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→ Binyoti Felix - SER/RR

Please come home by  
6/18/01. Thanks,  
Gandy

30 May 2001



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. 02687-007-003  
KMC Work Order No. 40-50-01-AKW-B

Re: Quarterly Groundwater Treatment Performance Monitoring Report, First Quarter 2001  
Moss-American Site, Milwaukee, Wisconsin

Dear Mr. Hart:

On behalf of Kerr-McGee Chemical, LLC, (KMC), Roy F. Weston, Inc., (WESTON®) is submitting this report summarizing the results of the first quarter 2001 groundwater monitoring event for the above-referenced project. In addition, results are presented for the monthly groundwater sampling conducted in January, February, and March 2001 for the treatment performance monitoring of the funnel-and-gate groundwater remedial system. A description of the groundwater monitoring program and the results obtained during this monitoring period are presented in the following sections. Also included is a discussion of the laboratory analytical results that exceeded the Preventive Action Limits (PALs) and Enforcement Standards (ESs) promulgated by Wisconsin Department of Natural Resources (WDNR) in NR140.10, entitled "Public Health Groundwater Quality Standards."

The groundwater analytical results reported for the first quarter (January through March 2001) reflect conditions at the site where the funnel and gate groundwater treatment system, including the containment-performance wells and treatment performance wells, are already in place. This quarterly groundwater monitoring report presents the results of the shallow and intermediate plume monitoring wells, the eight shallow containment performance wells, and the 18 treatment performance wells.

## 1.0 BACKGROUND

In accordance with paragraph 4a of the Remedial Design/Remedial Action Statement of Work (RD/RA SOW), KMC is required to implement a groundwater monitoring program capable of detecting changes in chemical concentrations in the groundwater. As previously agreed, the monitoring network includes 17 shallow groundwater monitoring wells (MW-3S, MW-4S, MW-5S, MW-6S, MW-7S, MW-8S, MW-9S, MW-10S, MW-13S, MW-20S, MW-25S, MW-26S, MW-27S, MW-28S, MW-29S, TW-05, and TW-09) and six intermediate groundwater





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monitoring wells (MW-3I, MW-4I, MW-7I, MW-8I, MW-9I, and MW-20I). The shallow groundwater monitoring wells are sampled on a quarterly basis, and the intermediate groundwater monitoring wells are sampled on a semi-annual basis, coinciding with the first and third quarter sampling events. Additionally, KMC is also required to extend the implementation of the quarterly groundwater monitoring program to include sampling of the eight newly installed 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.

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. Also, the hydraulic gradient will be calculated at each treatment gate, and will be 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 well locations are presented in Figure 1. 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.

In accordance with paragraph 4a (i) of the RD/RA SOW, the quarterly field measurement and analysis of groundwater samples collected from the shallow groundwater, intermediate monitoring, and containment performance 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 monthly field measurements for samples collected from the treatment performance monitoring wells include groundwater elevation, pH, temperature, specific conductance, redox potential, and DO. Quarterly laboratory analyses include microbial enumeration, nitrate-nitrogen (NO<sub>3</sub>-N), nitrite-nitrogen (NO<sub>2</sub>-N), total Kjeldahl nitrogen (TKN), ammonia-nitrogen (NH<sub>3</sub>-N), total phosphate-phosphorous (PO<sub>4</sub>-P), and orthophosphate (ORP) on a monthly basis. Additionally, laboratory



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analyses include biochemical oxygen demand (BOD), chemical oxygen demand (COD), total organic carbon (TOC), BTEX, and the PAHs indicated in the above paragraph.

## **2.0 GROUNDWATER MONITORING RESULTS**

The first quarter 2001 groundwater monitoring event at the Moss-American site was completed between 26 and 30 March 2001. The first quarter 2001 groundwater remedial system treatment performance monitoring sampling includes data obtained in January, February, and March 2001. Tasks completed during the field effort for this event included the collection of groundwater elevation data from the shallow and intermediate groundwater monitoring, containment performance monitoring, and treatment performance monitoring wells referenced in Section 1. Following groundwater elevation data measurements, groundwater samples were collected from all the shallow and intermediate monitoring wells with the exception of monitoring wells TW-09, MW-8S, and MW-8I since these wells were removed during the installation of the funnel and gate groundwater treatment system. The results of the groundwater samples that were collected and analyzed from the shallow wells are described in the following subsections.

Due to inclement conditions, several of the wells within the program scope were not sampled because the wells had frozen. The wells not sampled during the January event include wells TG3-2, TG-3-3, TG4-1, TG4-2, TG4-3, and TG5-2. The wells not sampled during the February event include wells TG1-2, TG1-3, TG3-2, TG3-3, TG4-1, TG4-3, TG5-1, and TG5-2, and the wells not sampled during the March event include wells TG4-1, TG4-3, TG5-2, MW-20S, MW-25S, and MW-31S.

### **2.1 Groundwater Elevation Measurements**

The depth to water was measured in each of the shallow and intermediate groundwater monitoring, containment performance monitoring, and treatment performance monitoring wells on 26 March 2001, prior to the beginning of groundwater sampling. In addition, the depth to groundwater was measured on a monthly basis in each treatment performance monitoring well prior to sample collection. 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 resulting elevations are presented in Table 1. The groundwater level measurements and groundwater elevation, calculated hydraulic gradients across the treatment gates, and groundwater flow velocity through the treatment gates are presented in Table 2. The January and February 2001 groundwater elevation data for the treatment performance monitoring wells is available upon request. Figure 1 presents a groundwater elevation contour map that



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shows the potentiometric surface within the shallow groundwater-bearing zone. An evaluation of these results is presented in the following paragraphs.

As shown in Figure 1, the groundwater within the shallow groundwater-bearing zone generally flows northeastward toward the Little Menomonee River (LMR). In the topographically higher (western) portion of the site, the horizontal hydraulic gradient of the potentiometric surface is relatively steep, at approximately 0.034 feet per foot (ft/ft) to the northeast. The topography of the site levels out near the river, as does the potentiometric surface, with an eastward hydraulic gradient of approximately 0.004 ft/ft. The estimated hydraulic gradients within the treatment gates range from -0.0004 to 0.0168 ft/ft (Table 2). The hydraulic gradient is relatively flat within the treatment gate area, with an overall hydraulic gradient from TG1 to TG6 of approximately 0.001 ft/ft, in an easterly direction. It should also be noted that due to the low hydraulic gradient in the vicinity of the treatment gates, the calculated hydraulic gradient through TG3 is westward, contrary to the overall groundwater flow direction at the site. The apparently reversed hydraulic gradient at TG3 is likely a result of error in measuring the depth to groundwater due to equipment limitations.

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

$$v = Ki/e$$

where:

v = groundwater velocity

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

i = hydraulic gradient

e = 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  $1 \times 10^{-5}$  to  $1 \times 10^{-6}$  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  $1 \times 10^{-3}$  cm/s (2.8 ft/day). Using a hydraulic gradient of 0.034 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 0.0034 ft/day. Near the river, using a hydraulic gradient of 0.004 ft/ft, a porosity of 0.3, and a hydraulic conductivity of 2.8 ft/day, the velocity of groundwater flow is calculated to be approximately





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0.011 ft/day. The groundwater flow velocities within the treatment gates are estimated to range from 0.0076 ft/day to 0.1587 ft/day (excluding the erratic data for TG3). The groundwater flow velocity through each treatment gate is presented in Table 2.

## **2.2 Groundwater Sample Analytical Results**

Groundwater samples were collected from a total of 41 shallow monitoring wells screened within the shallow groundwater-bearing zone and five wells screened in the intermediate groundwater-bearing zone. The shallow wells include 15 shallow groundwater monitoring wells included in the original quarterly groundwater monitoring program (MW-3S, MW-4S, MW-5S, MW-6S, MW-7S, MW-9S, MW-10S, MW-13S, MW-20S, MW-25S, MW-26S, MW-27S, MW-28S, MW-29S and TW-05), 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). The intermediate groundwater monitoring wells include MW3-I, MW4-I, MW7-I, MW9-I, and MW20-I.

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 a 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 of 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, dissolved oxygen, and turbidity. The field parameters were collected using portable water quality meters. The available results of the March 2001 measurements are provided in Table 3. The results of the monthly field measured parameters for the treatment performance monitoring wells, which vary only slightly from the quarterly measurements, are presented in Attachment 1. The groundwater pH, redox potential, specific conductance, and temperature are monitored during well purging prior to sampling, and the final (stabilized) values for these measurements prior to sample collection are presented.

## pH

The pH of the groundwater samples collected ranged from 7.03 to 8.28 pH standard units (S.U.). The pH measurements indicate relatively neutral (7.0 S.U.) conditions. pH is an important factor in determining the feasibility of bioremediation of contaminants in the site groundwater since biological systems typically function only in narrow pH ranges (typically 6.5 to 8.5 S.U.) and microbial growth rates are pH dependant.

## Redox Potential

The redox potentials of the groundwater samples collected at the site ranged from -242 to 120 millivolts (mV). Redox potential indicates the capability of the groundwater to promote chemical oxidation-reduction processes that consume organic matter and oxidize inorganic 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.

## Dissolved Oxygen

DO levels for the groundwater samples collected ranged from 0.6 to 2.4 milligrams per liter (mg/L). The dissolved oxygen value indicates the presence of low to moderate levels of oxygen in the water. DO promotes the growth of aerobic and facultative bacteria, production of readily assimilated nutrients, and provides oxygen, all of which are required to facilitate the oxidation reaction responsible for removal the contaminants from the groundwater. Figure 2 indicates the DO concentrations over time in the treatment performance monitoring wells.

## Specific Conductance

The specific conductance, or conductivity, of the groundwater samples collected ranged from 0.409 to 1.281 micromhos per centimeter ( $m\Omega/cm$ ). 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.



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### Temperature

Groundwater temperatures ranged from 3.4 to 8.5 degrees centigrade (°C). Temperature is an extremely important factor in bioremediation since microbial growth rates are greatly dependent upon temperature.

### Turbidity

Turbidity ranged from 0.80 to 182.8 nephelometric turbidity units (NTU). 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 January, February, and March 2001 are provided in Attachments 2, 3, and 4 respectively. 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 March 2001 sampling event was analyzed for BTEX and PAH compounds. The results of these analyses are presented in Table 4. Table 4 also indicates those parameters that were detected at concentrations exceeding their respective PALs (shown as bold values). Parameters with concentrations exceeding both PALs and ESs are presented as bold and shaded values in Table 4. Elevated groundwater sampling results during this quarter were also compared to the ES and PAL standards provided by the WDNR for benzene, naphthalene, and fluorene. These results are summarized in the following paragraphs. The laboratory reports are provided as Attachment A.

### Groundwater Sample Results

As shown in Table 4, benzene, naphthalene, and fluorene 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:



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PAL Exceedances:

- Benzene was detected at concentrations exceeding the WDNR PAL of 0.5  $\mu\text{g/L}$  in the groundwater samples collected from wells MW-4S, MW-7S, MW-34S, and TG1-1.
- Naphthalene was detected at concentrations exceeding the WDNR PAL of 8  $\mu\text{g/L}$  in the groundwater samples collected from wells MW-4S, MW-7S, MW-33S, MW-34S, TW-05, TG1-1, and TG1-2.
- Fluorene was detected at concentrations exceeding the WDNR PAL of 80  $\mu\text{g/L}$  in the groundwater samples collected from wells MW-4S and MW-34S.

ES Exceedances:

- Benzene was detected at concentrations exceeding the WDNR ES of 5  $\mu\text{g/L}$  in the groundwater samples collected from wells MW-4S and MW-7S.
- Naphthalene was detected at concentrations exceeding the WDNR ES of 40  $\mu\text{g/L}$  in the groundwater samples collected from wells MW-33S, MW-34S, TG1-1, and TG1-2.

The detected plume boundary is primarily in an area encompassing six shallow monitoring wells (MW-4S, MW-7S, TW-05, MW-33S, and MW-34S). Based on these detected concentrations, the contaminant plume generally indicates an northeasterly trend as indicated in Figure 1, as well as during the previous 12 quarterly groundwater-sampling events. The decrease in plume radius as compared to the plume dimensions indicated in the fourth quarter 2000 report may be attributable to seasonal changes in and groundwater temperature and recharge/discharge.

A summary table of the concentration of contaminants at wells that have regularly exceeded PALs and/or ESs during the last thirteen quarters is presented in Table 5. Levels of 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 trend in monitoring wells MW-4S, MW-7S and TW-05. A more accurate trend may be illustrated and a containment performance evaluation performed as additional data for samples collected from the containment performance wells (MW-30S through MW-37S) becomes available during the future quarterly groundwater sampling events.

### **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,  $\text{NO}_3\text{-N}$ ,  $\text{NO}_2\text{-N}$ , TKN,  $\text{NH}_3\text{-N}$ ,  $\text{PO}_4\text{-P}$ , and ORP on a monthly basis, and analyzed for BOD, COD, TOC, BTEX, and PAHs on a quarterly basis. The analytical results for microbial enumeration,  $\text{NO}_3\text{-N}$ ,  $\text{NO}_2\text{-N}$ , TKN,  $\text{NH}_3\text{-N}$ ,  $\text{PO}_4\text{-P}$ , ORP, BOD, COD, and TOC are presented in Table 6. The results of the treatment performance monitoring well sample analyses are summarized below.

#### Nitrogen and Phosphorous Compounds

$\text{NO}_3\text{-N}$  was detected at concentrations ranging from below method detection limits (non-detect) to 0.16 mg/L.  $\text{NO}_2\text{-N}$  was detected at low levels, ranging from non-detect to 0.176 mg/L. TKN was detected at concentrations ranging from 0.34 to 3.5 mg/L.  $\text{NH}_3\text{-N}$  was detected at levels ranging from non-detect to 1.9 mg/L. Overall, nitrogen compound concentrations are at relatively low levels. Temporal changes of  $\text{NO}_3\text{-N}$ ,  $\text{NO}_2\text{-N}$ , and  $\text{NH}_3\text{-N}$  concentrations in the treatment performance monitoring wells with respect to treatment gate are presented in Figures 3, 4, and 5, respectively.

$\text{PO}_4\text{-P}$  was detected at concentrations ranging from non-detect to 0.64 mg/L. ORP was detected at concentrations ranging from non-detect to 1.2 mg/L. The temporal changes of  $\text{PO}_4\text{-P}$  and ORP concentrations in the treatment performance monitoring wells with respect to treatment gate are presented in Figures 6 and 7, respectively.

#### BOD, COD, TOC

BOD concentrations for the samples collected throughout the treatment system range from non-detect to 6.3 mg/L. COD concentrations for the samples collected throughout the treatment system range from 7.7 to 49.2 mg/L. TOC concentrations for the samples collected throughout the treatment system range from 1.8 to 18.6 mg/L. As expected, the treatment gate wells indicate less BOD compared to COD. COD indicates presence of constituents that exert an oxygen demand, including carbon compounds such as the site contaminants in the groundwater, as well as other constituents such as ammonia, sulfurous compounds, and biological material such humic acids and detritus; however, a significant portion of oxygen demand that is exerted by those 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 detected by the COD analysis is catalyzed chemically and thermally. The low BOD indicates low concentrations of material that is readily biodegradable and/or quickly oxidized.





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### Microbial Enumeration

The monthly averages of the mean total microbe populations for TG1 and TG2 ranged from  $3.0 \times 10^2$  to  $1.7 \times 10^5$  colony forming units per milliliter (CFU/mL) during first quarter 2001. The monthly averages of the mean total microbe populations for TG3 and TG4 ranged from  $8.9 \times 10^2$  to  $5.1 \times 10^3$  CFU/mL during first quarter 2001. The monthly averages of the mean total microbe populations for TG5 and TG6 ranged from  $6.2 \times 10^2$  to  $2.3 \times 10^6$  CFU/mL during first quarter 2001. The temporal changes in total microbial populations are presented in Figure 8.

The monthly averages of the mean degrader microbe populations for TG1 and TG2 ranged from  $1.3 \times 10^2$  to  $3.0 \times 10^4$  CFU/mL during first quarter 2001. The monthly averages of the mean microbe populations for TG3 and TG4 ranged from  $4.0 \times 10^1$  to  $4.2 \times 10^3$  CFU/mL during first quarter 2001. The monthly averages of the mean microbe populations for TG5 and TG6 ranged from  $9.0 \times 10^1$  to  $5.8 \times 10^5$  CFU/mL during first quarter 2001. The temporal changes in degrader microbial populations are presented in Figure 9.

### **3.0 Evaluation of Pilot Scale Operations**

Our previous groundwater monitoring reports (third and fourth quarter 2000) presented guidelines for microbial populations required for optimal bioremediation. These guidelines were recommended to KMC/WESTON by our microbial enumeration laboratory, and are based on WDNR's guidance document entitled *Naturally Occurring Biodegradation as a Remedial Action Option for Soil Contamination: Interim Guidance (Revised)*, 26 August 1994. The previously presented levels are inappropriate for evaluation of inoculum in groundwater. These reference levels were developed for soil media, and not for groundwater. Through further discussions with the microbial enumeration laboratory, KMC/WESTON was informed that recommended inoculum levels for groundwater are currently unavailable; however, agencies and laboratories are in the process of developing such guidance. The primary concern with developing such guidance is the site-specificity of the ratio of microbes present in the soil to those present in the groundwater, which is dependent upon many factors such as groundwater flow velocity and quality, soil characteristics, etc. Upon agency development of interim or final guidance regarding groundwater inoculum levels required to facilitate biodegradation, KMC/WESTON will use the agency-developed guidance to evaluate the system performance.

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.



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The groundwater monitoring data presented for the first quarter of 2001 indicate that site augmentation may be required for bioremediation, since the C:N:P ratios in the treatment gate wells indicate a nitrogen and phosphorous deficiency in the groundwater, and the September 2000 through March 2001 DO concentrations in the wells prior to purging indicate an oxygen deficient environment. Degradation levels in the treatment performance wells during first quarter 2001 indicated a downward trend when compared to previous reports. The cause of the decrease in microbial levels is uncertain, however may be due to colder weather experienced during the winter months. In addition to the above concerns, based on the calculated hydraulic gradients and flow velocities through the treatment gates, KMC/WESTON has identified a potential concern associated with the site hydrogeology. 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. KMC/WESTON will continue to monitor and evaluate the site hydrogeology.

Site augmentation began in October 2000 by injecting air into the wells at all treatment gates; however, no significant difference in the oxygen levels measured in the wells has been observed to date. KMC/WESTON believes that the lack of DO in the treatment performance monitoring wells is primarily due to inefficient dispersion of the air injected into the treatment gate. To determine if air injection can be enhanced, KMC/WESTON plans installation of packers in the air injection wells into two gates (most likely TG1 and TG5) to minimize migration of the injected air vertically through the highly permeable material adjacent to the injection wells. KMC/WESTON expects installation of the well packers to be accomplished by early July 2001. KMC/WESTON will continue to monitor the DO levels at all treatment gates to determine if installation of the well packers enhances DO levels in the gates. If positive results are obtained, packers may be installed in all injection wells.

Nutrient injection is anticipated to begin in July 2001 following completion of the second quarter 2001 groundwater monitoring period. The last round of samples for the second quarter 2001 groundwater monitoring period is anticipated to be collected in late June 2001. In accordance with the Operations and Maintenance Plan (Final [100 Percent] Design for Groundwater Remedial System, WESTON, 1998), nutrient addition will be initially performed on TG1, and will continue for a minimum of two successive quarters. Upon evaluation of the performance of TG1 compared to the other gates, based on third and fourth quarter 2001 data, a recommendation regarding the benefits of nutrient addition will be drafted and included in the fourth quarter 2001 report.



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

Very truly yours,

ROY F. WESTON, INC.

A handwritten signature in cursive script that reads "Thomas P. Graan".

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

TPG/sk

Attachments

cc: G. Edelstein, WDNR  
B. Felix, WDNR

**Table 1**

**Groundwater Elevation Measurements**  
**Shallow Monitoring, Intermediate Monitoring, and Containment Performance Monitoring Wells**  
**Moss-American Site**  
**Milwaukee, Wisconsin**  
**First Quarter 2001**

| Well ID | Ground Elevation | TOC Elevation | Depth to Water | GW Elevation | Product Thickness |
|---------|------------------|---------------|----------------|--------------|-------------------|
| MW-3S   | 729.00           | 731.50        | 7.15           | 724.35       | ND                |
| MW-4S   | 731.00           | 732.86        | 5.12           | 727.74       | ND                |
| MW-5S   | 723.00           | 724.70        | 4.73           | 719.97       | ND                |
| MW-6S   | 727.00           | 724.28        | 3.76           | 720.52       | ND                |
| MW-7S   | 720.00           | 721.70        | 4.65           | 717.05       | ND                |
| MW-9S   | 720.00           | 721.71        | 5.74           | 715.97       | ND                |
| MW-10S  | 723.00           | 726.58        | 5.20           | 721.38       | ND                |
| MW-13S  | 737.00           | 738.68        | 2.71           | 735.97       | ND                |
| MW-20S  | 716.00           | 719.94        | NM             | NM           | ND                |
| MW-25S  | 736.83           | 739.24        | NM             | NM           | ND                |
| MW-26S  | 732.31           | 731.66        | 5.25           | 726.41       | ND                |
| MW-27S  | 720.59           | 723.15        | 4.55           | 718.60       | ND                |
| MW-28S  | 720.04           | 722.65        | 4.45           | 718.20       | ND                |
| MW-29S  | 720.01           | 722.39        | 4.15           | 718.24       | ND                |
| TW-05   | 721.76           | 724.16        | 2.87           | 721.29       | ND                |
| MW-30S  | 724.5            | 727.19        | 3.97           | 723.22       | ND                |
| MW-31S  | 723.8            | 726.35        | NM             | NM           | ND                |
| MW-32S  | 719.6            | 722.62        | 5.54           | 717.08       | ND                |
| MW-33S  | 719.1            | 721.69        | 4.82           | 716.87       | ND                |
| MW-34S  | 718.6            | 721.42        | 4.98           | 716.44       | ND                |
| MW-35S  | 718.9            | 721.54        | 4.50           | 717.04       | ND                |
| MW-36S  | 720.2            | 723.09        | 3.47           | 719.62       | ND                |
| MW-37S  | 720.5            | 723.13        | 5.27           | 717.86       | ND                |

Note: All values in feet.

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

TOC = Top of well casing.

GW = Groundwater.

NM = Not able to be measured due to freezing conditions.

ND = Not detected.

Depth to groundwater was measured on 26 March 2001.

**Table 2**

**Groundwater Elevation Measurements  
Treatment Performance Monitoring Wells  
Moss-American Site  
Milwaukee, Wisconsin  
First Quarter 2001**

| Well ID | Ground Elevation | TOC Elevation | Depth to Water | GW Elevation | Hydraulic Gradient (ft/ft) | Groundwater Velocity (ft/day) | Product Thickness |
|---------|------------------|---------------|----------------|--------------|----------------------------|-------------------------------|-------------------|
| TG1-1   | 720.05           | 723.18        | 4.98           | 718.20       | 0.0132                     | 0.1247                        | ND                |
| TG1-2   | 719.80           | 722.60        | 5.30           | 717.30       |                            |                               | ND                |
| TG1-3   | 719.30           | 722.35        | 4.81           | 717.54       |                            |                               | ND                |
| TG2-1   | 720.50           | 723.60        | 5.25           | 718.35       | 0.0168                     | 0.1587                        | ND                |
| TG2-2   | 719.90           | 722.86        | 5.23           | 717.63       |                            |                               | ND                |
| TG2-3   | 719.90           | 722.35        | 4.84           | 717.51       |                            |                               | ND                |
| TG3-1   | 718.40           | 720.95        | 3.81           | 717.14       | -0.0004                    | -0.0038                       | ND                |
| TG3-2   | 718.20           | 720.75        | 3.45           | 717.30       |                            |                               | ND                |
| TG3-3   | 717.80           | 720.30        | 3.14           | 717.16       |                            |                               | ND                |
| TG4-1   | 717.60           | 720.79        | NM             | NM           | NM                         | NM                            | ND                |
| TG4-2   | 717.90           | 720.51        | 3.38           | 717.13       |                            |                               | ND                |
| TG4-3   | 717.40           | 719.93        | NM             | NM           |                            |                               | ND                |
| TG5-1   | 717.60           | 720.56        | 3.85           | 716.71       | 0.0046                     | 0.0435                        | ND                |
| TG5-2   | 717.30           | 720.24        | NM             | NM           |                            |                               | ND                |
| TG5-3   | 717.00           | 719.73        | 3.25           | 716.48       |                            |                               | ND                |
| TG6-1   | 719.20           | 721.73        | 4.69           | 717.04       | 0.0008                     | 0.0076                        | ND                |
| TG6-2   | 719.20           | 721.90        | 4.87           | 717.03       |                            |                               | ND                |
| TG6-3   | 719.40           | 722.32        | 5.32           | 717.00       |                            |                               | ND                |

Note: All values in feet.

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

Porosity of soil is assumed to be 0.3.

Hydraulic conductivity of treatment gate material is assumed to be 1E-3 cm/s = 2.8 ft/day.

TOC = Top of the casing.

GW = Groundwater.

ft/day = feet per day.

ND = Not detected.

NM = Not able to be measured due to freezing conditions.

A negative value in the groundwater velocity column indicates that the groundwater flow was opposite to the general direction of groundwater flow at the site.

Depth to groundwater was measured on 26 March 2001.



**Table 3**

**Field-Measured Parameters  
Shallow Groundwater, Intermediate Groundwater, and Containment Performance  
Monitoring Wells  
Moss-American Site  
Milwaukee, Wisconsin  
First Quarter 2001**

| <b>Well Number</b> | <b>pH (Standard Units)</b> | <b>Specific Conductance (mΩ/cm)</b> | <b>Temperature (°C)</b> | <b>Redox Potential (mV)</b> | <b>Dissolved Oxygen (mg/L)</b> | <b>Turbidity (NTU)</b> |
|--------------------|----------------------------|-------------------------------------|-------------------------|-----------------------------|--------------------------------|------------------------|
| MW-3S              | 7.58                       | 0.92                                | 7.4                     | 046                         | 1.2                            | 3.36                   |
| MW-4S              | 7.79                       | 0.92                                | 6.8                     | 051                         | 1.0                            | 2.42                   |
| MW-5S              | 7.50                       | 0.82                                | 7.9                     | 067                         | 0.6                            | 5.97                   |
| MW-6S              | 7.46                       | 0.48                                | 5.9                     | -058                        | 1.2                            | 182.8                  |
| MW-7S              | 7.06                       | 0.942                               | 7.5                     | -052                        | 1.0                            | 2.33                   |
| MW-9S              | 7.12                       | 0.63                                | 8.5                     | -055                        | 0.8                            | 4.14                   |
| MW-10S             | 7.37                       | 0.68                                | 3.4                     | 092                         | 1.4                            | 1.64                   |
| MW-13S             | 7.61                       | 0.82                                | 4.0                     | 120                         | 2.4                            | 1.84                   |
| MW-20S             | 7.07                       | 0.59                                | 5.9                     | -079                        | NM                             | 5.11                   |
| MW-25S             | 7.44                       | 0.74                                | 4.0                     | 044                         | NA                             | 0.80                   |
| MW-26S             | 7.41                       | 0.41                                | 6.0                     | 049                         | 1.8                            | 4.20                   |
| MW-27S             | 7.23                       | 0.84                                | 6.1                     | -051                        | 1.3                            | 2.06                   |
| MW-28S             | 7.33                       | 0.797                               | 5.0                     | -095                        | 1.1                            | 8.32                   |
| MW-29S             | 7.66                       | 0.409                               | 5.4                     | 072                         | 1.2                            | 6.33                   |
| TW-05              | 7.26                       | 0.65                                | 4.5                     | -039                        | 1.6                            | 2.90                   |
| MW-30S             | 7.35                       | 0.44                                | 4.7                     | 098                         | 0.7                            | 153                    |
| MW-31S             | 7.44                       | 0.64                                | 4.8                     | -067                        | NA                             | 36.6                   |
| MW-32S             | 7.44                       | 0.453                               | 5.9                     | -075                        | 1.3                            | 4.30                   |
| MW-33S             | 7.40                       | 0.466                               | 7.1                     | -009                        | 1.0                            | 2.02                   |
| MW-34S             | 7.18                       | 0.466                               | 7.8                     | -065                        | 1.2                            | 1.36                   |
| MW-35S             | 7.51                       | 0.982                               | 4.8                     | -032                        | 1.1                            | 1.90                   |
| MW-36S             | 7.76                       | 0.386                               | 5.9                     | 075                         | 0.9                            | 5.30                   |
| MW-37S             | 7.78                       | 0.42                                | 6.1                     | 004                         | 0.6                            | 2.40                   |
| MW-3I              | 8.50                       | 0.33                                | 8.3                     | 062                         | 0.7                            | 9.88                   |
| MW-4I              | 7.88                       | 1.09                                | 9.0                     | 087                         | 0.5                            | 1.88                   |
| MW-7I              | 8.08                       | 0.39                                | 9.2                     | 094                         | NA                             | 324                    |
| MW-9I              | 8.21                       | 0.41                                | 9.6                     | 002                         | 0.6                            | 1.76                   |
| MW-20I             | 8.43                       | 0.25                                | 7.7                     | 078                         | NM                             | 9.08                   |

Table 3 (continued)

**Field-Measured Parameters  
Treatment Performance Monitoring Wells  
Moss-American Site  
Milwaukee, Wisconsin  
First Quarter 2001**

| Well Number | pH (Standard Units) | Specific Conductance (mΩ/cm) | Temperature (°C) | Redox Potential (mV) | Dissolved Oxygen (mg/L) | Turbidity (NTU) |
|-------------|---------------------|------------------------------|------------------|----------------------|-------------------------|-----------------|
| TG1-1       | 7.44                | 0.825                        | 3.8              | -052                 | 1.6                     | 6.32            |
| TG1-2       | 7.28                | 0.522                        | 4.6              | -049                 | 0.9                     | NM              |
| TG1-3       | 7.36                | 0.560                        | 5.2              | -059                 | 1.6                     | 4.56            |
| TG2-1       | 7.47                | 0.685                        | 5.5              | -045                 | 0.8                     | 6.71            |
| TG2-2       | 7.68                | 0.693                        | 5.3              | -080                 | 1.2                     | 0.88            |
| TG2-3       | 7.28                | 0.905                        | 4.8              | -153                 | 1.3                     | 2.92            |
| TG3-1       | 7.03                | 1.281                        | 4.7              | -114                 | 1.1                     | 1.03            |
| TG3-2       | 7.17                | 1.003                        | 4.7              | -129                 | 0.7                     | 4.60            |
| TG3-3       | 7.10                | 1.096                        | 5.4              | -066                 | 0.8                     | 3.68            |
| TG4-1       | NA                  | NA                           | NA               | NA                   | NA                      | NA              |
| TG4-2       | 7.53                | 0.415                        | 4.3              | -037                 | 1.7                     | 2.89            |
| TG4-3       | 7.39                | 0.661                        | 4.9              | -054                 | NA                      | 1.94            |
| TG5-1       | 7.53                | 0.54                         | 5.2              | -084                 | 1.2                     | 5.06            |
| TG5-2       | NA                  | NA                           | NA               | NA                   | NA                      | NA              |
| TG5-3       | 7.55                | 0.70                         | 6.1              | -077                 | 1.4                     | 66.4            |
| TG6-1       | 8.28                | 0.95                         | 5.5              | -242                 | 1.1                     | 1.22            |
| TG6-2       | 7.35                | 0.55                         | 6.1              | -055                 | 0.9                     | 1.84            |
| TG6-3       | 7.20                | 1.05                         | 5.9              | -072                 | 1.1                     | 2.50            |

S - Shallow well.

NM – Not measured.

