	2.0	mg/l	1
00273	Total Organic Carbon	n.a.	4.9	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	12.0	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.077	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.039	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.039	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.039	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.039	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.077	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.097	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.077	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	ug/l	1

0851

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Lancaster Laboratories Sample No. WW 4363332

MA3-TG5-1 MA3-TG5-1-092804-4 Groundwater
2,3,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 12:15 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:10
Discard: 11/28/2004

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PO Box 3048
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TG5-1 SDG#: KMA58-15

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	2	10/06/2004 10:13	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/29/2004 19:40	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 13:19	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/29/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/29/2004 23:10	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/29/2004 19:43	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	09/29/2004 19:32	Michelle A Bolton	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 11:57	Kyle W Eckenroad	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/02/2004 06:09	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/03/2004 04:51	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/02/2004 06:09	Victoria M Martell	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	10/01/2004 14:15	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/30/2004 08:00	Choon Y Tian	1

8852

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Lancaster Laboratories Sample No. WW 4363333

MA3-TG5-2 MA3-TG5-2-092804-5 Groundwater
2,3,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 12:20 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:10
Discard: 11/28/2004

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PO Box 3048
Livonia MI 48150

TG5-2 SDG#: KMA58-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	0.90 J	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.92 J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	1.9	mg/l	1
00273	Total Organic Carbon	n.a.	7.3	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	18.0	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.082	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.041	ug/l	1
00807	Fluoranthene	206-44-0	0.075 J	0.041	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.041	ug/l	1
00823	Benzo(a)pyrene	50-32-8	0.023 J	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.041	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.082	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.082	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1

0053

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363333

MA3-TG5-2 MA3-TG5-2-092804-5 Groundwater
2,3,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 12:20 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:10
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG5-2 SDG#: KMA58-16

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	2	10/06/2004 10:15	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/29/2004 19:59	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 13:23	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/29/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/29/2004 23:10	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/29/2004 19:43	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	09/29/2004 19:40	Michelle A Bolton	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 11:58	Kyle W Eckenroad	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/02/2004 06:48	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/03/2004 05:30	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/02/2004 06:48	Victoria M Martell	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	10/01/2004 14:15	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/30/2004 08:00	Choon Y Tian	1

0854

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363334

MA3-TG5-3 MA3-TG5-3-092804-7 Groundwater
2,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 13:10 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:10
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG5-3 SDG#: KMA58-17

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	0.91 J	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.71 J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	0.012 J	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	1.9	mg/l	1
00273	Total Organic Carbon	n.a.	7.0	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	16.4	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.085	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.043	ug/l	1
00807	Fluoranthene	206-44-0	0.045 J	0.043	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.043	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.043	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.085	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.085	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

0055

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363334

MA3-TG5-3 MA3-TG5-3-092804-7 Groundwater
2,5-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/28/2004 13:10 by MP

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:10
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG5-3 SDG#: KMA58-17

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	2	10/06/2004 10:16	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/29/2004 20:00	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 13:24	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	09/29/2004 15:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/29/2004 23:10	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/29/2004 19:43	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	09/29/2004 19:49	Michelle A Bolton	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 11:59	Kyle W Eckenroad	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/02/2004 07:28	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/03/2004 06:08	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/02/2004 07:28	Victoria M Martell	n.a.
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	2	10/01/2004 14:15	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/01/2004 11:00	Felix C Arroyo	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	09/30/2004 08:00	Choon Y Tian	1

8856

MEMBER ACI
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363335

MA3-TB MA3-TB Water
NA 02687.007.006.0001
Moss American Site - WI
Collected: n.a.

Account Number: 07802

Submitted: 09/29/2004 09:30
Reported: 10/13/2004 at 13:10
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

MA-TB SDG#: KMA58-18TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/01/2004 20:20	Victoria M Martell	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/01/2004 20:20	Victoria M Martell	n.a.

8857

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
Where quality is a science.

Case Narrative
Client: Kerr-McGee Corporation
SDG: KMA58

LANCASTER LABORATORIES
PAH by HPLC

SAMPLE NUMBER(S) :

LL #'s	Sample Code	Matrix Water	Comments
4362628	W30S3	X	
4362629	MW5S2	X	
4362630	MWC-1	X	
4362631	MWC1D	X	
4363320	3FB-1	X	Client Blank
4363321	3FB-2	X	Client Blank
4363322	MW9S8	X	
4363323	MWA-6	X	
4363324	MWB10	X	Unspiked
4363325	MWB10MS	X	Matrix Spike
4363326	MWB10MSD	X	Matrix Spike Dup
4363327	MWD-9	X	
4363328	MWD9D	X	
4363329	TG4-1	X	
4363330	TG4-2	X	
4363331	TG4-3	X	
4363332	TG5-1	X	
4363333	TG5-2	X	
4363334	TG5-3	X	

LABORATORY SUBMITTED QC:

SBLKWF274	SBLKWF2742	X	Method Blank
274WFLCS	274WFLCS2	X	Lab Control Sample

Case Narrative (continued)
SDG#: KMA58

SAMPLE PREPARATION:

Due to the nature of the sample matrices, reduced aliquots were used in the extractions of MWC1D, 3FB-1, 3FB-2, MW9S8, MWA-6, MWB10, MWB10MS, MWB10MSD, TG4-1, and TG5-3.

No other problems were encountered during the extraction of these samples.

ANALYSIS:

The method used for analysis was SW-846 8310.

All samples were analyzed for polynuclear aromatic hydrocarbons by HPLC.

No problems were encountered during the analysis of these samples.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC was within specifications.

DATA INTERPRETATION:

Only non-conformances for client requested compounds are addressed in this case narrative.

Due to incorrect integrations during the initial processing, manual integrations were performed for the following compounds.

Sample Code	Compound
STD 04272-07	triphenylene

No further interpretation is necessary for the data submitted.

Case Narrative (continued)
SDG#: KMA58

Case Narrative Reviewed and Approved by:

Date: 10/28/03

Charles J. Neslund
Group Leader, GC/MS Semivolatiles

8862

No F.B blanks were associated with this sample set.

8. Field Duplicates:

Samples TGZ-1 and 2-1 DP are field duplicates. Results show good correlation.

Data reviewed by: T. Balla Date: 11/16/04

Kerr-McGee
Moss American site
Milwaukee, Wisconsin
SDG# KMA59

water samples – BTEX

1. Holding Times:

Lab ID	Client ID	Sample Date	Analysis Date
	MA3-		
4363998	MW29S	9/29/04	10/4/04
4363999	MW31S	9/29/04	10/4/04
4364000	MW34S	9/29/04	10/4/04
4364001	MW36S	9/29/04	10/4/04
4364002	MW37S	9/29/04	10/4/04
4364003	MW6S	9/29/04	10/4/04
4364004	MW7S	9/29/04	10/5/04
4364005	TG3-1	9/29/04	10/5/04
4364006	TG3-2	9/29/04	10/5/04
4364007	TG3-3	9/29/04	10/5/04
4364008	Tg6-1	9/29/04	10/5/04
4364009	TG6-2	9/29/04	10/5/04
4364010	TG6-3	9/29/04	10/5/04
4364011	TB	9/29/04	10/5/04
4365389	TG1-1	9/30/04	10/5/04
4365390	TG1-2	9/30/04	10/5/04
4365391	TG1-3	9/30/04	10/5/04
4365392	TG2-1	9/30/04	10/5/04
4365393	TG2-1DP	9/30/04	10/5/04
4365394	TG2-2	9/30/04	10/5/04
4365395	TG2-3	9/30/04	10/5/04

All samples were analyzed and extracted within the required holding times.

2. Method Blank:

Five method blanks were associated with the BTEX samples (BLK2054, 2055, 2056, 2057, and 2058). All blanks were free of contamination.

3. Initial and Continuing Calibration:

For the BTEX samples, all initial and continuing calibration criteria appears to have been achieved. No deficiencies were noted in the laboratory narrative.

4. Surrogate Recovery-:

The surrogate recoveries for the BTEX surrogate (TFT) were all within required QC limits.

5. Matrix Spike/Matrix Spike Duplicate (MS/MSD):

Sample TG2-3 was designated as the MS/MDSD. All recoveries were within required control limits.

6. Laboratory Control Sample:

Two LCS were associated with the samples. All laboratory control sample results were acceptable.

7. Trip Blanks:

The trip blank results were non-detect. All results are acceptable.

8. Field Blanks:

Two field blanks were in this batch. All BTEX results were non-detect. All results are acceptable.

9. Field Duplicates:

Samples MWC/C DP and MWD/D DP are field duplicates. Results show good correlation.

Water Samples – Polynuclear Aromatic Hydrocarbons (PAHs by HPLC)

1. Holding Times:

Lab ID	Client ID	Sample Date	Extraction Date	Analysis Date
4363998	MW29S	9/29/04	10/4/04	10/10/04
4363999	MW31S	9/29/04	10/4/04	10/10/04
4364000	MW34S	9/29/04	10/4/04	10/10, 11, 10/12/04
4364001	MW36S	9/29/04	10/4/04	10/11/04
4364002	MW37S	9/29/04	10/4/04	10/11/04
4364003	MW6S	9/29/04	10/4/04	10/10/04
4364004	MW7S	9/29/04	10/4/04	10/10, 10/11/04
4364005	TG3-1	9/29/04	10/4/04	10/11/04
4364006	TG3-2	9/29/04	10/4/04	10/10/04
4364007	TG3-3	9/29/04	10/4/04	10/10/04
4364008	TG6-1	9/29/04	10/4/04	10/10/04
4364009	TG6-2	9/30/04	10/4/04	10/10/04
4364010	TG6-3	9/30/04	10/4/04	10/10/04

4365389	TG1-1	9/30/04	10/4/04	10/11/04
4365390	TG1-2	9/30/04	10/4/04	10/10/04
4365391	TG1-3	9/30/04	10/4/04	10/11/04
4365392	TG2-1	9/30/04	10/4/04	10/11/04
4365393	TG2-1DP	9/30/04	10/4/04	10/11/04
4365394	TG2-2	9/30/04	10/4/04	10/11/04
4365395	TG2-3	9/30/04	10/4/04	10/10/04

All samples were analyzed and extracted within the required holding times.

2. Method Blank:

One method blanks was associated with the samples (SBLKWE2762). The method blank results were free of contamination. A second method blank was associated with the reanalysis (SBLKWK2852). All results were free of contamination.

3. Initial and Continuing Calibration:

Calibration results were acceptable.

4. Surrogate Recovery:

The following surrogate recoveries were outside required control limits: all NBZ2 recoveries for all samples. In addition, the following results were also outside control limits: MW31S (all surrogates). The following samples had recoveries outside control limits due to dilutions: MW34S, TG1-1, MW34 dilution, MW7S dilution, TG1-1 dilution and MW34S second dilution. All compounds for sample MW34S are flagged J for positive results and UJ for non-detects. Two surrogate recoveries must be outside control limits in the same fraction to warrant qualification. No additional qualification is required.

5. Matrix Spike/Matrix Spike Duplicate:

Matrix QC was performed on sample TG2-3. All recoveries and RPDs were within required control limits.

6. Laboratory Control Sample:

One LCS was associated with the samples. All LCS recoveries were within required control limits.

7. Field Blanks:

No field blanks were associated with this sample set.

8. Field Duplicates:

Samples TG2-1 and 2-1 DP are field duplicates. Results show good correlation.

Data reviewed by: T. Balla Date: 11/16/04

Sample Reference List for SDG Number KMA59 with a Data Package Type of I

07802 - Kerr-McGee Corporation

Moss American Site - WI

Lab Sample Number	Lab Sample Code	Client Sample Description				
4363998	A329S	MA3-MW29S	MA3-MW29S-092904-7	Groundwater	8,11-092804	02687.007.006.0001
4363999	A331S	MA3-MW31S	MA3-MW31S-092904-10	Groundwater	8,11-092804	02687.007.006.0001
4364000	A334S	MA3-MW34S	MA3-MW34S-092904-13	Groundwater	10,11-092804	02687.007.006.0001
4364001	A336S	MA3-MW36S	MA3-MW36S-092904-9	Groundwater	8,11-092804	02687.007.006.0001
4364002	A337S	MA3-MW37S	MA3-MW37S-092904-8	Groundwater	7,11-092804	02687.007.006.0001
4364003	A306S	MA3-MW6S	MA3-MW6S-092904-11	Groundwater	8,11-092804	02687.007.006.0001
4364004	A307S	MA3-MW7S	MA3-MW7S-092904-12	Groundwater	8,11-092804	02687.007.006.0001
4364005	TG3-1	MA3-TG3-1	MA3-TG3-1-092904-4	Groundwater	7,9,10,11-092804	02687.007.006.0001
4364006	TG3-2	MA3-TG3-2	MA3-TG3-2-092904-5	Groundwater	7,9,10,11-092804	02687.007.006.0001
4364007	TG3-3	MA3-TG3-3	MA3-TG3-3-092904-6	Groundwater	7,9,10,11-092804	02687.007.006.0001
4364008	TG6-1	MA3-TG6-1	MA3-TG6-1-092904-1	Groundwater	9,10,11-092804	02687.007.006.0001
4364009	TG6-2	MA3-TG6-2	MA3-TG6-2-092904-2	Groundwater	10,11-092804	02687.007.006.0001
4364010	TG6-3	MA3-TG6-3	MA3-TG6-3-092904-3	Groundwater	7,9,11-092804	02687.007.006.0001
4364011	A3-TB	Trip_Blank	Trip_Blank	Water	NA	02687.007.006.0001
4365389	TG1-1	MA3-TG1-1	MA3-TG1-1-093004-6	Groundwater	1,2,5,6-093004	02687.007.006.0001
4365390	TG1-2	MA3-TG1-2	MA3-TG1-2-093004-7	Groundwater	1,2,5,6-093004	02687.007.006.0001
4365391	TG1-3	MA3-TG1-3	MA3-TG1-3-093004-8	Groundwater	2,3,5,6-093004	02687.007.006.0001
4365392	TG2-1	MA3-TG2-1	MA3-TG2-1-093004-3	Groundwater	2,3,5,6-093004	02687.007.006.0001
4365393	TG21D	MA3-TG2-1	MA3-TG2-1-093004-3-DP	Groundwater	4,6-093004	02687.007.006.0001
4365394	TG2-2	MA3-TG2-2	MA3-TG2-2-093004-2	Groundwater	3,4,5,6-093004	02687.007.006.0001
4365395	TG2-3	MA3-TG2-3	MA3-TG2-3-093004-1	Groundwater	3,4,5,6-093004	02687.007.006.0001
4365396	TG2-3	MA3-TG2-3	MA3-TG2-3-093004-1-MS	Groundwater	4,6-093004	02687.007.006.0001
4365397	TG2-3	MA3-TG2-3	MA3-TG2-3-093004-1-MSD	Groundwater	4,6-093004	02687.007.006.0001

7802 414154 4563478-1011

COC ID: COC11-092804

Chain of Custody Record

WESTON SOLUTIONS

Client Kerr McGee
Site Name Moss American
W. O. 02687.007.006.0001
Lab LANCASTER LABS
TAT PER QUOTE

Contact Name Tom Green
Contact Phone No. 847-918-4142
Lab Contact C. SWEIGART
Lab Phone 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 353.2-NO2 &NO3	EPA 353.2-NO2 &NO3	EPA 365.3-ORTHO P, EPA 405.1-BOD	EPA 415.1-TOC	SW846 8021B-BTEX
					Filtered					
					Container	40 ml Vials	40 ml Vials	500-ml Poly	250 ml Glass	40 ml Vials
					Preservative	H2SO4	N/A	N/A	N/A	HCl
	MA3-MW29S-092904-7	G		N	9/29/2004 14:15					3
	MA3-MW31S-092904-10	G		N	9/29/2004 15:40					3
	MA3-MW34S-092904-13	G		N	9/29/2004 16:55					3
	MA3-MW36S-092904-9	G		N	9/29/2004 14:35					3
	MA3-MW37S-092904-8	G		N	9/29/2004 14:25					3
	MA3-MW6S-092904-11	G		N	9/29/2004 15:50					3
	MA3-MW7S-092904-12	G		N	9/29/2004 16:45					3
	MA3-TG3-1-092904-4	G		N	9/29/2004 11:45	1	1		1	3
	MA3-TG3-2-092904-5	G		N	9/29/2004 11:55	1	1		1	3
	MA3-TG3-3-092904-6	G		N	9/29/2004 12:00	1	1		1	3
	MA3-TG6-1-092904-1	G		N	9/29/2004 10:00	1	1	1	1	3
	MA3-TG6-2-092904-2	G		N	9/29/2004 10:10	1	1	1	1	3
	MA3-TG6-3-092904-3	G		N	9/29/2004 10:20	1	1	1	1	3

Remarks/Comments
MA3-TG6-2-092904-2 → VIAL FOR NO_2 RECEIVED BROKEN. SUBSAMPLED FOR NEW CONTAINER FROM BOD CONTAINER CAF 10/1/04

Sampled By [signature]

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5
4.1	3.9	2.9	4.5	3.2

COC Tape was present on outer package (Y) N
COC Tape was unbroken on outer package (Y) N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition (Y) N - SEE NOTES
Labels indicate Properly Preserved (Y) N
Received within Holding Time (Y) N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[signature]	9/29/04 1900						
						[signature]	9-30-04 900

780d 714154 4363978-4011

COC ID: COC8-092804

Chain of Custody Record

WESTON SOLUTIONS

Client Kerr McGee

Site Name Moss American

W. O. 02687.007.006.0001

Lab LANCASTER LABS

TAT

Contact Name Tom Grean

Contact Phone No. 847-918-4142

Lab Contact C. SWEIGART

Lab Phone 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	SW846 8310-PAHS								
						Filtered								
						Container	1-L Amber							
						Preservative	N/A							
	MAJ-MW29S-092904-7	G		N	9/29/2004 14:15	2								
	MAJ-MW31S-092904-10	G		N	9/29/2004 15:40	2								
	MAJ-MW16S-092904-9	G		N	9/29/2004 14:35	2								
	MAJ-MW37S-092904-8	G		N	9/29/2004 14:25	2								
	MAJ-MW6S-092904-11	G		N	9/29/2004 15:50	2								

Remarks/Comments

COOLER TEMPS SHOWN ARE FROM LL DOCUMENTATION LOG. CAF 10/4/04

Sampled By M.P.L.L

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5
4.1	3.9	2.9	4.5	3.2

COC Tape was present on outer package (Y) N

COC Tape was unbroken on outer package (Y) N

COC Tape wa present on sample Y N

COC Tape was unbroken on sample Y N

Received in good condition (Y) N

Labels indicate Properly Preserved (Y) N

Received within Holding Time (Y) N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[signature]	9/29/04 1900						
						[signature]	9-30-04 905

7802 914154 4363998- 4011

COC ID: COC7-092804

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee

Site Name: Moss American

W. O.: 02687.007.006.0001

Lab: LANCASTER LABS

TAT:

Contact Name: Tom Grean

Contact Phone No.: 847-918-4142

Lab Contact: C. SWEIGART

Lab Phone: 717-656-2308 X1527

Lab ID.	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	SW846 8310-PAHS									
						Filtered									
						Container	1-L Amber								
						Preservative	N/A								
	MA3-MW7S-092904-12	G		N	9/29/2004 16:45	2									
	MA3-TG3-1-092904-4	G		N	9/29/2004 11:45	2									
	MA3-TG3-2-092904-5	G		N	9/29/2004 11:55.	2.									
	MA3-TG3-3-092904-6	G		N	9/29/2004 12:00	2									
	MA3-TG6-3-092904-3	G		N	9/29/2004 10:20	2									

Remarks/Comments

COOLER TEMPS SHOWN ARE FROM LL1 RECEIVER TEMP LOG. CAF 10/4/04

Sampled By M. Pini

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5
4.1	3.9	2.9	4.5	3.2

COC Tape was present on outer package (Y) N

COC Tape was unbroken on outer package (Y) N

COC Tape wa present on sample Y N

COC Tape was unbroken on sample Y N

Received in good condition (Y) N

Labels indicate Properly Preserved (Y) N

Received within Holding Time (Y) N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[illegible]	9/29/04 1900						
						[illegible]	9-30-04 905

7802 914154 4563928-4011

COC ID: COC9-092804

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT:

Contact Name: Tom Graan
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 350.2-NH3	TKN, TP PO4,COD								
						Filtered									
						Container	1-L Glass	1-L Glass							
						Preservative	N/A	N/A							
	MA3-TG3-1-092904-4	G		N	9/29/2004 11:45	1	1								
	MA3-TG3-2-092904-5	G		N	9/29/2004 11:55	1	1								
	MA3-TG3-3-092904-6	G		N	9/29/2004 12:00	1	1								
	MA3-TG6-1-092904-1	G		N	9/29/2004 10:00	1	1								
	MA3-TG6-3-092904-3	G		N	9/29/2004 10:20	1	1								

Remarks/Comments
COOLER TEMPS SHOWN ARE FROM LLI DOCUMENTATION LOG. CAF 10/4/04

Sampled By: M Pihl

Lab Use Only
Temp of Cooler when Received, C

1	2	3	4	5
4.1	3.9	2.9	4.5	3.2

COC Tape was present on outer package (Y) N
COC Tape was unbroken on outer package (Y) N
COC Tape ws present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition (Y) N
Labels indicate Properly Preserved (Y) N
Received within Holding Time (Y) N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[signature]	9/29/04						
						[signature]	9-30-04 905

7802 71.154 1305298 - 7011

COC ID: COC10-092804

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee

Site Name: Moss American | Contact Name: Tom Graan

W. O.: 02687.007.006.0001 | Contact Phone No.: 847-918-4142

Lab: LANCASTER LABS | Lab Contact: C. SWEIGART

TAT | Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 350.2-NH3	EPA 365.3-ORTHO P, EPA 405.1-BOD	SW846 8310-PAHS	TKN, TP PO4,COD						
					Filtered										
					Container	1-L Glass	500-ml Poly	1-L Amber	1-L Glass						
					Preservative	N/A	N/A	N/A	N/A						
	MA3-MW34S-092904-13	G		N	9/29/2004 16:55			2							
	MA3-TG3-1-092904-4	G		N	9/29/2004 11:45		1								
	MA3-TG3-2-092904-5	G		N	9/29/2004 11:55		1								
	MA3-TG3-3-092904-6	G		N	9/29/2004 12:00		1								
	MA3-TG6-1-092904-1	G		N	9/29/2004 10:00			2							
	MA3-TG6-2-092904-2	G		N	9/29/2004 10:10	1		2	1						

Remarks/Comments

COOLER TEMPS SHOWN ARE FROM LL1 DOCUMENTATION LOG. CAF 10/1/04

Sampled By

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5
4.1	3.9	2.9	4.5	3.2

COC Tape was present on outer package (Y) N

COC Tape was unbroken on outer package (Y) N

COC Tape wa present on sample Y N

COC Tape was unbroken on sample Y N

Received in good condition (Y) N

Labels Indicate Properly Preserved (Y) N

Received within Holding Time (Y) N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
							9/30/04 905

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration Receipt Documentation Log

Client/Project: Weston Solutions (FL)

Date of Receipt: 9-30-04

Time of Receipt: 905

Source Code: 50-1

Shipping Container Sealed: (Y) / N

Custody Seal Present: (Y) / N

Custody Seal Intact: (Y) / N / NA

Package: (Chilled) / Not Chilled

Unpacker Emp. No.: 1685

Temperature of Shipping Containers	
#1	**#2**
Thermometer ID: 8956	Thermometer ID: 8956
Temp.: 4.1ºC	Temp.: 3.9ºC
(Temp. Bottle) / Surface Temp.	(Temp. Bottle) / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) N — Loose / (Bagged)	Ice Present? (Y) / N — Loose / (Bagged)
#3 VOA	**#4**
Thermometer ID: 8956	Thermometer ID: 8956
Temp.: 2.9ºC	Temp.: 4.5ºC
(Temp. Bottle) / Surface Temp.	(Temp. Bottle) / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) N — Loose / (Bagged)	Ice Present? (Y) / N — Loose / (Bagged)

Paperwork Discrepancy/Unpacking Problems: Received broken vial for # MA3-TG6-2-092904-2 in cooler #3, received trip blank in cooler 3 (nitrate vial (80) - subsampled from 04 BC)
AH 9/30/04

Sample Administration Internal Chain of Custody			
Name	**Date**	**Time**	**Reason for Transfer**
[signature]	9-30-04	1104	Unpacking
Annalise Hutchinson	9/30/04	1130	Place in Storage or (Entry)
			Remove from Storage
			Place in Storage or Entry
			Entry

8887

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration
Receipt Documentation Log

Client/Project: Weston [illegible] (FL) **Shipping Container Sealed:** (Y) / N

Date of Receipt: 9-30-04 **Custody Seal Present:** (Y) / N

Time of Receipt: 905 **Custody Seal Intact:** (Y) / N / NA

Source Code: 50-1 **Package:** (Chilled) / Not Chilled

Unpacker Emp. No.: 1685

Temperature of Shipping Containers	
#5	#2
Thermometer ID: 8956	Thermometer ID:
Temp.: 3.9C	Temp.:
(Temp. Bottle) / Surface Temp.	Temp. Bottle / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose / (Bagged)	Ice Present? Y / N Loose / Bagged
#3	#4
Thermometer ID:	Thermometer ID:
Temp.:	Temp.:
Temp. Bottle / Surface Temp.	Temp. Bottle / Surface Temp.
Wet Ice / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? Y / N Loose / Bagged	Ice Present? Y / N Loose / Bagged

Paperwork Discrepancy/Unpacking Problems:

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
[illegible]	9-30-04	1104	Unpacking
[illegible]	9/30/04	1130	Place in Storage or (Entry)
			Remove from Storage
			Place in Storage or Entry
			Entry

1802[redacted] 6114361 4065387-91

COC ID: COC6-093004

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT: PER QUOTE
Contact Name: Tom Graan
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 353.2-NO2 &NO3	EPA 353.2-NO2 &NO3	EPA 415.1-TOC	SW846 8021B-BTEX
					Filtered				
					Container	40 ml Vials	40 ml Vials	250 ml Glass	40 ml Vials
					Preservative	H2SO4	N/A	N/A	HCl
	MA3-FB-093004-1	G		N	9/30/2004 10:30				3
	MA3-FB-093004-2	G		N	9/30/2004 16:00				3
	MA3-MW27S-093004-9	G		N	9/30/2004 15:30				3
	MA3-MW28S-093004-4	G		N	9/30/2004 11:15				3
	MA3-MW32S-093004-11	G		N	9/30/2004 15:45				3
	MA3-MW32S-093004-11-DP	G		N	9/30/2004 15:45				3
	MA3-MW33S-093004-10	G		N	9/30/2004 15:35				3
	MA3-MW35S-093004-5	G		N	9/30/2004 11:25				3
	MA3-TG1-1-093004-6	G		N	9/30/2004 12:45	1	1	1	3
	MA3-TG1-2-093004-7	G		N	9/30/2004 12:50	1	1	1	3
	MA3-TG1-3-093004-8	G		N	9/30/2004 13:00	1	1	1	3
	MA3-TG2-1-093004-3	G		N	9/30/2004 10:00	1	1	1	3
	MA3-TG2-1-093004-3-DP	G		N	9/30/2004 10:00				3
	MA3-TG2-2-093004-2	G		N	9/30/2004 09:50	1	1	1	3
	MA3-TG2-3-093004-1	G		N	9/30/2004 09:45	1	1	1	3
	MA3-TG2-3-093004-1-MSD	G		Y	9/30/2004 09:45				6

Remarks/Comments: COOLER TEMPS SHOWN ARE FROM LLI DOCUMENTATION COC. BAF 10/4/04

Sampled By: [illegible]

Lab Use Only

Temp of Cooler when Received, C: 1: 2.4, 2: 3.2, 3: 3.9, 4: 5.5, 5: 2.2, 6: 4.4

COC Tape was present on outer package (Y) N
COC Tape was unbroken on outer package (Y) N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N
Received in good condition (Y) N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[illegible]	09/30/04 [illegible]					Kathy Binkley	10-1-04 0905

1802 714361 4065#589-71

COC ID: COC5-093004

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT: PER QUOTE

Contact Name: Tom Graan
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 365.3-ORTHO P, EPA 405.1-BOD	SW846 8310-PAHS							
						Filtered								
						Container	500-ml Poly	1-L Amber						
						Preservative	N/A	N/A						
	MA3-FB-093004-1	G		N	9/30/2004 10:30		2							
	MA3-FB-093004-2	G		N	9/30/2004 16:00		2							
	MA3-MW33S-093004-10	G		N	9/30/2004 15:35		2							
	MA3-TG1-1-093004-6	G		N	9/30/2004 12:45	1								
	MA3-TG1-2-093004-7	G		N	9/30/2004 12:50	1								
	MA3-TG1-3-093004-8	G		N	9/30/2004 13:00	1								
	MA3-TG2-1-093004-3	G		N	9/30/2004 10:00	1								
	MA3-TG2-2-093004-2	G		N	9/30/2004 09:50	1								
	MA3-TG2-3-093004-1	G		N	9/30/2004 09:45	1								

Remarks/Comments
COOLER TEMPS SHOWN ARE FROM LL DOCUMENTATION
LOG. MF 10/4/04

Sampled By: M. Pihl

Lab Use Only
Temp of Cooler when Received, C

1	2	3	4	5	6
2.4	3.2	3.9	5.5	2.2	4.4

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition Y N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
	9/30/04 2000						
							10-1-04 0905

.02 714061 13--381-17

COC ID: COC1-093004

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT:

Contact Name: Tom Graan
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 350.2-NH3	SW846 8310-PAHS	TKN, TP PO4,COD
					Filtered			
					Container	1-L Glass	1-L Amber	1-L Glass
					Preservative	N/A	N/A	N/A
	MA3-MW27S-093004-9	G		N	9/30/2004 15:30		2	
	MA3-MW32S-093004-11	G		N	9/30/2004 15:45		2	
	MA3-MW32S-093004-11-DP	G		N	9/30/2004 15:45		2	
	MA3-TG1-1-093004-6	G		N	9/30/2004 12:45	1		1
	MA3-TG1-2-093004-7	G		N	9/30/2004 12:50	1		1

Remarks/Comments
COOLER TEMPS SHOWN ARE FROM LLI DOCUMENTATION LOG. CHF 10/4/04

Sampled By: W. Pikel

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5	6
2.4	3.2	3.9	5.5	2.2	4.4

COC Tape was present on outer package (Y) N
COC Tape was unbroken on outer package (Y) N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition (Y) N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[signature]	9-30-04/2000					Kathy Binkley	10-1-04/0905

7802 714367 4365387-97

COC ID: COC2-093004

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee

Site Name: Moss American | Contact Name: Tom Graan

W. O.: 02687.007.006.0001 | Contact Phone No.: 847-918-4142

Lab: LANCASTER LABS | Lab Contact: C. SWEIGART

TAT | Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	SW846 8310-PAHS									
						Filtered									
						Container	1-L Amber								
						Preservative	N/A								
	MA3-MW28S-093004-4	G		N	9/30/2004 11:15	2									
	MA3-TG1-1-093004-6	G		N	9/30/2004 12:45	2									
	MA3-TG1-2-093004-7	G		N	9/30/2004 12:50	2									
	MA3-TG1-3-093004-8	G		N	9/30/2004 13:00	2									
	MA3-TG2-1-093004-3	G		N	9/30/2004 10:00	2									

Remarks/Comments

COOLER TEMPS SHOWN ARE FROM LL DOCUMENTATION LOG. SAF 10/4/04

Sampled By N. Phl

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5	6
2.4	3.2	3.9	5.5	2.2	4.4

COC Tape was present on outer package: Y N

COC Tape was unbroken on outer package: Y N

COC Tape wa present on sample Y N

COC Tape was unbroken on sample Y N

Received in good condition: Y N

Labels indicate Properly Preserved Y N

Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
	9304 2000						
						Kathy Binkley	10-1-04 0905

7802 714 361 4360589-77

COC ID: COC3-093004

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT: PER QUOTE

Contact Name: Tom Graan
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 350.2-NH3	SW846 8310-PAHS	TKN, TP P04,COD							
						Filtered									
						Container	1-L Glass	1-L Amber	1-L Glass						
						Preservative	N/A	N/A	N/A						
	MA3-MW35S-093004-5	G		N	9/30/2004 11:25		2								
	MA3-TG1-3-093004-8	G		N	9/30/2004 13:00	1		1							
	MA3-TG2-1-093004-3	G		N	9/30/2004 10:00	1		1							
	MA3-TG2-2-093004-2	G		N	9/30/2004 09:50	1		1							
	MA3-TG2-3-093004-1	G		N	9/30/2004 09:45	1		1							

Remarks/Comments
COOLER TEMPS SHOWN ARE FROM LLI DOCUMENTATION LOG. CAF 10/4/04

Sampled By M. Piwl

Lab Use Only
Temp of Cooler when Received, C: 1 2.4 | 2 3.2 | 3 3.9 | 4 5.5 | 5 2.2 | 6 4.4

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape ws present on sample Y N
COC Tape was unbroken on sample Y N
Received in good condition Y N
Labels Indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[illegible]	9/30/04 2000					[illegible]	10-1-04 0900

180 714361 4363589-77

COC ID: COC4-093004

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT: PER QUOTE
Contact Name: Tom Graan
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	SW846 8310-PAHS
	Filtered					
	Container					1-L Amber
	Preservative					N/A
	MA3-TG2-1-093004-3-DP	G		N	9/30/2004 10:00	2
	MA3-TG2-2-093004-2	G		N	9/30/2004 09:50	2
	MA3-TG2-3-093004-1	G		N	9/30/2004 09:45	2
	MA3-TG2-3-093004-1-MSD	G		Y	9/30/2004 09:45	4

Remarks/Comments
COOLER TEMPS SHOWN ARE FROM LLI DOCUMENTATION LOG. CAF 10/4/04

Sampled By: M. Pinl

Lab Use Only
Temp of Cooler when Received, C: 1: 2.4 | 2: 3.2 | 3: 3.9 | 4: 5.5 | 5: 2.2 | 6: 4.4

COC Tape was present on outer package (Y) N
COC Tape was unbroken on outer package (Y) N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N
Received in good condition (Y) N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
Matt Pinl	9/30/04 2000					Kathy Binkley	10-1-04 0905

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration Receipt Documentation Log

Client/Project: (Kerr McGee) Weston Solutions (IL) Inc.

Date of Receipt: 10-1-04

Time of Receipt: 0905

Source Code: 50-1

Shipping Container Sealed: (Y) / N

Custody Seal Present: (Y) / N

Custody Seal Intact: (Y) / N / NA (1)

Package: (Chilled) / Not Chilled

Unpacker Emp. No.: 1255

Temperature of Shipping Containers	
#1 (Viola)	#2
Thermometer ID: 8886	Thermometer ID: 8886
Temp: 2.4°	Temp: 3.2°
(Temp. Bottle) / Surface Temp.	(Temp. Bottle) / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose / (Bagged)	Ice Present? (Y) / N Loose / (Bagged)
#3	#4
Thermometer ID: 8886	Thermometer ID: 8886
Temp: 3.9°	Temp: 5.5°
(Temp. Bottle) / Surface Temp.	(Temp. Bottle) / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose / (Bagged)	Ice Present? (Y) / N Loose / (Bagged)

Paperwork Discrepancy/Unpacking Problems: received (1) trip blank.

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
Kathy Rinkes	10-1-04	1230	Unpacking
Annabel Hutchens	10/1/04	1300	Place in Storage or (Entry)
			Remove from Storage
			Place in Storage or Entry
			Entry

2174.01

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2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration Receipt Documentation Log

Client/Project: Weston Solutions Inc (Kerr McGee) (IL)

Date of Receipt: 10-1-04

Time of Receipt: 0905

Source Code: 50-1

Shipping Container Sealed (Y) / N

Custody Seal Present: (Y) / N (2)

Custody Seal Intact: (Y) / N / NA

Package: (Chilled) / Not Chilled

Unpacker Emp. No.: 1255

Temperature of Shipping Containers	
#1	#2 #6
Thermometer ID: 8886	Thermometer ID: 8886
Temp.: @KB 10-1-04 3.9° 2.2°	Temp.: 4.4°
Temp. Bottle / Surface Temp.	Temp. Bottle / Surface Temp.
Wet Ice / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose / (Bagged)	Ice Present? (Y) / N Loose / (Bagged)
#3	#4
Thermometer ID:	Thermometer ID:
Temp.:	Temp.:
Temp. Bottle / Surface Temp.	Temp. Bottle / Surface Temp.
Wet Ice / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? Y / N Loose / Bagged	Ice Present? Y / N Loose / Bagged

Paperwork Discrepancy/Unpacking Problems:

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
Kathy Binkley	10-1-04	1230	Unpacking
Anneliese Hutchens	10/1/04	1300	Place in Storage or (Entry)
			Remove from Storage
			Place in Storage or Entry
			Entry

9916

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

734-367-7900

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 914154. Samples arrived at the laboratory on Thursday, September 30, 2004. The PO# for this group is ZAKW1KEOK0A90089.

Client Description			Lancaster Labs Number
MA3-MW29S	MA3-MW29S-092904-7	Groundwater	4363998
MA3-MW31S	MA3-MW31S-092904-10	Groundwater	4363999
MA3-MW34S	MA3-MW34S-092904-13	Groundwater	4364000
MA3-MW36S	MA3-MW36S-092904-9	Groundwater	4364001
MA3-MW37S	MA3-MW37S-092904-8	Groundwater	4364002
MA3-MW6S	MA3-MW6S-092904-11	Groundwater	4364003
MA3-MW7S	MA3-MW7S-092904-12	Groundwater	4364004
MA3-TG3-1	MA3-TG3-1-092904-4	Groundwater	4364005
MA3-TG3-2	MA3-TG3-2-092904-5	Groundwater	4364006
MA3-TG3-3	MA3-TG3-3-092904-6	Groundwater	4364007
MA3-TG6-1	MA3-TG6-1-092904-1	Groundwater	4364008
MA3-TG6-2	MA3-TG6-2-092904-2	Groundwater	4364009
MA3-TG6-3	MA3-TG6-3-092904-3	Groundwater	4364010
Trip_Blank	Trip_Blank	Water	4364011

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO	Weston Solutions, Inc.	Attn: Mr. Tom Graan
1 COPY TO	Kerr-McGee Corporation	Attn: Mr. Roy Widmann
1 COPY TO	Data Package Group	

8821

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Questions? Contact your Client Services Representative
Carrie A Fleming at (717) 656-2300.

Respectfully Submitted,

Michele A. Jarosick
Senior Chemist, Coordinator

0022

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363998

MA3-MW29S MA3-MW29S-092904-7 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 14:15 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A329S SDG#: KMA59-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.8	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.8	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.8	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.088	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.044	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.044	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.022	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.044	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.022	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.044	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.088	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.088	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.022	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/04/2004 21:13	Brian C Veety 0823	1

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Lancaster Laboratories Sample No. WW 4363998

MA3-MW29S MA3-MW29S-092904-7 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 14:15 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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A329S SDG#: KMA59-01

00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 12:59	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/04/2004 21:13	Brian C Veety	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

0824

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Lancaster Laboratories Sample No. WW 4363999

MA3-MW31S MA3-MW31S-092904-10 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 15:40 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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A331S SDG#: KMA59-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.082	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.041	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.041	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.041	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.041	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.082	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.082	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1

Surrogate recoveries were outside of QC limits for the HPLC PAH compounds. The analysis was repeated outside of the required hold time and surrogate recoveries met requirements. The data reported is from the initial extraction of the sample.