NA – Not analyzed due to freezing conditions.

TW - Temporary well (shallow).

TG – Treatment gate performance monitoring well.

Table 4

**Groundwater Sample Analytical Results**  
**Shallow Groundwater Monitoring Well Samples**  
**Moss-American Site**  
**Milwaukee, Wisconsin**  
**First Quarter 2001**

| Sample ID:             | MW-3S-13    | MW-4S-13    | MW-5S-13    | MW-6S-13    | MW-7S-13    | WDNR<br>PAL,<br>ug/L | WDNR<br>ES, ug/L |
|------------------------|-------------|-------------|-------------|-------------|-------------|----------------------|------------------|
| Sample Matrix:         | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater |                      |                  |
| Sample Date:           | 3/29/01     | 3/29/01     | 3/29/01     | 3/29/01     | 3/28/01     |                      |                  |
| Units of Measure:      | ug/L        | ug/L        | ug/L        | ug/L        | ug/L        |                      |                  |
| <b>Parameters</b>      |             |             |             |             |             |                      |                  |
| <b>VOCs</b>            |             |             |             |             |             |                      |                  |
| Benzene                | 0.2 U       | 5.1 J       | 0.2 U       | 0.2 U       | 5.5 J       | 0.5                  | 5                |
| Toluene                | 0.2 U       | 8.6 J       | 0.2 U       | 0.2 U       | 4           | 68.6                 | 343              |
| Ethylbenzene           | 0.2 U       | 11 J        | 0.2 U       | 0.2 U       | 14 J        | 140                  | 700              |
| Total Xylenes          | 0.6 U       | 21 J        | 0.6 U       | 0.6 U       | 38 J        | 124                  | 620              |
| <b>PAHs</b>            |             |             |             |             |             |                      |                  |
| Naphthalene            | 0.79 U      | 830         | 0.86 U      | 1 U         | 3800        | 8.0                  | 40               |
| Acenaphthalylene       | 0.79 U      | 97 J        | 0.86 U      | 1 U         | 160         | NA                   | NA               |
| Acenaphthene           | 0.79 U      | 460         | 0.86 U      | 1 U         | 69 J        | NA                   | NA               |
| Fluorene               | 0.17 U      | 210         | 0.18 U      | 0.2 U       | 10          | 80                   | 400              |
| Phenanthrene           | 0.069 U     | 6 J         | 0.076 U     | 0.084 U     | 0.68 U      | NA                   | NA               |
| Anthracene             | 0.03 U      | 2.7 J       | 0.032 U     | 0.036 U     | 0.29 U      | 600                  | 3,000            |
| Fluoranthene           | 0.03 U      | 23          | 0.032 U     | 0.036 U     | 0.29 U      | 80                   | 400              |
| Pyrene                 | 0.17 U      | 14 J        | 0.18 U      | 0.2 U       | 1.6 U       | 50                   | 250              |
| Benzo(a)anthracene     | 0.02 U      | 1 U         | 0.022 U     | 0.024 U     | 0.19 U      | NA                   | NA               |
| Chrysene               | 0.059 U     | 2.9 U       | 0.065 U     | 0.072 U     | 0.58 U      | 0.02                 | 0.2              |
| Benzo(b)fluoranthene   | 0.038 U     | 1.8 U       | 0.041 U     | 0.045 U     | 0.37 U      | 0.02                 | 0.2              |
| Benzo(k)fluoranthene   | 0.0099 U    | 0.48 U      | 0.011 U     | 0.012 U     | 0.097 U     | NA                   | NA               |
| Benzo(a)pyrene         | 0.02 U      | 1 U         | 0.022 U     | 0.024 U     | 0.19 U      | 0.02                 | 0.2              |
| Dibenzo(a,h)anthracene | 0.03 U      | 1.5 U       | 0.032 U     | 0.036 U     | 0.29 U      | NA                   | NA               |
| Benzo(g,h,i)perylene   | 0.099 U     | 4.8 U       | 0.11 U      | 0.12 U      | 1 U         | NA                   | NA               |
| Indeno(1,2,3-cd)pyrene | 0.066 U     | 3.2 U       | 0.072 U     | 0.08 U      | 0.65 U      | NA                   | NA               |

Table 4 (continued)

**Groundwater Sample Analytical Results  
Shallow Groundwater Monitoring Well Samples  
Moss-American Site  
Milwaukee, Wisconsin  
First Quarter 2001**

| Sample ID:             | MW-9S-13    | MW-10S-13   | MW-13S-13   | MW-20S-13   | MW-25S-13   | MW-26S-13   | WDNR<br>PAL,<br>ug/L | WDNR<br>ES, ug/L |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|------------------|
| Sample Matrix:         | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater |                      |                  |
| Sample Date:           | 3/28/01     | 3/29/01     | 3/29/01     | 3/27/01     | 3/29/01     | 3/29/01     |                      |                  |
| Units of Measure:      | ug/L        | ug/L        | ug/L        | ug/L        | ug/L        | ug/L        |                      |                  |
| <b>Parameters</b>      |             |             |             |             |             |             |                      |                  |
| <b>VOCs</b>            |             |             |             |             |             |             |                      |                  |
| Benzene                | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 0.5                  | 5                |
| Toluene                | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 68.6                 | 343              |
| Ethylbenzene           | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 140                  | 700              |
| Total Xylenes          | 0.6 U       | 0.6 U       | 0.6 U       | 0.6 U       | 0.6 U       | 0.6 U       | 124                  | 620              |
| <b>PAHs</b>            |             |             |             |             |             |             |                      |                  |
| Naphthalene            | 0.78 U      | 0.86 U      | 0.76 U      | 0.81 U      | 0.82 U      | 0.8 U       | 8.0                  | 40               |
| Acenaphthalylene       | 0.78 U      | 0.86 U      | 0.76 U      | 0.81 U      | 0.82 U      | 0.8 U       | NA                   | NA               |
| Acenaphthene           | 0.78 U      | 0.86 U      | 0.76 U      | 0.81 U      | 0.82 U      | 0.8 U       | NA                   | NA               |
| Fluorene               | 0.17 U      | 0.18 U      | 0.16 U      | 0.17 U      | 0.17 U      | 0.17 U      | 80                   | 400              |
| Phenanthrene           | 0.068 U     | 0.075 U     | 0.066 U     | 0.071 U     | 0.072 U     | 0.07 U      | NA                   | NA               |
| Anthracene             | 0.029 U     | 0.032 U     | 0.028 U     | 0.03 U      | 0.031 U     | 0.03 U      | 600                  | 3,000            |
| Fluoranthene           | 0.029 U     | 0.032 U     | 0.028 U     | 0.03 U      | 0.031 U     | 0.03 U      | 80                   | 400              |
| Pyrene                 | 0.17 U      | 0.18 U      | 0.16 U      | 0.17 U      | 0.17 U      | 0.17 U      | 50                   | 250              |
| Benzo(a)anthracene     | 0.02 U      | 0.022 U     | 0.019 U     | 0.02 U      | 0.02 U      | 0.02 U      | NA                   | NA               |
| Chrysene               | 0.059 U     | 0.065 U     | 0.057 U     | 0.06 U      | 0.061 U     | 0.06 U      | 0.02                 | 0.2              |
| Benzo(b)fluoranthene   | 0.037 U     | 0.041 U     | 0.036 U     | 0.038 U     | 0.039 U     | 0.038 U     | 0.02                 | 0.2              |
| Benzo(k)fluoranthene   | 0.0098 U    | 0.011 U     | 0.0095 U    | 0.01 U      | 0.01 U      | 0.01 U      | NA                   | NA               |
| Benzo(a)pyrene         | 0.02 U      | 0.022 U     | 0.019 U     | 0.02 U      | 0.02 U      | 0.02 U      | 0.02                 | 0.2              |
| Dibenzo(a,h)anthracene | 0.029 U     | 0.032 U     | 0.028 U     | 0.03 U      | 0.031 U     | 0.03 U      | NA                   | NA               |
| Benzo(g,h,i)perylene   | 0.098 U     | 0.11 U      | 0.095 U     | 0.1 U       | 0.1 U       | 0.1 U       | NA                   | NA               |
| Indeno(1,2,3-cd)pyrene | 0.065 U     | 0.072 U     | 0.064 U     | 0.068 U     | 0.069 U     | 0.067 U     | NA                   | NA               |

Table 4 (continued)

**Groundwater Sample Analytical Results  
Shallow Groundwater Monitoring Well Samples  
Moss-American Site  
Milwaukee, Wisconsin  
First Quarter 2001**

| Sample ID:             | MW-27S-13   | MW-28S-13   | MW-29S-13   | TW-05-13    | WDNR<br>PAL,<br>ug/L | WDNR<br>ES, ug/L |
|------------------------|-------------|-------------|-------------|-------------|----------------------|------------------|
| Sample Matrix:         | Groundwater | Groundwater | Groundwater | Groundwater |                      |                  |
| Sample Date:           | 3/28/01     | 3/27/01     | 3/29/01     | 3/29/01     |                      |                  |
| Units of Measure:      | ug/L        | ug/L        | ug/L        | ug/L        |                      |                  |
| <b>Parameters</b>      |             |             |             |             |                      |                  |
| <b>VOCs</b>            |             |             |             |             |                      |                  |
| Benzene                | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 0.5                  | 5                |
| Toluene                | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 68.6                 | 343              |
| Ethylbenzene           | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 140                  | 700              |
| Total Xylenes          | 0.6 U       | 0.6 U       | 0.6 U       | 0.6 U       | 124                  | 620              |
| <b>PAHs</b>            |             |             |             |             |                      |                  |
| Naphthalene            | 0.81 U      | 0.83 U      | 0.87 U      | 8.6 J       | 8.0                  | 40               |
| Acenaphthalylene       | 0.81 U      | 0.83 U      | 0.87 U      | 10 J        | NA                   | NA               |
| Acenaphthene           | 0.81 U      | 0.83 U      | 0.87 U      | 64          | NA                   | NA               |
| Fluorene               | 0.17 U      | 0.18 U      | 0.18 U      | 43          | 80                   | 400              |
| Phenanthrene           | 0.071 U     | 0.073 U     | 0.076 U     | 1.5 J       | NA                   | NA               |
| Anthracene             | 0.03 U      | 0.031 U     | 0.033 U     | 1.3         | 600                  | 3,000            |
| Fluoranthene           | 0.03 U      | 0.031 U     | 0.033 U     | 7.6         | 80                   | 400              |
| Pyrene                 | 0.17 U      | 0.18 U      | 0.18 U      | 4.6         | 50                   | 250              |
| Benzo(a)anthracene     | 0.02 U      | 0.021 U     | 0.022 U     | 0.11 J      | NA                   | NA               |
| Chrysene               | 0.061 U     | 0.063 U     | 0.065 U     | 0.32 U      | 0.02                 | 0.2              |
| Benzo(b)fluoranthene   | 0.038 U     | 0.040 U     | 0.041 U     | 0.2 U       | 0.02                 | 0.2              |
| Benzo(k)fluoranthene   | 0.01 U      | 0.010 U     | 0.011 U     | 0.053 U     | NA                   | NA               |
| Benzo(a)pyrene         | 0.02 U      | 0.021 U     | 0.022 U     | 0.11 U      | 0.02                 | 0.2              |
| Dibenzo(a,h)anthracene | 0.03 U      | 0.031 U     | 0.033 U     | 0.16 U      | NA                   | NA               |
| Benzo(g,h,l)perylene   | 0.1 U       | 0.010 U     | 0.11 U      | 0.53 U      | NA                   | NA               |
| Indeno(1,2,3-cd)pyrene | 0.068 U     | 0.070 U     | 0.073 U     | 0.35 U      | NA                   | NA               |



Table 4 (continued)

**Groundwater Sample Analytical Results**  
**Containment Performance Monitoring Well Samples**  
**Moss-American Site**  
**Milwaukee, Wisconsin**  
**First Quarter 2001**

| Sample ID:             | MW-30S-13   | MW-31S-13   | MW-32S-13   | MW-33S-13   | MW-34S-13   | MW-35S-13   | MW-36S-13   | MW-37S-13   | WDNR<br>PAL, ug/L | WDNR ES,<br>ug/L |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|------------------|
| Sample Matrix:         | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater |                   |                  |
| Sample Date:           | 3/29/01     | 3/29/01     | 3/28/01     | 3/28/01     | 3/28/01     | 3/28/01     | 3/29/01     | 3/28/01     |                   |                  |
| Units of Measure:      | ug/L        | ug/L        | ug/L        | ug/L        | ug/L        | ug/L        | ug/L        | ug/L        |                   |                  |
| <b>Parameters</b>      |             |             |             |             |             |             |             |             |                   |                  |
| <b>VOCs</b>            |             |             |             |             |             |             |             |             |                   |                  |
| Benzene                | 0.2 U       | 0.2 U       | 0.2 U       | 4 U         | 9.8 J       | 0.2 U       | 0.2 U       | 0.2 U       | 0.5               | 5                |
| Toluene                | 0.2 U       | 0.2 U       | 0.2 U       | 4 U         | 4 U         | 0.2 U       | 0.2 U       | 0.2 U       | 68.6              | 343              |
| Ethylbenzene           | 0.2 U       | 0.2 U       | 0.2 U       | 9.5 J       | 23          | 0.2 U       | 0.2 U       | 0.2 U       | 140               | 700              |
| Total Xylenes          | 0.6 U       | 0.6 U       | 0.6 U       | 21 J        | 72          | 0.6 U       | 0.6 U       | 0.6 U       | 124               | 620              |
| <b>PAHs</b>            |             |             |             |             |             |             |             |             |                   |                  |
| Naphthalene            | 0.85 U      | 0.86 U      | 0.78 U      | 2900        | 5900        | 2.36 J      | 0.82 U      | 0.91 U      | 8.0               | 40               |
| Acenaphthylene         | 0.85 U      | 0.86 U      | 0.78 U      | 130         | 220         | 1.59 J      | 0.82 U      | 0.91 U      | NA                | NA               |
| Acenaphthene           | 0.85 U      | 0.86 U      | 0.78 U      | 100         | 180         | 1.8 J       | 0.82 U      | 0.91 U      | NA                | NA               |
| Fluorene               | 0.18 U      | 0.18 U      | 0.17 U      | 19          | 83          | 0.31 J      | 0.18 U      | 0.19 U      | 80                | 400              |
| Phenanthrene           | 0.074 U     | 0.075 U     | 0.068 U     | 0.71 U      | 79          | 0.53        | 0.072 U     | 0.08 U      | NA                | NA               |
| Anthracene             | 0.032 U     | 0.032 U     | 0.029 U     | 0.31 U      | 6.4         | 0.29        | 0.031 U     | 0.034 U     | 600               | 3,000            |
| Fluoranthene           | 0.032 U     | 0.032 U     | 0.029 U     | 0.31 U      | 6.5         | 0.67        | 0.031 U     | 0.034 U     | 80                | 400              |
| Pyrene                 | 0.18 U      | 0.18 U      | 0.17 U      | 1.7 U       | 4.1 J       | 0.48 J      | 0.18 U      | 0.19 U      | 50                | 250              |
| Benzo(a)anthracene     | 0.021 U     | 0.022 U     | 0.019 U     | 0.2 U       | 0.23 U      | 0.023 U     | 0.021 U     | 0.023 U     | NA                | NA               |
| Chrysene               | 0.064 U     | 0.065 U     | 0.058 U     | 0.61 U      | 0.7 U       | 0.068 U     | 0.062 U     | 0.069 U     | 0.02              | 0.2              |
| Benzo(b)fluoranthene   | 0.04 U      | 0.041 U     | 0.037 U     | 0.39 U      | 0.44 U      | 0.043 U     | 0.039 U     | 0.043 U     | 0.02              | 0.2              |
| Benzo(k)fluoranthene   | 0.011 U     | 0.011 U     | 0.0097 U    | 0.1 U       | 0.12 U      | 0.011 U     | 0.01 U      | 0.011 U     | NA                | NA               |
| Benzo(a)pyrene         | 0.021 U     | 0.022 U     | 0.019 U     | 0.2 U       | 0.23 U      | 0.023 U     | 0.021 U     | 0.023 U     | 0.02              | 0.2              |
| Dibenzo(a,h)anthracene | 0.032 U     | 0.032 U     | 0.029 U     | 0.31 U      | 0.35 U      | 0.034 U     | 0.031 U     | 0.034 U     | NA                | NA               |
| Benzo(g,h,i)perylene   | 0.11 U      | 0.11 U      | 0.097 U     | 1 U         | 1.2 U       | 0.11 U      | 0.1 U       | 0.11 U      | NA                | NA               |
| Indeno(1,2,3-cd)pyrene | 0.071 U     | 0.072 U     | 0.065 U     | 0.68 U      | 0.78 U      | 0.076 U     | 0.069 U     | 0.077 U     | NA                | NA               |

Table 4 (continued)

**Groundwater Sample Analytical Results**  
**Treatment Performance Monitoring Well Samples**  
**Moss-American Site**  
**Milwaukee, Wisconsin**  
**First Quarter 2001**

| Sample ID:             | TG1-1-13    | TG1-2-13    | TG1-3-13    | TG2-1-13    | TG2-2-13    | TG2-3-13    | WDNR<br>PAL,<br>ug/L | WDNR<br>ES, ug/L |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|------------------|
| Sample Matrix:         | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater |                      |                  |
| Sample Date:           | 3/27/01     | 3/27/01     | 3/27/01     | 3/27/01     | 3/27/01     | 3/27/01     |                      |                  |
| Units of Measure:      | ug/L        | ug/L        | ug/L        | ug/L        | ug/L        | ug/L        |                      |                  |
| <b>Parameters</b>      |             |             |             |             |             |             |                      |                  |
| <b>VOCs</b>            |             |             |             |             |             |             |                      |                  |
| Benzene                | 2.8         | 0.2         | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 0.5                  | 5                |
| Toluene                | 0.68 J      | 0.2         | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 68.6                 | 343              |
| Ethylbenzene           | 12          | 0.23 J      | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 140                  | 700              |
| Total Xylenes          | 21          | 0.6         | 0.6 U       | 0.6 U       | 0.6 U       | 0.6 U       | 124                  | 620              |
| <b>PAHs</b>            |             |             |             |             |             |             |                      |                  |
| Naphthalene            | 1890 J      | 52.3 J      | 0.81 U      | 0.76 U      | 0.75 U      | 0.8 U       | 8.0                  | 40               |
| Acenaphthylene         | 95 J        | 2.41 J      | 0.81 U      | 0.76 U      | 0.75 U      | 0.8 U       | NA                   | NA               |
| Acenaphthene           | 150 J       | 16          | 0.81 U      | 0.76 U      | 0.75 U      | 0.8 U       | NA                   | NA               |
| Fluorene               | 72          | 5.39        | 0.17 U      | 0.16 U      | 0.16 U      | 0.17 U      | 80                   | 400              |
| Phenanthrene           | 45.1        | 7.19        | 0.071 U     | 0.066 U     | 0.084 J     | 0.07 U      | NA                   | NA               |
| Anthracene             | 3.57 J      | 1.05        | 0.037 J     | 0.028 U     | 0.035 J     | 0.03 U      | 600                  | 3,000            |
| Fluoranthene           | 1.64 J      | 1.72        | 0.041 J     | 0.028 U     | 0.059 J     | 0.03 U      | 80                   | 400              |
| Pyrene                 | 3.3 U       | 1.22        | 0.17 U      | 0.16 U      | 0.16 U      | 0.17 U      | 50                   | 250              |
| Benzo(a)anthracene     | 0.39 U      | 0.072 J     | 0.02 U      | 0.019 U     | 0.019 U     | 0.02 U      | NA                   | NA               |
| Chrysene               | 1.2 U       | 0.061 U     | 0.061 U     | 0.057 U     | 0.057 U     | 0.06 U      | 0.02                 | 0.2              |
| Benzo(b)fluoranthene   | 0.74 U      | 0.039 U     | 0.038 U     | 0.036 U     | 0.036 U     | 0.038 U     | 0.02                 | 0.2              |
| Benzo(k)fluoranthene   | 0.19 U      | 0.01 U      | 0.01 U      | 0.0095 U    | 0.0094 U    | 0.01 U      | NA                   | NA               |
| Benzo(a)pyrene         | 0.39 U      | 0.02 U      | 0.02 U      | 0.019 U     | 0.019 U     | 0.02 U      | 0.02                 | 0.2              |
| Dibenzo(a,h)anthracene | 0.58 U      | 0.031 U     | 0.03 U      | 0.028 U     | 0.028 U     | 0.03 U      | NA                   | NA               |
| Benzo(g,h,i)perylene   | 1.9 U       | 0.1 U       | 0.1 U       | 0.095 U     | 0.094 U     | 0.1 U       | NA                   | NA               |
| Indeno(1,2,3-cd)pyrene | 1.3 U       | 0.068 U     | 0.068 U     | 0.063 U     | 0.063 U     | 0.067 U     | NA                   | NA               |

Table 4 (continued)

**Groundwater Sample Analytical Results  
Treatment Performance Monitoring Well Samples  
Moss-American Site  
Milwaukee, Wisconsin  
First Quarter 2001**

| Sample ID:             | TG3-1-13    | TG3-2-13    | TG3-3-13    | TG4-1-13    | TG4-2-13    | TG4-3-13    | WDNR<br>PAL,<br>ug/L | WDNR<br>ES, ug/L |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|------------------|
| Sample Matrix:         | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater |                      |                  |
| Sample Date:           | 3/27/01     | 3/27/01     | 3/27/01     | 3/26/01     | 3/27/01     | 3/27/01     |                      |                  |
| Units of Measure:      | ug/L        | ug/L        | ug/L        | ug/L        | ug/L        | ug/L        |                      |                  |
| <b>Parameters</b>      |             |             |             |             |             |             |                      |                  |
| <b>VOCs</b>            |             |             |             |             |             |             |                      |                  |
| Benzene                | 0.2 U       | 0.2 U       | 0.2 U       | NS          | 0.2 U       | 0.2 U       | 0.5                  | 5                |
| Toluene                | 0.2 U       | 0.2 U       | 0.2 U       | NS          | 0.2 U       | 0.2 U       | 68.6                 | 343              |
| Ethylbenzene           | 0.2 U       | 0.2 U       | 0.2 U       | NS          | 0.2 U       | 0.2 U       | 140                  | 700              |
| Total Xylenes          | 0.6 U       | 0.6 U       | 0.6 U       | NS          | 0.6 U       | 0.6 U       | 124                  | 620              |
| <b>PAHs</b>            |             |             |             |             |             |             |                      |                  |
| Naphthalene            | 0.75 U      | 0.79 U      | 0.75 U      | NS          | 0.79 U      | 0.81 U      | 8.0                  | 40               |
| Acenaphthylene         | 0.75 U      | 0.79 U      | 0.75 U      | NS          | 0.79 U      | 0.81 U      | NA                   | NA               |
| Acenaphthene           | 0.75 U      | 0.79 U      | 0.75 U      | NS          | 0.79 U      | 0.81 U      | NA                   | NA               |
| Fluorene               | 0.47 J      | 0.17 U      | 0.16 U      | NS          | 0.17 U      | 0.17 U      | 80                   | 400              |
| Phenanthrene           | 0.28 J      | 0.069 U     | 0.066 U     | NS          | 0.116 J     | 0.071 U     | NA                   | NA               |
| Anthracene             | 0.21        | 0.038 J     | 0.04 J      | NS          | 0.115 J     | 0.031 J     | 600                  | 3,000            |
| Fluoranthene           | 0.25        | 0.058 J     | 0.055 J     | NS          | 0.21        | 0.03 U      | 80                   | 400              |
| Pyrene                 | 0.18 J      | 0.17 U      | 0.16 U      | NS          | 0.17 U      | 0.17 U      | 50                   | 250              |
| Benzo(a)anthracene     | 0.019 U     | 0.02 U      | 0.019 U     | NS          | 0.02 U      | 0.02 U      | NA                   | NA               |
| Chrysene               | 0.057 U     | 0.059 U     | 0.056 U     | NS          | 0.059 U     | 0.061 U     | 0.02                 | 0.2              |
| Benzo(b)fluoranthene   | 0.036 U     | 0.037 U     | 0.036 U     | NS          | 0.038 U     | 0.039 U     | 0.02                 | 0.2              |
| Benzo(k)fluoranthene   | 0.0094 U    | 0.0098 U    | 0.0094 U    | NS          | 0.0099 U    | 0.01 U      | NA                   | NA               |
| Benzo(a)pyrene         | 0.019 U     | 0.02 U      | 0.019 U     | NS          | 0.02 U      | 0.02 U      | 0.02                 | 0.2              |
| Dibenzo(a,h)anthracene | 0.028 U     | 0.03 U      | 0.028 U     | NS          | 0.03 U      | 0.03 U      | NA                   | NA               |
| Benzo(g,h,i)perylene   | 0.094 U     | 0.098 U     | 0.094 U     | NS          | 0.099 U     | 0.1 U       | NA                   | NA               |
| Indeno(1,2,3-cd)pyrene | 0.063 U     | 0.066 U     | 0.063 U     | NS          | 0.066 U     | 0.068 U     | NA                   | NA               |

Table 4 (continued)

**Groundwater Sample Analytical Results  
Treatment Performance Monitoring Well Samples  
Moss-American Site  
Milwaukee, Wisconsin  
First Quarter 2001**

| Sample ID:             | TG5-1-13    | TG5-2-13    | TG5-3-13    | TG6-1-13    | TG6-2-13    | TG6-3-13    | WDNR<br>PAL,<br>ug/L | WDNR<br>ES, ug/L |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|------------------|
| Sample Matrix:         | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater |                      |                  |
| Sample Date:           | 3/28/01     | 3/26/01     | 3/28/01     | 3/28/01     | 3/2/01      | 3/28/01     |                      |                  |
| Units of Measure:      | ug/L        | ug/L        | ug/L        | ug/L        | ug/L        | ug/L        |                      |                  |
| <b>Parameters</b>      |             |             |             |             |             |             |                      |                  |
| <b>VOCs</b>            |             |             |             |             |             |             |                      |                  |
| Benzene                | 0.2 U       | NS          | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 0.5                  | 5                |
| Toluene                | 0.2 U       | NS          | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 68.6                 | 343              |
| Ethylbenzene           | 0.2 U       | NS          | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 140                  | 700              |
| Total Xylenes          | 0.6 U       | NS          | 0.6 U       | 0.6 U       | 0.6 U       | 0.6 U       | 124                  | 620              |
| <b>PAHs</b>            |             |             |             |             |             |             |                      |                  |
| Naphthalene            | 2.64 J      | NS          | 0.82 U      | 0.84 U      | 0.78 U      | 0.77 U      | 8.0                  | 40               |
| Acenaphthylene         | 0.85 U      | NS          | 0.82 U      | 0.84 U      | 0.78 U      | 0.77 U      | NA                   | NA               |
| Acenaphthene           | 0.85 U      | NS          | 0.82 U      | 0.84 U      | 0.78 U      | 0.77 U      | NA                   | NA               |
| Fluorene               | 0.18 U      | NS          | 0.17 U      | 0.18 U      | 0.17 U      | 0.16 U      | 80                   | 400              |
| Phenanthrene           | 0.075 U     | NS          | 0.072 U     | 0.074 U     | 0.068 U     | 0.067 U     | NA                   | NA               |
| Anthracene             | 0.032 U     | NS          | 0.031 U     | 0.115 J     | 0.029 U     | 0.029 U     | 600                  | 3,000            |
| Fluoranthene           | 0.032 U     | NS          | 0.031 U     | 0.032 U     | 0.031 J     | 0.029 U     | 80                   | 400              |
| Pyrene                 | 0.18 U      | NS          | 0.17 U      | 0.18 U      | 0.17 U      | 0.16 U      | 50                   | 250              |
| Benzo(a)anthracene     | 0.021 U     | NS          | 0.021 U     | 0.021 U     | 0.019 U     | 0.019 U     | NA                   | NA               |
| Chrysene               | 0.064 U     | NS          | 0.062 U     | 0.063 U     | 0.058 U     | 0.058 U     | 0.02                 | 0.2              |
| Benzo(b)fluoranthene   | 0.04 U      | NS          | 0.039 U     | 0.04 U      | 0.037 U     | 0.037 U     | 0.02                 | 0.2              |
| Benzo(k)fluoranthene   | 0.011 U     | NS          | 0.01 U      | 0.011 U     | 0.0097 U    | 0.0096 U    | NA                   | NA               |
| Benzo(a)pyrene         | 0.021 U     | NS          | 0.021 U     | 0.021 U     | 0.019 U     | 0.019 U     | 0.02                 | 0.2              |
| Dibenzo(a,h)anthracene | 0.032 U     | NS          | 0.031 U     | 0.032 U     | 0.029 U     | 0.029 U     | NA                   | NA               |
| Benzo(g,h,i)perylene   | 0.11 U      | NS          | 0.1 U       | 0.11 U      | 0.097 U     | 0.096 U     | NA                   | NA               |
| Indeno(1,2,3-cd)pyrene | 0.071 U     | NS          | 0.069 U     | 0.071 U     | 0.065 U     | 0.064 U     | NA                   | NA               |

Table 4 (continued)

**Groundwater Sample Analytical Results  
Intermediate Groundwater Monitoring Well Samples  
Moss-American Site  
Milwaukee, Wisconsin  
First Quarter 2001**

| Sample ID:             | MW-3I-13    | MW-4I-13    | MW-7I-13    | MW-9I-13    | MW-20I-13   | WDNR<br>PAL,<br>ug/L | WDNR<br>ES, ug/L |
|------------------------|-------------|-------------|-------------|-------------|-------------|----------------------|------------------|
| Sample Matrix:         | Groundwater | Groundwater | Groundwater | Groundwater | Groundwater |                      |                  |
| Sample Date:           | 3/29/01     | 3/29/01     | 3/29/01     | 3/28/01     | 3/29/01     |                      |                  |
| Units of Measure:      | ug/L        | ug/L        | ug/L        | ug/L        | ug/L        |                      |                  |
| <b>Parameters</b>      |             |             |             |             |             |                      |                  |
| <b>VOCs</b>            |             |             |             |             |             |                      |                  |
| Benzene                | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 0.5                  | 5                |
| Toluene                | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 68.6                 | 343              |
| Ethylbenzene           | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 140                  | 700              |
| Total Xylenes          | 0.6 U       | 0.6 U       | 0.6 U       | 0.6 U       | 0.6 U       | 124                  | 620              |
| <b>PAHs</b>            |             |             |             |             |             |                      |                  |
| Naphthalene            | 0.76 U      | 0.86 U      | 0.83 U      | 0.81 U      | 0.87 U      | 8.0                  | 40               |
| Acenaphthylene         | 0.76 U      | 0.86 U      | 0.83 U      | 0.81 U      | 0.87 U      | NA                   | NA               |
| Acenaphthene           | 0.76 U      | 0.86 U      | 0.83 U      | 0.81 U      | 0.87 U      | NA                   | NA               |
| Fluorene               | 0.16 U      | 0.18 U      | 0.18 U      | 0.17 U      | 0.18 U      | 80                   | 400              |
| Phenanthrene           | 0.066 U     | 0.075 U     | 0.072 U     | 0.071 U     | 0.076 U     | NA                   | NA               |
| Anthracene             | 0.028 U     | 0.032 U     | 0.031 U     | 0.030 U     | 0.033 U     | 600                  | 3,000            |
| Fluoranthene           | 0.045 J     | 0.032 U     | 0.031 U     | 0.03 U      | 0.033 U     | 80                   | 400              |
| Pyrene                 | 0.16 U      | 0.18 U      | 0.18 U      | 0.17 U      | 0.18 U      | 50                   | 250              |
| Benzo(a)anthracene     | 0.019 U     | 0.021 U     | 0.021 U     | 0.02 U      | 0.022 U     | NA                   | NA               |
| Chrysene               | 0.057 U     | 0.064 U     | 0.062 U     | 0.061 U     | 0.065 U     | 0.02                 | 0.2              |
| Benzo(b)fluoranthene   | 0.036 U     | 0.041 U     | 0.039 U     | 0.038 U     | 0.041 U     | 0.02                 | 0.2              |
| Benzo(k)fluoranthene   | 0.0094 U    | 0.011 U     | 0.01 U      | 0.01 U      | 0.011 U     | NA                   | NA               |
| Benzo(a)pyrene         | 0.019 U     | 0.021 U     | 0.021 U     | 0.02 U      | 0.022 U     | 0.02                 | 0.2              |
| Dibenzo(a,h)anthracene | 0.028 U     | 0.032 U     | 0.031 U     | 0.03 U      | 0.033 U     | NA                   | NA               |
| Benzo(g,h,i)perylene   | 0.094 U     | 0.11 U      | 0.1 U       | 0.1 U       | 0.11 U      | NA                   | NA               |
| Indeno(1,2,3-cd)pyrene | 0.063 U     | 0.072 U     | 0.069 U     | 0.068 U     | 0.073 U     | NA                   | NA               |