Laboratory Chronicle

8825

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Lancaster Laboratories Sample No. WW 4363999

MA3-MW31S MA3-MW31S-092904-10 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 15:40 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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A331S SDG#: KMA59-02

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilutic Factor
08213	BTEX (8021)	SW-846 8021B	1	10/04/2004 13:21	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 13:37	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/04/2004 13:21	Victoria M Martell	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

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Lancaster Laboratories Sample No. WW 4364000

MA3-MW34S MA3-MW34S-092904-13 Groundwater
10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 16:55 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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A334S SDG#: KMA59-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)						
00776	Benzene	71-43-2	7.1	J	2.0	ug/l	10
00777	Toluene	108-88-3	2.1	J	2.0	ug/l	10
00778	Ethylbenzene	100-41-4	25.		2.0	ug/l	10
00779	Total Xylenes	1330-20-7	72.		6.0	ug/l	10
	The reporting limits were raised because sample dilution was necessary to bring non-target compounds into the calibration range of the system.						
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	11,000.		310.	ug/l	200
00782	Acenaphthylene	208-96-8	230.		16.	ug/l	10
00783	Acenaphthene	83-32-9	2,200.		16.	ug/l	10
00784	Fluorene	86-73-7	2,100.		35.	ug/l	200
00785	Phenanthrene	85-01-8	5,700.		79.	ug/l	1000
00789	Anthracene	120-12-7	600.		7.9	ug/l	200
00807	Fluoranthene	206-44-0	2,500.		39.	ug/l	1000
00811	Pyrene	129-00-0	2,000.		35.	ug/l	200
00812	Benzo(a)anthracene	56-55-3	410.		3.9	ug/l	200
00818	Benzo(b)fluoranthene	205-99-2	140.		7.9	ug/l	200
00823	Benzo(a)pyrene	50-32-8	140.		3.9	ug/l	200
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		30.	ug/l	10
00898	Indeno(1,2,3-cd)pyrene	193-39-5	29.		0.79	ug/l	10
00907	Benzo(g,h,i)perylene	191-24-2	58.		0.98	ug/l	10
07409	Chrysene	218-01-9	380.		16.	ug/l	200
07410	Benzo(k)fluoranthene	207-08-9	80.		3.9	ug/l	200

Due to the sample matrix an initial dilution was necessary to perform the analysis. Therefore, the reporting limits for the PAH by HPLC compounds were raised.

The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

Due to the presence of an interferent near its retention time, the normal reporting limit was not attained for dibenz(a,h)anthracene. The reporting limit for this compound was raised accordingly.

0827

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4364000

MA3-MW34S MA3-MW34S-092904-13 Groundwater
10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 16:55 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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A334S SDG#: KMA59-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/04/2004 21:52	Brian C Veety	10
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 14:19	Mark A Clark	10
00774	PAH's in Water by HPLC	SW-846 8310	1	10/11/2004 17:27	Mark A Clark	200
00774	PAH's in Water by HPLC	SW-846 8310	1	10/12/2004 00:16	Mark A Clark	1000
01146	GC VOA Water Prep	SW-846 5030B	1	10/04/2004 21:52	Brian C Veety	10
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

0028

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4364001

MA3-MW36S MA3-MW36S-092904-9 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 14:35 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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A336S SDG#: KMA59-04

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.18	ug/l	1
00785	Phenanthrene	85-01-8	0.10	J	0.081	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.041	ug/l	1
00807	Fluoranthene	206-44-0	0.050	J	0.041	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.041	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.041	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.081	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.081	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/04/2004 22:31	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/11/2004 15:27	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/04/2004 22:31	Brian C Veety	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

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Lancaster Laboratories Sample No. WW 4364001

MA3-MW36S MA3-MW36S-092904-9 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 14:35 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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A336S SDG#: KMA59-04

8838

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Lancaster Laboratories Sample No. WW 4364002

MA3-MW37S MA3-MW37S-092904-8 Groundwater
7,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 14:25 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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A337S SDG#: KMA59-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.087	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.043	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.043	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.022	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.043	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.022	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.043	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.087	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.087	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.022	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/04/2004 23:11	Brian C Veety	1

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Lancaster Laboratories Sample No. WW 4364002

MA3-MW37S MA3-MW37S-092904-8 Groundwater
7,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 14:25 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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A337S SDG#: KMA59-05

00774	PAH's in Water by HPLC	SW-846 8310	1	10/11/2004 16:06	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/04/2004 23:11	Brian C Veety	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

0832

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Lancaster Laboratories Sample No. WW 4364003

MA3-MW6S MA3-MW6S-092904-11 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 15:50 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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A306S SDG#: KMA59-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.079	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.079	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.099	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.079	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/04/2004 23:50	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 16:54	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/04/2004 23:50	Brian C Veety	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4364004

MA3-MW7S MA3-MW7S-092904-12 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 16:45 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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A307S SDG#: KMA59-07

00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 17:32	Mark A Clark	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/11/2004 18:09	Mark A Clark	50
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 00:29	Brian C Veety	5
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

8836

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Lancaster Laboratories Sample No. WW 4364005

MA3-TG3-1 MA3-TG3-1-092904-4 Groundwater
7,9,10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 11:45 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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TG3-1 SDG#: KMA59-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	0.65 J	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	N.D.	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	1.4	mg/l	1
00273	Total Organic Carbon	n.a.	9.4	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.60	mg/l	5
	Due to interferences from the sample matrix, the reporting limit for the Total Phosphorus as PO4 water determination was increased.					
01553	Chemical Oxygen Demand	n.a.	23.2	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.081	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.081	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.081	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

0037

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Lancaster Laboratories Sample No. WW 4364005

MA3-TG3-1 MA3-TG3-1-092904-4 Groundwater
7,9,10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 11:45 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG3-1 SDG#: KMA59-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:39	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/30/2004 19:23	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 15:02	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/04/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/30/2004 20:50	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/30/2004 22:30	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/05/2004 18:30	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 12:37	Kyle W Eckenroad	5
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 01:09	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 18:11	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 01:09	Brian C Veety	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 14:00	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/01/2004 10:00	Choon Y Tian	1

8838

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Lancaster Laboratories Sample No. WW 4364006

MA3-TG3-2 MA3-TG3-2-092904-5 Groundwater
7,9,10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 11:55 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG3-2 SDG#: KMA59-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	0.91 J	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	N.D.	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	3.4	mg/l	1
00273	Total Organic Carbon	n.a.	8.2	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.60	mg/l	5
	Due to interferences from the sample matrix, the reporting limit for the Total Phosphorus as PO4 water determination was increased.					
01553	Chemical Oxygen Demand	n.a.	20.0	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	0.74 J	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.082	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.041	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.041	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.041	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.041	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.082	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.082	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1

0039

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Lancaster Laboratories Sample No. WW 4364006

MA3-TG3-2 MA3-TG3-2-092904-5 Groundwater
7,9,10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 11:55 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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Livonia MI 48150

TG3-2 SDG#: KMA59-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:40	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/30/2004 19:24	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 15:05	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/04/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/30/2004 20:50	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/30/2004 22:30	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/05/2004 18:38	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 12:43	Kyle W Eckenroad	5
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 03:46	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 18:49	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 03:46	Brian C Veety	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 14:00	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/01/2004 10:00	Choon Y Tian	1

2040

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Lancaster Laboratories Sample No. WW 4364007

MA3-TG3-3 MA3-TG3-3-092904-6 Groundwater
7,9,10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 12:00 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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TG3-3 SDG#: KMA59-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.8	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.8	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	0.018 J	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	5.6	0.80	mg/l	1
00273	Total Organic Carbon	n.a.	12.2	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	32.0	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.078	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.039	ug/l	1
00807	Fluoranthene	206-44-0	0.092 J	0.039	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.039	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.039	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.078	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.098	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.078	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

9841

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Lancaster Laboratories Sample No. WW 4364007

MA3-TG3-3 MA3-TG3-3-092904-6 Groundwater
7,9,10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 12:00 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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TG3-3 SDG#: KMA59-10

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:41	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/30/2004 19:28	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 15:07	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/04/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/30/2004 20:50	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/30/2004 22:30	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/05/2004 18:46	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 12:44	Kyle W Eckenroad	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 04:25	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 19:28	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 04:25	Brian C Veety	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 14:00	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/01/2004 10:00	Choon Y Tian	1

0042

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Lancaster Laboratories Sample No. WW 4364008

MA3-TG6-1 MA3-TG6-1-092904-1 Groundwater
9,10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 10:00 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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TG6-1 SDG#: KMA59-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	2.1	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.8	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	0.012 J	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	2.9	mg/l	1
00273	Total Organic Carbon	n.a.	14.1	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.60	mg/l	5
	Due to interferences from the sample matrix, the reporting limit for the Total Phosphorus as PO4 water determination was increased.					
01553	Chemical Oxygen Demand	n.a.	32.8	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.082	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.041	ug/l	1
00807	Fluoranthene	206-44-0	0.046 J	0.041	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.041	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.041	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.082	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.082	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1

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Lancaster Laboratories Sample No. WW 4364008

MA3-TG6-1 MA3-TG6-1-092904-1 Groundwater
9,10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 10:00 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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TG6-1 SDG#: KMA59-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:45	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/30/2004 19:29	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 15:08	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/04/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/30/2004 20:50	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/30/2004 22:30	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/05/2004 18:54	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 12:45	Kyle W Eckenroad	5
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 05:04	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 20:06	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 05:04	Brian C Veety	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 14:50	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/01/2004 10:00	Choon Y Tian	1

5044

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4364009

MA3-TG6-2 MA3-TG6-2-092904-2 Groundwater
10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 10:10 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

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TG6-2 SDG#: KMA59-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.3	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.46 J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	1.8	mg/l	1
00273	Total Organic Carbon	n.a.	9.8	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	25.2	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.076	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.038	ug/l	1
00807	Fluoranthene	206-44-0	0.091 J	0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.095	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	ug/l	1

0045

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Lancaster Laboratories Sample No. WW 4364009

MA3-TG6-2 MA3-TG6-2-092904-2 Groundwater
10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 10:10 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:32
Discard: 11/30/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG6-2 SDG#: KMA59-12

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:46	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/30/2004 19:30	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 15:12	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/04/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/30/2004 20:50	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/30/2004 22:30	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/05/2004 19:02	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 12:46	Kyle W Eckenroad	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 05:44	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 20:45	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 05:44	Brian C Veety	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 14:50	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/01/2004 10:00	Choon Y Tian	1

0046

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4364010

MA3-TG6-3 MA3-TG6-3-092904-3 Groundwater
7,9,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 10:20 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:33
Discard: 11/30/2004

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PO Box 3048
Livonia MI 48150

TG6-3 SDG#: KMA59-13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	0.89 J	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.96 J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	0.011 J	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	1.4	mg/l	1
00273	Total Organic Carbon	n.a.	8.3	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.60	mg/l	5
	Due to interferences from the sample matrix, the reporting limit for the Total Phosphorus as PO4 water determination was increased.					
01553	Chemical Oxygen Demand	n.a.	21.2	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.084	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.042	ug/l	1
00807	Fluoranthene	206-44-0	0.058 J	0.042	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.042	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.042	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.084	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.084	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1
	Due to the nature of the sample matrix, a reduced aliquot was used for					

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Lancaster Laboratories Sample No. WW 4364010

MA3-TG6-3 MA3-TG6-3-092904-3 Groundwater
7,9,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 10:20 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:33
Discard: 11/30/2004

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Livonia MI 48150

TG6-3 SDG#: KMA59-13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilutio Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:47	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/30/2004 19:32	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 15:13	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/04/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/30/2004 20:50	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/30/2004 22:30	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/05/2004 19:10	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 12:47	Kyle W Eckenroad	5
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 06:23	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 21:24	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 06:23	Brian C Veety	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 14:50	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/01/2004 10:00	Choon Y Tian	1

0848

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Lancaster Laboratories Sample No. WW 4364011

Trip_Blank Trip_Blank Water
NA 02687.007.006.0001
Moss American Site - WI
Collected: n.a.

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 10/15/2004 at 16:33
Discard: 11/30/2004

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A3-TB SDG#: KMA59-14TB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/04/2004 19:54	Brian C Veety	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/04/2004 19:54	Brian C Veety	1

0849

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ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

734-367-7900

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 914367. Samples arrived at the laboratory on Friday, October 01, 2004. The PO# for this group is ZAKW1KEOK0A90089.

Client Description			Lancaster Labs Number
MA3-TG1-1	MA3-TG1-1-093004-6	Groundwater	4365389
MA3-TG1-2	MA3-TG1-2-093004-7	Groundwater	4365390
MA3-TG1-3	MA3-TG1-3-093004-8	Groundwater	4365391
MA3-TG2-1	MA3-TG2-1-093004-3	Groundwater	4365392
MA3-TG2-1	MA3-TG2-1-093004-3-DP	Groundwater	4365393
MA3-TG2-2	MA3-TG2-2-093004-2	Groundwater	4365394
MA3-TG2-3	MA3-TG2-3-093004-1	Groundwater	4365395
MA3-TG2-3	MA3-TG2-3-093004-1-MS	Groundwater	4365396
MA3-TG2-3	MA3-TG2-3-093004-1-MSD	Groundwater	4365397

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO	Weston Solutions, Inc.	Attn: Mr. Tom Graan
1 COPY TO	Kerr-McGee Corporation	Attn: Mr. Roy Widmann
1 COPY TO	Data Package Group	

0050

Lancaster Laboratories

Questions? Contact your Client Services Representative
Carrie A Fleming at (717) 656-2300.

Respectfully Submitted,

Michele A. Jarosick
Senior Chemist, Coordinator

8851

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365389

MA3-TG1-1 MA3-TG1-1-093004-6 Groundwater
1,2,5,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 12:45 by MP Account Number: 07802

Submitted: 10/01/2004 09:05 Kerr-McGee Corporation
Reported: 10/15/2004 at 16:34 PO Box 3048
Discard: 11/30/2004 Livonia MI 48150

TG1-1 SDG#: KMA59-15

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.8		0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.20	mg/l	5
	Due to interferences from the sample matrix, the reporting limit for the Nitrate Nitrogen determination was increased.						
00221	Ammonia Nitrogen	7664-41-7	1.6		0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	7.1		0.80	mg/l	1
00273	Total Organic Carbon	n.a.	11.8		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.		0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	57.6		4.2	mg/l	2
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		2.0	ug/l	10
00777	Toluene	108-88-3	N.D.		2.0	ug/l	10
00778	Ethylbenzene	100-41-4	29.		2.0	ug/l	10
00779	Total Xylenes	1330-20-7	41.		6.0	ug/l	10
	The reporting limits were raised because sample dilution was necessary to bring non-target compounds into the calibration range of the system.						
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	3,200.		17.	ug/l	10
00782	Acenaphthylene	208-96-8	92.	J	17.	ug/l	10
00783	Acenaphthene	83-32-9	1,100.		17.	ug/l	10
00784	Fluorene	86-73-7	800.		37.	ug/l	200
00785	Phenanthrene	85-01-8	1,900.		17.	ug/l	200
00789	Anthracene	120-12-7	200.		8.3	ug/l	200
00807	Fluoranthene	206-44-0	850.		8.3	ug/l	200
00811	Pyrene	129-00-0	690.		37.	ug/l	200
00812	Benzo(a)anthracene	56-55-3	150.		4.2	ug/l	200
00818	Benzo(b)fluoranthene	205-99-2	53.		8.3	ug/l	200
00823	Benzo(a)pyrene	50-32-8	56.		4.2	ug/l	200
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		12.	ug/l	10
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		11.	ug/l	10
00907	Benzo(g,h,i)perylene	191-24-2	23.		1.0	ug/l	10
07409	Chrysene	218-01-9	120.		0.83	ug/l	10

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365389

MA3-TG1-1 MA3-TG1-1-093004-6 Groundwater
1,2,5,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 12:45 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/15/2004 at 16:34
Discard: 11/30/2004

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PO Box 3048
Livonia MI 48150

TG1-1 SDG#: KMA59-15

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
07410	Benzo(k)fluoranthene	207-08-9	32.	0.21	ug/l	10

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Due to the sample matrix an initial dilution was necessary to perform the analysis. Therefore, the reporting limits for the PAH by HPLC compounds were raised.

The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

Due to the presence of interferents near their retention times, normal reporting limits were not attained for several target compounds. The reporting limits for these compounds were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:52	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	10/01/2004 20:39	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/05/2004 20:23	Venia B McFadden	5
00221	Ammonia Nitrogen	EPA 350.2	1	10/06/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	10/02/2004 07:00	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	10/01/2004 21:31	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/06/2004 16:24	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/05/2004 17:48	Kyle W Eckenroad	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/11/2004 06:30	Susan A Engle	2
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 19:26	Victoria M Martell	10
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 22:06	Mark A Clark	10
00774	PAH's in Water by HPLC	SW-846 8310	1	10/11/2004 18:51	Mark A Clark	200
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 19:26	Victoria M Martell	10
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 14:50	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

0853

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365389

MA3-TG1-1 MA3-TG1-1-093004-6 Groundwater
1,2,5,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 12:45 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/15/2004 at 16:34
Discard: 11/30/2004

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Livonia MI 48150

TG1-1 SDG#: KMA59-15

08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/05/2004 12:05	Cheryl L Robinson	1

0854

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365390

MA3-TG1-2 MA3-TG1-2-093004-7 Groundwater
1,2,5,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 12:50 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/15/2004 at 16:34
Discard: 11/30/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG1-2 SDG#: KMA59-16

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.4		0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.20	mg/l	5
	Due to interferences from the sample matrix, the reporting limit for the Nitrate Nitrogen determination was increased.						
00221	Ammonia Nitrogen	7664-41-7	N.D.		0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	0.011	J	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.		5.0	mg/l	1
00273	Total Organic Carbon	n.a.	13.0		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.15	J	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	33.1		2.1	mg/l	1
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	0.2	J	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	15.		1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.7	ug/l	1
00783	Acenaphthene	83-32-9	27.		1.7	ug/l	1
00784	Fluorene	86-73-7	14.		0.20	ug/l	1
00785	Phenanthrene	85-01-8	3.9		0.087	ug/l	1
00789	Anthracene	120-12-7	0.69		0.044	ug/l	1
00807	Fluoranthene	206-44-0	1.9		0.044	ug/l	1
00811	Pyrene	129-00-0	1.2		0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	0.070	J	0.022	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.044	ug/l	1
00823	Benzo(a)pyrene	50-32-8	0.031	J	0.022	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.044	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.087	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.087	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.022	ug/l	0054
	Due to the nature of the sample matrix, a reduced aliquot was used for						

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Lancaster Laboratories Sample No. WW 4365390

MA3-TG1-2 MA3-TG1-2-093004-7 Groundwater
1,2,5,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 12:50 by MP Account Number: 07802

Submitted: 10/01/2004 09:05 Kerr-McGee Corporation
Reported: 10/15/2004 at 16:34 PO Box 3048
Discard: 11/30/2004 Livonia MI 48150

TG1-2 SDG#: KMA59-16

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:53	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	10/01/2004 20:40	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/05/2004 20:24	Venia B McFadden	5
00221	Ammonia Nitrogen	EPA 350.2	1	10/06/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	10/02/2004 07:00	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	10/01/2004 21:31	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/06/2004 16:32	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/05/2004 17:49	Kyle W Eckenroad	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/11/2004 06:30	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 20:05	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 22:44	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 20:05	Victoria M Martell	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 14:50	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/05/2004 12:05	Cheryl L Robinson	1

0856

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Lancaster Laboratories Sample No. WW 4365391

MA3-TG1-3 MA3-TG1-3-093004-8 Groundwater
2,3,5,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 13:00 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/15/2004 at 16:34
Discard: 11/30/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG1-3 SDG#: KMA59-17

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.6		0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.2		0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	6.9		0.80	mg/l	1
00273	Total Organic Carbon	n.a.	13.0		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.24		0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	30.4		2.1	mg/l	1
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.6	ug/l	1
00783	Acenaphthene	83-32-9	1.7	J	1.6	ug/l	1
00784	Fluorene	86-73-7	0.76	J	0.18	ug/l	1
00785	Phenanthrene	85-01-8	0.12	J	0.082	ug/l	1
00789	Anthracene	120-12-7	0.069	J	0.041	ug/l	1
00807	Fluoranthene	206-44-0	0.23		0.041	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.041	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.041	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.082	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.082	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.020	ug/l	1

9857

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365391

MA3-TG1-3 MA3-TG1-3-093004-8 Groundwater
2,3,5,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 13:00 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/15/2004 at 16:34
Discard: 11/30/2004

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PO Box 3048
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TG1-3 SDG#: KMA59-17

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:55	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	10/01/2004 20:42	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/05/2004 20:29	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/06/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	10/02/2004 07:00	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	10/01/2004 21:31	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/06/2004 16:40	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/05/2004 17:50	Kyle W Eckenroad	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/11/2004 06:30	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 20:45	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/11/2004 00:01	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 20:45	Victoria M Martell	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 14:50	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/05/2004 12:05	Cheryl L Robinson	1

0059

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365392

MA3-TG2-1 MA3-TG2-1-093004-3 Groundwater
2,3,5,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 10:00 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/15/2004 at 16:34
Discard: 11/30/2004

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TG2-1 SDG#: KMA59-18

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	N.D.		0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.		0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.		0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	N.D.		0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.		0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.		1.9	mg/l	1
00273	Total Organic Carbon	n.a.	3.5		0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.		0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	7.0	J	2.1	mg/l	1
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.083	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.041	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.041	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.041	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.041	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.083	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.083	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.021	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

8859

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Lancaster Laboratories Sample No. WW 4365392

MA3-TG2-1 MA3-TG2-1-093004-3 Groundwater
2,3,5,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 10:00 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/15/2004 at 16:34
Discard: 11/30/2004

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PO Box 3048
Livonia MI 48150

TG2-1 SDG#: KMA59-18

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:56	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	10/01/2004 20:43	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/05/2004 20:31	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/06/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	10/02/2004 07:00	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	10/01/2004 21:31	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/06/2004 16:48	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/05/2004 17:51	Kyle W Eckenroad	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/11/2004 06:30	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 21:24	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/11/2004 00:40	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 21:24	Victoria M Martell	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 14:50	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/05/2004 12:05	Cheryl L Robinson	1

8868

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365393

MA3-TG2-1 MA3-TG2-1-093004-3-DP Groundwater
4,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 10:00 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/15/2004 at 16:34
Discard: 11/30/2004

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TG21D SDG#: KMA59-19FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.085	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.043	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.043	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.043	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.043	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.085	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.085	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 22:03	Victoria M Martell	1

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Lancaster Laboratories Sample No. WW 4365393

MA3-TG2-1 MA3-TG2-1-093004-3-DP Groundwater
4,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 10:00 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/15/2004 at 16:34
Discard: 11/30/2004

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Livonia MI 48150

TG21D SDG#: KMA59-19FD

00774	PAH's in Water by HPLC	SW-846 8310	1	10/11/2004 01:18	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 22:03	Victoria M Martell	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

2862

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365394

MA3-TG2-2 MA3-TG2-2-093004-2 Groundwater
3,4,5,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 09:50 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/15/2004 at 16:34
Discard: 11/30/2004

Kerr-McGee Corporation
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Livonia MI 48150

TG2-2 SDG#: KMA59-20

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	N.D.	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.73 J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	3.2	mg/l	1
00273	Total Organic Carbon	n.a.	3.0	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	7.4 J	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.083	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.042	ug/l	1
00807	Fluoranthene	206-44-0	0.043 J	0.042	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.042	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.042	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.083	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.083	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

0663

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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365394

MA3-TG2-2 MA3-TG2-2-093004-2 Groundwater
3,4,5,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 09:50 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/15/2004 at 16:34
Discard: 11/30/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG2-2 SDG#: KMA59-20

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:59	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	10/01/2004 20:55	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/05/2004 20:32	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/06/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	10/02/2004 07:00	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	10/01/2004 21:31	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/06/2004 16:56	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/05/2004 17:52	Kyle W Eckenroad	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/11/2004 06:30	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 22:42	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/11/2004 01:57	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 22:42	Victoria M Martell	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 15:30	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/05/2004 12:05	Cheryl L Robinson	1

8864

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Lancaster Laboratories Sample No. WW 4365395

MA3-TG2-3 MA3-TG2-3-093004-1 Groundwater
3,4,5,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 09:45 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/15/2004 at 16:35
Discard: 11/30/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG2-3 SDG#: KMA59-21BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	0.99 J	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	N.D.	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	4.6	mg/l	1
00273	Total Organic Carbon	n.a.	8.9	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	0.31	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	20.2	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.082	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.041	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.041	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.041	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.041	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.082	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.082	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

0065

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365395

MA3-TG2-3 MA3-TG2-3-093004-1 Groundwater
3,4,5,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 09:45 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/15/2004 at 16:35
Discard: 11/30/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG2-3 SDG#: KMA59-21BKG

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilutic Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:59	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	10/01/2004 20:57	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/05/2004 20:26	Venia B McFadden	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/06/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	10/02/2004 07:00	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	10/01/2004 21:31	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/06/2004 17:04	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/05/2004 17:45	Kyle W Eckenroad	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/11/2004 06:30	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 12:35	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 11:03	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 12:35	Victoria M Martell	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 15:30	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/05/2004 12:05	Cheryl L Robinson	1

8866

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365396

MA3-TG2-3 MA3-TG2-3-093004-1-MS Groundwater
4,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 09:45 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/15/2004 at 16:35
Discard: 11/30/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG2-3 SDG#: KMA59-21MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	21.	0.2	ug/l	1
00777	Toluene	108-88-3	21.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	21.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	62.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	150.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	160.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	160.	1.7	ug/l	1
00784	Fluorene	86-73-7	17.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	5.4	0.084	ug/l	1
00789	Anthracene	120-12-7	2.6	0.042	ug/l	1
00807	Fluoranthene	206-44-0	2.7	0.042	ug/l	1
00811	Pyrene	129-00-0	18.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	1.4	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	1.1	0.042	ug/l	1
00823	Benzo(a)pyrene	50-32-8	1.4	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	2.5	0.042	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	5.1	0.084	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	9.7	0.11	ug/l	1
07409	Chrysene	218-01-9	5.3	0.084	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	1.1	0.021	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 13:28	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 11:42	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 13:28	Victoria M Martell	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

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Lancaster Laboratories Sample No. WW 4365396

MA3-TG2-3 MA3-TG2-3-093004-1-MS Groundwater
4,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 09:45 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/15/2004 at 16:35
Discard: 11/30/2004

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PO Box 3048
Livonia MI 48150

TG2-3 SDG#: KMA59-21MS

0669

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Lancaster Laboratories Sample No. WW 4365397

MA3-TG2-3 MA3-TG2-3-093004-1-MSD Groundwater
4,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 09:45 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/15/2004 at 16:35
Discard: 11/30/2004

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PO Box 3048
Livonia MI 48150

TG2-3 SDG#: KMA59-21MSD*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	21.	0.2	ug/l	1
00777	Toluene	108-88-3	21.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	21.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	62.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	170.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	170.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	170.	1.7	ug/l	1
00784	Fluorene	86-73-7	18.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	5.5	0.086	ug/l	1
00789	Anthracene	120-12-7	2.7	0.043	ug/l	1
00807	Fluoranthene	206-44-0	2.8	0.043	ug/l	1
00811	Pyrene	129-00-0	19.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	1.4	0.022	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	1.1	0.043	ug/l	1
00823	Benzo(a)pyrene	50-32-8	1.4	0.022	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	2.7	0.043	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	5.4	0.086	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	10.	0.11	ug/l	1
07409	Chrysene	218-01-9	5.5	0.086	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	1.1	0.022	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 14:08	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 12:20	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 14:08	Victoria M Martell	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

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Lancaster, PA 17605-2425
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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365397

MA3-TG2-3 MA3-TG2-3-093004-1-MSD Groundwater
4,6-093004 02687.007.006.0001
Moss American - WI
Collected:09/30/2004 09:45 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/15/2004 at 16:35
Discard: 11/30/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG2-3 SDG#: KMA59-21MSD*

0078

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Lancaster, PA 17605-2425
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Case Narrative
Client: Kerr-McGee Corporation
SDG: KMA59

LANCASTER LABORATORIES
PAH by HPLC

SAMPLE NUMBER(S) :

LL #'s	Sample Code	Matrix Water	Comments
4363998	A329S	X	
4363999	A331S	X	
4363999RE	A331SRE	X	Reextraction
4364000	A334S	X	10X Dilution
4364000DL	A334SDL	X	200X Dilution
4364000DL2	A334SDL2	X	1000X Dilution
4364001	A336S	X	
4364002	A337S	X	
4364003	A306S	X	
4364004	A307S	X	
4364004DL	A307SDL	X	50X Dilution
4364005	TG3-1	X	
4364006	TG3-2	X	
4364007	TG3-3	X	
4364008	TG6-1	X	
4364009	TG6-2	X	
4364010	TG6-3	X	
4365389	TG1-1	X	10X Dilution
4365389DL	TG1-1DL	X	200X Dilution
4365390	TG1-2	X	
4365391	TG1-3	X	
4365392	TG2-1	X	
4365393	TG21D	X	
4365394	TG2-2	X	
4365395	TG2-3	X	Unspiked
4365396	TG2-3MS	X	Matrix Spike
4365397	TG2-3MSD	X	Matrix Spike Dup

6673

Case Narrative (continued)
SDG#: KMA59

LABORATORY SUBMITTED QC:

LL #'s	Sample Code	Matrix Water	Comments
SBLKWE276	SBLKWE2762	X	Method Blank
SBLKWK285	SBLKWK2852	X	Method Blank
276WELCS	276WELCS2	X	Lab Control Sample
285WKLCS	285WKLCS2	X	Lab Control Sample
285WKLCSD	285WKLCSD2	X	Lab Control Sample Dup

SAMPLE PREPARATION:

Due to the nature of the sample matrix, reduced aliquots were used in the extraction of the following samples.

Sample Code	Volume
A329S	908 mls
A331S	971 mls
A336S	987 mls
A337S	923 mls
TG6-3	951 mls
TG1-1	962 mls
TG1-2	918 mls
TG2-1	967 mls
TG21D	941 mls
TG2-2	963 mls

No other problems were encountered during the extraction of these samples.

ANALYSIS:

The method used for analysis was SW-846 8310.

All samples were analyzed for polynuclear aromatic hydrocarbons by HPLC.

0074

Sufficient sample volume was not available to perform a MS/MSD for the analysis of A331SRE. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

A334S and TG1-1 were analyzed at initial 10X dilutions due to the nature of the sample matrix.

Reextraction was required for A331S due to unacceptable surrogate recoveries.

No other problems were encountered during the analysis of these samples.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

The surrogate recoveries of nitrobenzene and triphenylene in A331S were below QC limits. A331S was reextracted outside of the method required holding time and did not confirm the original analysis. Both sets of data are included in this data package.

All other QC was within specifications.

DATA INTERPRETATION:

Only non-conformances for client requested compounds are addressed in this case narrative.

Due to incorrect integrations during the initial processing, manual integrations were performed for the following compounds.

Sample Code	Compound
A334S	triphenylene, dibenz(a,h)anthracene
A334SDL	triphenylene, dibenz(a,h)anthracene
A334SDL2	triphenylene
TG1-1	triphenylene,dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene
TG1-1DL	triphenylene, dibenz(a,h)anthracene
TG1-2	acenaphthylene

8275

Case Narrative (continued)
SDG#: KMA59

Due to the presence of interferents near their retention times, the following compound reporting limits were not met. The reporting limits were adjusted accordingly.

Sample Code	Compound
A334S	dibenz(a,h)anthracene
TG1-1	dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Charles J. Neslund
Group Leader, GC/MS Semivolatiles

Date: 10/21/04

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REPRINT

ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

734-367-7900

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 914154. Samples arrived at the laboratory on Thursday, September 30, 2004. The PO# for this group is ZAKW1KEOK0A90089.

Client Description			Lancaster Labs Number
MA3-MW29S	MA3-MW29S-092904-7	Groundwater	4363998
MA3-MW31S	MA3-MW31S-092904-10	Groundwater	4363999
MA3-MW34S	MA3-MW34S-092904-13	Groundwater	4364000
MA3-MW36S	MA3-MW36S-092904-9	Groundwater	4364001
MA3-MW37S	MA3-MW37S-092904-8	Groundwater	4364002
MA3-MW6S	MA3-MW6S-092904-11	Groundwater	4364003
MA3-MW7S	MA3-MW7S-092904-12	Groundwater	4364004
MA3-TG3-1	MA3-TG3-1-092904-4	Groundwater	4364005
MA3-TG3-2	MA3-TG3-2-092904-5	Groundwater	4364006
MA3-TG3-3	MA3-TG3-3-092904-6	Groundwater	4364007
MA3-TG6-1	MA3-TG6-1-092904-1	Groundwater	4364008
MA3-TG6-2	MA3-TG6-2-092904-2	Groundwater	4364009
MA3-TG6-3	MA3-TG6-3-092904-3	Groundwater	4364010
Trip_Blank	Trip_Blank	Water	4364011

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO	Weston Solutions, Inc.	Attn: Mr. Tom Graan
1 COPY TO	Kerr-McGee Corporation	Attn: Mr. Roy Widmann
1 COPY TO	Data Package Group	

Lancaster Laboratories

REPRINT

Questions? Contact your Client Services Representative
Carrie A Fleming at (717) 656-2300.

Respectfully Submitted,

Victoria M. Martell
Chemist

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4363998

MA3-MW29S MA3-MW29S-092904-7 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 14:15 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:18
Discard: 12/26/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A329S SDG#: KMA59-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.8	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.8	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.8	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.088	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.044	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.044	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.022	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.044	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.022	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.044	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.088	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.088	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.022	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/04/2004 21:13	Brian C Veety	1

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Lancaster Laboratories Sample No. WW 4363998

MA3-MW29S MA3-MW29S-092904-7 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 14:15 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:18
Discard: 12/26/2004

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A329S SDG#: KMA59-01

00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 12:59	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/04/2004 21:13	Brian C Veety	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

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Lancaster Laboratories Sample No. WW 4363999

MA3-MW31S MA3-MW31S-092904-10 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 15:40 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:18
Discard: 12/26/2004

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A331S SDG#: KMA59-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.082	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.041	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.041	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.041	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.041	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.082	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.082	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1

Surrogate recoveries were outside of QC limits for the HPLC PAH compounds. The analysis was repeated outside of the required hold time and surrogate recoveries met requirements. The data reported is from the initial extraction of the sample.

Laboratory Chronicle

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Lancaster Laboratories Sample No. WW 4363999

MA3-MW31S MA3-MW31S-092904-10 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 15:40 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:18
Discard: 12/26/2004

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A331S SDG#: KMA59-02

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/04/2004 13:21	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 13:37	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/04/2004 13:21	Victoria M Martell	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

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Lancaster Laboratories Sample No. WW 4364000

MA3-MW34S MA3-MW34S-092904-13 Groundwater
10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 16:55 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:18
Discard: 12/26/2004

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A334S SDG#: KMA59-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)						
00776	Benzene	71-43-2	7.1	J	2.0	ug/l	10
00777	Toluene	108-88-3	2.1	J	2.0	ug/l	10
00778	Ethylbenzene	100-41-4	25.		2.0	ug/l	10
00779	Total Xylenes	1330-20-7	72.		6.0	ug/l	10
	The reporting limits were raised because sample dilution was necessary to bring non-target compounds into the calibration range of the system.						
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	11,000.		310.	ug/l	200
00782	Acenaphthylene	208-96-8	230.		16.	ug/l	10
00783	Acenaphthene	83-32-9	2,200.		16.	ug/l	10
00784	Fluorene	86-73-7	2,100.		35.	ug/l	200
00785	Phenanthrene	85-01-8	5,700.		79.	ug/l	1000
00789	Anthracene	120-12-7	600.		7.9	ug/l	200
00807	Fluoranthene	206-44-0	2,500.		39.	ug/l	1000
00811	Pyrene	129-00-0	2,000.		35.	ug/l	200
00812	Benzo(a)anthracene	56-55-3	410.		3.9	ug/l	200
00818	Benzo(b)fluoranthene	205-99-2	140.		7.9	ug/l	200
00823	Benzo(a)pyrene	50-32-8	140.		3.9	ug/l	200
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		30.	ug/l	10
00898	Indeno(1,2,3-cd)pyrene	193-39-5	29.		0.79	ug/l	10
00907	Benzo(g,h,i)perylene	191-24-2	58.		0.98	ug/l	10
07409	Chrysene	218-01-9	380.		16.	ug/l	200
07410	Benzo(k)fluoranthene	207-08-9	80.		3.9	ug/l	200
	Due to the sample matrix an initial dilution was necessary to perform the analysis. Therefore, the reporting limits for the PAH by HPLC compounds were raised.						

The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.

Due to the presence of an interferent near its retention time, the normal reporting limit was not attained for dibenz(a,h)anthracene. The reporting limit for this compound was raised accordingly.

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Lancaster Laboratories Sample No. WW 4364000

MA3-MW34S MA3-MW34S-092904-13 Groundwater
10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 16:55 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:18
Discard: 12/26/2004

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A334S SDG#: KMA59-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/04/2004 21:52	Brian C Veety	10
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 14:19	Mark A Clark	10
00774	PAH's in Water by HPLC	SW-846 8310	1	10/11/2004 17:27	Mark A Clark	200
00774	PAH's in Water by HPLC	SW-846 8310	1	10/12/2004 00:16	Mark A Clark	1000
01146	GC VOA Water Prep	SW-846 5030B	1	10/04/2004 21:52	Brian C Veety	10
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

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Lancaster Laboratories Sample No. WW 4364001

MA3-MW36S MA3-MW36S-092904-9 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 14:35 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:18
Discard: 12/26/2004

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A336S SDG#: KMA59-04

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.		1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.		0.18	ug/l	1
00785	Phenanthrene	85-01-8	0.10	J	0.081	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.041	ug/l	1
00807	Fluoranthene	206-44-0	0.050	J	0.041	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.041	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.041	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.081	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.081	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/04/2004 22:31	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/11/2004 15:27	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/04/2004 22:31	Brian C Veety	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

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Lancaster Laboratories Sample No. WW 4364001

MA3-MW36S MA3-MW36S-092904-9 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 14:35 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:18
Discard: 12/26/2004

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A336S SDG#: KMA59-04

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Analysis Report

Lancaster Laboratories

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Lancaster Laboratories Sample No. WW 4364002

MA3-MW37S MA3-MW37S-092904-8 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 14:25 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:18
Discard: 12/26/2004

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A337S SDG#: KMA59-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.087	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.043	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.043	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.022	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.043	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.022	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.043	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.087	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.087	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.022	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/04/2004 23:11	Brian C Veety	1

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Lancaster Laboratories Sample No. WW 4364002

MA3-MW37S MA3-MW37S-092904-8 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 14:25 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:18
Discard: 12/26/2004

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A337S SDG#: KMA59-05

00774	PAH's in Water by HPLC	SW-846 8310	1	10/11/2004 16:06	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/04/2004 23:11	Brian C Veety	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4364003

MA3-MW6S MA3-MW6S-092904-11 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 15:50 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:18
Discard: 12/26/2004

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A306S SDG#: KMA59-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.079	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.079	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.099	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.079	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Analysis Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/04/2004 23:50	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 16:54	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/04/2004 23:50	Brian C Veety	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

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Lancaster Laboratories Sample No. WW 4364003

MA3-MW6S MA3-MW6S-092904-11 Groundwater
8,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 15:50 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:18
Discard: 12/26/2004

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A306S SDG#: KMA59-06

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Lancaster Laboratories Sample No. WW 4364004

MA3-MW7S MA3-MW7S-092904-12 Groundwater
7,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 16:45 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:19
Discard: 12/26/2004

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A307S SDG#: KMA59-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)						
00776	Benzene	71-43-2	2.2	J	1.0	ug/l	5
00777	Toluene	108-88-3	N.D.		1.0	ug/l	5
00778	Ethylbenzene	100-41-4	16.		1.0	ug/l	5
00779	Total Xylenes	1330-20-7	26.		3.0	ug/l	5
	The reporting limits were raised because sample dilution was necessary to bring non-target compounds into the calibration range of the system.						
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	2,700.		80.	ug/l	50
00782	Acenaphthylene	208-96-8	40.		1.6	ug/l	1
00783	Acenaphthene	83-32-9	44.		1.6	ug/l	1
00784	Fluorene	86-73-7	7.8		0.18	ug/l	1
00785	Phenanthrene	85-01-8	0.11	J	0.080	ug/l	1
00789	Anthracene	120-12-7	N.D.		0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.080	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.080	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 00:29	Brian C Veety	5