Table 4 (continued)

**Groundwater Sample Analytical Results**  
**Field Duplicate Samples**  
**Moss-American Site**  
**Milwaukee, Wisconsin**  
**First Quarter 2001**

| Sample ID:<br>Sample Matrix:<br>Sample Date:<br>Units of Measure: | MW-28S-DP   | MW-9S-DP    | MW-26S-DP   | MW-13S-DP   | WDNR<br>PAL,<br>ug/L | WDNR<br>ES, ug/L |
|---|-------------|-------------|-------------|-------------|----------------------|------------------|
|   | Groundwater | Groundwater | Groundwater | Groundwater |                      |                  |
|   | 3/27/01     | 3/28/01     | 3/29/01     |             |                      |                  |
|   | ug/L        | ug/L        | ug/L        | ug/L        |                      |                  |
| <b>Parameters</b>   |             |             |             |             |                      |                  |
| <b>VOCs</b>   |             |             |             |             |                      |                  |
| Benzene   | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 0.5                  | 5                |
| Toluene   | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 68.6                 | 343              |
| Ethylbenzene  | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 140                  | 700              |
| Total Xylenes   | 0.6 U       | 0.6 U       | 0.6 U       | 0.6 U       | 124                  | 620              |
| <b>PAHs</b>   |             |             |             |             |                      |                  |
| Naphthalene   | 0.76 U      | 0.78 U      | 1.2 J       | 0.77 U      | 8.0                  | 40               |
| Acenaphthylene  | 0.76 U      | 0.78 U      | 0.76 U      | 0.77 U      | NA                   | NA               |
| Acenaphthene  | 0.76 U      | 0.78 U      | 0.76 U      | 0.77 U      | NA                   | NA               |
| Fluorene  | 0.16 U      | 0.17 U      | 0.16 U      | 0.16 U      | 80                   | 400              |
| Phenanthrene  | 0.067 U     | 0.068 U     | 0.066 U     | 0.068 U     | NA                   | NA               |
| Anthracene  | 0.029 U     | 0.029 U     | 0.028 U     | 0.029 U     | 600                  | 3,000            |
| Fluoranthene  | 0.029 U     | 0.029 U     | 0.028 U     | 0.029 U     | 80                   | 400              |
| Pyrene  | 0.16 U      | 0.17 U      | 0.16 U      | 0.16 U      | 50                   | 250              |
| Benzo(a)anthracene  | 0.019 U     | 0.019 U     | 0.019 U     | 0.019 U     | NA                   | NA               |
| Chrysene  | 0.057 U     | 0.058 U     | 0.057 U     | 0.058 U     | 0.02                 | 0.2              |
| Benzo(b)fluoranthene  | 0.036 U     | 0.037 U     | 0.036 U     | 0.037 U     | 0.02                 | 0.2              |
| Benzo(k)fluoranthene  | 0.0096 U    | 0.0097 U    | 0.0095 U    | 0.0097 U    | NA                   | NA               |
| Benzo(a)pyrene  | 0.019 U     | 0.019 U     | 0.019 U     | 0.019 U     | 0.02                 | 0.2              |
| Dibenzo(a,h)anthracene  | 0.029 U     | 0.029 U     | 0.028 U     | 0.029 U     | NA                   | NA               |
| Benzo(g,h,i)perylene  | 0.096 U     | 0.097 U     | 0.095 U     | 0.097 U     | NA                   | NA               |
| Indeno(1,2,3-cd)pyrene  | 0.064 U     | 0.065 U     | 0.064 U     | 0.065 U     | NA                   | NA               |

Table 4 (continued)

**Groundwater Sample Analytical Results**  
**Matrix Spike/Matrix Spike Duplicate Samples**  
**Moss-American Site**  
**Milwaukee, Wisconsin**  
**First Quarter 2001**

| Sample ID:             | MW-37S-MS   | MW-37S-MSD  | MW-25S-MS   | MW-25S-MSD  | WDNR<br>PAL,<br>ug/L | WDNR<br>ES, ug/L |
|------------------------|-------------|-------------|-------------|-------------|----------------------|------------------|
| Sample Matrix:         | Groundwater | Groundwater | Groundwater | Groundwater |                      |                  |
| Sample Date:           | 3/28/01     | 3/28/01     | 3/29/01     | 3/29/01     |                      |                  |
| Units of Measure:      | ug/L        | ug/L        | ug/L        | ug/L        |                      |                  |
| <b>Parameters</b>      |             |             |             |             |                      |                  |
| <b>VOCs</b>            |             |             |             |             |                      |                  |
| Benzene                | 23          | 23          | 23          | 23          | 0.5                  | 5                |
| Toluene                | 22          | 22          | 22          | 22          | 68.6                 | 343              |
| Ethylbenzene           | 22          | 22          | 22          | 22          | 140                  | 700              |
| Total Xylenes          | 66          | 67          | 66          | 66          | 124                  | 620              |
| <b>PAHs</b>            |             |             |             |             |                      |                  |
| Naphthalene            | 183         | 198         | 160         | 190         | 8.0                  | 40               |
| Acenaphthylene         | 193         | 216         | 190         | 210         | NA                   | NA               |
| Acenaphthene           | 180         | 200         | 180         | 200         | NA                   | NA               |
| Fluorene               | 19          | 21          | 19          | 21          | 80                   | 400              |
| Phenanthrene           | 6.14        | 6.81        | 6.2         | 6.7         | NA                   | NA               |
| Anthracene             | 3           | 3.35        | 3           | 3.2         | 600                  | 3,000            |
| Fluoranthene           | 3.33        | 3.63        | 3.4         | 3.7         | 80                   | 400              |
| Pyrene                 | 19          | 20.8        | 20          | 21          | 50                   | 250              |
| Benzo(a)anthracene     | 1.61        | 1.74        | 1.6         | 1.8         | NA                   | NA               |
| Chrysene               | 6.29        | 7.05        | 6.4         | 6.8         | 0.02                 | 0.2              |
| Benzo(b)fluoranthene   | 1.31        | 1.42        | 1.3         | 1.4         | 0.02                 | 0.2              |
| Benzo(k)fluoranthene   | 1.29        | 1.4         | 1.3         | 1.4         | NA                   | NA               |
| Benzo(a)pyrene         | 1.59        | 1.72        | 1.4         | 1.6         | 0.02                 | 0.2              |
| Dibenzo(a,h)anthracene | 3.36        | 3.62        | 3.3         | 3.6         | NA                   | NA               |
| Benzo(g,h,i)perylene   | 12.2        | 13          | 12          | 12          | NA                   | NA               |
| Indeno(1,2,3-cd)pyrene | 6.73        | 7.18        | 6.5         | 7           | NA                   | NA               |

**Table 4 (continued)**

**Groundwater Sample Analytical Results  
Field Blank Samples  
Moss-American Site  
Milwaukee, Wisconsin  
First Quarter 2001**

| Sample ID:<br>Sample Matrix:<br>Sample Date:<br>Units of Measure: | FB-01       | FB-02       | FB-03       | FB-04       | WDNR<br>PAL,<br>ug/L | WDNR<br>ES, ug/L |
|---|-------------|-------------|-------------|-------------|----------------------|------------------|
|   | Groundwater | Groundwater | Groundwater | Groundwater |                      |                  |
|   | 3/28/01     | 3/28/01     | 3/29/01     | 3/29/01     |                      |                  |
|   | ug/L        | ug/L        | ug/L        | ug/L        |                      |                  |
| <b>Parameters</b>   |             |             |             |             |                      |                  |
| <b>VOCs</b>   |             |             |             |             |                      |                  |
| Benzene   | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 0.5                  | 5                |
| Toluene   | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 68.6                 | 343              |
| Ethylbenzene  | 0.2 U       | 0.2 U       | 0.2 U       | 0.2 U       | 140                  | 700              |
| Total Xylenes   | 0.6 U       | 0.6 U       | 0.6 U       | 0.6 U       | 124                  | 620              |
| <b>PAHs</b>   |             |             |             |             |                      |                  |
| Naphthalene   | 0.79 U      | 0.79 U      | 0.82 U      | 0.84 U      | 8.0                  | 40               |
| Acenaphthylene  | 0.79 U      | 0.79 U      | 0.82 U      | 0.84 U      | NA                   | NA               |
| Acenaphthene  | 0.79 U      | 0.79 U      | 0.82 U      | 0.84 U      | NA                   | NA               |
| Fluorene  | 0.17 U      | 0.17 U      | 0.18 U      | 0.18 U      | 80                   | 400              |
| Phenanthrene  | 0.069 U     | 0.069 U     | 0.072 U     | 0.073 U     | NA                   | NA               |
| Anthracene  | 0.03 U      | 0.03 U      | 0.031 U     | 0.031 U     | 600                  | 3,000            |
| Fluoranthene  | 0.03 U      | 0.03 U      | 0.031 U     | 0.031 U     | 80                   | 400              |
| Pyrene  | 0.17 U      | 0.17 U      | 0.18 U      | 0.18 U      | 50                   | 250              |
| Benzo(a)anthracene  | 0.02 U      | 0.02 U      | 0.021 U     | 0.021 U     | NA                   | NA               |
| Chrysene  | 0.059 U     | 0.059 U     | 0.062 U     | 0.063 U     | 0.02                 | 0.2              |
| Benzo(b)fluoranthene  | 0.038 U     | 0.038 U     | 0.039 U     | 0.04 U      | 0.02                 | 0.2              |
| Benzo(k)fluoranthene  | 0.0099 U    | 0.0099 U    | 0.01 U      | 0.01 U      | NA                   | NA               |
| Benzo(a)pyrene  | 0.02 U      | 0.02 U      | 0.021 U     | 0.021 U     | 0.02                 | 0.2              |
| Dibenzo(a,h)anthracene  | 0.03 U      | 0.03 U      | 0.031 U     | 0.031 U     | NA                   | NA               |
| Benzo(g,h,i)perylene  | 0.099 U     | 0.099 U     | 0.1 U       | 0.1 U       | NA                   | NA               |
| Indeno(1,2,3-cd)pyrene  | 0.066 U     | 0.066 U     | 0.069 U     | 0.07 U      | NA                   | NA               |

**Table 4 (continued)**

**Groundwater Sample Analytical Results**

**Table Notes**

**Moss-American Site  
Milwaukee, Wisconsin  
First Quarter 2001**

U - Indicates constituent not detected above detection limit. Detection limit indicated.

J - Indicates 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 cold weather.

Bold values indicate concentration exceeding PAL.

Bold and shaded values indicate concentration exceeding PAL and ES.

Table 5

**Concentration Trends in Groundwater Monitoring Wells  
First Quarter 1998 through First Quarter 2001  
Moss-American Site  
Milwaukee, Wisconsin**

|                               | MW-4S    | MW-7S    | TW-05   | TW-09 <sup>1</sup> | MW-32S <sup>2</sup> | MW-33S <sup>2</sup> | MW-34S <sup>2</sup> | MW-35S <sup>2</sup> |
|-------------------------------|----------|----------|---------|--------------------|---------------------|---------------------|---------------------|---------------------|
| <b><u>Benzene</u></b>         |          |          |         |                    |                     |                     |                     |                     |
| First Quarter (March '98)     | 10.00    | 5.00     | 0.20 U  | 2.00 J             | NS                  | NS                  | NS                  | NS                  |
| Second Quarter (June '98)     | 8.00     | 5.00     | 0.20 U  | 0.50 J             | NS                  | NS                  | NS                  | NS                  |
| Third Quarter (September '98) | 3.00     | 8.00 J   | 0.20 U  | 2.00 U             | NS                  | NS                  | NS                  | NS                  |
| Fourth Quarter (December '98) | 3.00 J   | NS       | 0.20 U  | 2.00 U             | NS                  | NS                  | NS                  | NS                  |
| First Quarter (March '99)     | 5.00     | 9.00     | 0.20 U  | 0.30 U             | NS                  | NS                  | NS                  | NS                  |
| Second Quarter (June '99)     | 6.00     | 7.00 J   | 0.20 U  | 2.00 U             | NS                  | NS                  | NS                  | NS                  |
| Third Quarter (September '99) | 3.00     | 9.00     | 0.20 U  | 0.80 J             | NS                  | NS                  | NS                  | NS                  |
| Fourth Quarter (December '99) | 2.80     | 7.10     | 0.20 U  | ---                | NS                  | NS                  | NS                  | NS                  |
| First Quarter (March '00)     | 4.00     | 5.20     | 0.20 U  | ---                | NS                  | NS                  | NS                  | NS                  |
| Second Quarter (June '00)     | 3.40     | 4.00 J   | 0.20 U  | ---                | 0.20 U              | 1.00 U              | 9.50 J              | 0.20 U              |
| Third Quarter (September '00) | 25.00    | ND       | ND      | ---                | ND                  | ND                  | 8.10 J              | ND                  |
| Fourth Quarter (December '00) | 2.60     | 3.4 J    | 0.20 U  | --                 | 0.20 U              | 8.3 J               | 2 U                 | 0.20 U              |
| First Quarter (March '01)     | 5.1 J    | 5.5 J    | 0.20 U  | --                 | 0.20 U              | 4.0 U               | 9.8 J               | 0.20 U              |
| <b><u>Naphthalene</u></b>     |          |          |         |                    |                     |                     |                     |                     |
| First Quarter (March '98)     | 2,080.00 | 6,470.00 | 3.51 J  | 3,080.00           | NS                  | NS                  | NS                  | NS                  |
| Second Quarter (June '98)     | 172.00 J | 16.10    | 15.10 J | 11,800.00          | NS                  | NS                  | NS                  | NS                  |
| Third Quarter (September '98) | 863.00 J | 7,140.00 | 19.00 J | 580.00 J           | NS                  | NS                  | NS                  | NS                  |
| Fourth Quarter (December '98) | 1,760.00 | NS       | 9.30 J  | 14,900.00          | NS                  | NS                  | NS                  | NS                  |
| First Quarter (March '99)     | 1,330.00 | 5,560.00 | 19.90   | 9,500.00           | NS                  | NS                  | NS                  | NS                  |
| Second Quarter (June '99)     | 940.00   | 6,400.00 | 3.90 J  | 11,600.00          | NS                  | NS                  | NS                  | NS                  |
| Third Quarter (September '99) | 418.00 J | 0.80 U   | 7.90 J  | 126,000.00         | NS                  | NS                  | NS                  | NS                  |
| Fourth Quarter (December '99) | 790.00   | 4,740.00 | 9.00 J  | ---                | NS                  | NS                  | NS                  | NS                  |
| First Quarter (March '00)     | 1,020.00 | 3,950.00 | 9.80 J  | ---                | NS                  | NS                  | NS                  | NS                  |
| Second Quarter (June '00)     | 364.00 J | 4,260.00 | 6.96 J  | ---                | 40.70               | 1,920.00            | 5,980.00            | 42.70               |
| Third Quarter (September '00) | 810.00   | 3,960.00 | 15.30 J | ---                | 59.30               | 2,220.00            | 5,720.00            | ND                  |
| Fourth Quarter (December '00) | 720.00   | 3,470.00 | 10.00 J | --                 | 1.25 J              | 1,760.00            | 5,050.00            | 0.94 J              |
| First Quarter (March '01)     | 830.00   | 3,800.00 | 8.6 J   | --                 | 0.78 U              | 2,900.00            | 5,900.00            | 2.36 J              |

Table 5 (continued)

**Concentration Trends in Groundwater Monitoring Wells  
First Quarter 1998 through First Quarter 2001  
Moss-American Site  
Milwaukee, Wisconsin**

|                               | MW-4S    | MW-7S   | TW-05   | TW-09 <sup>1</sup> | MW-32S <sup>2</sup> | MW-33S <sup>2</sup> | MW-34S <sup>2</sup> | MW-35S <sup>2</sup> |
|-------------------------------|----------|---------|---------|--------------------|---------------------|---------------------|---------------------|---------------------|
| <b>Fluorene</b>               |          |         |         |                    |                     |                     |                     |                     |
| First Quarter (March '98)     | 368.00   | 3.30 U  | 3.3 U   | 21.00 U            | NS                  | NS                  | NS                  | NS                  |
| Second Quarter (June '98)     | 50.00    | 3.60 J  | 105.00  | 3,590.00           | NS                  | NS                  | NS                  | NS                  |
| Third Quarter (September '98) | 323.00 J | 30.00   | 90.00   | 3.30 UJ            | NS                  | NS                  | NS                  | NS                  |
| Fourth Quarter (December '98) | 316.00   | NS      | 62.30   | 4,120.00           | NS                  | NS                  | NS                  | NS                  |
| First Quarter (March '99)     | 271.00   | 30.00   | 65.40   | 4,300.00           | NS                  | NS                  | NS                  | NS                  |
| Second Quarter (June '99)     | 547.00   | 36.50   | 79.60   | 5,200.00           | NS                  | NS                  | NS                  | NS                  |
| Third Quarter (September '99) | 651.00   | 39.20   | 136.00  | 47,700.00          | NS                  | NS                  | NS                  | NS                  |
| Fourth Quarter (December '99) | 333.00   | 24.40   | 66.60   | ---                | NS                  | NS                  | NS                  | NS                  |
| First Quarter (March '00)     | 281.00   | 15.80   | 55.50   | ---                | NS                  | NS                  | NS                  | NS                  |
| Second Quarter (June '00)     | 223.00   | 12.80   | 53.20   | ---                | 0.17 U              | 1.41                | 89.00               | 4.92                |
| Third Quarter (September '00) | 103.00   | 14.20   | 74.60   | ---                | 0.19                | 5.86                | 73.00 J             | ND                  |
| Fourth Quarter (December '00) | 217.00   | 12.70   | 40.10   | --                 | 0.82 U              | 15.00               | 74.00               | 0.23 J              |
| First Quarter (March '01)     | 210.00   | 10.00   | 43.00   | --                 | 0.17 U              | 19.00               | 83.00               | 0.31 J              |
| <b>Benzo(a) pyrene</b>        |          |         |         |                    |                     |                     |                     |                     |
| First Quarter (March '98)     | 25.30    | 0.021 U | 2.04    | 20.30              | NS                  | NS                  | NS                  | NS                  |
| Second Quarter (June '98)     | 112.00   | 25.30   | 1.63    | 226.00             | NS                  | NS                  | NS                  | NS                  |
| Third Quarter (September '98) | 7.45 J   | 0.42    | 3.40    | 4.40 J             | NS                  | NS                  | NS                  | NS                  |
| Fourth Quarter (December '98) | 8.95     | NS      | 1.72    | 228.00             | NS                  | NS                  | NS                  | NS                  |
| First Quarter (March '99)     | 6.10     | 0.43    | 2.10    | 240.00             | NS                  | NS                  | NS                  | NS                  |
| Second Quarter (June '99)     | 35.10    | 0.12 U  | 1.42    | 23.00 J            | NS                  | NS                  | NS                  | NS                  |
| Third Quarter (September '99) | 40.50    | 0.022 U | 4.33    | 3,610.00           | NS                  | NS                  | NS                  | NS                  |
| Fourth Quarter (December '99) | 9.70     | 0.21 U  | 1.49    | ---                | NS                  | NS                  | NS                  | NS                  |
| First Quarter (March '00)     | 8.40     | 0.21 U  | 1.44    | ---                | NS                  | NS                  | NS                  | NS                  |
| Second Quarter (June '00)     | 1.70 J   | 0.021 U | 0.361   | ---                | 0.02 U              | 0.02 U              | 2.00 U              | 0.162               |
| Third Quarter (September '00) | 6.70 J   | ND      | 0.89    | ---                | 0.02 U              | 0.02 U              | 0.10                | 0.153               |
| Fourth Quarter (December '00) | 0.051 J  | 0.02 U  | 0.096 U | --                 | 0.021 U             | 0.02 U              | 0.031 J             | 0.138               |
| First Quarter (March '01)     | 1.0 U    | 0.19 U  | 0.11 U  | --                 | 0.019 U             | 0.20 U              | 0.23 U              | 0.023 U             |

NS - Not sampled.

U - Constituent not detected; method detection limit (MDL) of the analysis reported.

J - Estimated concentration.

1 - TW-09 was removed to install the funnel-and-gate groundwater system.

2 - Additional wells (MW-32S, MW-33S, MW-34S, MW-35S) installed after March 2000.

**Table 6**

**Groundwater Sample Analytical Results  
Treatment Performance Monitoring Wells - Nutrient and Biological Parameters  
Moss-American Site  
Milwaukee, Wisconsin  
First Quarter 2001**

| Parameter (mg/L)                     | Sample Identification |          |          |          |          |          |          |          |          |
|--------------------------------------|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|
|                                      | TG1-1                 |          |          | TG1-2    |          |          | TG1-3    |          |          |
|                                      | January               | February | March    | January  | February | March    | January  | February | March    |
| Kjeldahl Nitrogen                    | 1.3                   | 1.6 U    | 1.1      | 0.94 J   | NS       | 1.1      | 0.57 J   | NS       | 0.90 J   |
| Nitrite Nitrogen                     | 0.015 U               | 0.163    | 0.21     | 0.015 U  | NS       | 0.176    | 0.015 U  | NS       | 0.015 U  |
| Nitrate Nitrogen                     | 0.040 U               | 0.040 U  | 0.040 U  | 0.040 U  | NS       | 0.040 U  | 0.040 U  | NS       | 0.040 U  |
| Ammonia Nitrogen                     | 1.2                   | 0.16 U   | 0.98 J   | 0.89 J   | NS       | 0.45 J   | 0.59 J   | NS       | 0.63 J   |
| Ortho-Phosphate as P                 | 0.0149 J              | 0.041    | 0.0171 J | 0.049    | NS       | 0.0061 J | 0.051    | NS       | 0.0096 J |
| Biochemical Oxygen Demand (BOD)      | NA                    | NA       | 5.6 U    | NA       | NS       | 4.3 U    | NA       | NS       | 3.2 U    |
| Total Organic Carbon (non-purgable)  | NA                    | NA       | 7.9 J    | NA       | NS       | 8.1 J    | NA       | NS       | 5.6 J    |
| Total Phosphorous as PO4             | 0.13                  | 0.17     | 0.13 U   | 0.27     | NS       | 0.17 U   | 0.22     | NS       | 0.3 U    |
| Chemical Oxygen Demand (COD)         | NA                    | NA       | 29.4     | NA       | NS       | 22.6     | NA       | NS       | 18.5     |
| Total Microbial Population (mean)    | 1.94E+03              | 1.70E+05 | 2.60E+04 | 2.18E+03 | NS       | 1.20E+03 | 2.32E+03 | NS       | 6.80E+02 |
| Degrader Microbial Population (mean) | 1.50E+02              | 1.90E+04 | 1.50E+03 | 1.70E+02 | NS       | 5.90E+02 | 3.70E+02 | NS       | 3.10E+02 |
|                                      | TG2-1                 |          |          | TG2-2    |          |          | TG2-3    |          |          |
|                                      | January               | February | March    | January  | February | March    | January  | February | March    |
| Kjeldahl Nitrogen                    | 0.34 J                | 0.36 U   | 0.32 J   | 0.79 J   | 1.2 U    | 0.77 J   | 0.46 J   | 0.64 U   | 0.43 J   |
| Nitrite Nitrogen                     | 0.015 U               | 0.015 U  | 0.015 U  | 0.015 U  | 0.172    | 0.015 U  | 0.015 U  | 0.015 U  | 0.015 U  |
| Nitrate Nitrogen                     | 0.040 U               | 0.040 U  | 0.040 U  | 0.040 U  | 0.040 U  | 0.040 U  | 0.040 U  | 0.040 U  | 0.040 U  |
| Ammonia Nitrogen                     | 0.18 J                | 0.16 U   | 0.16 U   | 0.50 J   | 0.50 J   | 0.57 J   | 0.32 J   | 0.16 U   | 0.27 J   |
| Ortho-Phosphate as P                 | 0.0056 U              | 0.0126 J | 0.0101 J | 0.0056 U | 0.031    | 0.0126 J | 0.0056 U | 0.059    | 0.027    |
| Biochemical Oxygen Demand (BOD)      | NA                    | NA       | 2.9 U    | NA       | NA       | 5.4 U    | NA       | NA       | 3.3 U    |
| Total Organic Carbon (non-purgable)  | NA                    | NA       | 1.8 J    | NA       | NA       | 3 J      | NA       | NA       | 5.6 J    |
| Total Phosphorous as PO4             | 0.13 U                | 0.14 J   | 0.13 U   | 0.22     | 0.23     | 0.23 U   | 0.23     | 0.32     | 0.24 U   |
| Chemical Oxygen Demand (COD)         | NA                    | NA       | 7.7 J    | NA       | NA       | 11.3     | NA       | NA       | 16.5     |
| Total Microbial Population (mean)    | 1.32E+05              | 8.70E+03 | 1.00E+04 | 2.20E+03 | 8.40E+02 | 3.00E+02 | 6.90E+03 | 3.90E+03 | 8.50E+03 |
| Degrader Microbial Population (mean) | 3.00E+04              | 6.60E+03 | 7.40E+03 | 1.30E+02 | 5.60E+02 | 2.10E+02 | 2.40E+02 | 2.60E+02 | 2.20E+03 |

Table 6 (continued)

**Groundwater Sample Analytical Results**  
**Treatment Performance Monitoring Wells - Nutrient and Biological Parameters**  
**Moss-American Site**  
**Milwaukee, Wisconsin**  
**First Quarter 2001**

| Parameter (mg/L)                     | Sample Identification |          |          |         |          |          |         |          |          |
|--------------------------------------|-----------------------|----------|----------|---------|----------|----------|---------|----------|----------|
|                                      | TG3-1                 |          |          | TG3-2   |          |          | TG3-3   |          |          |
|                                      | January               | February | March    | January | February | March    | January | February | March    |
| Kjeldahl Nitrogen                    | 1.5                   | 3.5      | 2.4      | NS      | NS       | 1.3      | NS      | NS       | 1.6      |
| Nitrite Nitrogen                     | 0.015 U               | 0.107    | 0.018 J  | NS      | NS       | 0.023 J  | NS      | NS       | 0.039 J  |
| Nitrate Nitrogen                     | 0.040 U               | 0.074 J  | 0.040 U  | NS      | NS       | 0.040 U  | NS      | NS       | 0.040 U  |
| Ammonia Nitrogen                     | 1.8                   | 1.2      | 1.9      | NS      | NS       | 1        | NS      | NS       | 0.54 J   |
| Ortho-Phosphate as P                 | 0.0056 U              | 0.0101 J | 0.0036 J | NS      | NS       | 0.0028 U | NS      | NS       | 0.0086 J |
| Biochemical Oxygen Demand (BOD)      | NA                    | NA       | 4.5 U    | NS      | NS       | 5.4      | NS      | NS       | 6.3      |
| Total Organic Carbon (non-purgable)  | NA                    | NA       | 18.6 J   | NS      | NS       | 8.6 J    | NS      | NS       | 9.2 J    |
| Total Phosphorous as PO4             | 0.53                  | 0.64     | 0.63 U   | NS      | NS       | 0.27 U   | NS      | NS       | 0.32 U   |
| Chemical Oxygen Demand (COD)         | NA                    | NA       | 49.2     | NS      | NS       | 24.2     | NS      | NS       | 24.6     |
| Total Microbial Population (mean)    | 1.50E+03              | 3.00E+03 | 8.90E+02 | NS      | NS       | 9.60E+02 | NS      | NS       | 5.10E+03 |
| Degrader Microbial Population (mean) | 2.00E+02              | 3.10E+02 | 4.00E+01 | NS      | NS       | 6.20E+02 | NS      | NS       | 4.20E+03 |
|                                      | TG4-1                 |          |          | TG4-2   |          |          | TG4-3   |          |          |
|                                      | January               | February | March    | January | February | March    | January | February | March    |
| Kjeldahl Nitrogen                    | NS                    | NS       | NS       | NS      | 1.7 U    | 1.2      | NS      | NS       | 1.4      |
| Nitrite Nitrogen                     | NS                    | NS       | NS       | NS      | 0.015 U  | 0.015 U  | NS      | NS       | 0.015 U  |
| Nitrate Nitrogen                     | NS                    | NS       | NS       | NS      | 0.040 U  | 0.040 U  | NS      | NS       | 0.040 U  |
| Ammonia Nitrogen                     | NS                    | NS       | NS       | NS      | 0.59 J   | 0.84 J   | NS      | NS       | 0.99 J   |
| Ortho-Phosphate as P                 | NS                    | NS       | NS       | NS      | 0.0036 J | 0.0028 U | NS      | NS       | 0.0028 U |
| Biochemical Oxygen Demand (BOD)      | NS                    | NS       | NS       | NS      | NA       | 3.2 U    | NS      | NS       | 3.2 U    |
| Total Organic Carbon (non-purgable)  | NS                    | NS       | NS       | NS      | NA       | 6.9 J    | NS      | NS       | 6.4 J    |
| Total Phosphorous as PO4             | NS                    | NS       | NS       | NS      | 0.19     | 0.16 U   | NS      | NS       | 0.26 U   |
| Chemical Oxygen Demand (COD)         | NS                    | NS       | NS       | NS      | NA       | 25       | NS      | NS       | 23.8     |
| Total Microbial Population (mean)    | NS                    | NS       | NS       | NS      | 1.30E+03 | 1.90E+03 | NS      | NS       | 1.80E+03 |
| Degrader Microbial Population (mean) | NS                    | NS       | NS       | NS      | 3.80E+02 | 4.10E+02 | NS      | NS       | 4.90E+02 |



Table 6 (continued)