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Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4364004

MA3-MW7S MA3-MW7S-092904-12 Groundwater
7,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 16:45 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:19
Discard: 12/26/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A307S SDG#: KMA59-07

00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 17:32	Mark A Clark	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/11/2004 18:09	Mark A Clark	50
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 00:29	Brian C Veety	5
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4364005

MA3-TG3-1 MA3-TG3-1-092904-4 Groundwater
7,9,10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 11:45 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:19
Discard: 12/26/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG3-1 SDG#: KMA59-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	0.65 J	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	N.D.	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	1.4	mg/l	1
00273	Total Organic Carbon	n.a.	9.4	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.60	mg/l	5
	Due to interferences from the sample matrix, the reporting limit for the Total Phosphorus as PO4 water determination was increased.					
01553	Chemical Oxygen Demand	n.a.	23.2	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.081	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.081	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.081	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

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Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4364005

MA3-TG3-1 MA3-TG3-1-092904-4 Groundwater
7,9,10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 11:45 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:19
Discard: 12/26/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG3-1 SDG#: KMA59-08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:39	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/30/2004 19:23	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 15:02	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/04/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/30/2004 20:50	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/30/2004 22:30	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/05/2004 18:30	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 12:37	Kyle W Eckenroad	5
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 01:09	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 18:11	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 01:09	Brian C Veety	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 14:00	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/01/2004 10:00	Choon Y Tian	1

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Lancaster Laboratories Sample No. WW 4364006

MA3-TG3-2 MA3-TG3-2-092904-5 Groundwater
7,9,10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 11:55 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:19
Discard: 12/26/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG3-2 SDG#: KMA59-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	0.91 J	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	N.D.	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	3.4	mg/l	1
00273	Total Organic Carbon	n.a.	8.2	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.60	mg/l	5
	Due to interferences from the sample matrix, the reporting limit for the Total Phosphorus as PO4 water determination was increased.					
01553	Chemical Oxygen Demand	n.a.	20.0	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	0.74 J	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.082	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.041	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.041	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.041	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.041	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.082	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.082	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4364006

MA3-TG3-2 MA3-TG3-2-092904-5 Groundwater
7,9,10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 11:55 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:19
Discard: 12/26/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG3-2 SDG#: KMA59-09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:40	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/30/2004 19:24	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 15:05	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/04/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/30/2004 20:50	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/30/2004 22:30	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/05/2004 18:38	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 12:43	Kyle W Eckenroad	5
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 03:46	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 18:49	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 03:46	Brian C Veety	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 14:00	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/01/2004 10:00	Choon Y Tian	1

Analysis Report

Lancaster Laboratories

REPRINT

Lancaster Laboratories Sample No. WW 4364007

MA3-TG3-3 MA3-TG3-3-092904-6 Groundwater
7,9,10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 12:00 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:19
Discard: 12/26/2004

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TG3-3 SDG#: KMA59-10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.8	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.8	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	0.018 J	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	5.6	0.80	mg/l	1
00273	Total Organic Carbon	n.a.	12.2	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	32.0	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.078	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.039	ug/l	1
00807	Fluoranthene	206-44-0	0.092 J	0.039	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.039	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.039	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.078	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.098	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.078	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

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Lancaster Laboratories Sample No. WW 4364007

MA3-TG3-3 MA3-TG3-3-092904-6 Groundwater
7,9,10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 12:00 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:19
Discard: 12/26/2004

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Livonia MI 48150

TG3-3 SDG#: KMA59-10

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:41	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/30/2004 19:28	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 15:07	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/04/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/30/2004 20:50	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/30/2004 22:30	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/05/2004 18:46	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 12:44	Kyle W Eckenroad	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 04:25	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 19:28	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 04:25	Brian C Veety	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 14:00	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/01/2004 10:00	Choon Y Tian	1

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4364008

MA3-TG6-1 MA3-TG6-1-092904-1 Groundwater
9,10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 10:00 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:19
Discard: 12/26/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG6-1 SDG#: KMA59-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	2.1	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	1.8	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	0.012 J	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	2.9	mg/l	1
00273	Total Organic Carbon	n.a.	14.1	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.60	mg/l	5
	Due to interferences from the sample matrix, the reporting limit for the Total Phosphorus as PO4 water determination was increased.					
01553	Chemical Oxygen Demand	n.a.	32.8	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.082	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.041	ug/l	1
00807	Fluoranthene	206-44-0	0.046 J	0.041	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.041	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.041	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.082	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.082	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4364008

MA3-TG6-1 MA3-TG6-1-092904-1 Groundwater
9,10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 10:00 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:19
Discard: 12/26/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG6-1 SDG#: KMA59-11

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:45	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/30/2004 19:29	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 15:08	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/04/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/30/2004 20:50	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/30/2004 22:30	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/05/2004 18:54	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 12:45	Kyle W Eckenroad	5
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 05:04	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 20:06	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 05:04	Brian C Veety	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 14:50	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/01/2004 10:00	Choon Y Tian	1

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4364009

MA3-TG6-2 MA3-TG6-2-092904-2 Groundwater
10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 10:10 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:19
Discard: 12/26/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG6-2 SDG#: KMA59-12

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	1.3	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.46 J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	N.D.	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	1.8	mg/l	1
00273	Total Organic Carbon	n.a.	9.8	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.12	mg/l	1
01553	Chemical Oxygen Demand	n.a.	25.2	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.5	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.5	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.5	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.17	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.076	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.038	ug/l	1
00807	Fluoranthene	206-44-0	0.091 J	0.038	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.17	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.019	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.038	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.019	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.038	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.076	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.095	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.076	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.019	ug/l	1

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4364009

MA3-TG6-2 MA3-TG6-2-092904-2 Groundwater
10,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 10:10 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:19
Discard: 12/26/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG6-2 SDG#: KMA59-12

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:46	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/30/2004 19:30	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 15:12	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/04/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/30/2004 20:50	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/30/2004 22:30	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/05/2004 19:02	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 12:46	Kyle W Eckenroad	1
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 05:44	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 20:45	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 05:44	Brian C Veety	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 14:50	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/01/2004 10:00	Choon Y Tian	1

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4364010

MA3-TG6-3 MA3-TG6-3-092904-3 Groundwater
7,9,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 10:20 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:19
Discard: 12/26/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG6-3 SDG#: KMA59-13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
00217	Kjeldahl Nitrogen	7727-37-9	0.89 J	0.50	mg/l	1
00219	Nitrite Nitrogen	14797-65-0	N.D.	0.015	mg/l	1
00220	Nitrate Nitrogen	14797-55-8	N.D.	0.040	mg/l	1
00221	Ammonia Nitrogen	7664-41-7	0.96 J	0.11	mg/l	1
00226	Ortho-Phosphate as P	14265-44-2	0.011 J	0.010	mg/l	1
00235	Biochemical Oxygen Demand	n.a.	N.D.	1.4	mg/l	1
00273	Total Organic Carbon	n.a.	8.3	0.50	mg/l	1
00345	Total Phosphorus as PO4 water	14265-44-2	N.D.	0.60	mg/l	5
	Due to interferences from the sample matrix, the reporting limit for the Total Phosphorus as PO4 water determination was increased.					
01553	Chemical Oxygen Demand	n.a.	21.2	2.1	mg/l	1
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.084	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.042	ug/l	1
00807	Fluoranthene	206-44-0	0.058 J	0.042	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.042	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.042	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.084	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.084	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1
	Due to the nature of the sample matrix, a reduced aliquot was used for					

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4364010

MA3-TG6-3 MA3-TG6-3-092904-3 Groundwater
7,9,11-092804 02687.007.006.0001
Moss American Site - WI
Collected:09/29/2004 10:20 by MP

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:19
Discard: 12/26/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

TG6-3 SDG#: KMA59-13

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor

analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00217	Kjeldahl Nitrogen	EPA 351.2	1	10/06/2004 10:47	Katherine D Webster	1
00219	Nitrite Nitrogen	EPA 353.2	1	09/30/2004 19:32	Kyle W Eckenroad	1
00220	Nitrate Nitrogen	EPA 353.2	1	10/04/2004 15:13	Katherine D Webster	1
00221	Ammonia Nitrogen	EPA 350.2	1	10/04/2004 16:00	Luz M Groff	1
00226	Ortho-Phosphate as P	EPA 365.3	1	09/30/2004 20:50	Daniel S Smith	1
00235	Biochemical Oxygen Demand	EPA 405.1	1	09/30/2004 22:30	Nicole R Rohrer	1
00273	Total Organic Carbon	EPA 415.1	1	10/05/2004 19:10	Timothy M Petree	1
00345	Total Phosphorus as PO4 water	EPA 365.1	1	10/02/2004 12:47	Kyle W Eckenroad	5
01553	Chemical Oxygen Demand	EPA 410.2	1	10/04/2004 06:05	Susan A Engle	1
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 06:23	Brian C Veety	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/10/2004 21:24	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 06:23	Brian C Veety	1
01460	Total Kjeldahl Nitrogen Digest	EPA 351.2	1	10/05/2004 14:50	Nancy J Shoop	1
03337	PAH Water Extraction	SW-846 3510C	1	10/04/2004 10:30	Jessica Agosto	1
08264	Total Phos as PO4 Prep (water)	EPA 365.1	1	10/01/2004 10:00	Choon Y Tian	1

Analysis Report

Lancaster Laboratories

REPRINT

Lancaster Laboratories Sample No. WW 4364011

Trip_Blank Trip_Blank Water
NA 02687.007.006.0001
Moss American Site - WI
Collected: n.a.

Account Number: 07802

Submitted: 09/30/2004 09:05
Reported: 11/10/2004 at 10:19
Discard: 12/26/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A3-TB SDG#: KMA59-14TB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/04/2004 19:54	Brian C Veety	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/04/2004 19:54	Brian C Veety	1

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Kerr-McGee
Moss American site
Milwaukee, Wisconsin
SDG# KMA60

water samples – BTEX

1. Holding Times:

Lab ID	Client ID MA3-	Sample Date	Analysis Date
4365424	FB-1	9/30/04	10/5/04
4365425	FB-2	9/30/04	10/6/04
4365426	MW27S	9/30/04	10/6/04
4365427	MW28S	9/30/04	10/6/04
4365428	MW32S	9/30/04	10/6/04
4365429	MW32S DP	9/30/04	10/6/04
4365430	MW33S	9/30/04	10/6/04
4365431	MW35S	9/30/04	10/6/04
4365762	TB	9/30/04	10/6/04

All samples were analyzed and extracted within the required holding times.

2. Method Blank:

Three method blanks were associated with the BTEX samples (BLK2057, 2058, and 2059). All blanks were free of contamination.

3. Initial and Continuing Calibration:

For the BTEX samples, all initial and continuing calibration criteria appears to have been achieved. No deficiencies were noted in the laboratory narrative.

4. Surrogate Recovery-:

The surrogate recoveries for the BTEX surrogate (TFT) were all within required QC limits.

5. Matrix Spike/Matrix Spike Duplicate (MS/MSD):

A sample from an alternate delivery group was included as matrix QC. No qualifications are required.

6. Laboratory Control Sample:

One LCS was associated with the samples. All laboratory control sample results were acceptable.

7. Trip Blanks:

The trip blank results were non-detect. All results are acceptable.

8. Field Blanks:

Two field blanks were in this batch. All BTEX results were non-detect. All results are acceptable.

9. Field Duplicates:

Samples MW32S and 32S DP are field duplicates. Results show good correlation.

Water Samples – Polynuclear Aromatic Hydrocarbons (PAHs by HPLC)

1. Holding Times:

Lab ID	Client ID	Sample Date	Extraction Date	Analysis Date
4365424	FB-1	9/30/04	10/6/04	10/7/04
4365425	FB-2	9/30/04	10/6/04	10/7/04
4365426	MW27S	9/30/04	10/6/04	10/7/04
4365427	MW28S	9/30/04	10/6/04	10/7/04
4365428	MW32S	9/30/04	10/6/04	10/7/04
4365429	MW32S DP	9/30/04	10/6/04	10/7/04
4365430	MW33S	9/30/04	10/6/04	10/7, 10/8/04
4365431	MW35S	9/30/04	10/6/04	10/8/04

All samples were analyzed and extracted within the required holding times.

2. Method Blank:

One method blanks was associated with the samples (SBLKWG2792). The method blank results were free of contamination.

3. Initial and Continuing Calibration:

Calibration results were acceptable.

4. Surrogate Recovery:

The NBZ2 surrogate had all recoveries (except one) low outside control limits. Two surrogates in the same fraction must be outside control limits to warrant qualification. All surrogate remaining recoveries were within required control limits.

5. Matrix Spike/Matrix Spike Duplicate:

Matrix QC was performed on not performed on a sample from this data set.

6. Laboratory Control Sample:

One LCS was associated with the samples. All LCS recoveries were within required control limits.

7. Field Blanks:

Two field blanks were analyzed with this set. The field blank results were non-detect.

8. Field Duplicates:

Samples MW32S and 32S DP are field duplicates. Results show good correlation.

Data reviewed by: T. Balla Date: 11/17/04

Lancaster Laboratories
Data Deliverables

Sample Reference List for SDG Number KMA60
with a Data Package Type of I

07802 - Kerr-McGee Corporation
Moss American Site - WI

Lab Sample Number	Lab Sample Code	Client Sample Description				
4365424	3FB01	MA3-FB	MA3-FB-093004-1	Groundwater	5,6-093004	02687.007.006.0001
4365425	023FB	MA3-FB	MA3-FB-093004-2	Groundwater	5,6-093004	02687.007.006.0001
4365426	A327S	MA3-MW27S	MA3-MW27S-093004-9	Groundwater	1,6-093004	02687.007.006.0001
4365427	A328S	MA3-MW28S	MA3-MW28S-093004-4	Groundwater	2,6-093004	02687.007.006.0001
4365428	A332S	MA3-MW32S	MA3-MW32S-093004-11	Groundwater	1,6-093004	02687.007.006.0001
4365429	A332D	MA3-MW32S	MA3-MW32S-093004-11-DP	Groundwater	1,6-093004	02687.007.006.0001
4365430	A333S	MA3-MW33S	MA3-MW33S-093004-10	Groundwater	5,6-093004	02687.007.006.0001
4365431	A335S	MA3-MW35S	MA3-MW35S-093004-5	Groundwater	3,6-093004	02687.007.006.0001
4365762	KMATB	MA3-TB	MA3-TB	Water	NA	02687.007.006.0001

7802 914372 4365424-31

COC ID: COC6-093004

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.008.0001
Lab: LANCASTER LABS
TAT: PER QUOTE
Contact Name: Tom Graan
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 353.2-NO2 &NO3	EPA 353.2-NO2 &NO3	EPA 415.1-TOC	SW846 8021B-BTEX						
						Filtered									
						Container	40 ml Vials	40 ml Vials	250 ml Glass	40 ml Vials						
						Preservative	H2SO4	N/A	N/A	HCl						
	MA3-FB-093004-1	G		N	9/30/2004 10:30				3						
	MA3-FB-093004-2	G		N	9/30/2004 16:00				3						
	MA3-MW27S-093004-9	G		N	9/30/2004 15:30				3						
	MA3-MW28S-093004-4	G		N	9/30/2004 11:15				3						
	MA3-MW32S-093004-11	G		N	9/30/2004 15:45				3						
	MA3-MW32S-093004-11-DP	G		N	9/30/2004 15:45				3						
	MA3-MW33S-093004-10	G		N	9/30/2004 15:35				3						
	MA3-MW35S-093004-5	G		N	9/30/2004 11:25				3						
	MA3-TG1-1-093004-6	G		N	9/30/2004 12:45	1	1	1	3						
	MA3-TG1-2-093004-7	G		N	9/30/2004 12:50	1	1	1	3						
	MA3-TG1-3-093004-8	G		N	9/30/2004 13:00	1	1	1	3						
	MA3-TG2-1-093004-3	G		N	9/30/2004 10:00	1	1	1	3						
	MA3-TG2-1-093004-3-DP	G		N	9/30/2004 10:00				3						
	MA3-TG2-2-093004-2	G		N	9/30/2004 09:50	1	1	1	3						
	MA3-TG2-3-093004-1	G		N	9/30/2004 09:45	1	1	1	3						
	MA3-TG2-3-093004-1-MSD	G		Y	9/30/2004 09:45				6						

Remarks/Comments

COOLER TEMPS SHOWN ARE FROM LLI DOCUMENTATION LOG. CAF 10/1/04

Sampled By

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5	6
2.4	3.2	3.9	5.5	2.2	4.4

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape wa present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition Y N
Labels Indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
	09/30/2004						
						Kathy Bindley	10-1-04 0905

7802 914372 4365424-31

Chain of Custody Record

WESTON SOLUTIONS

COC ID: COC5-093004

Client	Kerr McGee		
Site Name	Moss American	Contact Name	Tom Grean
W. O.	02687.007.006.0001	Contact Phone No.	847-918-4142
Lab	LANCASTER LABS	Lab Contact	C. SWEIGART
TAT	PER QUOTE	Lab Phone	717-656-2308 X1527

						EPA 365.3-ORTHO P, EPA 405.1-BOD	SW846 8310-PAHS								
					Filtered										
					Container	500-ml Poly	1-L Amber								
					Preservative	N/A	N/A								
Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected										
	MA3-FB-093004-1	G		N	9/30/2004 10:30		2								
	MA3-FB-093004-2	G		N	9/30/2004 16:00		2								
	MA3-MW33S-093004-10	G		N	9/30/2004 15:35		2								
	MA3-TG1-1-093004-6	G		N	9/30/2004 12:45	1									
	MA3-TG1-2-093004-7	G		N	9/30/2004 12:50	1									
	MA3-TG1-3-093004-8	G		N	9/30/2004 13:00	1									
	MA3-TG2-1-093004-3	G		N	9/30/2004 10:00	1									
	MA3-TG2-2-093004-2	G		N	9/30/2004 09:50	1									
	MA3-TG2-3-093004-1	G		N	9/30/2004 09:45	1									

Remarks/Comments

COOLER TEMPS SHOWN ARE FROM LLI DOCUMENTATION LOG. CAF 10/4/04

Sampled By M. Pihl

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5	6
2.4	3.2	3.4	5.5	2.2	4.4

COC Tape was present on outer package Y N

COC Tape was unbroken on outer package Y N

COC Tape was present on sample Y N

COC Tape was unbroken on sample Y N

Received in good condition Y N

Labels Indicate Properly Preserved Y N

Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
	9/30/04 2000						
							10-1-04 0905

7802 914372 4365424-31

COC ID: COC1-093004

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT:

Contact Name: Tom Green
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 350.2-NH3	SW846 8310-PAHS	TKN, TP PO4,COD						
						Filtered								
						Container	1-L Glass	1-L Amber	1-L Glass					
						Preservative	N/A	N/A	N/A					
	MA3-MW27S-093004-9	G		N	9/30/2004 15:30		2							
	MA3-MW32S-093004-11	G		N	9/30/2004 15:45		2							
	MA3-MW32S-093004-11-DP	G		N	9/30/2004 15:45		2							
	MA3-TG1-1-093004-6	G		N	9/30/2004 12:45	1		1						
	MA3-TG1-2-093004-7	G		N	9/30/2004 12:50	1		1						

Remarks/Comments
COOLER TEMPS SHOWN ARE FROM LL1 DOCUMENTATION LOG.