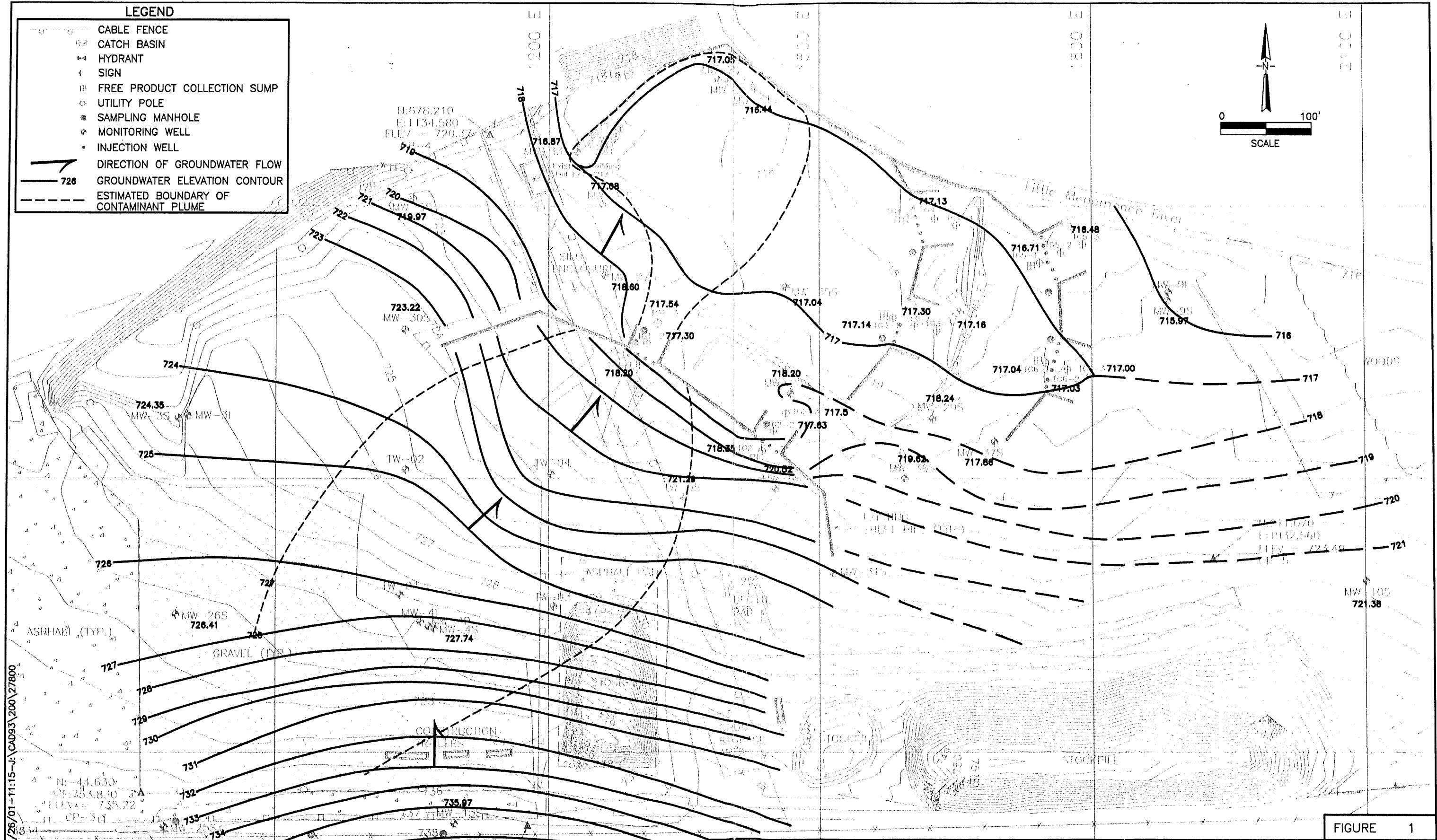
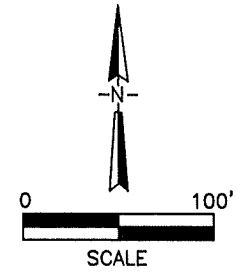
**Groundwater Sample Analytical Results**  
**Treatment Performance Monitoring Wells - Nutrient and Biological Parameters**  
**Moss-American Site**  
**Milwaukee, Wisconsin**  
**First Quarter 2001**

| Parameter (mg/L)                     | Sample Identification |          |          |          |          |          |          |          |          |
|--------------------------------------|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|
|                                      | TG5-1                 |          |          | TG5-2    |          |          | TG5-3    |          |          |
|                                      | January               | February | March    | January  | February | March    | January  | February | March    |
| Kjeldahl Nitrogen                    | 0.37 J                | NS       | 0.71 J   | NS       | NS       | NS       | 0.73 J   | 0.74 J   | 0.57 J   |
| Nitrite Nitrogen                     | 0.015 U               | NS       | 0.015 U  | NS       | NS       | NS       | 0.015 U  | 0.015 U  | 0.015 U  |
| Nitrate Nitrogen                     | 0.040 U               | NS       | 0.040 U  | NS       | NS       | NS       | 0.040 U  | 0.16     | 0.040 U  |
| Ammonia Nitrogen                     | 0.59 J                | NS       | 0.27 J   | NS       | NS       | NS       | 0.32 J   | 0.16 U   | 0.16 U   |
| Ortho-Phosphate as P                 | 0.0056 U              | NS       | 0.023 J  | NS       | NS       | NS       | 0.0056 U | 0.039    | 0.152 J  |
| Biochemical Oxygen Demand (BOD)      | NA                    | NS       | 2.4 U    | NS       | NS       | NS       | NA       | NA       | 2.4 J    |
| Total Organic Carbon (non-purgable)  | NA                    | NS       | 3.9 J    | NS       | NS       | NS       | NA       | NA       | 4.3      |
| Total Phosphorous as PO4             | 0.21                  | NS       | 0.19 J   | NS       | NS       | NS       | 0.17     | 0.44     | 0.24 J   |
| Chemical Oxygen Demand (COD)         | NA                    | NS       | NA       | NS       | NS       | NS       | NA       | NA       | NA       |
| Total Microbial Population (mean)    | 4.30E+03              | NS       | 3.40E+03 | NS       | NS       | NS       | 1.03E+03 | 6.70E+03 | 1.40E+05 |
| Degrader Microbial Population (mean) | 1.14E+03              | NS       | 1.90E+03 | NS       | NS       | NS       | 4.20E+02 | 1.20E+03 | 5.30E+03 |
|                                      | TG6-1                 |          |          | TG6-2    |          |          | TG6-3    |          |          |
|                                      | January               | February | March    | January  | February | March    | January  | February | March    |
| Kjeldahl Nitrogen                    | 1.2                   | 1.8 U    | 1.3 J    | 0.70 J   | 0.59 U   | 0.59 J   | 0.63 J   | 1.5 U    | 1.1 J    |
| Nitrite Nitrogen                     | 0.015 U               | 0.015 U  | 0.015 U  | 0.015 U  | 0.015 U  | 0.015 U  | 0.015 U  | 0.126    | 0.015 U  |
| Nitrate Nitrogen                     | 0.040 U               | 0.040 U  | 0.040 U  | 0.040 U  | 0.040 U  | 0.040 U  | 0.040 U  | 0.044 J  | 0.04 J   |
| Ammonia Nitrogen                     | 1.2                   | 1.1      | 0.93 J   | 0.77 J   | 0.16 U   | 0.24 J   | 0.62 J   | 0.16     | 0.81 J   |
| Ortho-Phosphate as P                 | 0.0056 U              | 0.0161 J | 0.228 J  | 0.0056 U | 0.0071 J | 0.303 J  | 0.0056 U | 0.0046 J | 0.088 J  |
| Biochemical Oxygen Demand (BOD)      | NA                    | NA       | 2.5 J    | NA       | NA       | 2 J      | NA       | NA       | 2.9 J    |
| Total Organic Carbon (non-purgable)  | NA                    | NA       | 6.7      | NA       | NA       | 4.6      | NA       | NA       | 7        |
| Total Phosphorous as PO4             | 0.22                  | 0.27     | 0.3 J    | 0.13 U   | 0.22     | 0.13 U   | 0.15 J   | 0.25     | 0.26 J   |
| Chemical Oxygen Demand (COD)         | NA                    | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA       |
| Total Microbial Population (mean)    | 1.30E+03              | 6.20E+03 | 1.60E+05 | 6.60E+02 | 2.10E+03 | 2.30E+06 | 6.20E+02 | 8.90E+02 | 2.40E+05 |
| Degrader Microbial Population (mean) | 9.00E+01              | 2.30E+02 | 3.30E+03 | 2.10E+02 | >3000    | 5.80E+05 | 1.20E+02 | 2.10E+02 | 1.10E+05 |

U - Compound not detected above detection limit.  
 J - Estimated value.  
 NA - Not analyzed.  
 NS - Well not measured due to freezing conditions.

**LEGEND**

- CABLE FENCE
- ▣ CATCH BASIN
- ▶ HYDRANT
- ↑ SIGN
- ▩ FREE PRODUCT COLLECTION SUMP
- UTILITY POLE
- SAMPLING MANHOLE
- ⊕ MONITORING WELL
- INJECTION WELL
- DIRECTION OF GROUNDWATER FLOW
- 726 GROUNDWATER ELEVATION CONTOUR
- - - ESTIMATED BOUNDARY OF CONTAMINANT PLUME



HERNAND-02/26/01-11:15-J-CAD93\200\27800

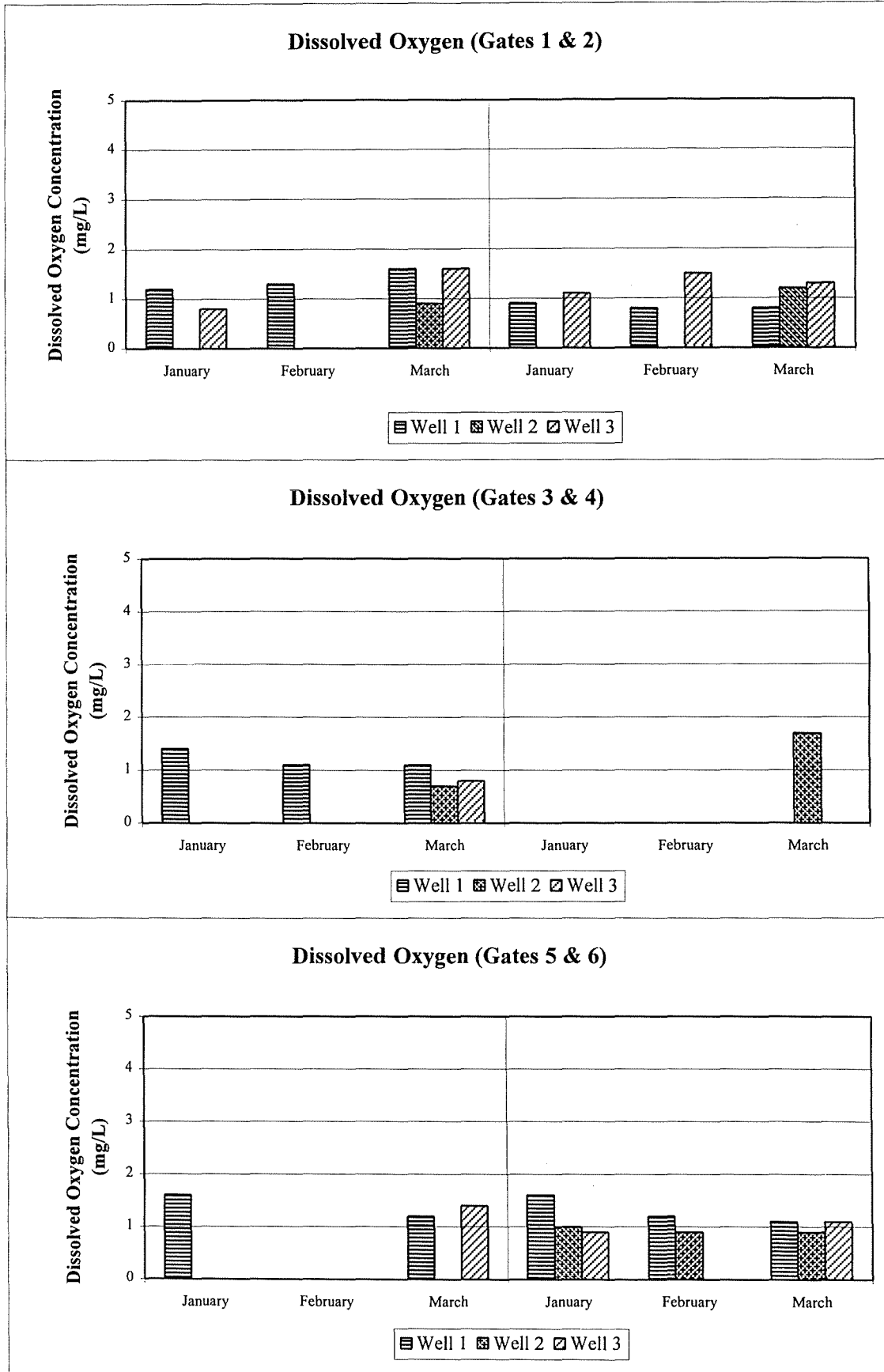
SOURCE: BERNKLAU SURVEYING, N64 W24801 MAIN ST., SUITE 103, SUSSEX, WI 53089



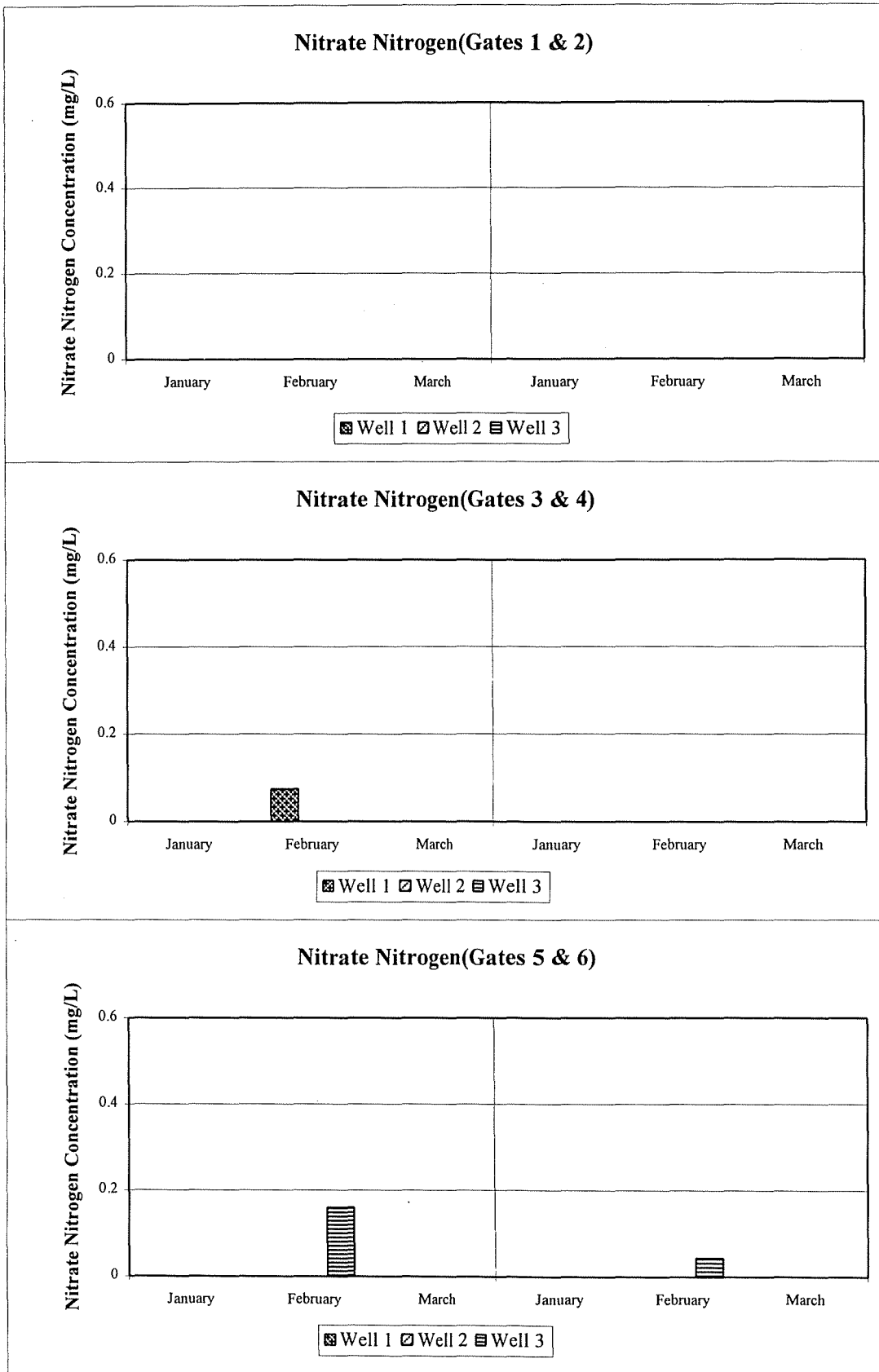
750 E. Bunker Ct.  
Suite 500  
Vernon Hills, Illinois  
60061

**FIGURE 1**  
GROUNDWATER ELEVATION CONTOUR MAP - 1ST QTR 2001  
KERR MCGEE CORPORATION  
MOSS-AMERICAN SITE  
Milwaukee, Wisconsin

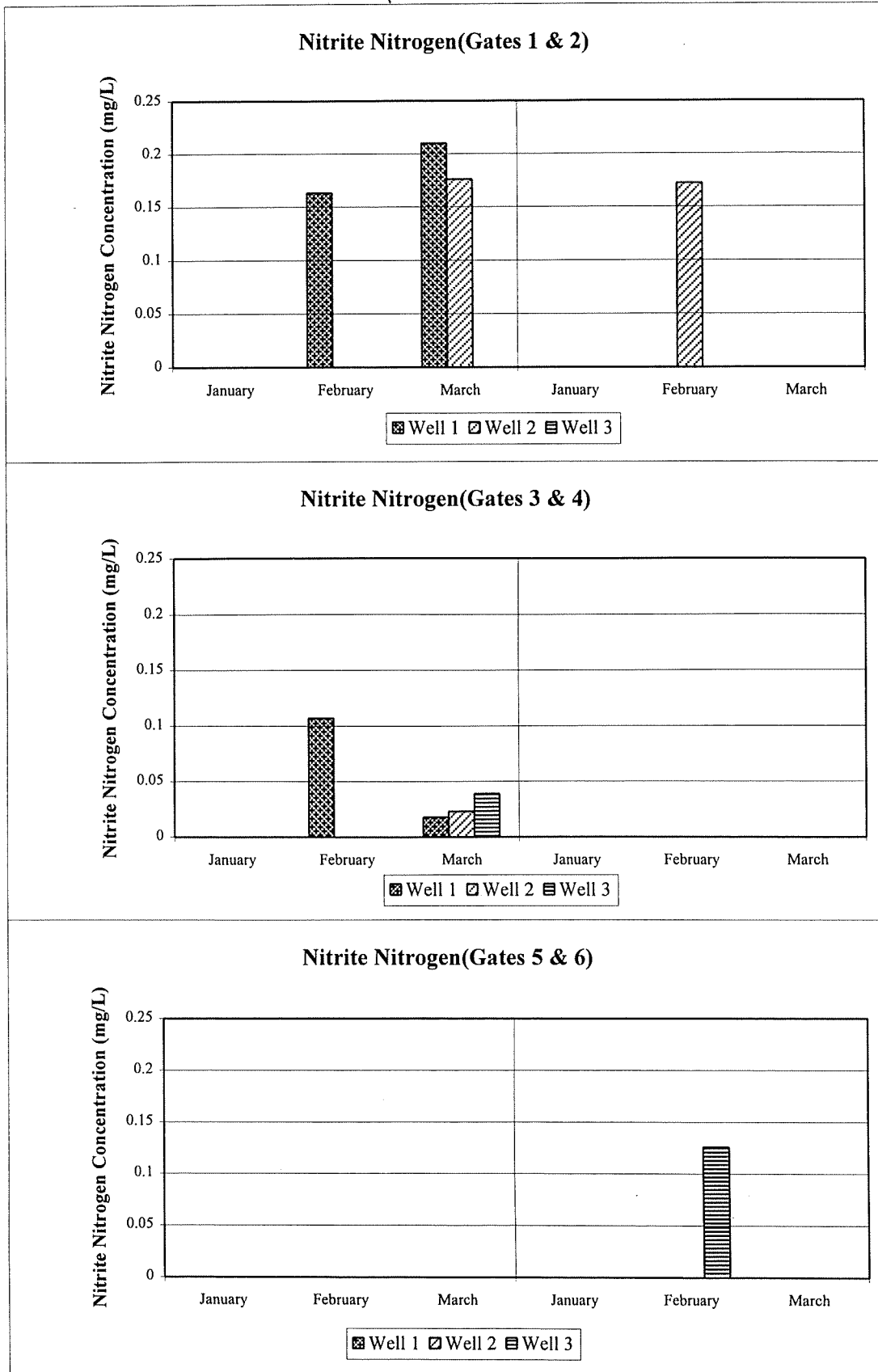
**Figure 2**  
**Treatment Performance Monitoring Wells**  
**First Quarter 2001**  
**Moss-American Site**  
**Milwaukee, Wisconsin**



**Figure 3**  
**Treatment Performance Monitoring Wells**  
**First Quarter 2001**  
**Moss-American Site**  
**Milwaukee, Wisconsin**



**Figure 4**  
**Treatment Performance Monitoring Wells**  
**First Quarter 2001**  
**Moss-American Site**  
**Milwaukee, Wisconsin**



**Figure 5**  
**Treatment Performance Monitoring Wells**  
**First Quarter 2001**  
**Moss-American Site**  
**Milwaukee, Wisconsin**

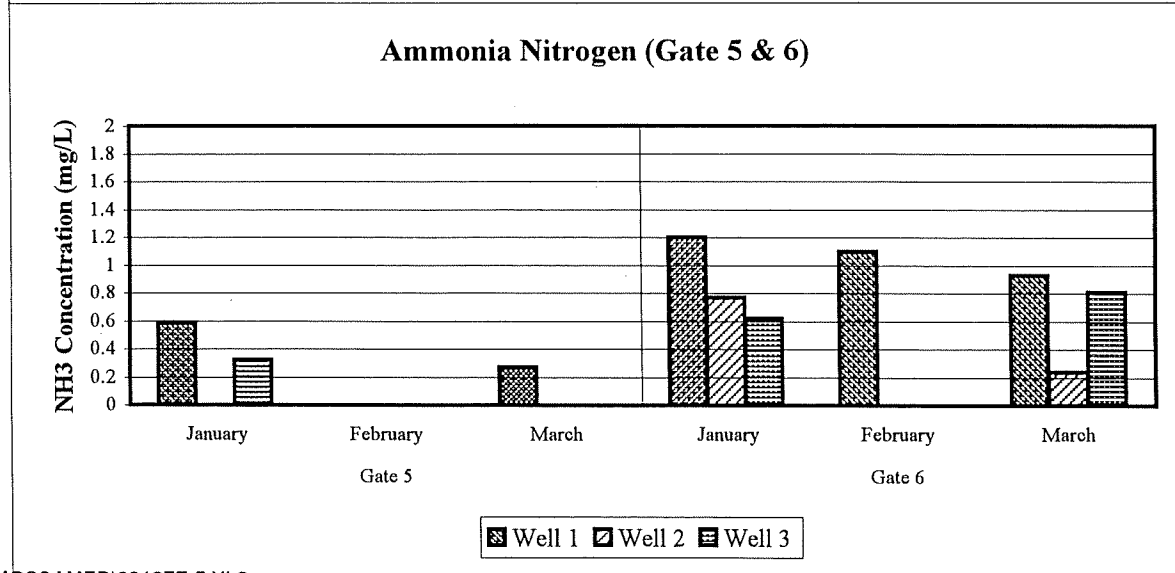
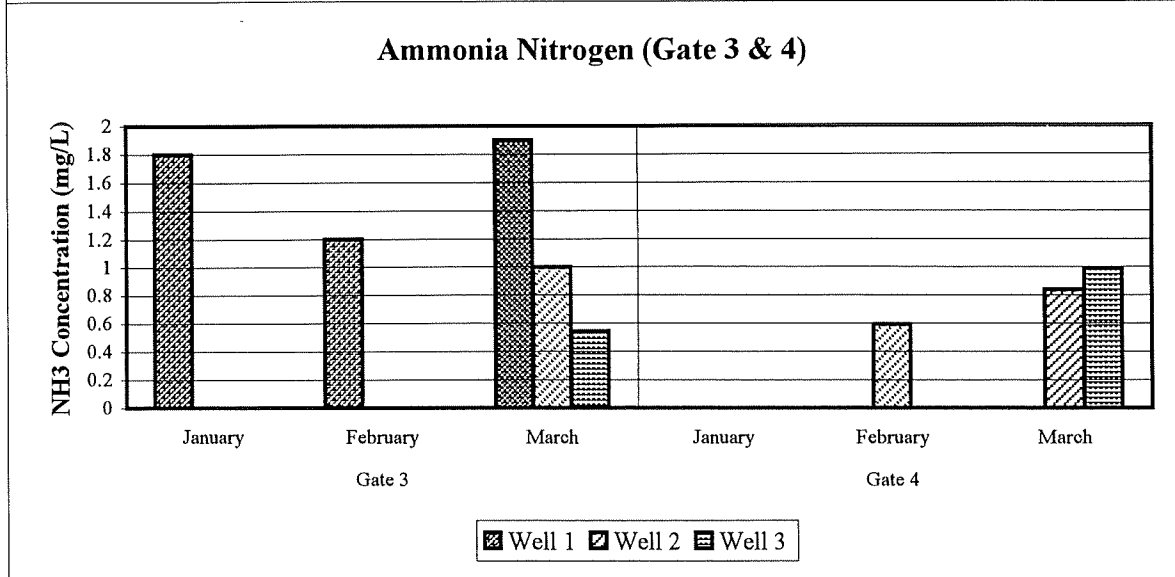
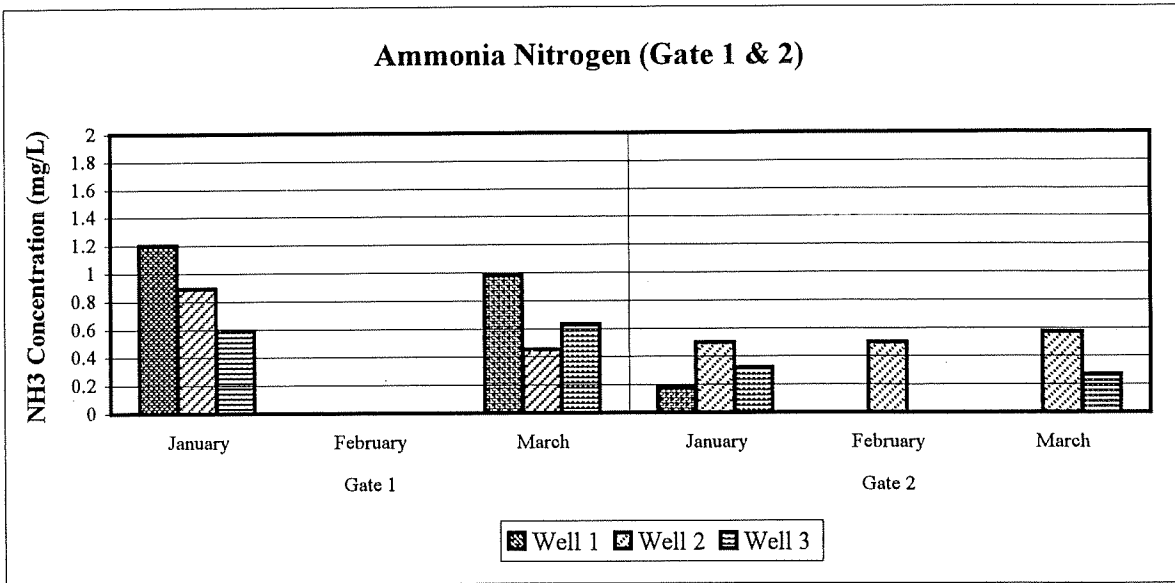
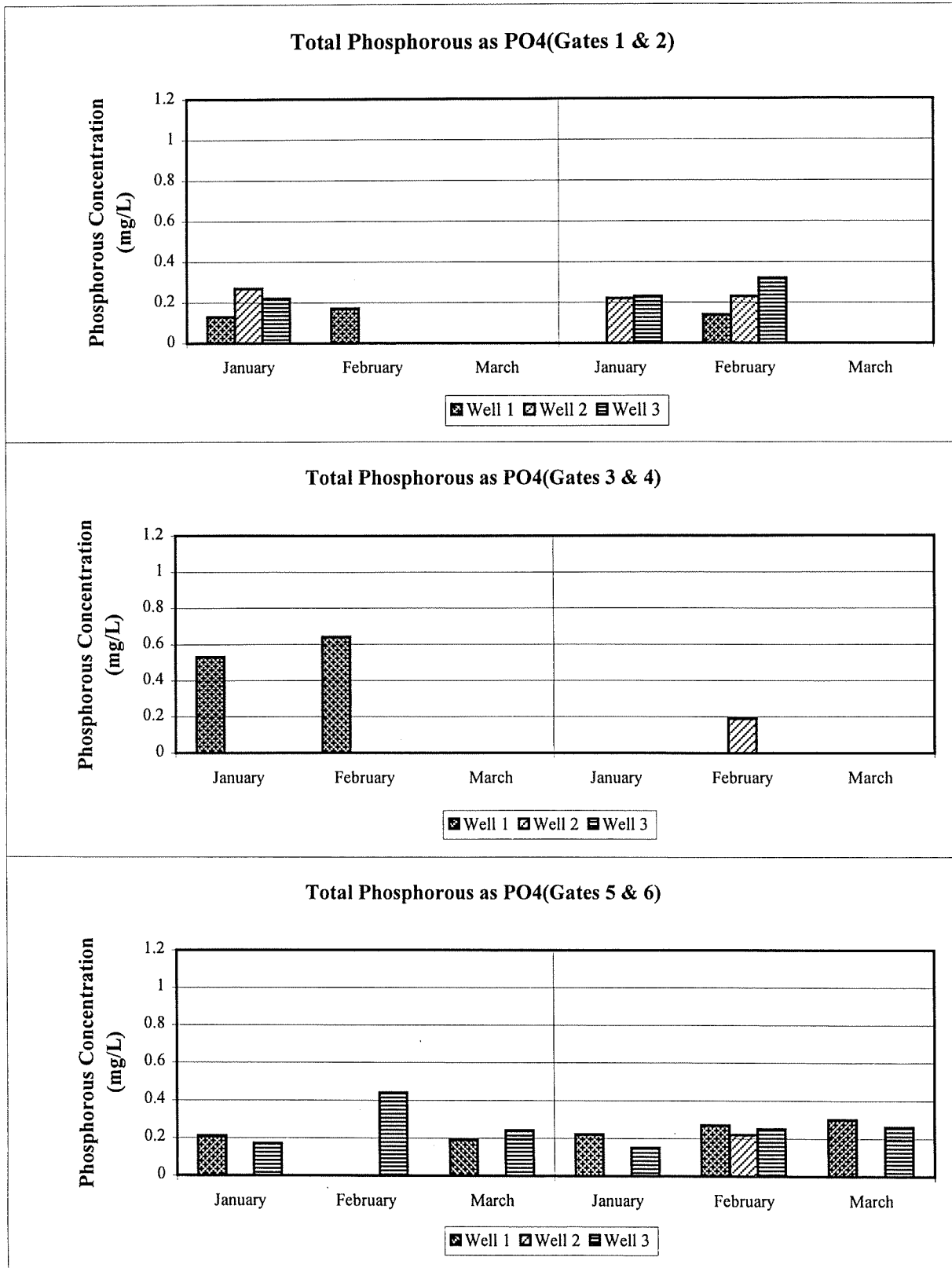
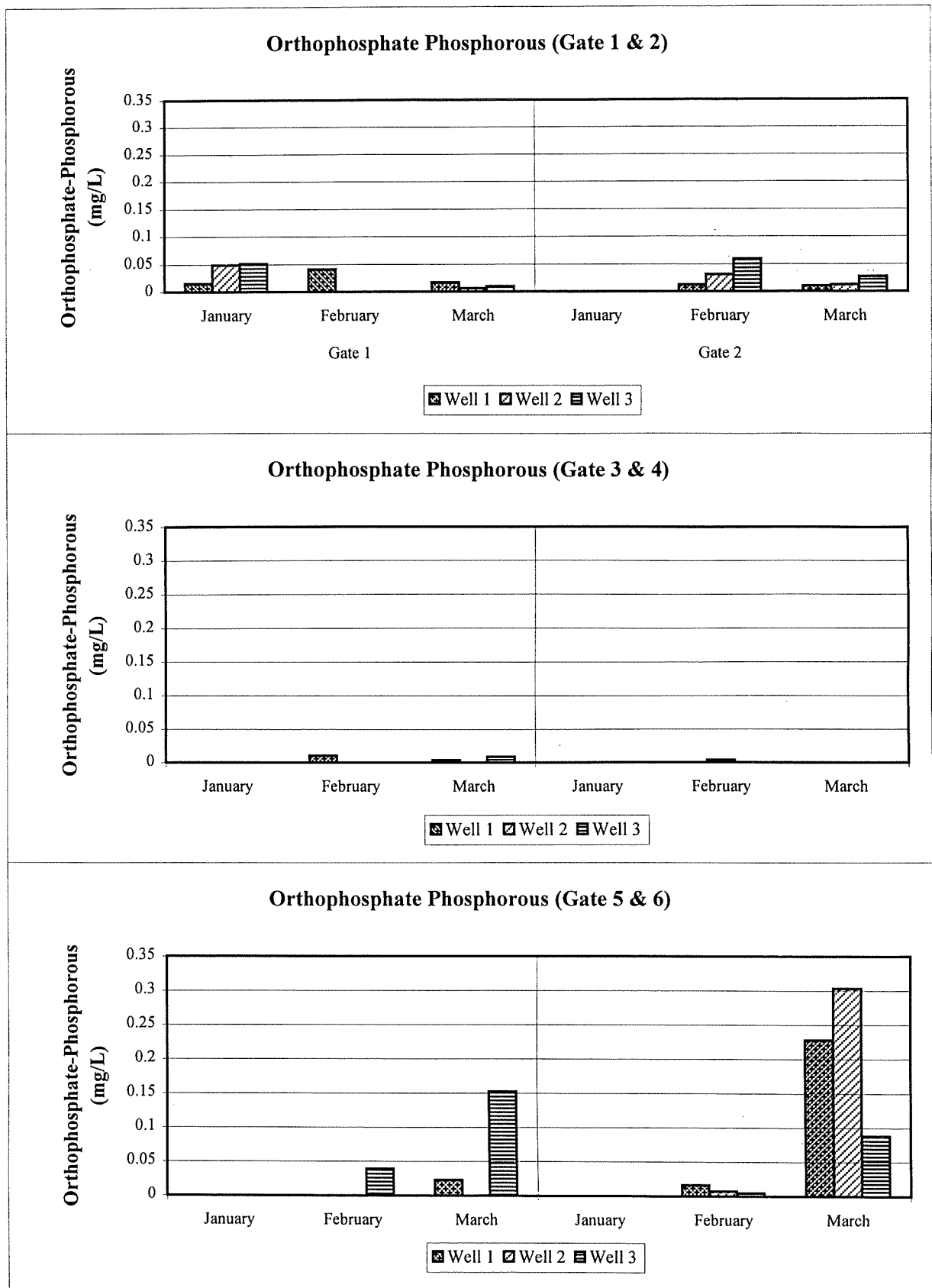