Sampled By: W. Pihl

Lab Use Only
Temp of Cooler when Received, C: 1 2.4 | 2 3.2 | 3 3.9 | 4 5.5 | 5 2.2 | 6 4.4

COC Tape was present on outer package: (Y) N
COC Tape was unbroken on outer package: (Y) N
COC Tape wa present on sample: Y N
COC Tape was unbroken on sample: Y N
Received in good condition: (Y) N
Labels Indicate Properly Preserved: Y N
Received within Holding Time: Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[signature]	9-30-04						
						Kristy Binkley	10-1-04 / 0945

7802 914372 4365424-31

COC ID: COC2-093004

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT:

Contact Name: Tom Green
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	SW846 8310-PAHS									
						Filtered									
						Container	1-L Amber								
						Preservative	N/A								
	MA3-MW28S-093004-4	G		N	9/30/2004 11:15	2									
	MA3-TG1-1-093004-6	G		N	9/30/2004 12:45	2									
	MA3-TG1-2-093004-7	G		N	9/30/2004 12:50	2									
	MA3-TG1-3-093004-8	G		N	9/30/2004 13:00	2									
	MA3-TG2-1-093004-3	G		N	9/30/2004 10:00	2									

Remarks/Comments
COOLER TEMPS SHOWN ARE FROM LL1 DOCUMENTATION LOG. CAF 10/4/04

Sampled By: M. Phl

Lab Use Only
Temp of Cooler when Received, C

1	2	3	4	5	6
2.4	3.2	3.9	5.5	2.2	4.4

COC Tape was present on outer package: (Y) N
COC Tape was unbroken on outer package: (Y) N
COC Tape wa present on sample: Y N
COC Tape was unbroken on sample: Y N

Received in good condition: (Y) N
Labels Indicate Properly Preserved: Y N
Received within Holding Time: Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[illegible]	9.30.04 2000						
						Kathy Binkley	10-1-04 0905

7802 914372 4365424-31

COC ID: COC3-093004

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT: PER QUOTE

Contact Name: Tom Graan
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 350.2-NH3	SW846 8310-PAHS	TKN, TP PO4,COD
					Filtered			
					Container	1-L Glass	1-L Amber	1-L Glass
					Preservative	N/A	N/A	N/A
	MA3-MW35S-093004-5	G		N	9/30/2004 11:25		2	
	MA3-TG1-3-093004-8	G		N	9/30/2004 13:00	1		1
	MA3-TG2-1-093004-3	G		N	9/30/2004 10:00	1		1
	MA3-TG2-2-093004-2	G		N	9/30/2004 09:50	1		1
	MA3-TG2-3-093004-1	G		N	9/30/2004 09:45	1		1

Remarks/Comments: COOLER TEMPS SHOWN ARE FROM LLI DOCUMENTATION LOG. CSF 10/4/04

Sampled By: M. Pihl

Lab Use Only

Temp of Cooler when Received, C: 1: 2.4 2: 3.2 3: 3.9 4: 5.5 5: 2.2 6: 4.4

COC Tape was present on outer package (Y) N
COC Tape was unbroken on outer package (Y) N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N
Received in good condition (Y) N
Labels Indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
M. Pihl	9/30/04 2000					Kadi Binkley	10-1-04 0905

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2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration Receipt Documentation Log

(Kerr McGee) (IL)

Client/Project: Weston Solutions Inc.

Date of Receipt: 10-1-04

Time of Receipt: 0905

Source Code: 50-1

Shipping Container Sealed: (Y) N

Custody Seal Present: (Y) / N

Custody Seal Intact: (Y) / N / NA (1)

Package: (Chilled) / Not Chilled

Unpacker Emp. No.: 1255

Temperature of Shipping Containers	
#1 (Vials)	#2
Thermometer ID: 8886	Thermometer ID: 8886
Temp: 2.4°	Temp: 3.2°
(Temp. Bottle) / Surface Temp.	(Temp. Bottle) / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose / (Bagged)	Ice Present? (Y) / N Loose / (Bagged)
#3	#4
Thermometer ID: 8886	Thermometer ID: 8886
Temp: 3.9°	Temp: 5.5°
(Temp. Bottle) / Surface Temp.	(Temp. Bottle) / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose / (Bagged)	Ice Present? (Y) / N Loose / (Bagged)

Paperwork Discrepancy/Unpacking Problems: received (1) trip blank.

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
Kathy Binkley	10-1-04	1230	Unpacking
Anne Marie Hutchison	10/1/04	1300	Place in Storage or (Entry)
			Remove from Storage
			Place in Storage or Entry
			Entry

2174 01

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2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration Receipt Documentation Log

(Kerr McGee) (IL)

Client/Project: Weston Solutions Inc

Date of Receipt: 10-1-04

Time of Receipt: 0905

Source Code: 501

Shipping Container Sealed: (Y) / N

Custody Seal Present: (Y) / N (2)

Custody Seal Intact: (Y) / N / NA

Package: (Chilled) / Not Chilled

Unpacker Emp. No.: 1255

Temperature of Shipping Containers	
#5	#2 #6
Thermometer ID: 8886	Thermometer ID: 8886
Temp.: @RB 10-1-04 3.9° 2.2°	Temp.: 4.4°
Temp. Bottle / Surface Temp.	Temp. Bottle / Surface Temp.
Wet Ice / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose / Bagged	Ice Present? (Y) / N Loose / Bagged
#3	#4
Thermometer ID:	Thermometer ID:
Temp.:	Temp.:
Temp. Bottle / Surface Temp	Temp. Bottle / Surface Temp
Wet Ice / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? Y / N Loose / Bagged	Ice Present? Y / N Loose / Bagged

Paperwork Discrepancy/Unpacking Problems:

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
Kathy Brickley	10-1-04	1230	Unpacking
Annabel Hutchins	10/1/04	1300	Place in Storage or (Entry)
			Remove from Storage
			Place in Storage or Entry
			Entry

7802 9143~~67~~ 420 ~~4365389-99~~ 4365762

COC ID: COC6-093004

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee

Site Name: Moss American

W. O.: 02687.007.006.0001

Lab: LANCASTER LABS

TAT: PER QUOTE

Contact Name: Tom Graan

Contact Phone No.: 847-818-4142

Lab Contact: C. SWEIGART

Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 353.2-NO2 &NO3	EPA 353.2-NO2 &NO3	EPA 415.1-TOC	SW846 8021B-BTEX
					Filtered				
					Container	40 ml Vials	40 ml Vials	250 ml Glass	40 ml Vials
					Preservative	H2SO4	N/A	N/A	HCl
	MA3-FB-093004-1	G		N	9/30/2004 10:30				3
	MA3-FB-093004-2	G		N	9/30/2004 16:00				3
	MA3-MW27S-093004-9	G		N	9/30/2004 15:30				3
	MA3-MW28S-093004-4	G		N	9/30/2004 11:15				3
	MA3-MW32S-093004-11	G		N	9/30/2004 15:45				3
	MA3-MW32S-093004-11-DP	G		N	9/30/2004 15:45				3
	MA3-MW33S-093004-10	G		N	9/30/2004 15:35				3
	MA3-MW35S-093004-5	G		N*	9/30/2004 11:25				3
	MA3-TG1-1-093004-6	G		N	9/30/2004 12:45	1	1	1	3
	MA3-TG1-2-093004-7	G		N	9/30/2004 12:50	1	1	1	3
	MA3-TG1-3-093004-8	G		N	9/30/2004 13:00	1	1	1	3
	MA3-TG2-1-093004-3	G		N	9/30/2004 10:00	1	1	1	3
	MA3-TG2-1-093004-3-DP	G		N	9/30/2004 10:00				3
	MA3-TG2-2-093004-2	G		N	9/30/2004 09:50	1	1	1	3
	MA3-TG2-3-093004-1	G		N	9/30/2004 09:45	1	1	1	3
	MA3-TG2-3-093004-1-MSD	G		Y	9/30/2004 09:45				6

Remarks/Comments

COOLER TEMPS SHOWN ARE FROM LLI DOCUMENTATION LOG. [initials] 10/4/04

Sampled By: [signature]

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5	6
2.4	3.2	3.9	5.5	2.2	4.4

COC Tape was present on outer package (Y) N

COC Tape was unbroken on outer package (Y) N

COC Tape was present on sample Y N

COC Tape was unbroken on sample Y N

Received in good condition (Y) N

Labels indicate Properly Preserved Y N

Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[signature]	09/30/04 [illegible]					Kathy Binkley	10-1-04 0905

7802 914420 TA ~~914367~~ ~~4365~~ 4365762

COC ID: COC5-093004

Chain of Custody Record

WESTON SOLUTIONS

Client Kerr McGee

Site Name Moss American

W. O. 02687.007.006.0001

Lab LANCASTER LABS

TAT PER QUOTE

Contact Name Tom Graan

Contact Phone No. 847-918-4142

Lab Contact C. SWEIGART

Lab Phone 717-656-2308 X1527

	EPA 365.3-ORTHO P, EPA 405.1-BOD	SW846 8310-PAHS
Filtered		
Container	500-ml Poly	1-L Amber
Preservative	N/A	N/A

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 365.3-ORTHO P, EPA 405.1-BOD	SW846 8310-PAHS
	MA3-FB-093004-1	G		N	9/30/2004 10:30		2
	MA3-FB-093004-2	G		N	9/30/2004 16:00		2
	MA3-MW33S-093004-10	G		N	9/30/2004 15:35		2
	MA3-TG1-1-093004-6	G		N	9/30/2004 12:45	1	
	MA3-TG1-2-093004-7	G		N	9/30/2004 12:50	1	
	MA3-TG1-3-093004-8	G		N	9/30/2004 13:00	1	
	MA3-TG2-1-093004-3	G		N	9/30/2004 10:00	1	
	MA3-TG2-2-093004-2	G		N	9/30/2004 09:50	1	
	MA3-TG2-3-093004-1	G		N	9/30/2004 09:45	1	

Remarks/Comments

COOLER TEMPS SHOWN ARE FROM LLI DOCUMENTATION LOG. CAF 10/4/04

Sampled By M Pihl

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5	
2.4	3.2	3.9	5.5	2.2	4.4

COC Tape was present on outer package (Y) N

COC Tape was unbroken on outer package (Y) N

COC Tape was present on sample Y N

COC Tape was unbroken on sample Y N

Received in good condition (Y) N

Labels Indicate Properly Preserved Y N

Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
M Pihl	9/30/04 2000					[illegible signature]	10-1-04 0905

7802 9/14/20 ~~9/14/36~~ ~~4365389-97~~ 4365762

COC ID: COC1-093004

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT:

Contact Name: Tom Green
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 350.2-NH3	SW846 8310-PAHS	TKN, TP PO4, COD							
						Filtered									
						Container	1-L Glass	1-L Amber	1-L Glass						
						Preservative	N/A	N/A	N/A						
	MAJ-MW27S-093004-9	G		N	9/30/2004 15:30		2								
	MAJ-MW32S-093004-11	G		N	9/30/2004 15:45		2								
	MAJ-MW32S-093004-11-DP	G		N	9/30/2004 15:45		2								
	MAJ-TGI-1-093004-6	G		N	9/30/2004 12:45	1		1							
	MAJ-TGI-2-093004-7	G		N	9/30/2004 12:50	1		1							

Remarks/Comments
Cooler Temps shown are from LLI Documentation
LOC. CA 10/4/04

Sampled By W. Pike

Lab Use Only
Temp of Cooler when Received, C
1: 2.4 | 2: 3.2 | 3: 3.9 | 4: 5.5 | 5: 2.2 | 6: 4.4

COC Tape was present on outer package: Y N
COC Tape was unbroken on outer package: Y N
COC Tape ws present on sample: Y N
COC Tape was unbroken on sample: Y N

Received in good condition: Y N
Labels indicate Properly Preserved: Y N
Received within Holding Time: Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[signature]	9-30-04 1600						
						Kaily Binkley	10-1-04 0900

7802 ~~914367~~ 914420 72 ~~4365389 97~~ 424 4365762

COC ID: COC2-093004

Chain of Custody Record

WESTON

Client Kerr McGee

Site Name Moss American

W. O. 02687.007.006.0001

Lab LANCASTER LABS

TAT

Contact Name Tom Green

Contact Phone No. 847-918-4142

Lab Contact C. SWEIGART

Lab Phone 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	SW846 8310-PAHS									
					Filtered										
					Container	1-L Amber									
					Preservative	N/A									
	MA3-MW28S-093004-4	G		N	9/30/2004 11:15	2									
	MA3-TG1-1-093004-6	G		N	9/30/2004 12:45	2									
	MA3-TG1-2-093004-7	G		N	9/30/2004 12:50	2									
	MA3-TG1-3-093004-8	G		N	9/30/2004 13:00	2									
	MA3-TG2-1-093004-3	G		N	9/30/2004 10:00	2									

Remarks/Comments

COOLER TEMPS SHOWN ARE FROM LLI DOCUMENTATION LOG. CHF 10/4/04

Sampled By [signature]

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5

COC Tape was present on outer package (Y) N

COC Tape was unbroken on outer package (Y) N

COC Tape was present on sample Y N

COC Tape was unbroken on sample Y N

Received in good condition (Y) N

Labels indicate Properly Preserved Y N

Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[signature]	9/30/04 2000					Kathy Rinkley	10-1-04 0905

7802 914420 ~~914387~~ ~~4365389-TT~~ 4365762

COC ID: COC3-093004

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT: PER QUOTE

Contact Name: Tom Graan
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	EPA 350.2-NH3	SW846 8310-PAHS	TKN, TP P04,COD							
						Filtered									
						Container	1-L Glass	1-L Amber	1-L Glass						
						Preservative	N/A	N/A	N/A						
	MAJ-MW35S-093004-S	G		N	9/30/2004 11:25		2								
	MAJ-TG1-3-093004-8	G		N	9/30/2004 13:00	1		1							
	MAJ-TG2-1-093004-3	G		N	9/30/2004 10:00	1		1							
	MAJ-TG2-2-093004-2	G		N	9/30/2004 09:50	1		1							
	MAJ-TG2-3-093004-1	G		N	9/30/2004 09:45	1		1							

Remarks/Comments
COOLER TEMPS SHOWN ARE FROM LL! DOCUMENTATION
LOG-IN 10/4/04

Sampled By M Piwl

Lab Use Only
Temp of Cooler when Received, C: 1 | 2 | 3 | 4 | 5

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape was present on sample Y N
COC Tape was unbroken on sample Y N
Received in good condition Y N
Labels indicate Property Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[illegible]	9/30/04 2000						
						[illegible]	10-1-04 0905

7802 914420 ~~914367~~ ~~4365389~~ 424 4365762

COC ID: COC4-093004

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee
Site Name: Moss American
W. O.: 02687.007.006.0001
Lab: LANCASTER LABS
TAT: PER QUOTE

Contact Name: Tom Graan
Contact Phone No.: 847-918-4142
Lab Contact: C. SWEIGART
Lab Phone: 717-656-2308 X1527

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	SW846 8310-PAHS
					Filtered	
					Container	1-L Amber
					Preservative	N/A
	MA3-TG2-1-093004-3-DP	G		N	9/30/2004 10:00	2
	MA3-TG2-2-093004-2	G		N	9/30/2004 09:50	2
	MA3-TG2-3-093004-1	G		N	9/30/2004 09:45	2
	MA3-TG2-3-093004-1-MSD	G		Y	9/30/2004 09:45	4

Remarks/Comments
COOLER TEMPS SHOWN ARE FROM LLI DOCUMENTATION LOG. CAF 10/1/04

Sampled By: M. P[illegible]

Lab Use Only

Temp of Cooler when Received, C: 1: 2.8 (2.9) | 2: 3.2 | 3: 3.9 | 4: 5.5 | 5: 2.2 | 6: 4.4 — CAF 10/1/04

COC Tape was present on outer package: (Y) N
COC Tape was unbroken on outer package: (Y) N
COC Tape was present on sample: Y N
COC Tape was unbroken on sample: Y N

Received in good condition: (Y) N
Labels indicate Properly Preserved: Y N
Received within Holding Time: Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[illegible signature]	9/30/04 2000					Kathy Binkley	10-1-04 0905

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration Receipt Documentation Log

(Kerr McGee)

Client/Project: Weston Solutions (FL) Inc.

Date of Receipt: 10-1-04

Time of Receipt: 0905

Source Code: 50-1

Shipping Container Sealed: (Y) N

Custody Seal Present: (Y) / N

Custody Seal Intact: (Y) / N / NA (1)

Package: (Chilled) / Not Chilled

Unpacker Emp. No.: 1255

Temperature of Shipping Containers	
#1 (Vials)	#2
Thermometer ID: 8886	Thermometer ID: 8886
Temp.: 2.4°	Temp.: 3.2°
(Temp. Bottle) / Surface Temp.	(Temp. Bottle) / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) N Loose / (Bagged)	Ice Present? (Y) N Loose / (Bagged)
#3	#4
Thermometer ID: 8886	Thermometer ID: 8886
Temp.: 3.9°	Temp.: 5.5°
(Temp. Bottle) / Surface Temp.	(Temp. Bottle) / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose / (Bagged)	Ice Present? (Y) N Loose / (Bagged)

Paperwork Discrepancy/Unpacking Problems: received (1) trip blank.

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
Kathy Binkley	10-1-04	1230	Unpacking
Annabel Hutchison	10/1/04	1300	Place in Storage or (Entry)
			Remove from Storage
			Place in Storage or Entry
			Entry

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Environmental Sample Administration Receipt Documentation Log

(Kerr McGee) (IL)

Client/Project: Weston Solutions Inc

Date of Receipt: 10-1-04

Time of Receipt: 0905

Source Code: 501

Shipping Container Sealed (Y) / N

Custody Seal Present: (Y) / N (2)

Custody Seal Intact: (Y) / N / NA

Package: (Chilled) / Not Chilled

Unpacker Emp. No.: 1255

Temperature of Shipping Containers	
#5	#2 #6
Thermometer ID: 8886	Thermometer ID: 8886
Temp: @KB 10-1-04 3.9° 2.2°	Temp: 4.4°
(Temp. Bottle) / Surface Temp.	(Temp. Bottle) / Surface Temp.
(Wet Ice) / Dry Ice / Ice Packs	(Wet Ice) / Dry Ice / Ice Packs
Ice Present? (Y) / N Loose / (Bagged)	Ice Present? (Y) / N Loose / (Bagged)
#3	#4
Thermometer ID:	Thermometer ID:
Temp.:	Temp.:
Temp. Bottle / Surface Temp	Temp. Bottle / Surface Temp.
Wet Ice / Dry Ice / Ice Packs	Wet Ice / Dry Ice / Ice Packs
Ice Present? Y / N Loose / Bagged	Ice Present? Y / N Loose / Bagged

Paperwork Discrepancy/Unpacking Problems:

Sample Administration Internal Chain of Custody			
Name	Date	Time	Reason for Transfer
Kathy Binkley	10-1-04	1230	Unpacking
Anneliese Hutchinson	10/1/04	1300	Place in Storage or (Entry)
			Remove from Storage
			Place in Storage or Entry
			Entry

Analysis Report

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

734-367-7900

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 914372. Samples arrived at the laboratory on Friday, October 01, 2004. The PO# for this group is ZAKW1KEOK0A90089.

Client Description			Lancaster Labs Number
MA3-FB	MA3-FB-093004-1	Groundwater	4365424
MA3-FB	MA3-FB-093004-2	Groundwater	4365425
MA3-MW27S	MA3-MW27S-093004-9	Groundwater	4365426
MA3-MW28S	MA3-MW28S-093004-4	Groundwater	4365427
MA3-MW32S	MA3-MW32S-093004-11	Groundwater	4365428
MA3-MW32S	MA3-MW32S-093004-11-DP	Groundwater	4365429
MA3-MW33S	MA3-MW33S-093004-10	Groundwater	4365430
MA3-MW35S	MA3-MW35S-093004-5	Groundwater	4365431

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO	Weston Solutions, Inc.	Attn: Mr. Tom Graan
1 COPY TO	Kerr-McGee Corporation	Attn: Mr. Roy Widmann
1 COPY TO	Data Package Group	

2218

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Questions? Contact your Client Services Representative
Carrie A Fleming at (717) 656-2300.

Respectfully Submitted,

Michele M. Turner

Michele M. Turner
Manager

8819

MEMBER ACIL

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365424

MA3-FB MA3-FB-093004-1 Groundwater
5,6-093004 02687.007.006.0001
Moss American Site - WI
Collected:09/30/2004 10:30 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/13/2004 at 15:13
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3FB01 SDG#: KMA60-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.8	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.8	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.8	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.20	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.088	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.044	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.044	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.20	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.022	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.044	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.022	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.044	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.088	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.088	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.022	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/05/2004 23:21	Victoria M Martell	1

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365424

MA3-FB MA3-FB-093004-1 Groundwater
5,6-093004 02687.007.006.0001
Moss American Site - WI
Collected:09/30/2004 10:30 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/13/2004 at 15:13
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

3FB01 SDG#: KMA60-01

00774	PAH's in Water by HPLC	SW-846 8310	1	10/07/2004 18:57	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/05/2004 23:21	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/06/2004 11:23	Felix C Arroyo	1

8821

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365425

MA3-FB MA3-FB-093004-2 Groundwater
5,6-093004 02687.007.006.0001
Moss American Site - WI
Collected:09/30/2004 16:00 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/13/2004 at 15:13
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

023FB SDG#: KMA60-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.9	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.9	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.9	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.21	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.094	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.047	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.047	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.21	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.023	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.047	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.023	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.047	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.094	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.12	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.094	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.023	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/06/2004 00:00	Victoria M Martell 2822	1

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PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365425

MA3-FB MA3-FB-093004-2 Groundwater
5,6-093004 02687.007.006.0001
Moss American Site - WI
Collected:09/30/2004 16:00 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/13/2004 at 15:13
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

023FB SDG#: KMA60-02

00774	PAH's in Water by HPLC	SW-846 8310	1	10/07/2004 19:35	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/06/2004 00:00	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/06/2004 11:23	Felix C Arroyo	1

8823

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PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365426

MA3-MW27S MA3-MW27S-093004-9 Groundwater
1,6-093004 02687.007.006.0001
Moss American Site - WI
Collected:09/30/2004 15:30 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/13/2004 at 15:13
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A327S SDG#: KMA60-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.086	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.043	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.043	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.022	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.043	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.022	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.043	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.086	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.11	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.086	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.022	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/06/2004 00:40	Victoria M Martell	1

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PO Box 12425
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717-656-2300 Fax: 717-656-2681

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365426

MA3-MW27S MA3-MW27S-093004-9 Groundwater
1,6-093004 02687.007.006.0001
Moss American Site - WI
Collected:09/30/2004 15:30 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/13/2004 at 15:13
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A327S SDG#: KMA60-03

00774	PAH's in Water by HPLC	SW-846 8310	1	10/07/2004 20:14	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/06/2004 00:40	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/06/2004 11:23	Felix C Arroyo	1

0025

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PO Box 12425
Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365427

MA3-MW28S MA3-MW28S-093004-4 Groundwater
2,6-093004 02687.007.006.0001
Moss American Site - WI
Collected:09/30/2004 11:15 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/13/2004 at 15:13
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A328S SDG#: KMA60-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.7	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.7	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.084	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.042	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.042	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.042	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.042	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.084	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.084	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.021	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/06/2004 01:19	Victoria M Martell	1

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365427

MA3-MW28S MA3-MW28S-093004-4 Groundwater
2,6-093004 02687.007.006.0001
Moss American Site - WI
Collected:09/30/2004 11:15 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/13/2004 at 15:13
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A328S SDG#: KMA60-04

00774	PAH's in Water by HPLC	SW-846 8310	1	10/07/2004 20:52	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/06/2004 01:19	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/06/2004 11:23	Felix C Arroyo	1

8827

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

MEMBER ACIL

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365428

MA3-MW32S MA3-MW32S-093004-11 Groundwater
1,6-093004 02687.007.006.0001
Moss American Site - WI
Collected:09/30/2004 15:45 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/13/2004 at 15:13
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A332S SDG#: KMA60-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.079	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.039	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.039	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.039	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.039	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.079	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.098	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.079	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/06/2004 03:56	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/07/2004 21:31	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/06/2004 03:56	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/06/2004 11:23	Felix C Arroyo	1

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Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365428

MA3-MW32S MA3-MW32S-093004-11 Groundwater
1,6-093004 02687.007.006.0001
Moss American Site - WI
Collected:09/30/2004 15:45 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/13/2004 at 15:13
Discard: 11/28/2004

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A332S SDG#: KMA60-05

0029

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Lancaster, PA 17605-2425
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Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365429

MA3-MW32S MA3-MW32S-093004-11-DP Groundwater
1,6-093004 02687.007.006.0001
Moss American Site - WI
Collected:09/30/2004 15:45 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/13/2004 at 15:13
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A332D SDG#: KMA60-06FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1
00774	PAH's in Water by HPLC					
00775	Naphthalene	91-20-3	N.D.	1.6	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.	1.6	ug/l	1
00783	Acenaphthene	83-32-9	N.D.	1.6	ug/l	1
00784	Fluorene	86-73-7	N.D.	0.18	ug/l	1
00785	Phenanthrene	85-01-8	N.D.	0.079	ug/l	1
00789	Anthracene	120-12-7	N.D.	0.040	ug/l	1
00807	Fluoranthene	206-44-0	N.D.	0.040	ug/l	1
00811	Pyrene	129-00-0	N.D.	0.18	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.	0.020	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.	0.040	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.	0.020	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.	0.040	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.079	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.	0.099	ug/l	1
07409	Chrysene	218-01-9	N.D.	0.079	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.	0.020	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/06/2004 04:36	Victoria M Martell	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/07/2004 22:10	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/06/2004 04:36	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/06/2004 11:23	Felix C Arroyo	1

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365429

MA3-MW32S MA3-MW32S-093004-11-DP Groundwater
1,6-093004 02687.007.006.0001
Moss American Site - WI
Collected:09/30/2004 15:45 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/13/2004 at 15:13
Discard: 11/28/2004

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PO Box 3048
Livonia MI 48150

A332D SDG#: KMA60-06FD

~~8831~~

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PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365430

MA3-MW33S MA3-MW33S-093004-10 Groundwater
5,6-093004 02687.007.006.0001
Moss American Site - WI
Collected:09/30/2004 15:35 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/13/2004 at 15:13
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A333S SDG#: KMA60-07

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		1.0	ug/l	5
00777	Toluene	108-88-3	N.D.		1.0	ug/l	5
00778	Ethylbenzene	100-41-4	7.0		1.0	ug/l	5
00779	Total Xylenes	1330-20-7	11.	J	3.0	ug/l	5
	The reporting limits were raised because sample dilution was necessary to bring non-target compounds into the calibration range of the system.						
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	970.		17.	ug/l	10
00782	Acenaphthylene	208-96-8	N.D.		31.	ug/l	1
00783	Acenaphthene	83-32-9	160.		1.7	ug/l	1
00784	Fluorene	86-73-7	59.		1.9	ug/l	10
00785	Phenanthrene	85-01-8	12.		0.084	ug/l	1
00789	Anthracene	120-12-7	0.38		0.042	ug/l	1
00807	Fluoranthene	206-44-0	N.D.		0.042	ug/l	1
00811	Pyrene	129-00-0	N.D.		0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	N.D.		0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.042	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.042	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.084	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.084	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.021	ug/l	1
	Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.						
	Due to the presence of an interferent near its retention time, the normal reporting limit was not attained for acenaphthylene. The reporting limit for this compound was raised accordingly.						

8832

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365430

MA3-MW33S MA3-MW33S-093004-10 Groundwater
5,6-093004 02687.007.006.0001
Moss American Site - WI
Collected:09/30/2004 15:35 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/13/2004 at 15:13
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A333S SDG#: KMA60-07

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/06/2004 05:15	Victoria M Martell	5
00774	PAH's in Water by HPLC	SW-846 8310	1	10/07/2004 22:48	Mark A Clark	1
00774	PAH's in Water by HPLC	SW-846 8310	1	10/08/2004 17:07	Mark A Clark	10
01146	GC VOA Water Prep	SW-846 5030B	1	10/06/2004 05:15	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/06/2004 11:23	Felix C Arroyo	1

0033

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365431

MA3-MW35S MA3-MW35S-093004-5 Groundwater
3,6-093004 02687.007.006.0001
Moss American Site - WI
Collected:09/30/2004 11:25 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/13/2004 at 15:13
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A335S SDG#: KMA60-08

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)						
00776	Benzene	71-43-2	N.D.		0.2	ug/l	1
00777	Toluene	108-88-3	N.D.		0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.		0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.		0.6	ug/l	1
00774	PAH's in Water by HPLC						
00775	Naphthalene	91-20-3	N.D.		1.7	ug/l	1
00782	Acenaphthylene	208-96-8	N.D.		1.7	ug/l	1
00783	Acenaphthene	83-32-9	4.0	J	1.7	ug/l	1
00784	Fluorene	86-73-7	1.3		0.19	ug/l	1
00785	Phenanthrene	85-01-8	N.D.		0.083	ug/l	1
00789	Anthracene	120-12-7	0.14	J	0.042	ug/l	1
00807	Fluoranthene	206-44-0	0.87		0.042	ug/l	1
00811	Pyrene	129-00-0	0.52	J	0.19	ug/l	1
00812	Benzo(a)anthracene	56-55-3	0.034	J	0.021	ug/l	1
00818	Benzo(b)fluoranthene	205-99-2	N.D.		0.042	ug/l	1
00823	Benzo(a)pyrene	50-32-8	N.D.		0.021	ug/l	1
00895	Dibenz(a,h)anthracene	53-70-3	N.D.		0.042	ug/l	1
00898	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.083	ug/l	1
00907	Benzo(g,h,i)perylene	191-24-2	N.D.		0.10	ug/l	1
07409	Chrysene	218-01-9	N.D.		0.083	ug/l	1
07410	Benzo(k)fluoranthene	207-08-9	N.D.		0.021	ug/l	1

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/06/2004 05:55	Victoria M Martell 6634	1

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365431

MA3-MW35S MA3-MW35S-093004-5 Groundwater
3,6-093004 02687.007.006.0001
Moss American Site - WI
Collected:09/30/2004 11:25 by MP

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/13/2004 at 15:13
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

A335S SDG#: KMA60-08

00774	PAH's in Water by HPLC	SW-846 8310	1	10/08/2004 00:05	Mark A Clark	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/06/2004 05:55	Victoria M Martell	n.a.
03337	PAH Water Extraction	SW-846 3510C	1	10/06/2004 11:23	Felix C Arroyo	1

0035

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

734-367-7900

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 914420. Samples arrived at the laboratory on Friday, October 01, 2004. The PO# for this group is ZAKW1KEOK0A90089.

Client Description			Lancaster Labs Number
MA3-TB	MA3-TB	Water	4365762

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the laboratory chronicles.

1 COPY TO	Weston Solutions, Inc.	Attn: Mr. Tom Graan
1 COPY TO	Kerr-McGee Corporation	Attn: Mr. Roy Widmann
1 COPY TO	Data Package Group	

Questions? Contact your Client Services Representative
Carrie A Fleming at (717) 656-2300.

Respectfully Submitted,

Victoria M. Martell
Chemist

0036

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories

Lancaster Laboratories Sample No. WW 4365762

MA3-TB MA3-TB Water
NA 02687.007.006.0001
Moss American Site - WI
Collected: n.a.

Account Number: 07802

Submitted: 10/01/2004 09:05
Reported: 10/13/2004 at 14:54
Discard: 11/28/2004

Kerr-McGee Corporation
PO Box 3048
Livonia MI 48150

KMATB SDG#: KMA60-09TB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
08213	BTEX (8021)					
00776	Benzene	71-43-2	N.D.	0.2	ug/l	1
00777	Toluene	108-88-3	N.D.	0.2	ug/l	1
00778	Ethylbenzene	100-41-4	N.D.	0.2	ug/l	1
00779	Total Xylenes	1330-20-7	N.D.	0.6	ug/l	1

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
08213	BTEX (8021)	SW-846 8021B	1	10/06/2004 06:34	Victoria M Martell	1
01146	GC VOA Water Prep	SW-846 5030B	1	10/06/2004 06:34	Victoria M Martell	n.a.

8837

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Case Narrative
Client: Kerr-McGee Corporation
SDG: KMA60

LANCASTER LABORATORIES
PAH by HPLC

SAMPLE NUMBER(S) :

LL #'s	Sample Code	Matrix Water	Comments
4365424	3FB01	X	
4365425	023FB	X	
4365426	A327S	X	
4365427	A328S	X	
4365428	A332S	X	
4365429	A332D	X	
4365430	A333S	X	
4365430DL	A333SDL	X	10X Dilution
4365431	A335S	X	
LABORATORY SUBMITTED QC:			
SBLKWG279	SBLKWG2792	X	Method Blank
279WGLCS	279WGLCS2	X	Lab Control Sample
279WGLCSD	279WGLCSD2	X	Lab Control Sample Dup

SAMPLE PREPARATION:

Due to the nature of the sample matrix, reduced aliquots were used in the extraction of the following samples.

Sample Code	Volume
3FB01	908 mls
023FB	855 mls
A327S	925 mls
A328S	954 mls
A333S	953 mls
A335S	961 mls

Case Narrative (continued)
SDG#: KMA60

No other problems were encountered during the extraction of these samples.

ANALYSIS:

The method used for analysis was SW-846 8310.

All samples were analyzed for polynuclear aromatic hydrocarbons by HPLC.

Sufficient sample volume was not available to perform a MS/MSD for this analysis. Therefore, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

No problems were encountered during the analysis of these samples.

QUALITY CONTROL AND NONCONFORMANCE SUMMARY:

All QC was within specifications.

DATA INTERPRETATION:

Only non-conformances for client requested compounds are addressed in this case narrative.

Due to incorrect integrations during the initial processing, manual integrations were performed for the following compounds.

Sample Code	Compound
A333S	acenaphthylene

Lancaster Laboratories • 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425
Phone: 717-656-2300 • Fax: 717-656-2300 • http:// www.LancasterLabs.com

Case Narrative (continued)
SDG#: KMA60

Due to the presence of interferents near their retention times, the following compound reporting limits were not met. The reporting limits were adjusted accordingly.

Sample Code	Compound
A333S	acenaphthylene

No further interpretation is necessary for the data submitted.

Case Narrative Reviewed and Approved by:

Charles J. Neslund
Group Leader, GC/MS Semivolatiles

Date: 10/21/04

8842

-----Original Message-----
From: Balla, Tonya
Sent: Tuesday, November 16, 2004 3:41 PM
Subject: KM

Kerr McGee samples from Microbac for batch ME0410003 should have all results flagged J. The samples were received at greater than the required temperature and outside the holding time. The results are therefore estimated (J) and should be considered to be biased high. Let me know if anyone has any questions.

Thanks
Tonya

Tonya Balla
WESTON Solutions Inc.
750 E. Bunker Court, Ste. 500
Vernon Hills, Illinois 60061
(847) 918-4094
(847) 918-4055 fax
t.balla@westonsolutions.com
www.westonsolutions.com

Microbac

October 27, 2004

Tom Graan
Weston Solutions, Inc.
750 East Bunker Court
Suite 500
Vernon Hills, IL 60061-1450

Work Order No.: ME0410007

RE: Moss American
Dear Tom Graan:

Microbac Laboratories, Inc. received 6 samples on 10/1/04 for the analyses presented in the following report.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted. This report includes the numbered pages as well as the Cooler Inspection Report and Chain of Custody form(s).

The SIMALABS Division of Microbac Laboratories, Inc. is an accredited laboratory under the requirements of the National Environmental Laboratory Accreditation Program (IL EPA lab #100435). All data included has been reviewed for and meets all project specific and Quality Control requirements of this accreditation, unless otherwise noted. This report shall not be reproduced except in full, without the written approval of the SIMALABS Division.

We appreciate the opportunity to service your analytical needs. If you have any questions, please feel free to contact us.

Sincerely,
Microbac Laboratories, Inc.

Karen A. Ziolkowski
Senior Project Manager

Enclosures

Microbac

Work Order Sample Summary

Date: *27-Oct-04*

CLIENT: Weston Solutions, Inc.
Project: Moss American
Lab Order: ME0410007

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
ME0410007-01A	MA3-TG1-1-093004-6	MA3-TG1-1-093004-6	9/30/04 12:45:00 PM	10/1/04
ME0410007-02A	MA3-TG1-2-093004-7	MA3-TG1-2-093004-7	9/30/04 12:50:00 PM	10/1/04
ME0410007-03A	MA3-TG1-3-093004-8	MA3-TG1-3-093004-8	9/30/04 1:00:00 PM	10/1/04
ME0410007-04A	MA3-TG2-1-093004-3	MA3-TG2-1-093004-3	9/30/04 10:00:00 AM	10/1/04
ME0410007-05A	MA3-TG2-1-093004-2	MA3-TG2-1-093004-2	9/30/04 9:50:00 AM	10/1/04
ME0410007-06A	MA3-TG2-1-093004-1	MA3-TG2-1-093004-1	9/30/04 9:45:00 AM	10/1/04

Microbac

ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss American
		Work Order:	ME0410007
Client Sample ID:	MA3-TG1-1-093004-6	*SIMALABS ID:*	ME0410007-01A
Sample Description:	MA3-TG1-1-093004-6		
Sample Matrix:	Groundwater		
Collection Date:	09/30/04		
Date Received:	10/01/04		

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**	Prep Date/Time: **10/1/04 1:21:44 PM**		Analyst: **NM**				
Total Aerobic Bacteria	A	*870*	1.0		cfu/ml	1	10/1/04
Total Aerobic Degrader Bacteria	A	*20*	1.0		cfu/ml	1	10/1/04

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss American
		Work Order:	ME0410007
Client Sample ID:	MA3-TG1-2-093004-7	*SIMALABS ID:*	ME0410007-02A
Sample Description:	MA3-TG1-2-093004-7		
Sample Matrix:	Groundwater		
Collection Date:	09/30/04		
Date Received:	10/01/04		

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**			Prep Date/Time: **10/1/04 1:21:44 PM**				Analyst: **NM**
Total Aerobic Bacteria	A	***29000***	1.0		cfu/ml	1	10/1/04
Total Aerobic Degrader Bacteria	A	***400***	1.0		cfu/ml	1	10/1/04

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

Microbac

ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss American
		Work Order:	ME0410007
Client Sample ID:	MA3-TG1-3-093004-8	*SIMALABS ID:*	ME0410007-03A
Sample Description:	MA3-TG1-3-093004-8		
Sample Matrix:	Groundwater		
Collection Date:	09/30/04		
Date Received:	10/01/04		

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**		Prep Date/Time: **10/1/04 1:21:44 PM**		Analyst: **NM**			
Total Aerobic Bacteria	A	*4000*	1.0		cfu/ml	1	10/1/04
Total Aerobic Degrader Bacteria	A	*10*	1.0		cfu/ml	1	10/1/04

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard; T - Tentatively Identified Compound (TIC,concentration estimated); **DF** - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit; B - Detected in the associated Method Blank; * - Exceeds Maximum Contaminant Level; S - Spike recovery outside recovery limits; SD - Value diluted out; R - RPD outside accepted recovery limits; E - Value above quantitation range; I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss American
		Work Order:	ME0410007
Client Sample ID:	MA3-TG2-1-093004-3	*SIMALABS ID:*	ME0410007-04A
Sample Description:	MA3-TG2-1-093004-3		
Sample Matrix:	Groundwater		
Collection Date:	09/30/04		
Date Received:	10/01/04		

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**		Prep Date/Time: **10/1/04 1:21:44 PM**		Analyst: **NM**			
Total Aerobic Bacteria	A	*900*	1.0		cfu/ml	1	10/1/04
Total Aerobic Degrader Bacteria	A	*<10*	1.0		cfu/ml	1	10/1/04

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard; T - Tentatively Identified Compound (TIC,concentration estimated)

DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit; B - Detected in the associated Method Blank; * - Exceeds Maximum Contaminant Level; S - Spike recovery outside recovery limits; SD - Value diluted out; R - RPD outside accepted recovery limits; E - Value above quantitation range; I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Microbac

ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss American
		Work Order:	ME0410007
Client Sample ID:	MA3-TG2-1-093004-2	*SIMALABS ID:*	ME0410007-05A
Sample Description:	MA3-TG2-1-093004-2		
Sample Matrix:	Groundwater		
Collection Date:	09/30/04		
Date Received:	10/01/04		

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**		Prep Date/Time: **10/1/04 1:21:44 PM**			Analyst: **NM**		
Total Aerobic Bacteria	A	*8700*	1.0		cfu/ml	1	10/1/04
Total Aerobic Degrader Bacteria	A	*20*	1.0		cfu/ml	1	10/1/04

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

Microbac

ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss American
		Work Order:	ME0410007
Client Sample ID:	MA3-TG2-1-093004-1	*SIMALABS ID:*	ME0410007-06A
Sample Description:	MA3-TG2-1-093004-1		
Sample Matrix:	Groundwater		
Collection Date:	09/30/04		
Date Received:	10/01/04		

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**		Prep Date/Time: **10/1/04 1:21:44 PM**			Analyst: **NM**		
Total Aerobic Bacteria	A	*4100*	1.0		cfu/ml	1	10/1/04
Total Aerobic Degrader Bacteria	A	*10*	1.0		cfu/ml	1	10/1/04

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

250 West 84th Drive, Merrillville, IN 46410 TEL.800.536.8379 TEL.219.769.8378 FAX 219.769.1664

Chain of Custody Record

COC ID: COC7-093004

WESTON SOLUTIONS

Client Kerr McGee

Site Name Moss American — Contact Name Tom Graan

W. O. 02687.007.006.0001 — Contact Phone No. 847-918-4142

Lab MICROBAC LABS — Lab Contact N. MCDONALD

TAT — Lab Phone 219-932-1770

10007

						MICROBIAL ENUMERATION
					Filtered	
					Container	POLY-100mL
					Preservative	N/A
Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	
1A	MA3-TG1-1-093004-6	G		N	9/30/2004 12:45	1
2A	MA3-TG1-2-093004-7	G		N	9/30/2004 12:50	1
3A	MA3-TG1-3-093004-8	G		N	9/30/2004 13:00	1
4A	MA3-TG2-1-093004-3	G		N	9/30/2004 10:00	1
5A	MA3-TG2-2-093004-2	G		N	9/30/2004 09:50	1
6A	MA3-TG2-3-093004-1	G		N	9/30/2004 09:45	1

Remarks/Comments

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5
1				

COC Tape was present on outer package Y N
COC Tape was unbroken on outer package Y N
COC Tape ws present on sample Y N
COC Tape was unbroken on sample Y N

Received in good condition Y N
Labels indicate Properly Preserved Y N
Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
[illegible signature]	9/30/04 1000	[illegible signature]	10/1/04 9:30				

Sampled By M.P.W.