Figure 6

Treatment Performance Monitoring Wells  
 First Quarter 2001  
 Moss-American Site  
 Milwaukee, Wisconsin



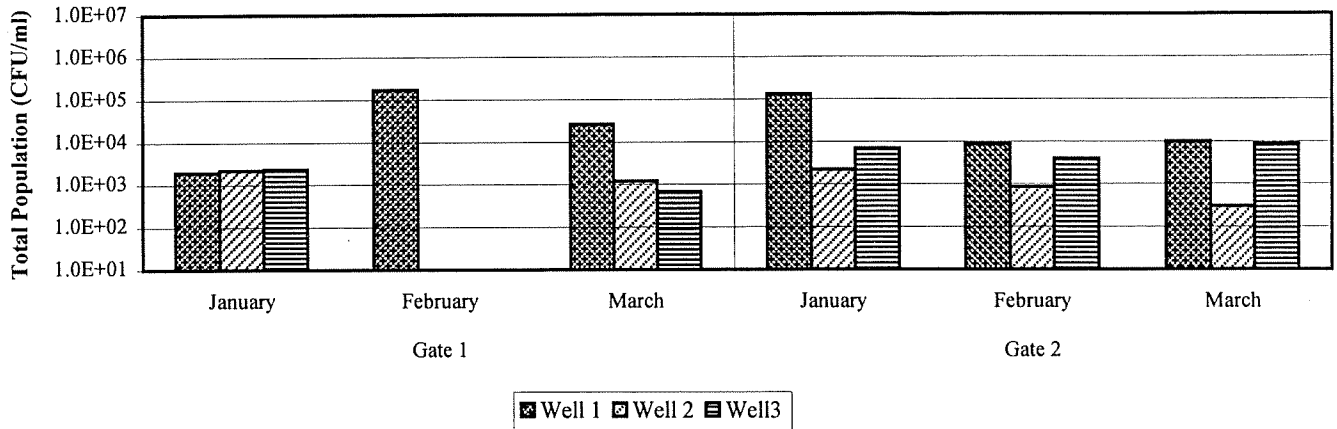
**Figure 7**  
**Treatment Performance Monitoring Wells**  
**First Quarter 2001**  
**Moss-American Site**  
**Milwaukee, Wisconsin**



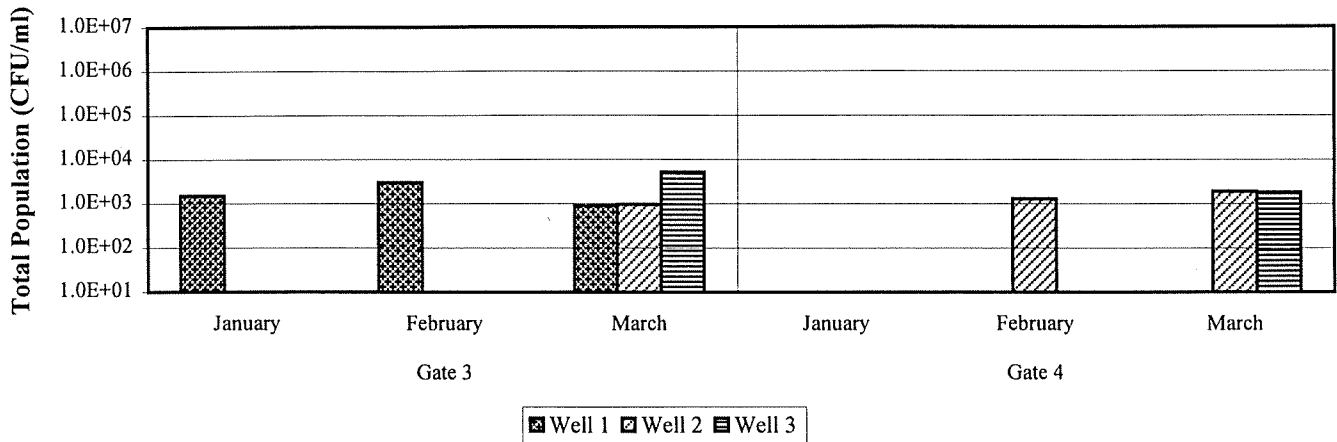


**Figure 8**  
**Treatment Performance Monitoring Wells**  
**First Quarter 2001**  
**Moss-American Site**  
**Milwaukee, Wisconsin**

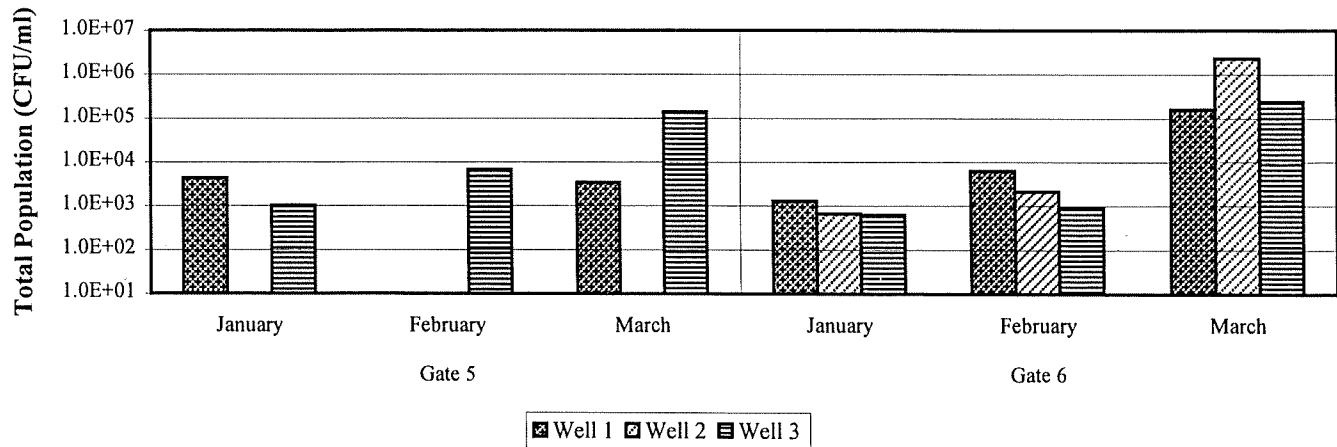
**Total Microbial Population (Gates 1 & 2)**



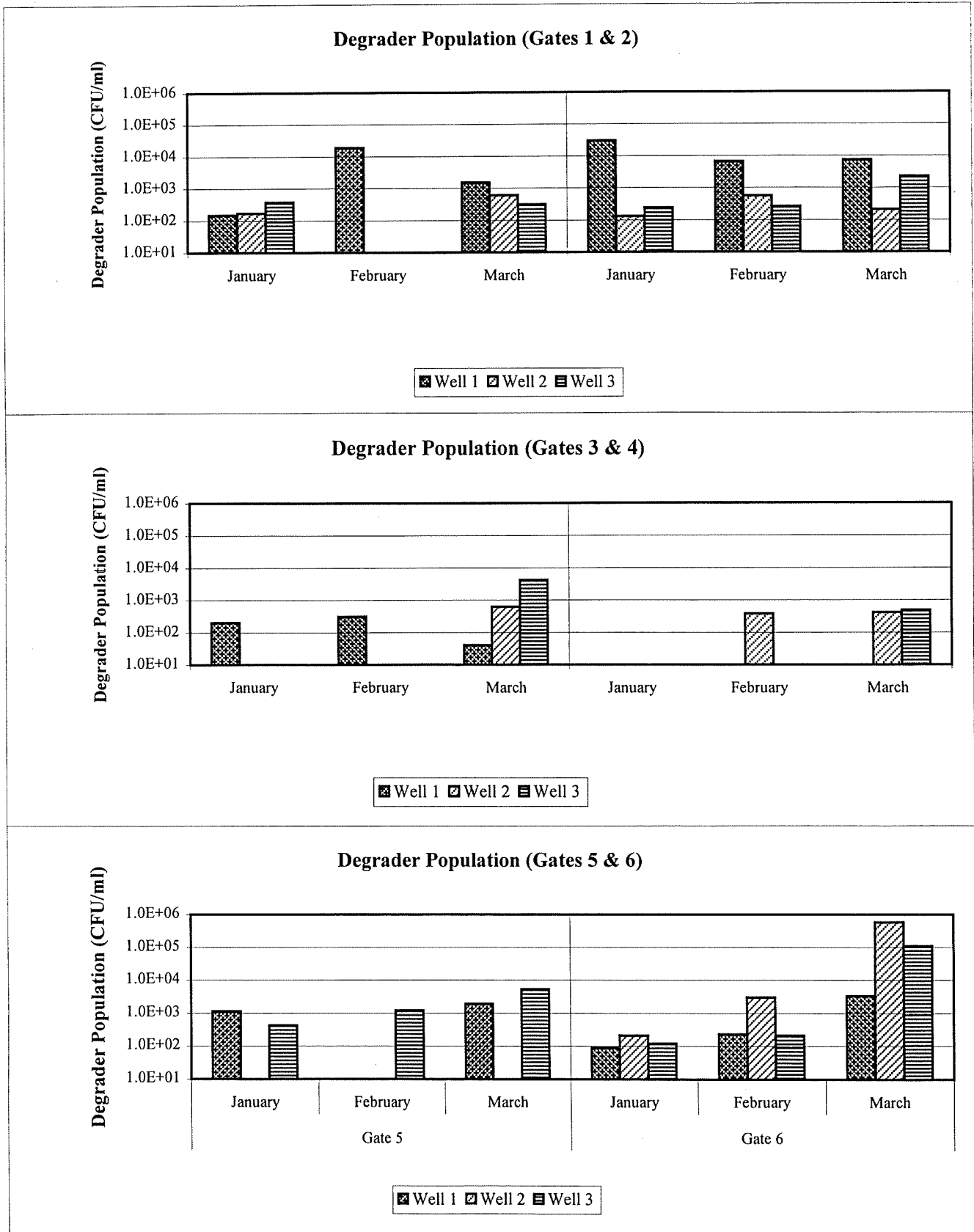
**Total Microbial Population (Gates 3 & 4)**



**Total Microbial Population (Gates 5 & 6)**



**Figure 9**  
**Treatment Performance Monitoring Wells**  
**First Quarter 2001**  
**Moss-American Site**  
**Milwaukee, Wisconsin**



**ATTACHMENT 1**

**MONTHLY FIELD-MEASURED PARAMETERS  
FOR TREATMENT PERFORMANCE MONITORING WELLS**

**Attachment 1**  
**Monthly Field-Measured Parameters**  
**Treatment Performance Monitoring Wells**  
**Moss-American Site**  
**Milwaukee, Wisconsin**  
**First Quarter 2001**

| Well Number | Date        | Temperature (C) | pH   | Specific Conductance (microohms/cm) | Redox Potential (mV) | Dissolved Oxygen (mg/L) | Turbidity (Ntu) |
|-------------|-------------|-----------------|------|-------------------------------------|----------------------|-------------------------|-----------------|
| TG1-1       | January-01  | 4.3             | 7.23 | 0.664                               | 002                  | 1.20                    | NM              |
|             | February-01 | 3.2             | 7.94 | 0.759                               | -001                 | 1.30                    | NM              |
|             | March-01    | 3.8             | 7.44 | 0.825                               | -052                 | 1.60                    | 6.32            |
| TG1-2       | January-01  | 4.7             | 7.40 | 0.786                               | 002                  | NA                      | NM              |
|             | February-01 | NA              | NA   | NA                                  | NA                   | NA                      | NM              |
|             | March-01    | 4.6             | 7.28 | 0.522                               | -049                 | 0.90                    | NM              |
| TG1-3       | January-01  | 4.5             | 7.45 | 0.711                               | 002                  | 0.80                    | NM              |
|             | February-01 | NA              | NA   | NA                                  | NA                   | NA                      | NM              |
|             | March-01    | 5.2             | 7.36 | 0.560                               | -059                 | 1.60                    | 4.56            |
| TG2-1       | January-01  | 5.7             | 7.50 | 0.511                               | 001                  | 0.90                    | NM              |
|             | February-01 | 4.7             | 8.12 | 0.849                               | -001                 | 0.80                    | NM              |
|             | March-01    | 5.5             | 7.47 | 0.685                               | -045                 | 0.80                    | 6.71            |
| TG2-2       | January-01  | 5.5             | 7.47 | 0.503                               | 000                  | NA                      | NM              |
|             | February-01 | 5.0             | 8.16 | 0.775                               | -000                 | NA                      | NM              |
|             | March-01    | 5.3             | 7.68 | 0.693                               | -080                 | 1.20                    | 0.88            |
| TG2-3       | January-01  | 5.8             | 7.36 | 0.740                               | 000                  | 1.10                    | NM              |
|             | February-01 | 4.5             | 8.30 | 1.297                               | -003                 | 1.50                    | NM              |
|             | March-01    | 4.8             | 7.28 | 0.905                               | -153                 | 1.30                    | 2.92            |
| TG3-1       | January-01  | 5.6             | 7.17 | 1.002                               | 000                  | 1.40                    | NM              |
|             | February-01 | 4.0             | 7.16 | 1.498                               | 002                  | 1.10                    | NM              |
|             | March-01    | 4.7             | 7.03 | 1.281                               | -114                 | 1.10                    | 1.03            |
| TG3-2       | January-01  | NA              | NA   | NA                                  | NA                   | NA                      | NM              |
|             | February-01 | NA              | NA   | NA                                  | NA                   | NA                      | NM              |
|             | March-01    | 4.7             | 7.17 | 1.003                               | -129                 | 0.70                    | 4.60            |
| TG3-3       | January-01  | NA              | NA   | NA                                  | NA                   | NA                      | NM              |
|             | February-01 | NA              | NA   | NA                                  | NA                   | NA                      | NM              |
|             | March-01    | 5.4             | 7.10 | 1.096                               | -066                 | 0.80                    | 3.68            |
| TG4-1       | January-01  | NA              | NA   | NA                                  | NA                   | NA                      | NM              |
|             | February-01 | NA              | NA   | NA                                  | NA                   | NA                      | NM              |
|             | March-01    | NA              | NA   | NA                                  | NA                   | NA                      | NA              |
| TG4-2       | January-01  | NA              | NA   | NA                                  | NA                   | NA                      | NM              |
|             | February-01 | 3.9             | 7.93 | 0.771                               | 000                  | NA                      | NM              |
|             | March-01    | 4.3             | 7.53 | 0.415                               | -049                 | 1.70                    | 2.89            |
| TG4-3       | January-01  | NA              | NA   | NA                                  | NA                   | NA                      | NM              |
|             | February-01 | NA              | NA   | NA                                  | NA                   | NA                      | NM              |
|             | March-01    | NA              | NA   | NA                                  | NA                   | NA                      | 1.94            |
| TG5-1       | January-01  | 5.6             | 7.88 | 0.511                               | -001                 | 1.60                    | NM              |
|             | February-01 | NA              | NA   | NA                                  | NA                   | NA                      | NM              |
|             | March-01    | 5.2             | 7.53 | 0.540                               | -084                 | 1.20                    | 5.06            |
| TG5-2       | January-01  | NA              | NA   | NA                                  | NA                   | NA                      | NM              |
|             | February-01 | NA              | NA   | NA                                  | NA                   | NA                      | NM              |
|             | March-01    | NA              | NA   | NA                                  | NA                   | NA                      | NA              |
| TG5-3       | January-01  | 6.5             | 7.64 | 0.564                               | -001                 | NA                      | NM              |
|             | February-01 | 5.9             | 8.14 | 0.865                               | -001                 | NA                      | NM              |
|             | March-01    | 6.1             | 7.55 | 0.700                               | -077                 | 1.40                    | 66.4            |
| TG6-1       | January-01  | 5.5             | 7.42 | 0.741                               | -001                 | 1.60                    | NM              |
|             | February-01 | 2.4             | 7.41 | 1.079                               | 000                  | NA                      | NM              |
|             | March-01    | 5.5             | 8.28 | 0.950                               | -242                 | 1.10                    | 1.22            |
| TG6-2       | January-01  | 5.8             | 7.49 | 0.755                               | -001                 | 1.00                    | NM              |
|             | February-01 | 2.3             | 7.43 | 1.175                               | 003                  | 1.20                    | NM              |
|             | March-01    | 6.1             | 7.35 | 0.550                               | -055                 | 0.90                    | 1.84            |
| TG6-3       | January-01  | 5.9             | 7.33 | 0.760                               | -001                 | 0.90                    | NM              |
|             | February-01 | 3.3             | 7.26 | 1.168                               | 001                  | 0.90                    | NM              |
|             | March-01    | 5.9             | 7.20 | 1.050                               | -072                 | 1.10                    | 2.50            |

NA- Not available due to cold temperatures and ice.

NA- Not measured. Value only measured quarterly.

**ATTACHMENT 2**

**JANUARY 2001 GROUNDWATER SAMPLE ANALYTICAL RESULTS**

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Hammond, IN 46324  
(219) 932-1770

INDIANA CERTIFICATION NUMBERS: H-45-8 C-45-02

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### CERTIFICATE OF ANALYSIS

Tom Graam  
Roy F. Weston, Inc.  
750 East Bankes Court  
Suite 500  
Vernon Hills, IL 60061

Date Reported: 2/23/01  
P.O. Number: Moss America  
Sample ID: 9925-00329  
Date Received: 1/31/01  
Time Received: 12:20

Permit Number Kerr McGee

| PARAMETERS  | RESULTS         | DATE    | TECH | METHOD         |
|---|-----------------|---------|------|----------------|
| SUBJECT: MA3-FG2-1-300101-01, 1/30/01, 09:10 by EK/NK |                 |         |      |                |
| Total Aerobic Bacteria                                | 132,000. cfu/ml | 1/31/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradable Bacteria                         | 30,000. cfu/ml  | 1/31/01 | DJH  | 9215B MODIFIED |
| SUBJECT: MA3-FG2-2-300101-02, 1/30/01, 09:15 by EK/NK |                 |         |      |                |
| Total Aerobic Bacteria                                | 2,200. cfu/ml   | 1/31/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradable Bacteria                         | 130. cfu/ml     | 1/31/01 | DJH  | 9215B MODIFIED |
| SUBJECT: MA3-FG2-3-300101-03, 1/30/01, 09:20 by EK/NK |                 |         |      |                |
| Total Aerobic Bacteria                                | 6,900. cfu/ml   | 1/31/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradable Bacteria                         | 240. cfu/ml     | 1/31/01 | DJH  | 9215B MODIFIED |
| SUBJECT: MA3-FG5-1-300101-05, 1/30/01, 14:20 by EK/NK |                 |         |      |                |
| Total Aerobic Bacteria                                | 4,300. cfu/ml   | 1/31/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradable Bacteria                         | 1,140. cfu/ml   | 1/31/01 | DJH  | 9215B MODIFIED |
| SUBJECT: MA3-FG5-3-300101-06, 1/30/01, 15:15 by EK/NK |                 |         |      |                |
| Total Aerobic Bacteria                                | 1,030. cfu/ml   | 1/31/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradable Bacteria                         | 420. cfu/ml     | 1/31/01 | DJH  | 9215B MODIFIED |
| SUBJECT: MA3-FG6-1-300101-07, 1/30/01, 15:00 by EK/NK |                 |         |      |                |
| Total Aerobic Bacteria                                | 1,300. cfu/ml   | 1/31/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradable Bacteria                         | 90. cfu/ml      | 1/31/01 | DJH  | 9215B MODIFIED |
| SUBJECT: MA3-FG6-2-300101-08, 1/30/01, 15:15 by EK/NK |                 |         |      |                |
| Total Aerobic Bacteria                                | 660. cfu/ml     | 1/31/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradable Bacteria                         | 210. cfu/ml     | 1/31/01 | DJH  | 9215B MODIFIED |

\*\*\* Certificate Continues On Next Page \*\*\*

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## CERTIFICATE OF ANALYSIS

Tom Graam  
Roy F. Weston, Inc.  
750 East Bankes Court  
Suite 500  
Vernon Hills, IL 60061

Date Reported: 2/23/01  
P.O. Number: Moss America  
Sample ID: 9925-00329  
Date Received: 1/31/01  
Time Received: 12:20

Permit Number Kerr McGee

| PARAMETERS  | RESULTS       | DATE    | TECH | METHOD         |
|---|---------------|---------|------|----------------|
| SUBJECT: MA3-TG6-3-300101-09, 1/30/01, 15:40 by EK/NK |               |         |      |                |
| Total Aerobic Bacteria                                | 620. cfu/ml   | 1/31/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                           | 120. cfu/ml   | 1/31/01 | DJH  | 9215B MODIFIED |
| SUBJECT: MA3-TG1-1-300101-10, 1/30/01, 13:55 by EK/NK |               |         |      |                |
| Total Aerobic Bacteria                                | 1,940. cfu/ml | 1/31/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                           | 150. cfu/ml   | 1/31/01 | DJH  | 9215B MODIFIED |
| SUBJECT: MA3-TG1-2-300101-11, 1/30/01, 14:10 by EK/NK |               |         |      |                |
| Total Aerobic Bacteria                                | 2,180. cfu/ml | 1/31/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                           | 170. cfu/ml   | 1/31/01 | DJH  | 9215B MODIFIED |
| SUBJECT: MA3-TG1-3-300101-12, 1/30/01, 14:20 by EK/NK |               |         |      |                |
| Total Aerobic Bacteria                                | 2,320. cfu/ml | 1/31/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                           | 370. cfu/ml   | 1/31/01 | DJH  | 9215B MODIFIED |
| SUBJECT: MA3-TG1-1-300101-04, 1/30/01, 11:20 by EK/NK |               |         |      |                |
| Total Aerobic Bacteria                                | 1,500. cfu/ml | 1/31/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                           | 200. cfu/ml   | 1/31/01 | DJH  | 9215B MODIFIED |

Submitted with Quality by \_\_\_\_\_



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## CHAIN OF CUSTODY RECORD

Microbac Laboratories, Inc.  
Seaway Industrial Laboratory Division  
542-544 Conkey Street Hammond, Indiana 46324  
219/932-1770 219/932-1721 Fax

\_\_\_ COMPOSITE BEGIN: \_\_\_\_\_ END: \_\_\_\_\_ TEMP \_\_\_\_\_  
\_\_\_ AUTOMATIC DATE \_\_\_\_\_ DATE \_\_\_\_\_ TECH \_\_\_\_\_  
\_\_\_ DISCRETE TIME \_\_\_\_\_ TIME \_\_\_\_\_ MLS/Sample \_\_\_\_\_  
\_\_\_ FLOW PROPORTIONED FLOW \_\_\_\_\_ FLOW \_\_\_\_\_ # Samples \_\_\_\_\_  
\_\_\_ CONTINUOUS  
\_\_\_ TIME TOTAL FLOW \_\_\_\_\_ INTERVAL \_\_\_\_\_

| P.O. #                       |  | CLIENT NAME                      |      | LOCATION/PROJECT                                     |      |   |                  | ANALYSES REQUESTED           |       |        |      |                          |  |  |  |  |  | RETURN SAMPLES TO CLIENT |  |
|------------------------------|--|----------------------------------|------|--|------|---|------------------|------------------------------|-------|--------|------|--------------------------|--|--|--|--|--|--------------------------|--|
|                              |  | KERR MC GEE                      |      | MISS AMERICA   |      |   |                  | MICROBIAL ENUMERATION        |       |        |      |                          |  |  |  |  |  |                          | PAH/BTEX<br><br>REMARKS<br>OBSERVATIONS<br><br>LIST SPECIAL HAZARDS HERE |
| SAMPLERS (Signature)         |  | E. Keeley<br>N. Kuester          |      | SEND REPORT TO:<br>JOE KLEMP<br>PHONE (847) 918 4000 |      |   |                  |                              |       |        |      |                          |  |  |  |  |  |                          |  |
| LAB I.D. #                   |  | Sample Chest #<br>Chest Temp. °C |      | Sample Temp. at Lab °C                               |      | Method of Shipment To Lab:<br>Date Time |                  |                              |       |        |      |                          |  |  |  |  |  |                          |  |
| 1925-329                     |  |                                  |      |  |      |   |                  |                              |       |        |      |                          |  |  |  |  |  |                          |  |
| SAMPLE LOCATION              |  | COLLECTED                        |      | SAMPLE TYPE  |      |   | NO OF CONTAINERS | CONTAINER TYPE PRESERVATIVE  |       |        |      |                          |  |  |  |  |  |                          |  |
|                              |  | DATE                             | TIME | COMP.  | GRAB | MATRIX                                  |                  |                              |       |        |      |                          |  |  |  |  |  |                          |  |
| 1 MA3-TG2-1-300101-01        |  | 1/30/01                          | 910  | <del>W</del>   | X    | W                                       | 1                | VIALS<br>NONE                | X     |        |      |                          |  |  |  |  |  |                          |  |
| 2 MA3-TG2-2-300101-02        |  | 1/30/01                          | 915  | <del>W</del>   | X    | W                                       | 1                | VIALS<br>NONE                | X     |        |      |                          |  |  |  |  |  |                          |  |
| 3 MA3-TG2-3-300101-03        |  | 1/30/01                          | 920  | <del>W</del>   | X    | W                                       | 1                | VIALS<br>NONE                | X     |        |      |                          |  |  |  |  |  |                          |  |
| 4 MA3-TG5-1-300101-05        |  | 1/30/01                          | 2:20 | <del>W</del>   | X    | W                                       | 1                | VIALS<br>NONE                | X     |        |      |                          |  |  |  |  |  |                          |  |
| 5 MA3-TG5-3-300101-05        |  | 1/30/01                          | 3:15 | <del>W</del>   | X    | W                                       | 1                | VIALS<br>NONE                | X     |        |      |                          |  |  |  |  |  |                          |  |
| 6 MA3-TG6-1-300101-07        |  | 1/30/01                          | 3:00 | <del>W</del>   | X    | W                                       | 1                | VIALS<br>NONE                | X     |        |      |                          |  |  |  |  |  |                          |  |
| 7 MA3-TG6-2-300101-08        |  | 1/30/01                          | 3:15 |  | X    | W                                       | 1                | VIALS<br>NONE                | X     |        |      |                          |  |  |  |  |  |                          |  |
| 8 MA3-TG6-3-300101-09        |  | 1/30/01                          | 3:40 |  | X    | W                                       | 1                | VIALS<br>NONE                | X     |        |      |                          |  |  |  |  |  |                          |  |
| Relinquished by: (Signature) |  | Date                             | Time | Received by: (Signature)                             |      |   |                  | Relinquished by: (Signature) |       | Date   | Time | Received by: (Signature) |  |  |  |  |  |                          |  |
| 1 <i>[Signature]</i>         |  | 1/30/01                          |      |  |      |   |                  | 2                            |       |        |      | 3                        |  |  |  |  |  |                          |  |
| Relinquished by: (Signature) |  | Date                             | Time | Received by: (Signature)                             |      |   |                  | Relinquished by: (Signature) |       | Date   | Time | Received by: (Signature) |  |  |  |  |  |                          |  |
| 5                            |  |                                  |      |  |      |   |                  | 6                            |       |        |      | 7                        |  |  |  |  |  |                          |  |
| Relinquished by: (Signature) |  | Date                             | Time | Received for Lab by: (Signature)                     |      |   |                  | Date                         | Time  |        |      |                          |  |  |  |  |  |                          |  |
| 9                            |  |                                  |      | <i>[Signature]</i>                                   |      |   |                  | 1/31/01                      | 12:00 | ge 1 2 |      |                          |  |  |  |  |  |                          |  |





**Site Information**

|                |              |                        |                 |
|----------------|--------------|------------------------|-----------------|
| Site Name      | Moss America | Date received          | 31-Jan-01       |
| Location       | Milwaukee WI | Date of this report    | 21-Feb-01       |
| Consultant     | Roy F Weston | Microbacl Job Code     | <b>9925-329</b> |
| Proj. Contact  | Joe Klemp    |                        |                 |
| Project Ref ID | 0            | Number of soil samples | 0               |
| Contaminant    | pah,btex     | Number of gw samples   | 8               |

**Section I - Summary of Bioremediation Data**

Nutrient/physical factors are as suggested by Wisconsin DNR guidelines for site characterization requirements for natural biodegradation. Microbial factors are shown according to bio-engineering norms.

| Sample ID                 | Soil microbial populations: |        | pH      | % TON / |     |      | % moisture / SWHC | % Air-filled pore space |
|---------------------------|-----------------------------|--------|---------|---------|-----|------|-------------------|-------------------------|
|                           | Exceeds norm for:           |        |         | % OM    | C:N | C:P  |                   |                         |
|                           | Passive                     | Active |         |         |     |      |                   |                         |
|                           | >1E+06                      | >1E+03 | 5.5-8.5 | >1.5    | <40 | <120 | 25-85%            | >10%                    |
| Guideline note reference: | 1                           | 2      | 3       | 4       | 5   | 6    | 7                 | 8                       |

- ma3-tg2-1-30010 Summary table not applicable for groundwater.
- ma3-tg2-2-30010 Summary table not applicable for groundwater.
- ma3-tg2-3-30010 Summary table not applicable for groundwater.
- ma3-tg5-1-30010 Summary table not applicable for groundwater.
- ma3-tg5-3-30010 Summary table not applicable for groundwater.
- ma3-tg6-1-30010 Summary table not applicable for groundwater.
- ma3-tg6-2-30010 Summary table not applicable for groundwater.
- ma3-tg6-3-30010 Summary table not applicable for groundwater.