10

Microbac

October 27, 2004

Tom Graan
Weston Solutions, Inc.
750 East Bunker Court
Suite 500
Vernon Hills, IL 60061-1450

Work Order No.: ME0409874

RE: Moss American
Dear Tom Graan:

Microbac Laboratories, Inc. received 6 samples on 9/30/04 9:00:00 AM for the analyses presented in the following report.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted. This report includes the numbered pages as well as the Cooler Inspection Report and Chain of Custody form(s).

The SIMALABS Division of Microbac Laboratories, Inc. is an accredited laboratory under the requirements of the National Environmental Laboratory Accreditation Program (IL EPA lab #100435). All data included has been reviewed for and meets all project specific and Quality Control requirements of this accreditation, unless otherwise noted. This report shall not be reproduced except in full, without the written approval of the SIMALABS Division.

We appreciate the opportunity to service your analytical needs. If you have any questions, please feel free to contact us.

Sincerely,
Microbac Laboratories, Inc.

Karen A. Ziolkowski
Senior Project Manager

Enclosures

Microbac

Work Order Sample Summary

Date: *27-Oct-04*

CLIENT: Weston Solutions, Inc.
Project: Moss American
Lab Order: ME0409874

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
ME0409874-01A	MA3-TG3-1-092904-4	MA3-TG3-1-092904-4	9/29/04 11:45:00 AM	9/30/04
ME0409874-02A	MA3-TG3-2-092904-5	MA3-TG3-2-092904-5	9/29/04 11:55:00 AM	9/30/04
ME0409874-03A	MA3-TG3-3-092904-6	MA3-TG3-3-092904-6	9/29/04 12:00:00 PM	9/30/04
ME0409874-04A	MA3-TG6-1-092904-1	MA3-TG6-1-092904-1	9/29/04 10:00:00 AM	9/30/04
ME0409874-05A	MA3-TG6-2-092904-2	MA3-TG6-2-092904-2	9/29/04 10:10:00 AM	9/30/04
ME0409874-06A	MA3-TG6-3-092904-3	MA3-TG6-3-092904-3	9/29/04 10:20:00 AM	9/30/04

Microbac

ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss American
		Work Order:	ME0409874
Client Sample ID:	MA3-TG3-1-092904-4	*SIMALABS ID:*	ME0409874-01A
Sample Description:	MA3-TG3-1-092904-4		
Sample Matrix:	Groundwater		
Collection Date:	09/29/04		
Date Received:	09/30/04		

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**			Prep Date/Time: **9/30/04 11:23:04 AM**		Analyst: **NM**		
Total Aerobic Bacteria	A	*4200*	1.0		cfu/ml	1	9/30/04 12:00:00 PM
Total Aerobic Degrader Bacteria	A	*500*	1.0		cfu/ml	1	9/30/04 12:00:00 PM

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

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Microbac

ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss American
		Work Order:	ME0409874
Client Sample ID:	MA3-TG3-2-092904-5	*SIMALABS ID:*	ME0409874-02A
Sample Description:	MA3-TG3-2-092904-5		
Sample Matrix:	Groundwater		
Collection Date:	09/29/04		
Date Received:	09/30/04		

COMPARATIVE ENUMERATION ASSA Method: **9215B MOD** Prep Date/Time: **9/30/04 11:23:04 AM** Analyst: **NM**

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
Total Aerobic Bacteria	A	*420*	1.0		cfu/ml	1	9/30/04 12:00:00 PM
Total Aerobic Degrader Bacteria	A	*<10*	1.0		cfu/ml	1	9/30/04 12:00:00 PM

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard; T - Tentatively Identified Compound (TIC,concentration estimated) **DF** - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit; B - Detected in the associated Method Blank; * - Exceeds Maximum Contaminant Level; S - Spike recovery outside recovery limits; SD - Value diluted out; R - RPD outside accepted recovery limits; E - Value above quantitation range; I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

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ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss American
		Work Order:	ME0409874
Client Sample ID:	MA3-TG3-3-092904-6	*SIMALABS ID:*	ME0409874-03A
Sample Description:	MA3-TG3-3-092904-6		
Sample Matrix:	Groundwater		
Collection Date:	09/29/04		
Date Received:	09/30/04		

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**		Prep Date/Time: **9/30/04 11:23:04 AM**		Analyst: **NM**			
Total Aerobic Bacteria	A	*120*	1.0		cfu/ml	1	9/30/04 12:00:00 PM
Total Aerobic Degrader Bacteria	A	*<10*	1.0		cfu/ml	1	9/30/04 12:00:00 PM

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard; T - Tentatively Identified Compound (TIC,concentration estimated) **DF** - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit; B - Detected in the associated Method Blank; * - Exceeds Maximum Contaminant Level; S - Spike recovery outside recovery limits; SD - Value diluted out; R - RPD outside accepted recovery limits; E - Value above quantitation range; I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

Microbac

ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss American
		Work Order:	ME0409874
Client Sample ID:	MA3-TG6-1-092904-1	*SIMALABS ID:*	ME0409874-04A
Sample Description:	MA3-TG6-1-092904-1		
Sample Matrix:	Groundwater		
Collection Date:	09/29/04		
Date Received:	09/30/04		

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**		Prep Date/Time: **9/30/04 11:23:04 AM**		Analyst: **NM**			
Total Aerobic Bacteria	A	*700*	1.0		cfu/ml	1	9/30/04 12:00:00 PM
Total Aerobic Degrader Bacteria	A	*<10*	1.0		cfu/ml	1	9/30/04 12:00:00 PM

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)

DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

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Microbac

ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss American
		Work Order:	ME0409874
Client Sample ID:	MA3-TG6-2-092904-2	*SIMALABS ID:*	ME0409874-05A
Sample Description:	MA3-TG6-2-092904-2		
Sample Matrix:	Groundwater		
Collection Date:	09/29/04		
Date Received:	09/30/04		

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**		Prep Date/Time: **9/30/04 11:23:04 AM**		Analyst: **NM**			
Total Aerobic Bacteria	A	*7900*	1.0		cfu/ml	1	9/30/04 12:00:00 PM
Total Aerobic Degrader Bacteria	A	*<10*	1.0		cfu/ml	1	9/30/04 12:00:00 PM

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

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Microbac

ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss American
		Work Order:	ME0409874
Client Sample ID:	MA3-TG6-3-092904-3	*SIMALABS ID:*	ME0409874-06A
Sample Description:	MA3-TG6-3-092904-3		
Sample Matrix:	Groundwater		
Collection Date:	09/29/04		
Date Received:	09/30/04		

COMPARATIVE ENUMERATION ASSA Method: **9215B MOD** Prep Date/Time: **9/30/04 11:23:04 AM** Analyst: **NM**

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
Total Aerobic Bacteria	A	*1200*	1.0		cfu/ml	1	9/30/04 12:00:00 PM
Total Aerobic Degrader Bacteria	A	*10*	1.0		cfu/ml	1	9/30/04 12:00:00 PM

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

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COC ID: COC12-092804

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee

Site Name: Moss American | Contact Name: Tom Graan

W. O.: 02687.007.006.0001 | Contact Phone No.: 847-918-4142

Lab: MICROBAC LABS | Lab Contact: N. MCDONALD

TAT: PER QUOTE | Lab Phone: 219-932-1770

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	MICROBIAL ENUMERATION N									
						Filtered									
						Container	POLY-100mL								
						Preservative	N/A								
	MA3-TG3-1-092904-4	G		N	9/29/2004 11:45	1									
	MA3-TG3-2-092904-5	G		N	9/29/2004 11:55	1									
	MA3-TG3-3-092904-6	G		N	9/29/2004 12:00	1									
	MA3-TG6-1-092904-1	G		N	9/29/2004 10:00	1									
	MA3-TG6-2-092904-2	G		N	9/29/2004 10:10	1									
	MA3-TG6-3-092904-3	G		N	9/29/2004 10:20	1									

9874

1A
2A
3A
4A
5A
6A

Remarks/Comments

Sampled By: M. Pihl

Lab Use Only

Temp of Cooler when Received, C: 1 | 2 | 3 | 4 | 5

COC Tape was present on outer package (Y) N

COC Tape was unbroken on outer package (Y) N

COC Tape ws present on sample (Y) N

COC Tape was unbroken on sample (Y) N

Received in good condition (Y) N

Labels indicate Properly Preserved (Y) N

Received within Holding Time (Y) N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
M. Pihl	9/29/04 1900	Carey Herman	9/30/04 9:00				

Microbac

October 27, 2004

Tom Graan
Weston Solutions, Inc.
750 East Bunker Court
Suite 500
Vernon Hills, IL 60061-1450

Work Order No.: ME0410003

RE: Moss America

Dear Tom Graan:

Microbac Laboratories, Inc. received 6 samples on 10/1/04 9:30:00 AM for the analyses presented in the following report.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted. This report includes the numbered pages as well as the Cooler Inspection Report and Chain of Custody form(s).

The SIMALABS Division of Microbac Laboratories, Inc. is an accredited laboratory under the requirements of the National Environmental Laboratory Accreditation Program (IL EPA lab #100435). All data included has been reviewed for and meets all project specific and Quality Control requirements of this accreditation, unless otherwise noted. This report shall not be reproduced except in full, without the written approval of the SIMALABS Division.

We appreciate the opportunity to service your analytical needs. If you have any questions, please feel free to contact us.

Sincerely,
Microbac Laboratories, Inc.

Karen A. Ziolkowski
Senior Project Manager

Enclosures

Microbac

Work Order Sample Summary

Date: *27-Oct-04*

CLIENT: Weston Solutions, Inc.
Project: Moss America
Lab Order: ME0410003

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
ME0410003-01A	MA3-TG4-1-092804-1	MA3-TG4-1-092804-1	9/28/04 10:20:00 AM	10/1/04
ME0410003-02A	MA3-TG4-2-092804-2	MA3-TG4-2-092804-2	9/28/04 10:30:00 AM	10/1/04
ME0410003-03A	MA3-TG4-3-092804-3	MA3-TG4-3-092804-3	9/28/04 10:40:00 AM	10/1/04
ME0410003-04A	MA3-TG5-1-092804-4	MA3-TG5-1-092804-4	9/28/04 12:15:00 PM	10/1/04
ME0410003-05A	MA3-TG5-2-092804-5	MA3-TG5-2-092804-1	9/28/04 12:20:00 PM	10/1/04
ME0410003-06A	MA3-TG5-3-092804-7	MA3-TG5-3-092804-7	9/28/04 1:10:00 PM	10/1/04

Microbac

CASE NARRATIVE

Date: *Wednesday, October 27, 2004*

Client: Weston Solutions, Inc.
Project: Moss America
Lab Order: ME0410003

Sample were received at the lab at 17C. Tom Graan was notified 10/1/04 @ 10:40 and instructed the laboratory to proceed with the analysis. The shipment was delayed - the package was originally sent to the closed Hammond facility.

Microbac

ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss America
		Work Order:	ME0410003
Client Sample ID:	MA3-TG4-1-092804-1	*SIMALABS ID:*	ME0410003-01A
Sample Description:	MA3-TG4-1-092804-1		
Sample Matrix:	Groundwater		
Collection Date:	09/28/04		
Date Received:	10/01/04		

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**		Prep Date/Time: **10/1/04 1:21:44 PM**			Analyst: **NM**		
Total Aerobic Bacteria	A	***610000***	1.0		cfu/ml	1	10/1/04
Total Aerobic Degrader Bacteria	A	***40000***	1.0		cfu/ml	1	10/1/04

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

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Microbac

ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss America
		Work Order:	ME0410003
Client Sample ID:	MA3-TG4-2-092804-2	*SIMALABS ID:*	ME0410003-02A
Sample Description:	MA3-TG4-2-092804-2		
Sample Matrix:	Groundwater		
Collection Date:	09/28/04		
Date Received:	10/01/04		

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**		Prep Date/Time: **10/1/04 1:21:44 PM**			Analyst: **NM**		
Total Aerobic Bacteria	A	*6000*	1.0		cfu/ml	1	10/1/04
Total Aerobic Degrader Bacteria	A	*<10*	1.0		cfu/ml	1	10/1/04

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard; T - Tentatively Identified Compound (TIC,concentration estimated) — **DF** - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit; B - Detected in the associated Method Blank; * - Exceeds Maximum Contaminant Level; S - Spike recovery outside recovery limits; SD - Value diluted out; R - RPD outside accepted recovery limits; E - Value above quantitation range; I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

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Microbac

ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss America
		Work Order:	ME0410003
Client Sample ID:	MA3-TG4-3-092804-3	*SIMALABS ID:*	ME0410003-03A
Sample Description:	MA3-TG4-3-092804-3		
Sample Matrix:	Groundwater		
Collection Date:	09/28/04		
Date Received:	10/01/04		

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**		Prep Date/Time: **10/1/04 1:21:44 PM**			Analyst: **NM**		
Total Aerobic Bacteria	A	*140000*	1.0		cfu/ml	1	10/1/04
Total Aerobic Degrader Bacteria	A	*12000*	1.0		cfu/ml	1	10/1/04

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard; T - Tentatively Identified Compound (TIC,concentration estimated); **DF** - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit; B - Detected in the associated Method Blank; * - Exceeds Maximum Contaminant Level; S - Spike recovery outside recovery limits; SD - Value diluted out; R - RPD outside accepted recovery limits; E - Value above quantitation range; I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

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Microbac

ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss America
		Work Order:	ME0410003
Client Sample ID:	MA3-TG5-1-092804-4	*SIMALABS ID:*	ME0410003-04A
Sample Description:	MA3-TG5-1-092804-4		
Sample Matrix:	Groundwater		
Collection Date:	09/28/04		
Date Received:	10/01/04		

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**		Prep Date/Time: **10/1/04 1:21:44 PM**			Analyst: **NM**		
Total Aerobic Bacteria	A	***41000***	1.0		cfu/ml	1	10/1/04
Total Aerobic Degrader Bacteria	A	***1000***	1.0		cfu/ml	1	10/1/04

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual:
ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
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Microbac

ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss America
		Work Order:	ME0410003
Client Sample ID:	MA3-TG5-2-092804-5	*SIMALABS ID:*	ME0410003-05A
Sample Description:	MA3-TG5-2-092804-1		
Sample Matrix:	Groundwater		
Collection Date:	09/28/04		
Date Received:	10/01/04		

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**		Prep Date/Time: **10/1/04 1:21:44 PM**			Analyst: **NM**		
Total Aerobic Bacteria	A	***140000***	1.0		cfu/ml	1	10/1/04
Total Aerobic Degrader Bacteria	A	***20***	1.0		cfu/ml	1	10/1/04

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard
T - Tentatively Identified Compound (TIC,concentration estimated)
DF - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit
B - Detected in the associated Method Blank
* - Exceeds Maximum Contaminant Level
S - Spike recovery outside recovery limits
SD - Value diluted out
R - RPD outside accepted recovery limits
E - Value above quantitation range
I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

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Microbac

ANALYTICAL RESULTS

Date: *Wednesday, October 27, 2004*

Client:	Weston Solutions, Inc.	*Client Project:*	Moss America
		Work Order:	ME0410003
Client Sample ID:	MA3-TG5-3-092804-7	*SIMALABS ID:*	ME0410003-06A
Sample Description:	MA3-TG5-3-092804-7		
Sample Matrix:	Groundwater		
Collection Date:	09/28/04		
Date Received:	10/01/04		

Analyses	Samp Type	Result	Reporting Limit	Qual	Units	DF	Date / Time Analyzed
COMPARATIVE ENUMERATION ASSA Method: **9215B MOD**			Prep Date/Time: **10/1/04 1:21:44 PM**				Analyst: **NM**
Total Aerobic Bacteria	A	*9200*	1.0		cfu/ml	1	10/1/04
Total Aerobic Degrader Bacteria	A	*1300*	1.0		cfu/ml	1	10/1/04

Samp Type: A - Analyte, S - Surrogate, I - Internal Standard; T - Tentatively Identified Compound (TIC,concentration estimated); **DF** - Dilution Factor

Qual: ND - Not Detected at the Reporting Limit; B - Detected in the associated Method Blank; * - Exceeds Maximum Contaminant Level; S - Spike recovery outside recovery limits; SD - Value diluted out; R - RPD outside accepted recovery limits; E - Value above quantitation range; I -Matrix Interference

H - Analyte was prepared and/or analyzed outside of the analytical method holding time

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COC ID: COC4-092804

Chain of Custody Record

WESTON SOLUTIONS

Client: Kerr McGee

Site Name: Moss American | Contact Name: Tom Graan

W. O.: 02687.007.006.0001 | Contact Phone No.: 847-918-4142

Lab: MICROBAC LABS | Lab Contact: N. MCDONALD

TAT | Lab Phone: 219-932-1770

10003

Lab ID	Sample ID	Matrix	PID	MS/MSD	Date-Time Collected	MICROBIAL ENUMERATION N									
						Filtered									
						Container	POLY-100mL								
						Preservative	N/A								
								10003							
1A	MA3-TG4-1-092804-1	G		N	9/28/2004 10:20	1									
2A	MA3-TG4-2-092804-2	G		N	9/28/2004 10:30	1									
3A	MA3-TG4-3-092804-3	G		N	9/28/2004 10:40	1									
4A	MA3-TG5-1-092804-4	G		N	9/28/2004 12:15	1									
5A	MA3-TG5-2-092804-5	G		N	9/28/2004 12:20	1									
6A	MA3-TG5-3-092804-7	G		N	9/28/2004 13:10	1									

Remarks/Comments

10/1/04 1040 notified Tom Graan - receipt temp 17C - he instructed to me to proceed

Sampled By M Pirl

Lab Use Only

Temp of Cooler when Received, C

1	2	3	4	5
17				

COC Tape was present on outer package Y N

COC Tape was unbroken on outer package Y N

COC Tape ws present on sample Y N

COC Tape was unbroken on sample Y N

Received in good condition Y N

Labels indicate Properly Preserved Y N

Received within Holding Time Y N

Relinquished By	Date / Time	Received By	Date / Time	Relinquished By	Date / Time	Received By	Date / Time
Mark Smith	9/29/04 1900	Casey Stevens	10/1/04 9:30				

170