The nutrient/physical parameters summarized above for unsaturated zone soils, reflect suggested minimum Wisconsin DNR " site characterization requirements for natural biodegradation projects" as presented on pp. 6-10 in Naturally Occurring Biodegradation as a Remedial Action Option for *Soil Contamination: Interim Guidance (Revised)* dated August 26, 1994. **BioRenewal stresses that these "suggested guidelines" are only intended to provide a working frame of reference for evaluation.** Each site is unique and requires professional judgement in order to select an appropriate remedial design. We provide this information in recognition that our clients need to work within the guidelines suggested by the state. Further, we hope this will facilitate continued evolution of a working framework for evaluating sites as to the potential for bioremediation whether through site augmentation or natural attenuation.

- ✓ = Sample meets guideline.
- ✗ = Sample does not meet guideline.
- Blank = Below detection limit, not applicable, or not available for that sample.

- NOTES:
- 1) Microbial population levels in soils generally accepted as potentially adequate to support natural biodegradation. These levels are based on bio-engineering norms and not WDNR guidelines.
  - 2) Microbial population levels in soils generally accepted as minimum to serve as an "inoculum" for implementing active bioremediation strategies.
  - 3) See page 7 and 10, WDNR.
  - 4) See pages 8 and 10, WDNR. Total Organic Nitrogen (calculated from TKN minus ammonium nitrogen ) divided by % organic matter.
  - 5) See pages 8 and 10, WDNR.
  - 6) See pages 8 and 10, WDNR.
  - 7) See page 6 and 10, WDNR. The suggested optimum range is 50-80% (p. 6).
  - 8) See page 8 and 10, WDNR. WDNR suggests a minimum air-filled porosity in soil of 10% is necessary for adequate oxygen diffusion in the soil gas to support biodegradation.

Section II - Microbial Data Summary continued

All values in cfu/ml\*

Groundwater Samples

Total populations

Low and high indicate 95% confidence range

| Sample ID       | Mean    | Low     | High    | 1.0E+01 | 1.0E+02 | 1.0E+03 | 1.0E+04 | 1.0E+05 | 1.0E+06 | 1.0E+07 | 1.0E+08 | 1.0E+09 |
|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| ma3-tg2-1-30010 | 1.3E+05 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| ma3-tg2-2-30010 | 2.2E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| ma3-tg2-3-30010 | 6.9E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| ma3-tg5-1-30010 | 4.3E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| ma3-tg5-3-30010 | 1.7E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| ma3-tg6-1-30010 | 9.9E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| ma3-tg6-2-30010 | 6.6E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| ma3-tg6-3-30010 | 6.2E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |

Groundwater Samples

Degrader populations

Low and high indicate 95% confidence range

| Sample ID                 | Mean    | Low     | High    | 1.0E+01 | 1.0E+02 | 1.0E+03 | 1.0E+04 | 1.0E+05 | 1.0E+06 | 1.0E+07 | 1.0E+08 | 1.0E+09 |  |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|
| ma3-tg2-1-30010           | 3.0E+04 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |  |
| ma3-tg2-2-30010           | 1.3E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |  |
| ma3-tg2-3-30010           | 2.4E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |  |
| ma3-tg5-1-30010           | 1.1E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |  |
| ma3-tg5-3-30010           | 4.2E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |  |
| ma3-tg6-1-30010           | 9.0E+01 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |  |
| ma3-tg6-2-30010           | 2.1E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |  |
| ma3-tg6-3-30010           | 1.2E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |  |
| Marginal inoculum         |         |         |         |         |         |         |         |         |         |         |         |         |  |
| Inoculum levels           |         |         |         |         |         |         |         |         |         |         |         |         |  |
| Active degradation levels |         |         |         |         |         |         |         |         |         |         |         |         |  |

**Marginal inoculum** = Degrader populations below 1.0E+03 are indicative of severe limitations. Substantial augmentation of site conditions will likely be required to attain adequate cell mass to attain measurable biotransformation rates.

**Inoculum levels** = Degrader populations between 1.0E+03 and 1.0E+06 are amenable to site augmentation, but are generally insufficient to attain adequate biotransformation without site augmentation.

**Active degradation levels** = Degrader populations greater than 1.0E+06 are generally of sufficient magnitude to support measurable biotransformation without site augmentation. However, site augmentation may still be required to attain desirable rates of transformation due to specific site conditions.

Assay conditions

| Sample ID       | Degrader Media |                | Temp.<br>(Celcius) | Growth<br>Conditions | DOF ** |          | Percent<br>Degraders |
|-----------------|----------------|----------------|--------------------|----------------------|--------|----------|----------------------|
|                 | Carbon source  | % Carbon (v/v) |                    |                      | Total  | Degrader |                      |
| ma3-tg2-1-30010 | pah,btex       | 1.0            | 22                 | aerobic              | 0      | 0        | 22.7%                |
| ma3-tg2-2-30010 | pah,btex       | 1.0            | 22                 | aerobic              | 0      | 0        | 5.9%                 |
| ma3-tg2-3-30010 | pah,btex       | 1.0            | 22                 | aerobic              | 0      | 0        | 3.5%                 |
| ma3-tg5-1-30010 | pah,btex       | 1.0            | 22                 | aerobic              | 0      | 0        | 26.5%                |
| ma3-tg5-3-30010 | pah,btex       | 1.0            | 22                 | aerobic              | 0      | 0        | 24.7%                |
| ma3-tg6-1-30010 | pah,btex       | 1.0            | 22                 | aerobic              | 0      | 0        | 9.1%                 |
| ma3-tg6-2-30010 | pah,btex       | 1.0            | 22                 | aerobic              | 0      | 0        | 31.8%                |
| ma3-tg6-3-30010 | pah,btex       | 1.0            | 22                 | aerobic              | 0      | 0        | 19.4%                |

\* cfu/ml = colony forming units per ml of groundwater

\*\* DOF = Degrees of freedom is number of replicates minus one. This parameter is used in calculation of 95% confidence intervals.

Site Information

|                |              |                        |           |
|----------------|--------------|------------------------|-----------|
| Site Name      | Moss America | Date received          | 31-Jan-01 |
| Location       | Milwaukee WI | Date of this report    | 21-Feb-01 |
| Consultant     | Roy F Weston | Microbac Job Code      | 9925-329  |
| Proj. Contact  | Joe Klomp    |                        |           |
| Project Ref ID | 0            | Number of soil samples | 0         |
| Contaminant    | pah,btex     | Number of gw samples   | 4         |

Section I - Summary of Bioremediation Data

Nutrient/physical factors are as suggested by Wisconsin DNR guidelines for site characterization requirements for natural biodegradation. Microbial factors are shown according to bio-engineering norms.

| Sample ID                 | Soil microbial populations: |        |         |         |     |      |              |              |
|---------------------------|-----------------------------|--------|---------|---------|-----|------|--------------|--------------|
|                           | Exceeds norm for:           |        |         | % TON / |     |      | % moisture / | % Air-filled |
|                           | Passive                     | Active | pH      | % OM    | C:N | C:P  | SWHC         | pore space   |
|                           | >1E+06                      | >1E+03 | 5.5-8.5 | >1.5    | <40 | <120 | 25-85%       | >10%         |
| Guideline note reference: | 1                           | 2      | 3       | 4       | 5   | 6    | 7            | 8            |

- ma3-tg1-1-30010 Summary table not applicable for groundwater.
- ma3-tg1-2-30010 Summary table not applicable for groundwater.
- ma3-tg1-3-30010 Summary table not applicable for groundwater.
- ma3-tg3-1-30010 Summary table not applicable for groundwater.

The nutrient/physical parameters summarized above for unsaturated zone soils, reflect suggested minimum Wisconsin DNR "site characterization requirements for natural biodegradation projects" as presented on pp. 6-10 in Naturally Occurring Biodegradation as a Remedial Action Option for *Soil Contamination: Interim Guidance (Revised)* dated August 26, 1994. BioRenewal stresses that these "suggested guidelines" are only intended to provide a working frame of reference for evaluation. Each site is unique and requires professional judgement in order to select an appropriate remedial design. We provide this information in recognition that our clients need to work within the guidelines suggested by the state. Further, we hope this will facilitate continued evolution of a working framework for evaluating sites as to the potential for bioremediation whether through site augmentation or natural attenuation.

- ✓ = Sample meets guideline.
- ✗ = Sample does not meet guideline.
- Blank = Below detection limit, not applicable, or not available for that sample.

- NOTES:
- 1) Microbial population levels in soils generally accepted as potentially adequate to support natural biodegradation. These levels are based on bio-engineering norms and not WDNR guidelines.
  - 2) Microbial population levels in soils generally accepted as minimum to serve as an "inoculum" for implementing active bioremediation strategies.
  - 3) See page 7 and 10, WDNR.
  - 4) See pages 8 and 10, WDNR. Total Organic Nitrogen (calculated from TKN minus ammonium nitrogen) divided by % organic matter.
  - 5) See pages 8 and 10, WDNR.
  - 6) See pages 8 and 10, WDNR.
  - 7) See page 6 and 10, WDNR. The suggested optimum range is 50-80% (p. 6).
  - 8) See page 8 and 10, WDNR. WDNR suggests a minimum air-filled porosity in soil of 10% is necessary for adequate oxygen diffusion in the soil gas to support biodegradation.

Section II - Microbial Data Summary continued

All values in cfu/ml\*

Groundwater Samples

Total populations

Low and high indicate 95% confidence range

| Sample ID       | Mean    | Low     | High    | 1.0E+01 | 1.0E+02 | 1.0E+03 | 1.0E+04 | 1.0E+05 | 1.0E+06 | 1.0E+07 | 1.0E+08 | 1.0E+09 |
|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| ma3-tg1-1-30010 | 1.9E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| ma3-tg1-2-30010 | 2.2E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| ma3-tg1-3-30010 | 2.3E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| ma3-tg3-1-30010 | 1.5E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |

Groundwater Samples

Degrader populations

Low and high indicate 95% confidence range

| Sample ID                 | Mean    | Low     | High    | 1.0E+01 | 1.0E+02 | 1.0E+03 | 1.0E+04 | 1.0E+05 | 1.0E+06 | 1.0E+07 | 1.0E+08 | 1.0E+09 |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| ma3-tg1-1-30010           | 1.5E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| ma3-tg1-2-30010           | 1.7E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| ma3-tg1-3-30010           | 3.7E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| ma3-tg3-1-30010           | 2.0E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| Marginal inoculum         |         |         |         | Shaded  |         |         |         |         |         |         |         |         |
| Inoculum levels           |         |         |         |         |         | Shaded  |         |         |         |         |         |         |
| Active degradation levels |         |         |         |         |         |         |         |         | Shaded  |         |         |         |

**Marginal Inoculum** = Degrader populations below 1.0E+03 are indicative of severe limitations. Substantial augmentation of site conditions will likely be required to attain adequate cell mass to attain measurable biotransformation rates.

**Inoculum levels** = Degrader populations between 1.0E+03 and 1.0E+06 are amenable to site augmentation, but are generally insufficient to attain adequate biotransformation without site augmentation.

**Active degradation levels** = Degrader populations greater than 1.0E+06 are generally of sufficient magnitude to support measurable biotransformation without site augmentation. However, site augmentation may still be required to attain desirable rates of transformation due to specific site conditions.

Assay conditions

| Sample ID       | Degrader Media |                | Temp.<br>(Celcius) | Growth<br>Conditions | DOF ** |          | Percent<br>Degraders |
|-----------------|----------------|----------------|--------------------|----------------------|--------|----------|----------------------|
|                 | Carbon source  | % Carbon (v/v) |                    |                      | Total  | Degrader |                      |
| ma3-tg1-1-30010 | pah,btex       | 1.0            | 22                 | aerobic              | 0      | 0        | 7.7%                 |
| ma3-tg1-2-30010 | pah,btex       | 1.0            | 22                 | aerobic              | 0      | 0        | 7.8%                 |
| ma3-tg1-3-30010 | pah,btex       | 1.0            | 22                 | aerobic              | 0      | 0        | 15.9%                |
| ma3-tg3-1-30010 | pah,btex       | 1.0            | 22                 | aerobic              | 0      | 0        | 13.3%                |

\* cfu/ml = colony forming units per ml of groundwater

\*\* DOF = Degrees of freedom is number of replicates minus one. This parameter is used in calculation of 95% confidence intervals.



## ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation  
P.O. Box 25861  
Oklahoma City OK 73125

Prepared by:

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

## SAMPLE GROUP

The sample group for this submittal is 748855. Samples arrived at the laboratory on Wednesday, January 31, 2001.

| <u>Client Description</u>             | <u>Lancaster Labs Number</u> |
|---------------------------------------|------------------------------|
| MA3-TG2-1-300101-01 Grab Water Sample | 3543911                      |
| MA3-TG2-2-300101-02 Grab Water Sample | 3543912                      |
| MA3-TG2-3-300101-03 Grab Water Sample | 3543913                      |
| MA3-TG3-1-300101-04 Grab Water Sample | 3543914                      |
| MA3-TG5-1-300101-05 Grab Water Sample | 3543915                      |
| MA3-TG5-3-300101-06 Grab Water Sample | 3543916                      |
| MA3-TG6-1-300101-07 Grab Water Sample | 3543917                      |
| MA3-TG6-2-300101-08 Grab Water Sample | 3543918                      |
| MA3-TG6-3-300101-09 Grab Water Sample | 3543919                      |
| MW-29S Grab Water Sample              | 3543920                      |
| TG1-1-290101-01 Grab Water Sample     | 3543921                      |
| TG1-2-290101-02 Grab Water Sample     | 3543922                      |
| TG1-3-290101-03 Grab Water Sample     | 3543923                      |

## METHODOLOGY

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

1 COPY TO Kerr-McGee Corporation  
1 COPY TO Roy F. Weston  
1 COPY TO Data Package Group

Attn: Dr. Jeff Ostmeyer  
Attn: Mr. Tom Graan



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



Questions? Contact your Client Services Representative  
Kay G. Hower at (717) 656-2300.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Erik J. Frederiksen".

Erik J. Frederiksen  
Group Leader



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



Lancaster Laboratories Sample No. WW 3543911

Collected: 01/30/2001 09:10 by EK

Account Number: 07802

Submitted: 01/31/2001 09:25  
 Reported: 02/14/01 at 11:52 AM  
 Discard: 3/17/01

Kerr-McGee Corporation  
 P.O. Box 25861  
 Oklahoma City OK 73125

MA3-TG2-1-300101-01 Grab Water Sample  
 Moss American Superfund Site - Milwaukee, WI

13001 SDG#: MOA31-01

| CAT No.  | Analysis Name                 | CAS Number | As Received |   | As Received Method |       | Dilution Factor |
|--|-------------------------------|------------|-------------|---|--------------------|-------|-----------------|
|  |                               |            | Result      |   | Detection Limit    | Units |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 0.34        | J | 0.30               | 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               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |             |   |                    |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | 0.18        | J | 0.16               | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |             |   |                    |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | N.D.        |   | 0.0056             | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | N.D.        |   | 0.13               | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  |                     | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    | Analyst             |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 02/07/2001 14:56 | Venia M. McFadden   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 01/31/2001 10:31 | Mark A. Buckwalter  | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 02/03/2001 11:35 | Mark A. Buckwalter  | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 02/03/2001 06:00 | Michelle Heidig     | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 02/01/2001 01:00 | Daniel S. Smith     | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 02/06/2001 10:35 | Mark A. Buckwalter  | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 02/06/2001 13:20 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 02/02/2001 13:35 | Nancy J. Shoop      | 1               |



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





Lancaster Laboratories Sample No. WW 3543912

Collected: 01/30/2001 09:15 by EK

Account Number: 07802

Submitted: 01/31/2001 09:25

Kerr-McGee Corporation

Reported: 02/14/01 at 11:52 AM

P.O. Box 25861

Discard: 3/17/01

Oklahoma City OK 73125

MA3-TG2-2-300101-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

13002 SDG#: MOA31-02

| CAT No.  | Analysis Name                 | CAS Number | As Received |   | As Received Method |  | Units | Dilution Factor |
|--|-------------------------------|------------|-------------|---|--------------------|--|-------|-----------------|
|  |                               |            | Result      |   | Detection Limit    |  |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 0.79        | J | 0.30               |  | 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               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |             |   |                    |  |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | 0.50        | J | 0.16               |  | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |             |   |                    |  |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | N.D.        |   | 0.0056             |  | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.22        |   | 0.13               |  | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  |  | Analyst             | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|--|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    |  |                     |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 02/07/2001 14:57 |  | Venia M. McFadden   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 01/31/2001 10:30 |  | Mark A. Buckwalter  | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 02/03/2001 11:33 |  | Mark A. Buckwalter  | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 02/03/2001 06:00 |  | Michelle Heidig     | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 02/01/2001 01:00 |  | Daniel S. Smith     | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 02/06/2001 10:40 |  | Mark A. Buckwalter  | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 02/06/2001 13:20 |  | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 02/02/2001 13:35 |  | Nancy J. Shoop      | 1               |



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Lancaster Laboratories Sample No. WW 3543913

Collected: 01/30/2001 09:20 by EK

Account Number: 07802

Submitted: 01/31/2001 09:25

Kerr-McGee Corporation

Reported: 02/14/01 at 11:52 AM

P.O. Box 25861

Discard: 3/17/01

Oklahoma City OK 73125

MA3-TG2-3-300101-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

13003 SDG#: MOA31-03

| CAT No.  | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|--|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|  |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 0.46 J             |             | 0.30            | 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               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |                    |             |                 |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | 0.32 J             |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |                    |             |                 |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | N.D.               |             | 0.0056          | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.23               |             | 0.13            | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  |                     | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    | Analyst             |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 02/07/2001 15:01 | Venia M. McFadden   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 01/31/2001 10:28 | Mark A. Buckwalter  | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 02/03/2001 11:34 | Mark A. Buckwalter  | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 02/03/2001 06:00 | Michelle Heidig     | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 02/01/2001 01:00 | Daniel S. Smith     | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 02/06/2001 10:41 | Mark A. Buckwalter  | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 02/06/2001 13:20 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 02/02/2001 13:35 | Nancy J. Shoop      | 1               |



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Lancaster Laboratories Sample No. WW 3543914

Collected: 01/30/2001 11:20 by EK

Account Number: 07802

Submitted: 01/31/2001 09:25

Kerr-McGee Corporation

Reported: 02/14/01 at 11:52 AM

P.O. Box 25861

Discard: 3/17/01

Oklahoma City OK 73125

MA3-TG3-1-300101-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

13004 SDG#: MOA31-04

| CAT No.  | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|--|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|  |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 1.5                |             | 0.30            | 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               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |                    |             |                 |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | 1.8                |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |                    |             |                 |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | N.D.               |             | 0.0056          | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.53               |             | 0.13            | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Trial# | Analysis         |  | Analyst             | Dilution Factor |
|---------|--------------------------------|-----------|--------|------------------|--|---------------------|-----------------|
|         |                                |           |        | Date and Time    |  |                     |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1      | 02/07/2001 15:02 |  | Venia M. McFadden   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1      | 01/31/2001 10:27 |  | Mark A. Buckwalter  | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1      | 02/03/2001 11:36 |  | Mark A. Buckwalter  | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1      | 02/03/2001 06:00 |  | Michelle Heidig     | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1      | 02/01/2001 01:00 |  | Daniel S. Smith     | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1      | 02/06/2001 10:42 |  | Mark A. Buckwalter  | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1      | 02/06/2001 13:20 |  | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1      | 02/02/2001 13:35 |  | Nancy J. Shoop      | 1               |



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Lancaster Laboratories Sample No. WW 3543915

Collected: 01/30/2001 14:20 by EK

Account Number: 07802

Submitted: 01/31/2001 09:25

Kerr-McGee Corporation

Reported: 02/14/01 at 11:52 AM

P.O. Box 25861

Discard: 3/17/01

Oklahoma City OK 73125

MA3-TG5-1-300101-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

13005 SDG#: MOA31-05

| CAT No. | Analysis Name   | CAS Number | As Received |   | As Received            | Units | Dilution Factor |
|---------|---|------------|-------------|---|------------------------|-------|-----------------|
|         |   |            | Result      | J | Method Detection Limit |       |                 |
| 00217   | Kjeldahl Nitrogen   | 7727-37-9  | 0.37        | J | 0.30                   | mg/l  | 1               |
| 00219   | Nitrite Nitrogen  | 14797-65-0 | N.D.        |   | 0.015                  | mg/l  | 1               |
|         | The initial NO2 result was .124 mg/l, which was higher than the NO3. The NO2 was re-analyzed outside of the 48 hour holding time. The result on this second trial was None Detected. This result is being reported. |            |             |   |                        |       |                 |
| 00220   | Nitrate Nitrogen  | 14797-55-8 | N.D.        |   | 0.040                  | mg/l  | 1               |
|         | This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days.                                  |            |             |   |                        |       |                 |
| 00221   | Ammonia Nitrogen  | 7664-41-7  | 0.59        | J | 0.16                   | mg/l  | 1               |
|         | Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.                                     |            |             |   |                        |       |                 |
| 00226   | Ortho-Phosphate as P  | 14265-44-2 | N.D.        |   | 0.0056                 | mg/l  | 1               |
| 00345   | Total Phosphorus as PO4 water   | 14265-44-2 | 0.21        |   | 0.13                   | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  | Analyst             | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    |                     |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 02/07/2001 15:04 | Venia M. McFadden   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 2        | 02/06/2001 17:38 | Venia M. McFadden   | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 2        | 02/08/2001 18:52 | Venia M. McFadden   | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 02/03/2001 06:00 | Michelle Heidig     | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 02/01/2001 01:00 | Daniel S. Smith     | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 02/06/2001 10:43 | Mark A. Buckwalter  | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 02/06/2001 13:20 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 02/02/2001 13:35 | Nancy J. Shoop      | 1               |



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Lancaster Laboratories Sample No. WW 3543916

Collected: 01/30/2001 15:15 by EK

Account Number: 07802

Submitted: 01/31/2001 09:25  
 Reported: 02/14/01 at 11:52 AM  
 Discard: 3/17/01

Kerr-McGee Corporation  
 P.O. Box 25861  
 Oklahoma City OK 73125

MA3-TG5-3-300101-06 Grab Water Sample  
 Moss American Superfund Site - Milwaukee, WI

13006 SDG#: MOA31-06

| CAT No.  | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|--|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|  |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 0.73 J             |             | 0.30            | 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               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |                    |             |                 |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | 0.32 J             |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |                    |             |                 |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | N.D.               |             | 0.0056          | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.17               |             | 0.13            | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  | Analyst             | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    |                     |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 02/07/2001 15:05 | Venia M. McFadden   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 01/31/2001 10:25 | Mark A. Buckwalter  | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 02/03/2001 11:39 | Mark A. Buckwalter  | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 02/03/2001 06:00 | Michelle Heidig     | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 02/01/2001 01:00 | Daniel S. Smith     | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 02/06/2001 10:43 | Mark A. Buckwalter  | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 02/06/2001 13:20 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 02/02/2001 13:35 | Nancy J. Shoop      | 1               |



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Lancaster Laboratories Sample No. WW 3543917

Collected: 01/30/2001 15:00 by EK

Account Number: 07802

Submitted: 01/31/2001 09:25

Kerr-McGee Corporation

Reported: 02/14/01 at 11:52 AM

P.O. Box 25861

Discard: 3/17/01

Oklahoma City OK 73125

MA3-TG6-1-300101-07 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

13007 SDG#: MOA31-07

| CAT No.  | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|--|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|  |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 1.2                |             | 0.30            | 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               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |                    |             |                 |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | 1.2                |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |                    |             |                 |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | N.D.               |             | 0.0056          | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.22               |             | 0.13            | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  |                     | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    | Analyst             |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 02/07/2001 15:06 | Venia M. McFadden   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 01/31/2001 10:32 | Mark A. Buckwalter  | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 02/03/2001 11:40 | Mark A. Buckwalter  | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 02/03/2001 06:00 | Michelle Heidig     | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 02/01/2001 01:00 | Daniel S. Smith     | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 02/06/2001 10:44 | Mark A. Buckwalter  | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 02/06/2001 13:20 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 02/02/2001 13:35 | Nancy J. Shoop      | 1               |



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Lancaster Laboratories Sample No. WW 3543918

Collected: 01/30/2001 15:15 by EK

Account Number: 07802

Submitted: 01/31/2001 09:25  
 Reported: 02/14/01 at 11:52 AM  
 Discard: 3/17/01

Kerr-McGee Corporation  
 P.O. Box 25861  
 Oklahoma City OK 73125

MA3-TG6-2-300101-08 Grab Water Sample  
 Moss American Superfund Site - Milwaukee, WI

13008 SDG#: MOA31-08

| CAT No.  | Analysis Name                 | CAS Number | As Received Result | As Received Method |  | Units | Dilution Factor |
|--|-------------------------------|------------|--------------------|--------------------|--|-------|-----------------|
|  |                               |            |                    | Detection Limit    |  |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 0.70 J             | 0.30               |  | 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               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |                    |                    |  |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | 0.77 J             | 0.16               |  | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |                    |                    |  |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | N.D.               | 0.0056             |  | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | N.D.               | 0.13               |  | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  |                     | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    | Analyst             |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 02/07/2001 15:10 | Venia M. McFadden   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 01/31/2001 10:33 | Mark A. Buckwalter  | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 02/03/2001 11:41 | Mark A. Buckwalter  | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 02/06/2001 09:45 | Michele L. Hanby    | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 02/01/2001 01:00 | Daniel S. Smith     | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 02/06/2001 10:45 | Mark A. Buckwalter  | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 02/06/2001 13:20 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 02/02/2001 13:35 | Nancy J. Shoop      | 1               |



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Lancaster Laboratories Sample No. WW 3543919

Collected: 01/30/2001 15:40 by EK

Account Number: 07802

Submitted: 01/31/2001 09:25

Kerr-McGee Corporation

Reported: 02/14/01 at 11:53 AM

P.O. Box 25861

Discard: 3/17/01

Oklahoma City OK 73125

MA3-TG6-3-300101-09 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

13009 SDG#: MOA31-09

| CAT No.  | Analysis Name                 | CAS Number | As Received |   | As Received Method |       | Dilution Factor |
|--|-------------------------------|------------|-------------|---|--------------------|-------|-----------------|
|  |                               |            | Result      |   | Detection Limit    | Units |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 0.63        | J | 0.30               | 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               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |             |   |                    |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | 0.62        | J | 0.16               | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |             |   |                    |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | N.D.        |   | 0.0056             | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.15        | J | 0.13               | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  |                     | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    | Analyst             |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 02/06/2001 14:26 | Matthew J. Mercer   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 01/31/2001 10:35 | Mark A. Buckwalter  | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 02/03/2001 11:43 | Mark A. Buckwalter  | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 02/06/2001 09:45 | Michele L. Hanby    | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 02/01/2001 01:00 | Daniel S. Smith     | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 02/06/2001 10:46 | Mark A. Buckwalter  | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 02/06/2001 12:15 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 02/02/2001 13:35 | Nancy J. Shoop      | 1               |



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Lancaster Laboratories Sample No. WW 3543920

Collected: 01/30/2001 11:45 by EK

Account Number: 07802

Submitted: 01/31/2001 09:25  
 Reported: 02/14/01 at 11:53 AM  
 Discard: 3/17/01

Kerr-McGee Corporation  
 P.O. Box 25861  
 Oklahoma City OK 73125

MW-29S Grab Water Sample  
 Moss American Superfund Site - Milwaukee, WI

MW29S SDG#: MOA31-10

| CAT No.  | Analysis Name                 | CAS Number | As Received Result | As Received Method |  | Units | Dilution Factor |
|--|-------------------------------|------------|--------------------|--------------------|--|-------|-----------------|
|  |                               |            |                    | Detection Limit    |  |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | N.D.               | 0.30               |  | 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               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |                    |                    |  |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | N.D.               | 0.16               |  | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |                    |                    |  |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | N.D.               | 0.0056             |  | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | N.D.               | 0.13               |  | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  |                     | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    | Analyst             |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 02/06/2001 14:30 | Matthew J. Mercer   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 01/31/2001 10:36 | Mark A. Buckwalter  | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 02/03/2001 11:46 | Mark A. Buckwalter  | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 02/06/2001 09:45 | Michele L. Hanby    | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 02/01/2001 01:00 | Daniel S. Smith     | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 02/06/2001 10:47 | Mark A. Buckwalter  | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 02/06/2001 12:15 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 02/02/2001 13:35 | Nancy J. Shoop      | 1               |



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



Lancaster Laboratories Sample No. WW 3543921

Collected: 01/29/2001 15:30 by JK Account Number: 07802

Submitted: 01/31/2001 09:25  
 Reported: 02/14/01 at 11:53 AM  
 Discard: 3/17/01  
 TGI-1-290101-01 Grab Water Sample  
 Moss American Superfund Site - Milwaukee, WI

12901 SDG#: MOA31-11

| CAT No.  | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|--|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|  |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 1.3                |             | 0.30            | 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               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |                    |             |                 |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | 1.2                |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |                    |             |                 |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | 0.0149 J           |             | 0.0056          | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.13 J             |             | 0.13            | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  | Analyst             | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    |                     |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 02/06/2001 14:31 | Matthew J. Mercer   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 01/31/2001 10:40 | Mark A. Buckwalter  | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 02/03/2001 11:48 | Mark A. Buckwalter  | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 02/06/2001 09:45 | Michele L. Hanby    | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 01/31/2001 13:00 | Shannon L. Phillips | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 02/06/2001 10:50 | Mark A. Buckwalter  | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 02/06/2001 12:15 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 02/02/2001 13:35 | Nancy J. Shoop      | 1               |



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Lancaster Laboratories Sample No. WW 3543922

Collected: 01/29/2001 15:35 by JK

Account Number: 07802

Submitted: 01/31/2001 09:25

Kerr-McGee Corporation

Reported: 02/14/01 at 11:53 AM

P.O. Box 25861

Discard: 3/17/01

Oklahoma City OK 73125

TG1-2-290101-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

12902 SDG#: MOA31-12

| CAT No.  | Analysis Name                 | CAS Number | As Received Result | As Received Method |  | Units | Dilution Factor |
|--|-------------------------------|------------|--------------------|--------------------|--|-------|-----------------|
|  |                               |            |                    | Detection Limit    |  |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 0.94 J             | 0.30               |  | 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               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |                    |                    |  |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | 0.89 J             | 0.16               |  | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |                    |                    |  |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | 0.049              | 0.0056             |  | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.27               | 0.13               |  | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  | Analyst             | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    |                     |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 02/06/2001 14:33 | Matthew J. Mercer   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 01/31/2001 10:41 | Mark A. Buckwalter  | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 02/03/2001 11:49 | Mark A. Buckwalter  | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 02/06/2001 09:45 | Michele L. Hanby    | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 01/31/2001 13:00 | Shannon L. Phillips | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 02/06/2001 10:53 | Mark A. Buckwalter  | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 02/06/2001 12:15 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 02/02/2001 13:35 | Nancy J. Shoop      | 1               |



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Lancaster Laboratories Sample No. WW 3543923

Collected: 01/29/2001 15:50 by JK Account Number: 07802

Submitted: 01/31/2001 09:25 Kerr-McGee Corporation

Reported: 02/14/01 at 11:53 AM P.O. Box 25861

Discard: 3/17/01 Oklahoma City OK 73125

TG1-3-290101-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

12903 SDG#: MOA31-13\*

| CAT No.  | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|--|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|  |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 0.57 J             |             | 0.30            | 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               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |                    |             |                 |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | 0.59 J             |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |                    |             |                 |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | 0.051              |             | 0.0056          | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.22               |             | 0.13            | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  | Analyst             | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    |                     |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 02/06/2001 14:34 | Matthew J. Mercer   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 01/31/2001 10:42 | Mark A. Buckwalter  | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 02/03/2001 11:50 | Mark A. Buckwalter  | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 02/06/2001 09:45 | Michele L. Hanby    | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 01/31/2001 13:00 | Shannon L. Phillips | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 02/06/2001 10:54 | Mark A. Buckwalter  | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 02/06/2001 12:15 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 02/02/2001 13:35 | Nancy J. Shoop      | 1               |



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Client Name: Kerr-McGee Corporation  
 Reported: 02/14/01 at 11:53 AM

Group Number: 748855

### Laboratory Compliance Quality Control

| <u>Analysis Name</u>  | <u>Blank Result</u> | <u>Blank MDL</u> | <u>Report Units</u> | <u>LCS %REC</u> | <u>LCS %REC</u> | <u>LCS/LCSD Limits</u> | <u>RPD</u> | <u>RPD Max</u> |
|---|---------------------|------------------|---------------------|-----------------|-----------------|------------------------|------------|----------------|
| Batch number: 01031022601A<br>Ortho-Phosphate as P          | N.D.                | .0056            | mg/l                | 97              |                 | 53-147                 |            |                |
| Batch number: 01031105101A<br>Nitrite Nitrogen              | N.D.                | .015             | mg/l                | 104             |                 | 90-110                 |            |                |
| Batch number: 01031105101B<br>Nitrite Nitrogen              | N.D.                | .015             | mg/l                | 104             |                 | 90-110                 |            |                |
| Batch number: 01032022601A<br>Ortho-Phosphate as P          | N.D.                | .0056            | mg/l                | 93              |                 | 53-147                 |            |                |
| Batch number: 01033110101A<br>Total Phosphorus as PO4 water | N.D.                | .13              | mg/l                | 106             |                 | 90-110                 |            |                |
| Batch number: 01033110101B<br>Total Phosphorus as PO4 water | N.D.                | .13              | mg/l                | 106             |                 | 90-110                 |            |                |
| Batch number: 01034022101A<br>Ammonia Nitrogen              | N.D.                | .16              | mg/l                | 95              | 97              | 90-102                 | 2          | 3              |
| Batch number: 01034106101A<br>Nitrate Nitrogen              | N.D.                | .04              | mg/l                | 99              |                 | 89-110                 |            |                |
| Batch number: 01034106101B<br>Nitrate Nitrogen              | N.D.                | .04              | mg/l                | 99              |                 | 89-110                 |            |                |
| Batch number: 01037022101A<br>Ammonia Nitrogen              | N.D.                | .16              | mg/l                | 97              | 97              | 90-102                 | 0          | 3              |
| Batch number: 01037105101A<br>Nitrite Nitrogen              | N.D.                | .015             | mg/l                | 101             |                 | 90-110                 |            |                |
| Batch number: 01037108101A<br>Kjeldahl Nitrogen             | N.D.                | .3               | mg/l                | 91              |                 | 90-110                 |            |                |
| Batch number: 01037108101B<br>Kjeldahl Nitrogen             | N.D.                | .3               | mg/l                | 91              |                 | 90-110                 |            |                |
| Batch number: 01037108102A<br>Kjeldahl Nitrogen             | N.D.                | .3               | mg/l                | 92              |                 | 90-110                 |            |                |
| Batch number: 01039106101A<br>Nitrate Nitrogen              | N.D.                | .04              | mg/l                | 99              |                 | 89-110                 |            |                |

### Sample Matrix Quality Control

- \*- Outside of specification
- (1) The result for one or both determinations was less than five times the LOQ.
  - (2) The background result was more than four times the spike added.





### Quality Control Summary

Client Name: Kerr-McGee Corporation  
 Reported: 02/14/01 at 11:53 AM

Group Number: 748855

| <u>Analysis Name</u>  | <u>MS</u>   | <u>MSD</u>  | <u>MS/MSD</u> | <u>RPD</u> | <u>BKG</u> | <u>DUP</u>  | <u>DUP</u>  | <u>Dup</u> |            |
|---|-------------|-------------|---------------|------------|------------|-------------|-------------|------------|------------|
|   | <u>%REC</u> | <u>%REC</u> | <u>Limits</u> | <u>RPD</u> | <u>MAX</u> | <u>Conc</u> | <u>Conc</u> | <u>RPD</u> | <u>RPD</u> |
|   |             |             |               |            |            |             |             | <u>Max</u> |            |
| Batch number: 01031022601A<br>Ortho-Phosphate as P          | 99          | 100         | 80-114        | 1          | 4          | 0.051       | 0.044       | 15* (1)    | 7          |
| Batch number: 01031105101A<br>Nitrite Nitrogen              | 110         |             | 90-110        |            |            | N.D.        | N.D.        | 11* (1)    | 6          |
| Batch number: 01031105101B<br>Nitrite Nitrogen              | 108         |             | 90-110        |            |            | N.D.        | N.D.        | 61* (1)    | 6          |
| Batch number: 01032022601A<br>Ortho-Phosphate as P          | 91          | 88          | 80-114        | 3          | 4          | N.D.        | N.D.        | 0 (1)      | 7          |
| Batch number: 01033110101A<br>Total Phosphorus as PO4 water | 105         |             | 90-110        |            |            | N.D.        | N.D.        | 30* (1)    | 2          |
| Batch number: 01033110101B<br>Total Phosphorus as PO4 water | 104         |             | 90-110        |            |            | 0.13 J      | N.D.        | 7* (1)     | 2          |
| Batch number: 01034022101A<br>Ammonia Nitrogen              |             |             |               |            |            | 0.80 J      | 0.86 J      | 8 (1)      | 8          |
| Batch number: 01034106101A<br>Nitrate Nitrogen              | 96          |             | 90-110        |            |            | N.D.        | N.D.        | 0 (1)      | 6          |
| Batch number: 01034106101B<br>Nitrate Nitrogen              | 97          |             | 90-110        |            |            | N.D.        | N.D.        | 0 (1)      | 6          |
| Batch number: 01037022101A<br>Ammonia Nitrogen              |             |             |               |            |            | 41.6        | 41.9        | 1          | 8          |
| Batch number: 01037105101A<br>Nitrite Nitrogen              | 98          |             | 90-110        |            |            | N.D.        | N.D.        | 0 (1)      | 6          |
| Batch number: 01037108101A<br>Kjeldahl Nitrogen             | 102         |             | 90-110        |            |            | 17.6        | 14.3        | 21* (1)    | 20         |
| Batch number: 01037108101B<br>Kjeldahl Nitrogen             | 54*         |             | 90-110        |            |            | 1.2         | 1.2         | 5 (1)      | 20         |
| Batch number: 01037108102A<br>Kjeldahl Nitrogen             | 46*         |             | 90-110        |            |            | 0.63 J      | 0.48 J      | 26* (1)    | 20         |
| Batch number: 01039106101A<br>Nitrate Nitrogen              | 106         |             | 90-110        |            |            | N.D.        | N.D.        | 19* (1)    | 6          |

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.





## Lancaster Laboratories

*Where quality is a science.*

### Quality Control Summary

Page 3 of 3

Client Name: Kerr-McGee Corporation  
Reported: 02/14/01 at 11:53 AM

Group Number: 748855

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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

# Analysis Request/ Environmental Services Chain of Custody



For Lancaster Laboratories use only  
 Acct. # 7802 Sample # 3543911-23

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: KERR MCGEE Acct. #: \_\_\_\_\_  
 Project Name/#: MOSS AMERICA PWSID #: \_\_\_\_\_  
 Project Manager: TOM GRAAN P.O.# \_\_\_\_\_  
 Sampler: E. KEELEY Quote #: \_\_\_\_\_  
 Name of state where samples were collected: WISCONSIN

Matrix 4

5 Analyses Requested

For lab use only  
 FSC: \_\_\_\_\_  
 SCR#: 1143918

6 Temperature of samples upon receipt (if requested)

| Sample Identification | Date Collected | Time Collected | Grab | Composite | Matrix 4 |       |       | Total # of Containers | 5 Analyses Requested |             |     |          | Remarks | 6 |
|-----------------------|----------------|----------------|------|-----------|----------|-------|-------|-----------------------|----------------------|-------------|-----|----------|---------|---|
|                       |                |                |      |           | Soil     | Water | Other |                       | O-PO4                | TKN, TP-PO4 | NH3 | NO2, NO3 |         |   |
| MA3-TG2-1-300101-01   | 1-30-01        | 910            | X    |           |          | X     |       | 5                     | X                    | X           | X   | X        |         |   |
| MA3-TG2-2-300101-02   | 1-30-01        | 915            | X    |           |          | X     |       | 5                     | X                    | X           | X   | X        |         |   |
| MA3-TG2-3-300101-03   | 1-30-01        | 920            | X    |           |          | X     |       | 5                     | X                    | X           | X   | X        |         |   |
| MA3-TG3-1-300101-04   | 1-30-01        | 1120           | X    |           |          | X     |       | 5                     | X                    | X           | X   | X        |         |   |
| MA3-TG5-1-300101-05   | 1-30-01        | 1425           | X    |           |          | X     |       | 5                     | X                    | X           | X   | X        |         |   |
| MA3-TG5-3-300101-06   | 1-30-01        | 1515           | X    |           |          | X     |       | 5                     | X                    | X           | X   | X        |         |   |
| MA3-TG6-1-300101-07   | 1-30-01        | 1500           | X    |           |          | X     |       | 5                     | X                    | X           | X   | X        |         |   |
| MA3-TG6-2-300101-08   | 1-30-01        | 1515           | X    |           |          | X     |       | 5                     | X                    | X           | X   | X        |         |   |
| MA3-TG6-3-300101-09   | 1-30-01        | 1540           | X    |           |          | X     |       | 5                     | X                    | X           | X   | X        |         |   |
| MW-295                | 1-30-01        | 1145           | X    |           |          | X     |       | 5                     | X                    | X           | X   | X        |         |   |

7 Turnaround Time Requested (TAT) (please circle): Normal Rush  
 (Rush TAT is subject to Lancaster Laboratories approval and surcharge.)  
 Date results are needed: STD TAT  
 Rush results requested by (please circle): Phone: Fax  
 Phone #: 847-918-4000 Fax #: 847-918-4055

8 Data Package Options (please circle if requested) SDG Complete? Yes No

QC Summary Type VI (Raw Data) PER QUOTE Yes No  
 Type I (Tier I) GLP  
 Type II (Tier II) Other  
 Type III (NJ Red. Del.)  
 Type IV (CLP)

Site-specific QC required? Yes No  
 (If yes, indicate QC sample and submit triplicate volume.)  
 Internal Chain of Custody required? Yes No

Relinquished by: K. Baker Date: 9-21-01 Time: 1700 Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished by: M. F. Walker Date: 1-30-01 Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: Denise Date: 1-30-01 Time: 0925





For Lancaster Laboratories use only  
 Acct. # 7802 Sample # 3543911-23

Please print. Instructions on reverse side correspond with circled numbers.

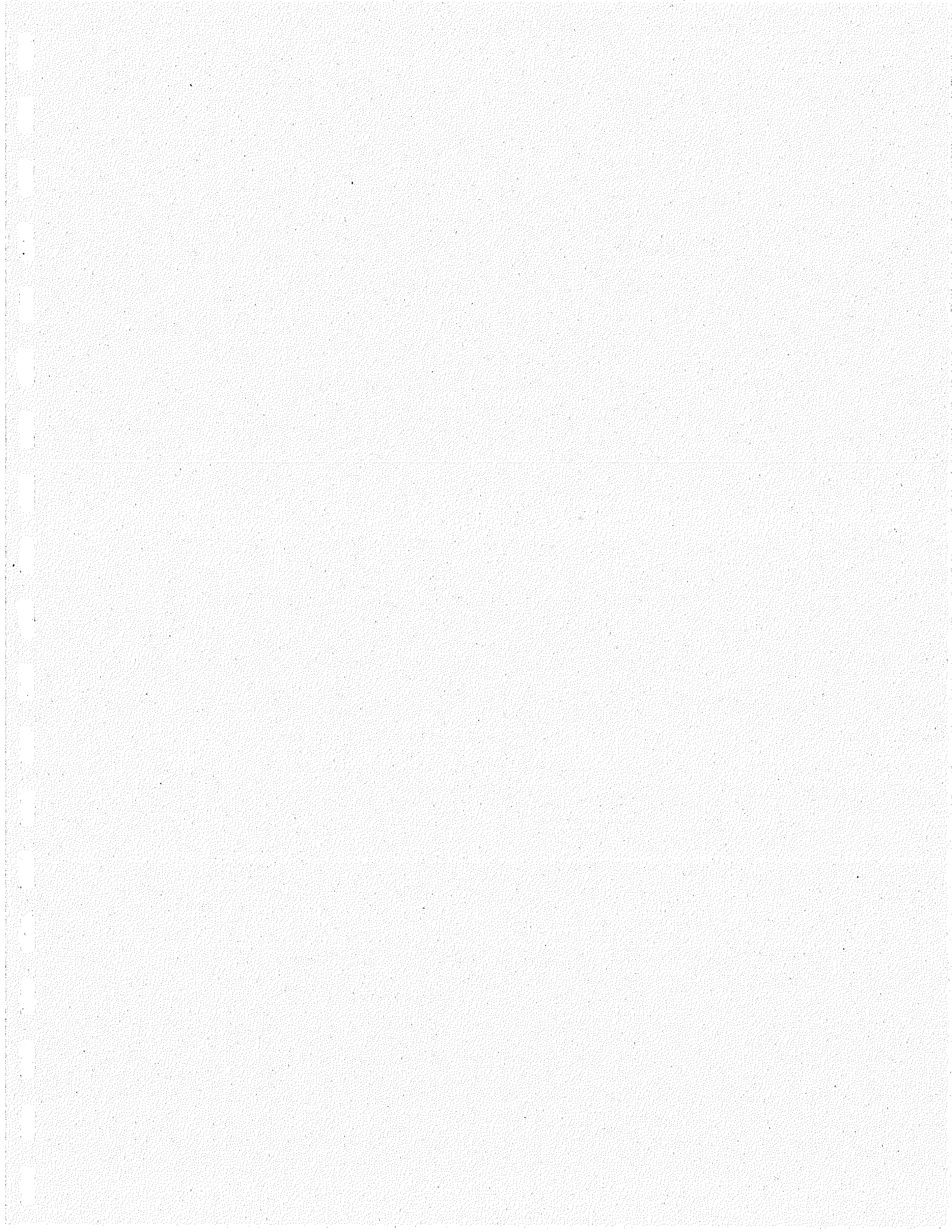
|  |   |   |                       |   |   |
|--|---|---|-----------------------|---|---|
| Client: <u>KERR-MCGEE</u><br>Project Name/#: <u>MOSS-AMERICA</u><br>Project Manager: <u>TOM GRAAN</u><br>Sampler: <u>JOE KLEMP</u><br>Name of state where samples were collected: <u>WISCONSIN</u> | Acct. #: _____<br>PWSID #: _____<br>P.O.# _____<br>Quote #: _____ | Matrix <b>(4)</b><br><input type="checkbox"/> Potable (Check if applicable)<br><input type="checkbox"/> Water<br><input type="checkbox"/> NPDES<br><input type="checkbox"/> Other | Total # of Containers | Analyses Requested <b>(5)</b><br>TKN, TP, PO4<br>NH3<br>O-PO4<br>NO2, NO3 | For lab use only<br>FSC: _____<br>SCR #: <u>1146359</u><br>Temperature of samples upon receipt (if requested) |
|--|---|---|-----------------------|---|---|

| Sample Identification | Date Collected | Time Collected | Grab <b>(3)</b> | Composite | Soil | Water | Other | Total # of Containers | Remarks | Temperature of samples upon receipt (if requested) |
|-----------------------|----------------|----------------|-----------------|-----------|------|-------|-------|-----------------------|---------|--|
| TG1-1-290101-01       | 1-29-01        | 3:30           | X               |           |      | X     |       | 5                     |         |  |
| TG1-2-290101-02       | 1-29-01        | 3:35           | X               |           |      | X     |       | 5                     |         |  |
| TG1-3-290101-03       | 1-29-01        | 3:50           | X               |           |      | X     |       | 5                     |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |
|                       |                |                |                 |           |      |       |       |                       |         |  |

|   |  |   |  |   |  |
|---|--|---|--|---|--|
| <b>7 Turnaround Time Requested (TAT)</b> (please circle): <u>Normal</u> Rush<br>(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)<br>Date results are needed: <u>STD TAT</u><br>Rush results requested by (please circle): Phone Fax<br>Phone #: <u>847-918-4000</u> Fax #: <u>847-918-4055</u> | Relinquished by: <u>Sherry Man</u><br>Date: <u>11/22/00</u> Time: <u>0600</u>  | Received by: _____<br>Date: _____ Time: _____     | Relinquished by: <u>Natalie Kuester</u><br>Date: <u>1/29/01</u> Time: <u>430</u> | Received by: _____<br>Date: _____ Time: _____     |  |
| <b>8 Data Package Options</b> (please circle if requested)<br>QC Summary Type VI (Raw Data) <u>PER QUOTE</u><br>Type I (Tier I) GLP<br>Type II (Tier II) Other<br>Type III (NJ Red. Del.)<br>Type IV (CLP)  | SDG Complete? Yes <u>(No)</u><br>Site-specific QC required? Yes No<br>(If yes, indicate QC sample and submit triplicate volume.)<br>Internal Chain of Custody required? Yes No | Relinquished by: _____<br>Date: _____ Time: _____ | Received by: _____<br>Date: _____ Time: _____                                    | Relinquished by: _____<br>Date: _____ Time: _____ | Received by: <u>[Signature]</u><br>Date: <u>11/31/00</u> Time: <u>0715</u> |

**ATTACHMENT 3**

**FEBRUARY 2001 GROUNDWATER SAMPLE ANALYTICAL RESULTS**



# Microbac

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Seaway Division

544 Conkey Street

Hammond, IN 46324

(219) 932-1770

INDIANA CERTIFICATION NUMBERS: M-45-8 C-45-02

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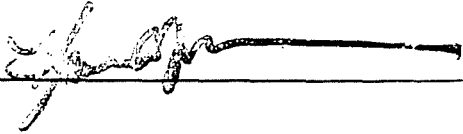
### CERTIFICATE OF ANALYSIS

Tom Graam  
Roy F. Weston, Inc.  
750 East Bankes Court  
Suite 500  
Vernon Hills, IL 60061

Date Reported: 3/21/01  
P.O. Number:  
Sample ID: 9926-00274  
Date Received: 2/28/01  
Time Received: 09:00

Permit Number

| PARAMETERS                                       | RESULTS         | DATE    | TECH | METHOD         |
|--|-----------------|---------|------|----------------|
| SUBJECT: TG1-1-270201-01, 02/27/01 @ 15:15 by JK |                 |         |      |                |
| Total Aerobic Bacteria                           | 170,000. cfu/ml | 3/01/01 | DJH  | 9215B MODIFIED |
| F.Aerobic Degrader Bacteria                      | 19,000. cfu/ml  | 3/01/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG2-1-270201-02, 02/27/01 @ 15:25 by JK |                 |         |      |                |
| Total Aerobic Bacteria                           | 8,700. cfu/ml   | 3/01/01 | DJH  | 9215B MODIFIED |
| F.Aerobic Degrader Bacteria                      | 6,600. cfu/ml   | 3/01/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG2-2-270201-03, 02/27/01 @ 16:10 by JK |                 |         |      |                |
| Total Aerobic Bacteria                           | 840. cfu/ml     | 3/01/01 | DJH  | 9215B MODIFIED |
| F.Aerobic Degrader Bacteria                      | 560. cfu/ml     | 3/01/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG2-3-270201-04, 02/27/01 @ 16:45 by JK |                 |         |      |                |
| Total Aerobic Bacteria                           | 3,900. cfu/ml   | 3/01/01 | DJH  | 9215B MODIFIED |
| F.Aerobic Degrader Bacteria                      | 260. cfu/ml     | 3/01/01 | DJH  | 9215B MODIFIED |

Submitted with Quality by 

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USDA-EPA-NIOSH Testing Food Sanitation Consulting Chemical and Microbiological Analyses and Research

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### CERTIFICATE OF ANALYSIS

Tom Graam  
Roy F. Weston, Inc.  
750 East Bankes Court  
Suite 500  
Vernon Hills, IL 60061

Date Reported: 3/21/01  
P.O. Number:  
Sample ID: 9927-00002  
Date Received: 2/28/01  
Time Received: 09:30

Permit Number

| PARAMETERS                                      | RESULTS       | DATE    | TECH | METHOD         |
|---|---------------|---------|------|----------------|
| SUBJECT: TG3-1-280201-01, 2/28/01 @ 09:15 by JK |               |         |      |                |
| Total Aerobic Bacteria                          | 3,000. cfu/ml | 3/01/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                     | 310. cfu/ml   | 3/01/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG6-2-280201-02, 2/28/01 @ 09:20 by JK |               |         |      |                |
| Total Aerobic Bacteria                          | 2,100. cfu/ml | 3/01/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                     | >3000. cfu/ml | 3/01/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG6-1-280201-03, 2/28/01 @ 10:15 by JK |               |         |      |                |
| Total Aerobic Bacteria                          | 6,200. cfu/ml | 3/01/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                     | 230. cfu/ml   | 3/01/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG6-3-280201-04, 2/28/01 @ 10:30 by JK |               |         |      |                |
| Total Aerobic Bacteria                          | 890. cfu/ml   | 3/01/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                     | 210. cfu/ml   | 3/01/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG4-2-280201-05, 2/28/01 @ 13:00 by JK |               |         |      |                |
| Total Aerobic Bacteria                          | 1,300. cfu/ml | 3/01/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                     | 380. cfu/ml   | 3/01/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG5-3-280201-06, 2/28/01 @ 13:15 by JK |               |         |      |                |
| Total Aerobic Bacteria                          | 6,700. cfu/ml | 3/01/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                     | 1,200. cfu/ml | 3/01/01 | DJH  | 9215B MODIFIED |

\*\*\* Certificate Continues On Next Page \*\*\*

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(219) 932-1770

INDIANA CERTIFICATION NUMBERS: M-45-8 C-45-02

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**CERTIFICATE OF ANALYSIS**

Tom Graam  
Roy F. Weston, Inc.  
750 East Bankes Court  
Suite 500  
Vernon Hills, IL 60061

Date Reported: 3/21/01  
P.O. Number:  
Sample ID: 9927-00002  
Date Received: 2/28/01  
Time Received: 09:30

Permit Number

| PARAMETERS | RESULTS | DATE | TECH | METHOD |
|------------|---------|------|------|--------|
|------------|---------|------|------|--------|

Submitted with Quality by



Contact person Tom Graan Sampler J. Klemp  
 Project name Kerr-Helgeson Mass Ave Project # \_\_\_\_\_  
 Project location Milwaukee, WI  
 (City) (state)

Site contaminant \* BTEX, PAH  
 (Used in test for degrader microbial populations, give ratios if applicable, e.g. 50:50, gasoline:diesel)

\* If available, a sample of free product is preferred for use as the carbon source for enumerating the degrader microbial populations. Free product included?  yes  No

1426-217

Requested analyses (✓)

|   |  |   |   |                                 |                     |             |  |                       |
|---|--|---|---|---------------------------------|---------------------|-------------|--|-----------------------|
| CEA* (soil/gw) see note<br><input type="checkbox"/> Aerobic, <input type="checkbox"/> Anaerobic, <input type="checkbox"/> Microaerophilic | Standard nutrient panel (soil/gw)<br>incl. TKN, ammonium nitrogen, available P, pH, total organic carbon, % moisture (s) | Particle size analysis (soil)<br><input type="checkbox"/> sieve and hydrometer, <input type="checkbox"/> sieve only | % air-filled pore space (soil)<br>(includes bulk density) | Soil moisture at field capacity | Bulk density (soil) | Intact core |  | Microbial Enumeration |
|   |  |   |   |                                 |                     |             |  |                       |
|   |  |   |   |                                 |                     |             |  |                       |
|   |  |   |   |                                 |                     |             |  |                       |
|   |  |   |   |                                 |                     |             |  |                       |
|   |  |   |   |                                 |                     |             |  |                       |
|   |  |   |   |                                 |                     |             |  |                       |
|   |  |   |   |                                 |                     |             |  |                       |
|   |  |   |   |                                 |                     |             |  |                       |
|   |  |   |   |                                 |                     |             |  |                       |
|   |  |   |   |                                 |                     |             |  |                       |
|   |  |   |   |                                 |                     |             |  |                       |

| MA3 - Sample ID  | Lab use only | Date    | Time | (✓)  |    | Sample depth | #    |       |      | Additional comments |
|------------------|--------------|---------|------|------|----|--------------|------|-------|------|---------------------|
|                  |              |         |      | Soil | GW |              | Jars | Vials | Core |                     |
| T6-1-1-270241-01 |              | 2/27/01 | 1515 |      | ✓  | 10-12'       | 1    |       |      |                     |
| T6-2-1-270241-02 |              | ↓       | 1525 |      | ✓  | ↓            | 1    |       |      |                     |
| T6-2-2-270241-03 |              | ↓       | 1610 |      | ✓  | ↓            | 1    |       |      |                     |
| T6-2-3-270241-04 |              | ↓       | 1645 |      | ✓  | ↓            | 1    |       |      |                     |
|                  |              |         |      |      |    |              |      |       |      |                     |
|                  |              |         |      |      |    |              |      |       |      |                     |
|                  |              |         |      |      |    |              |      |       |      |                     |
|                  |              |         |      |      |    |              |      |       |      |                     |
|                  |              |         |      |      |    |              |      |       |      |                     |

Relinquished by: [Signature] Date/time: 2/27/01 1800 Comments: \_\_\_\_\_ Sample condition upon arrival: \_\_\_\_\_  
 Received by: [Signature] Date/time: 2/28/01 0700 On ice?  Yes,  No

**Microbac Laboratories,  
 HAMMOND DIVISION  
 542-544 Conkey Street  
 Hammond, Indiana 46324  
 219-932-1770**

Send results to:  
 Name Tom Graan  
 Company Roy F. Weston, Inc.  
 Address 750 E. Bunker Ct. Ste 500  
 City Yemassee Hills State FL Zip 32061  
 Phone (847) 918-4000 Fax (847) 918-4055

Send Invoice to:  Same as results  
 Name \_\_\_\_\_  
 Company \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Phone \_\_\_\_\_ Fax \_\_\_\_\_

\*CEA : Comparative Enumeration Assay includes total heterotrophic and degrader populations

Contact person Tom Grazzi Sampler J. K. Lewis  
 Project name Kan-McGee Mass Ave. Project # \_\_\_\_\_  
 Project location Milwaukee, WI (City) (State)

1420 TMD 1921-2

Requested analyses (✓)

Site contaminant \* BTEX, PAH  
 (Used in test for degrader microbial populations, give ratios if applicable, e.g. 50:50, gasoline:dies:l)

\* If available, a sample of free product is preferred for use as the carbon source for enumerating the degrader microbial populations. Free product included?  yes  No

|  |  |   |   |                                 |                     |                       |             |  |
|--|--|---|---|---------------------------------|---------------------|-----------------------|-------------|--|
| CEA* (soil/gw) see note<br><input type="checkbox"/> Aerobic <input type="checkbox"/> Anaerobic, <input type="checkbox"/> Microaerophilic | Standard nutrient panel (soil/gw)<br>- incl. TKN, ammonium nitrogen, available P, pH, total organic carbon, % moisture (s) | Particle size analysis (soil)<br><input type="checkbox"/> sieve and hydrometer, <input type="checkbox"/> sieve only | % air-filled pore space (soil)<br>(includes bulk density) | Soil moisture at field capacity | Bulk density (soil) | Microbial Enumeration | Intact core |  |
|  |  |   |   |                                 |                     |                       |             |  |

| MA3-<br>Sample ID   | Lab use<br>only | Date    | Time | - (✓) |    | Sample<br>depth | #    |       |      | Additional<br>comments |
|---------------------|-----------------|---------|------|-------|----|-----------------|------|-------|------|------------------------|
|                     |                 |         |      | Soil  | Gw |                 | Jars | Vials | Core |                        |
| TG3-1-<br>280201-01 |                 | 2/28/01 | 0915 |       | X  |                 | 1    |       |      |                        |
| TG6-2-<br>280201-02 |                 |         | 0930 |       | X  |                 | 1    |       |      |                        |
| TG6-1<br>280201-03  |                 |         | 1015 |       | X  |                 | 1    |       |      |                        |
| TG6-3-<br>280201-04 |                 |         | 1030 |       | X  |                 | 1    |       |      |                        |
| TG4-2-<br>280201-05 |                 |         | 1300 |       | X  |                 | 1    |       |      |                        |
| TG5-3-<br>280201-06 |                 |         | 1315 |       | X  |                 | 1    |       |      |                        |

|                                      |   |           |                                |
|--------------------------------------|---|-----------|--------------------------------|
| Refiniquished by: <u>[Signature]</u> | Date/time: <u>02/28/01</u> <u>16:00</u> | Comments: | Sample condition upon arrival: |
| Received by: <u>[Signature]</u>      | Date/time: <u>2/28/01</u> <u>9:30</u>   |           |                                |

On ice?  Yes;  No

**Microbac Laboratories,**  
**HAMMOND DIVISION**  
**542-544 Conkey Street**  
**Hammond, Indiana 46324**  
**219-932-1770**

Send results to:  
 Name Tom Grazzi  
 Company Boji Western, Inc  
 Address 75 E. Banker Ct. St. 500  
 City Yerkes Hills State IL Zip 60661  
 Phone (847) 918-4200 Fax (847) 718-4055

Send invoice to:  Same as results  
 Name \_\_\_\_\_  
 Company \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Phone \_\_\_\_\_ Fax \_\_\_\_\_

\*CEA : Comparative Enumeration Assay includes total heterotrophic and degrader populations



**Site Information**

|                |               |                        |           |
|----------------|---------------|------------------------|-----------|
| Site Name      | Moss-America  | Date received          | 27-Feb-01 |
| Location       | Milwaukee, WI | Date of this report    | 21-Mar-01 |
| Consultant     | Roy F Weston  | Microbacl Job Code     | 9926-274  |
| Proj. Contact  | Tom Graan     |                        |           |
| Project Ref ID |               | Number of soil samples | 0         |
| Contaminant    | btex, PAH     | Number of gw samples   | 4         |

**Section I - Summary of Bioremediation Data**

Nutrient/physical factors are as suggested by Wisconsin DNR guidelines for site characterization requirements for natural biodegradation. Microbial factors are shown according to bio-engineering norms.

| Sample ID                 | Soil microbial populations: |        | pH      | % TON / |     |      | % moisture / SWHC | % Air-filled pore space |
|---------------------------|-----------------------------|--------|---------|---------|-----|------|-------------------|-------------------------|
|                           | Exceeds norm for:           |        |         | % OM    | C:N | C:P  |                   |                         |
|                           | Passive                     | Active |         |         |     |      |                   |                         |
|                           | >1E+06                      | >1E+03 | 5.5-8.5 | >1.5    | <40 | <120 | 25-85%            | >10%                    |
| Guideline note reference: | 1                           | 2      | 3       | 4       | 5   | 6    | 7                 | 8                       |

- tg1-1-270201-01 Summary table not applicable for groundwater.
- tg2-1-270201-02 Summary table not applicable for groundwater.
- tg2-2-270201-03 Summary table not applicable for groundwater.
- tg2-3-270201-04 Summary table not applicable for groundwater.

The nutrient/physical parameters summarized above for unsaturated zone soils, reflect suggested minimum Wisconsin DNR "site characterization requirements for natural biodegradation projects" as presented on pp. 6-10 in Naturally Occurring Biodegradation as a Remedial Action Option for *Soil Contamination: Interim Guidance (Revised)* dated August 26, 1994. **BioRenewal stresses that these "suggested guidelines" are only intended to provide a working frame of reference for evaluation.** Each site is unique and requires professional judgement in order to select an appropriate remedial design. We provide this information in recognition that our clients need to work within the guidelines suggested by the state. Further, we hope this will facilitate continued evolution of a working framework for evaluating sites as to the potential for bioremediation whether through site augmentation or natural attenuation.

- ✓ = Sample meets guideline.
- ✗ = Sample does not meet guideline.
- Blank = Below detection limit, not applicable, or not available for that sample.

- NOTES:
- 1) Microbial population levels in soils generally accepted as potentially adequate to support natural biodegradation. These levels are based on bio-engineering norms and not WDNR guidelines.
  - 2) Microbial population levels in soils generally accepted as minimum to serve as an "inoculum" for implementing active bioremediation strategies.
  - 3) See page 7 and 10, WDNR.
  - 4) See pages 8 and 10, WDNR. Total Organic Nitrogen (calculated from TKN minus ammonium nitrogen) divided by % organic matter.
  - 5) See pages 8 and 10, WDNR.
  - 6) See pages 8 and 10, WDNR.
  - 7) See page 6 and 10, WDNR. The suggested optimum range is 50-80% (p. 6).
  - 8) See page 8 and 10, WDNR. WDNR suggests a minimum air-filled porosity in soil of 10% is necessary for adequate oxygen diffusion in the soil gas to support biodegradation.

Section II - Microbial Data Summary continued

All values in cfu/ml\*

Groundwater Samples

Total populations

Low and high indicate 95% confidence range

| Sample ID       | Mean    | Low     | High    | 1.0E+01 | 1.0E+02 | 1.0E+03 | 1.0E+04 | 1.0E+05 | 1.0E+06 | 1.0E+07 | 1.0E+08 | 1.0E+09 |
|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| tg1-1-270201-01 | 1.7E+05 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg2-1-270201-02 | 8.7E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg2-2-270201-03 | 8.4E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg2-3-270201-04 | 3.9E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |

Groundwater Samples

Degrader populations

Low and high indicate 95% confidence range

| Sample ID       | Mean    | Low     | High    | 1.0E+01 | 1.0E+02 | 1.0E+03 | 1.0E+04 | 1.0E+05 | 1.0E+06 | 1.0E+07 | 1.0E+08 | 1.0E+09 |
|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| tg1-1-270201-01 | 1.9E+04 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg2-1-270201-02 | 6.6E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg2-2-270201-03 | 5.6E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg2-3-270201-04 | 2.6E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |

Marginal inoculum

Inoculum levels

Active degradation levels

**Marginal inoculum** = Degrader populations below 1.0E+03 are indicative of severe limitations. Substantial augmentation of site conditions will likely be required to attain adequate cell mass to attain measurable biotransformation rates.

**Inoculum levels** = Degrader populations between 1.0E+03 and 1.0E+06 are amenable to site augmentation, but are generally insufficient to attain adequate biotransformation without site augmentation.

**Active degradation levels** = Degrader populations greater than 1.0E+06 are generally of sufficient magnitude to support measurable biotransformation without site augmentation. However, site augmentation may still be required to attain desirable rates of transformation due to specific site conditions.

Assay conditions

| Sample ID       | Degrader Media |                | Temp.<br>(Celcius) | Growth<br>Conditions | DOF ** |          | Percent<br>Degraders |
|-----------------|----------------|----------------|--------------------|----------------------|--------|----------|----------------------|
|                 | Carbon source  | % Carbon (v/v) |                    |                      | Total  | Degrader |                      |
| tg1-1-270201-01 | btex, PAH      | 1.0            | 22                 | aerobic              | 0      | 0        | 11.2%                |
| tg2-1-270201-02 | btex, PAH      | 1.0            | 22                 | aerobic              | 0      | 0        | 75.9%                |
| tg2-2-270201-03 | btex, PAH      | 1.0            | 22                 | aerobic              | 0      | 0        | 66.7%                |
| tg2-3-270201-04 | btex, PAH      | 1.0            | 22                 | aerobic              | 0      | 0        | 6.7%                 |

\*\* DOF = Degrees of freedom is number of replicates minus one. This parameter is used in calculation of 95% confidence intervals.

**Site Information**

|                |              |                        |           |
|----------------|--------------|------------------------|-----------|
| Site Name      | Moss-America | Date received          | 1-Mar-01  |
| Location       | Milwaukee WI | Date of this report    | 21-Mar-01 |
| Consultant     | Roy F Weston | Microbacl Job Code     | 9927-02   |
| Proj. Contact  | Tom Graan    |                        |           |
| Project Ref ID |              | Number of soil samples | 0         |
| Contaminant    | BTEX, PAH    | Number of gw samples   | 6         |

**Section I - Summary of Bioremediation Data**

Nutrient/physical factors are as suggested by Wisconsin DNR guidelines for site characterization requirements for natural biodegradation. Microbial factors are shown according to bio-engineering norms.

| Sample ID                 | Soil microbial populations:                   |        | pH      | % TON / |     |      | % moisture / SWHC | % Air-filled pore space |
|---------------------------|---|--------|---------|---------|-----|------|-------------------|-------------------------|
|                           | Exceeds norm for: Passive                     | Active |         | % OM    | C:N | C:P  |                   |                         |
|                           | >1E+06  | >1E+03 | 5.5-8.5 | >1.5    | <40 | <120 | 25-85%            | >10%                    |
| Guideline note reference: | 1   | 2      | 3       | 4       | 5   | 6    | 7                 | 8                       |
| tg3-1-280201-01           | Summary table not applicable for groundwater. |        |         |         |     |      |                   |                         |
| tg6-2-280201-02           | Summary table not applicable for groundwater. |        |         |         |     |      |                   |                         |
| tg6-1-280201-03           | Summary table not applicable for groundwater. |        |         |         |     |      |                   |                         |
| tg6-3-280201-04           | Summary table not applicable for groundwater. |        |         |         |     |      |                   |                         |
| tg4-2-280201-05           | Summary table not applicable for groundwater. |        |         |         |     |      |                   |                         |
| tg5-3-280201-06           | Summary table not applicable for groundwater. |        |         |         |     |      |                   |                         |

The nutrient/physical parameters summarized above for unsaturated zone soils, reflect suggested minimum Wisconsin DNR "site characterization requirements for natural biodegradation projects" as presented on pp. 6-10 in Naturally Occurring Biodegradation as a Remedial Action Option for *Soil Contamination: Interim Guidance (Revised)* dated August 26, 1994. BioRenewal stresses that these "suggested guidelines" are only intended to provide a working frame of reference for evaluation. Each site is unique and requires professional judgement in order to select an appropriate remedial design. We provide this information in recognition that our clients need to work within the guidelines suggested by the state. Further, we hope this will facilitate continued evolution of a working framework for evaluating sites as to the potential for bioremediation whether through site augmentation or natural attenuation.

✓ = Sample meets guideline.

x = Sample does not meet guideline.

Blank = Below detection limit, not applicable, or not available for that sample.

- NOTES:
- 1) Microbial population levels in soils generally accepted as potentially adequate to support natural biodegradation. These levels are based on bio-engineering norms and not WDNR guidelines.
  - 2) Microbial population levels in soils generally accepted as minimum to serve as an "inoculum" for implementing active bioremediation strategies.
  - 3) See page 7 and 10, WDNR.
  - 4) See pages 8 and 10, WDNR. Total Organic Nitrogen (calculated from TKN minus ammonium nitrogen) divided by % organic matter.
  - 5) See pages 8 and 10, WDNR.
  - 6) See pages 8 and 10, WDNR.
  - 7) See page 6 and 10, WDNR. The suggested optimum range is 50-80% (p. 6).
  - 8) See page 8 and 10, WDNR. WDNR suggests a minimum air-filled porosity in soil of 10% is necessary for adequate oxygen diffusion in the soil gas to support biodegradation.

Section II - Microbial Data Summary continued

All values in cfu/ml\*

Groundwater Samples

Total populations

Low and high indicate 95% confidence range

| Sample ID       | Mean    | Low     | High    | 1.0E+01 | 1.0E+02 | 1.0E+03 | 1.0E+04 | 1.0E+05 | 1.0E+06 | 1.0E+07 | 1.0E+08 | 1.0E+09 |
|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| tg3-1-280201-01 | 3.0E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg6-2-280201-02 | 2.1E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg6-1-280201-03 | 6.2E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg6-3-280201-04 | 8.9E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg4-2-280201-05 | 1.3E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg5-3-280201-06 | 6.7E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |

Groundwater Samples

Degrader populations

Low and high indicate 95% confidence range

| Sample ID                 | Mean    | Low     | High    | 1.0E+01 | 1.0E+02 | 1.0E+03 | 1.0E+04 | 1.0E+05 | 1.0E+06 | 1.0E+07 | 1.0E+08 | 1.0E+09 |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| tg3-1-280201-01           | 3.1E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg6-2-280201-02           | 1.8E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg6-1-280201-03           | 2.3E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg6-3-280201-04           | 2.1E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg4-2-280201-05           | 3.8E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg5-3-280201-06           | 1.2E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| Marginal inoculum         |         |         |         |         |         |         |         |         |         |         |         |         |
| Inoculum levels           |         |         |         |         |         |         |         |         |         |         |         |         |
| Active degradation levels |         |         |         |         |         |         |         |         |         |         |         |         |

**Marginal inoculum** = Degrader populations below 1.0E+03 are indicative of severe limitations. Substantial augmentation of site conditions will likely be required to attain adequate cell mass to attain measurable biotransformation rates.

**Inoculum levels** = Degrader populations between 1.0E+03 and 1.0E+06 are amenable to site augmentation, but are generally insufficient to attain adequate biotransformation without site augmentation.

**Active degradation levels** = Degrader populations greater than 1.0E+06 are generally of sufficient magnitude to support measurable biotransformation without site augmentation. However, site augmentation may still be required to attain desirable rates of transformation due to specific site conditions.

Assay conditions

| Sample ID       | Degrader Media |                | Temp.<br>(Celcius) | Growth<br>Conditions | DOF ** |          | Percent<br>Degraders |
|-----------------|----------------|----------------|--------------------|----------------------|--------|----------|----------------------|
|                 | Carbon source  | % Carbon (v/v) |                    |                      | Total  | Degrader |                      |
| tg3-1-280201-01 | BTEX, PAH      | 1.0            | 22                 | aerobic              | 0      | 0        | 10.3%                |
| tg6-2-280201-02 | BTEX, PAH      | 1.0            | 22                 | aerobic              | 0      | 0        | 85.7%                |
| tg6-1-280201-03 | BTEX, PAH      | 1.0            | 22                 | aerobic              | 0      | 0        | 3.7%                 |
| tg6-3-280201-04 | BTEX, PAH      | 1.0            | 22                 | aerobic              | 0      | 0        | 23.6%                |
| tg4-2-280201-05 | BTEX, PAH      | 1.0            | 22                 | aerobic              | 0      | 0        | 29.2%                |
| tg5-3-280201-06 | BTEX, PAH      | 1.0            | 22                 | aerobic              | 0      | 0        | 17.9%                |

\* cfu/ml = colony forming units per ml of groundwater

\*\* DOF = Degrees of freedom is number of replicates minus one. This parameter is used in calculation of 95% confidence intervals.



## ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation  
P.O. Box 25861  
Oklahoma City OK 73125

Prepared by:

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

## SAMPLE GROUP

The sample group for this submittal is 752447. Samples arrived at the laboratory on Wednesday, February 28, 2001.

## Client Description

MA3-TG1-1-270201-01 Grab Water Sample  
MA3-TG2-1-270201-02 Grab Water Sample  
MA3-TG2-2-270201-03 Grab Water Sample  
MA3-TG2-3-270201-04 Grab Water Sample

## Lancaster Labs Number

3560366  
3560367  
3560368  
3560369

## METHODOLOGY

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

1 COPY TO Kerr-McGee Corporation  
1 COPY TO Roy F. Weston  
1 COPY TO Data Package Group

Attn: Dr. Jeff Ostmeyer  
Attn: Mr. Tom Graan

Questions? Contact your Client Services Representative  
Kay G. Hower at (717) 656-2300.

Respectfully Submitted,



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



Lancaster Laboratories Sample No. WW 3560366

Collected: 02/27/2001 15:15 by JK

Account Number: 07802

Submitted: 02/28/2001 08:55

Kerr-McGee Corporation

Reported: 03/12/01 at 03:53 PM

P.O. Box 25861

Discard: 4/12/01

Oklahoma City OK 73125

MA3-TG1-1-270201-01 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

27021 SDG#: MOA37-01

| CAT No.  | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|--|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|  |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 1.6                |             | 0.30            | mg/l  | 1               |
| 00219  | Nitrite Nitrogen              | 14797-65-0 | 0.163              |             | 0.015           | mg/l  | 1               |
| This sample was originally analyzed within the 48 hour holding time for nitrite, however the result obtained was greater than the result obtained for nitrate. The analysis was repeated on 3/8/01 and yielded a result of ND. The first trial result is being reported because it was analyzed within the holding time. |                               |            |                    |             |                 |       |                 |
| 00220  | Nitrate Nitrogen              | 14797-55-8 | N.D.               |             | 0.040           | mg/l  | 1               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days.   |                               |            |                    |             |                 |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | N.D.               |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.  |                               |            |                    |             |                 |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | 0.041              |             | 0.0028          | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.17               |             | 0.13            | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  |                     | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    | Analyst             |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 03/06/2001 10:30 | Matthew J. Mercer   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 02/28/2001 17:41 | Brad M. La Placa    | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 2        | 03/08/2001 16:17 | Venia M. McFadden   | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 03/07/2001 09:15 | Michele L. Hanby    | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 03/01/2001 14:30 | Shannon L. Phillips | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 03/05/2001 15:30 | Venia M. McFadden   | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 03/05/2001 10:40 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 03/02/2001 12:00 | Patricia J. Weirich | 1               |



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Lancaster Laboratories Sample No. WW 3560366

Collected: 02/27/2001 15:15 by JK

Account Number: 07802

Submitted: 02/28/2001 08:55

Kerr-McGee Corporation

Reported: 03/12/01 at 03:53 PM

P.O. Box 25861

Discard: 4/12/01

Oklahoma City OK 73125

MA3-TG1-1-270201-01 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

27021 SDG#: MOA37-01



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Lancaster Laboratories Sample No. WW 3560367

Collected: 02/27/2001 15:25 by JK

Account Number: 07802

Submitted: 02/28/2001 08:55

Kerr-McGee Corporation

Reported: 03/12/01 at 03:53 PM

P.O. Box 25861

Discard: 4/12/01

Oklahoma City OK 73125

MA3-TG2-1-270201-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

A3702 SDG#: MOA37-02

| CAT No.  | Analysis Name                 | CAS Number | As Received |   | As Received |                 | Dilution Factor |
|--|-------------------------------|------------|-------------|---|-------------|-----------------|-----------------|
|  |                               |            | Result      |   | Method      | Detection Limit |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 0.36        | J | 0.30        | 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               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |             |   |             |                 |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | N.D.        |   | 0.16        | mg/l            | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |             |   |             |                 |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | 0.0126      | J | 0.0028      | mg/l            | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.14        | J | 0.13        | mg/l            | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  |                     | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    | Analyst             |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 2        | 03/08/2001 15:16 | Mark A. Buckwalter  | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 02/28/2001 17:42 | Brad M. La Placa    | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 03/02/2001 15:06 | Brad M. La Placa    | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 03/07/2001 09:15 | Michele L. Hanby    | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 03/01/2001 14:30 | Shannon L. Phillips | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 03/05/2001 15:31 | Venia M. McFadden   | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 03/05/2001 10:40 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 03/02/2001 12:00 | Patricia J. Weirich | 1               |



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Lancaster Laboratories Sample No. WW 3560368

Collected: 02/27/2001 16:10 by JK

Account Number: 07802

Submitted: 02/28/2001 08:55

Kerr-McGee Corporation

Reported: 03/12/01 at 03:53 PM

P.O. Box 25861

Discard: 4/12/01

Oklahoma City OK 73125

MA3-TG2-2-270201-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

A3703 SDG#: MOA37-03

| CAT No.  | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|--|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|  |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 1.2                |             | 0.30            | mg/l  | 1               |
| 00219  | Nitrite Nitrogen              | 14797-65-0 | 0.172              |             | 0.015           | mg/l  | 1               |
| This sample was originally analyzed within the 48 hour holding time for nitrite, however the result obtained was greater than the result obtained for nitrate. The analysis was repeated on 3/8/01 and yielded a result of ND. The first trial result is being reported because it was analyzed within the holding time. |                               |            |                    |             |                 |       |                 |
| 00220  | Nitrate Nitrogen              | 14797-55-8 | N.D.               |             | 0.040           | mg/l  | 1               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days.   |                               |            |                    |             |                 |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | 0.50 J             |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.  |                               |            |                    |             |                 |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | 0.031              |             | 0.0028          | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.23               |             | 0.13            | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  |                     | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    | Analyst             |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 03/06/2001 10:35 | Matthew J. Mercer   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 02/28/2001 17:43 | Brad M. La Placa    | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 2        | 03/08/2001 16:18 | Venia M. McFadden   | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 03/07/2001 09:15 | Michele L. Hanby    | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 03/01/2001 14:30 | Shannon L. Phillips | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 03/05/2001 15:32 | Venia M. McFadden   | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 03/05/2001 10:40 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 03/02/2001 12:00 | Patricia J. Weirich | 1               |



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Lancaster Laboratories Sample No. WW 3560368

Collected: 02/27/2001 16:10 by JK

Account Number: 07802

Submitted: 02/28/2001 08:55

Reported: 03/12/01 at 03:53 PM

Discard: 4/12/01

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MA3-TG2-2-270201-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

A3703 SDG#: MOA37-03



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Lancaster Laboratories Sample No. WW 3560369

Collected: 02/27/2001 16:45 by JK

Account Number: 07802

Submitted: 02/28/2001 08:55

Kerr-McGee Corporation

Reported: 03/12/01 at 03:53 PM

P.O. Box 25861

Discard: 4/12/01

Oklahoma City OK 73125

MA3-TG2-3-270201-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

A3704 SDG#: MOA37-04

| CAT No.  | Analysis Name                 | CAS Number | As Received |        | As Received     |       | Dilution Factor |
|--|-------------------------------|------------|-------------|--------|-----------------|-------|-----------------|
|  |                               |            | Result      | Method | Detection Limit | Units |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 0.64        | J      | 0.30            | 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               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |             |        |                 |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | N.D.        |        | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |             |        |                 |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | 0.059       |        | 0.0028          | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.32        |        | 0.13            | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  | Analyst             | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    |                     |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 2        | 03/08/2001 15:17 | Mark A. Buckwalter  | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 02/28/2001 17:45 | Brad M. La Placa    | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 03/02/2001 15:09 | Brad M. La Placa    | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 03/07/2001 09:15 | Michele L. Hanby    | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 03/01/2001 14:30 | Shannon L. Phillips | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 03/05/2001 15:35 | Venia M. McFadden   | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 03/05/2001 10:40 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 03/02/2001 12:00 | Patricia J. Weirich | 1               |



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## Lancaster Laboratories

Where quality is a science.

### Quality Control Summary

Client Name: Kerr-McGee Corporation  
 Reported: 03/12/01 at 03:54 PM

Group Number: 752447

#### Laboratory Compliance Quality Control

| <u>Analysis Name</u>  | <u>Blank Result</u> | <u>Blank MDL</u> | <u>Report Units</u> | <u>LCS %REC</u> | <u>LCSD %REC</u> | <u>LCS/LCSD Limits</u> | <u>RPD</u> | <u>RPD Max</u> |
|---|---------------------|------------------|---------------------|-----------------|------------------|------------------------|------------|----------------|
| Batch number: 01030022601A<br>Ortho-Phosphate as P          | N.D.                | .0028            | mg/l                | 106             |                  | 53-147                 |            |                |
| Batch number: 01059105102A<br>Nitrite Nitrogen              | N.D.                | .015             | mg/l                | 103             |                  | 90-110                 |            |                |
| Batch number: 01061106101B<br>Nitrate Nitrogen              | N.D.                | .04              | mg/l                | 98              |                  | 89-110                 |            |                |
| Batch number: 01061110101A<br>Total Phosphorus as PO4 water | N.D.                | .13              | mg/l                | 102             |                  | 90-110                 |            |                |
| Batch number: 01064108101A<br>Kjeldahl Nitrogen             | 0.64 J              | .3               | mg/l                | 103             |                  | 90-110                 |            |                |
| Batch number: 01066022101A<br>Ammonia Nitrogen              | N.D.                | .16              | mg/l                | 98              | 96               | 90-102                 | 3          | 3              |

#### Sample Matrix Quality Control

| <u>Analysis Name</u>  | <u>MS %REC</u> | <u>MSD %REC</u> | <u>MS/MSD Limits</u> | <u>RPD</u> | <u>MAX</u> | <u>BKG Conc</u> | <u>DUP Conc</u> | <u>DUP RPD</u> | <u>Dup RPD Max</u> |
|---|----------------|-----------------|----------------------|------------|------------|-----------------|-----------------|----------------|--------------------|
| Batch number: 01030022601A<br>Ortho-Phosphate as P          | 97             | 99              | 80-114               | 1          | 4          | 0.059           | 0.043           | 31* (1)        | 7                  |
| Batch number: 01059105102A<br>Nitrite Nitrogen              | 98             |                 | 90-110               |            |            | N.D.            | N.D.            | 0 (1)          | 6                  |
| Batch number: 01061106101B<br>Nitrate Nitrogen              | 98             |                 | 90-110               |            |            | N.D.            | N.D.            | 0 (1)          | 6                  |
| Batch number: 01061110101A<br>Total Phosphorus as PO4 water | 101            |                 | 90-110               |            |            | 0.23            | 0.19            | 16* (1)        | 2                  |
| Batch number: 01064108101A<br>Kjeldahl Nitrogen             | 89*            |                 | 90-110               |            |            | 1.6             | 1.4             | 10 (1)         | 20                 |
| Batch number: 01066022101A<br>Ammonia Nitrogen              |                |                 |                      |            |            | 5.3             | 5.4             | 2              | 8                  |

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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### Quality Control Summary

Page 2 of 2

Client Name: Kerr-McGee Corporation  
Reported: 03/12/01 at 03:54 PM

Group Number: 752447

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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## ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation  
P.O. Box 25861  
Oklahoma City OK 73125

Prepared by:

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

### SAMPLE GROUP

The sample group for this submittal is 752632. Samples arrived at the laboratory on Thursday, March 01, 2001.

| <u>Client Description</u>             | <u>Lancaster Labs Number</u> |
|---------------------------------------|------------------------------|
| MA3-TG3-1-280201-01 Grab Water Sample | 3561310                      |
| MA3-TG6-2-280201-02 Grab Water Sample | 3561311                      |
| MA3-TG6-1-280201-03 Grab Water Sample | 3561312                      |
| MA3-TG6-3-280201-04 Grab Water Sample | 3561313                      |
| MA3-TG4-2-280201-05 Grab Water Sample | 3561314                      |
| MA3-TG5-3-280201-06 Grab Water Sample | 3561315                      |

### METHODOLOGY

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

1 COPY TO      Kerr-McGee Corporation  
1 COPY TO      Roy F. Weston  
1 COPY TO      Data Package Group

Attn: Dr. Jeff Ostmeyer  
Attn: Mr. Tom Graan



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## Lancaster Laboratories

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Questions? Contact your Client Services Representative  
Kay G. Hower at (717) 656-2300.

Respectfully Submitted,

Erik J. Frederiksen  
Group Leader



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



Lancaster Laboratories Sample No. WW 3561310

Collected: 02/28/2001 09:15 by JK

Account Number: 07802

Submitted: 03/01/2001 09:25

Kerr-McGee Corporation

Reported: 03/13/01 at 04:11 PM

P.O. Box 25861

Discard: 4/13/01

Oklahoma City OK 73125

MA3-TG3-1-280201-01 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

80201 SDG#: MOA37-05

| CAT No.  | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|--|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|  |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 3.5                |             | 0.75            | mg/l  | 1               |
| 00219  | Nitrite Nitrogen              | 14797-65-0 | 0.107              |             | 0.015           | mg/l  | 1               |
| 00220  | Nitrate Nitrogen              | 14797-55-8 | 0.074 J            |             | 0.040           | mg/l  | 1               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |                    |             |                 |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | 1.2                |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |                    |             |                 |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | 0.0101 J           |             | 0.0028          | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.64               |             | 0.13            | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  | Analyst             | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    |                     |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 03/06/2001 10:38 | Matthew J. Mercer   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 03/01/2001 19:27 | Brad M. La Placa    | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 03/08/2001 16:42 | Venia M. McFadden   | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 03/07/2001 09:15 | Michele L. Hanby    | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 03/02/2001 08:00 | Michele L. Hanby    | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 03/05/2001 15:36 | Venia M. McFadden   | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 03/05/2001 10:40 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 03/02/2001 12:00 | Patricia J. Weirich | 1               |



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Lancaster Laboratories Sample No. WW 3561311

Collected: 02/28/2001 09:20 by JK

Account Number: 07802

Submitted: 03/01/2001 09:25

Kerr-McGee Corporation

Reported: 03/13/01 at 04:11 PM

P.O. Box 25861

Discard: 4/13/01

Oklahoma City OK 73125

MA3-TG6-2-280201-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

80202 SDG#: MOA37-06

| CAT No.  | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|--|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|  |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 0.59 J             |             | 0.30            | 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               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |                    |             |                 |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | N.D.               |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |                    |             |                 |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | 0.0071 J           |             | 0.0028          | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.22               |             | 0.13            | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  | Analyst             | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    |                     |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 2        | 03/08/2001 15:18 | Mark A. Buckwalter  | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 03/01/2001 19:28 | Brad M. La Placa    | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 03/08/2001 16:43 | Venia M. McFadden   | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 03/07/2001 09:15 | Michele L. Hanby    | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 03/02/2001 08:00 | Michele L. Hanby    | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 03/05/2001 15:39 | Venia M. McFadden   | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 03/05/2001 10:40 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 03/02/2001 12:00 | Patricia J. Weirich | 1               |



Lancaster Laboratories Sample No. WW 3561312

Collected: 02/28/2001 10:15 by JK

Account Number: 07802

Submitted: 03/01/2001 09:25  
 Reported: 03/13/01 at 04:11 PM  
 Discard: 4/13/01

Kerr-McGee Corporation  
 P.O. Box 25861  
 Oklahoma City OK 73125

MA3-TG6-1-280201-03 Grab Water Sample  
 Moss American Superfund Site - Milwaukee, WI

80203 SDG#: MOA37-07

| CAT No.  | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|--|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|  |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 1.8                |             | 0.30            | 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               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |                    |             |                 |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | 1.1                |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |                    |             |                 |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | 0.0161 J           |             | 0.0028          | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.27               |             | 0.13            | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  | Analyst             | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    |                     |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 03/06/2001 10:43 | Matthew J. Mercer   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 03/01/2001 19:30 | Brad M. La Placa    | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 03/08/2001 16:47 | Venia M. McFadden   | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 03/07/2001 09:15 | Michele L. Hanby    | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 03/02/2001 08:00 | Michele L. Hanby    | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 03/05/2001 15:40 | Venia M. McFadden   | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 03/05/2001 10:40 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 03/02/2001 12:00 | Patricia J. Weirich | 1               |



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Lancaster Laboratories Sample No. WW 3561313

Collected: 02/28/2001 10:30 by JK

Account Number: 07802

Submitted: 03/01/2001 09:25

Kerr-McGee Corporation

Reported: 03/13/01 at 04:11 PM

P.O. Box 25861

Discard: 4/13/01

Oklahoma City OK 73125

MA3-TG6-3-280201-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

80204 SDG#: MOA37-08

| CAT No.  | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|--|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|  |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 1.5                |             | 0.30            | mg/l  | 1               |
| 00219  | Nitrite Nitrogen              | 14797-65-0 | 0.126              |             | 0.015           | mg/l  | 1               |
| 00220  | Nitrate Nitrogen              | 14797-55-8 | 0.044 J            |             | 0.040           | mg/l  | 1               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |                    |             |                 |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | N.D.               |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |                    |             |                 |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | 0.0046 J           |             | 0.0028          | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.25               |             | 0.13            | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  |                     | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    | Analyst             |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 03/06/2001 10:44 | Matthew J. Mercer   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 03/01/2001 19:31 | Brad M. La Placa    | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 03/08/2001 16:48 | Venia M. McFadden   | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 03/07/2001 09:15 | Michele L. Hanby    | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 03/02/2001 08:00 | Michele L. Hanby    | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 03/05/2001 15:40 | Venia M. McFadden   | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 03/05/2001 10:40 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 03/02/2001 12:00 | Patricia J. Weirich | 1               |



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Lancaster Laboratories Sample No. WW 3561314

Collected: 02/28/2001 13:00 by JK

Account Number: 07802

Submitted: 03/01/2001 09:25

Kerr-McGee Corporation

Reported: 03/13/01 at 04:11 PM

P.O. Box 25861

Discard: 4/13/01

Oklahoma City OK 73125

MA3-TG4-2-280201-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

80205 SDG#: MOA37-09

| CAT No.  | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|--|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|  |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 1.7                |             | 0.30            | 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               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |                    |             |                 |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | 0.59 J             |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |                    |             |                 |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | 0.0036 J           |             | 0.0028          | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.19               |             | 0.13            | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  |                     | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    | Analyst             |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 1        | 03/06/2001 10:45 | Matthew J. Mercer   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 03/01/2001 19:32 | Brad M. La Placa    | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 03/08/2001 16:49 | Venia M. McFadden   | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 03/07/2001 09:15 | Michele L. Hanby    | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 03/02/2001 08:00 | Michele L. Hanby    | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 03/05/2001 15:41 | Venia M. McFadden   | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 1        | 03/05/2001 10:40 | Patricia J. Weirich | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 03/02/2001 12:00 | Patricia J. Weirich | 1               |



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Lancaster Laboratories Sample No. WW 3561315

Collected: 02/28/2001 13:15 by JK

Account Number: 07802

Submitted: 03/01/2001 09:25

Kerr-McGee Corporation

Reported: 03/13/01 at 04:11 PM

P.O. Box 25861

Discard: 4/13/01

Oklahoma City OK 73125

MA3-TG5-3-280201-06 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

80206 SDG#: MOA37-10\*

| CAT No.  | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|--|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|  |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217  | Kjeldahl Nitrogen             | 7727-37-9  | 0.74 J             |             | 0.30            | mg/l  | 1               |
| 00219  | Nitrite Nitrogen              | 14797-65-0 | N.D.               |             | 0.015           | mg/l  | 1               |
| 00220  | Nitrate Nitrogen              | 14797-55-8 | 0.16               |             | 0.040           | mg/l  | 1               |
| This sample was preserved to pH <2 with sulfuric acid immediately following the nitrite-nitrogen analysis. This extends the holding time for nitrate-nitrogen analysis to 28 days. |                               |            |                    |             |                 |       |                 |
| 00221  | Ammonia Nitrogen              | 7664-41-7  | N.D.               |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.    |                               |            |                    |             |                 |       |                 |
| 00226  | Ortho-Phosphate as P          | 14265-44-2 | 0.039              |             | 0.0028          | mg/l  | 1               |
| 00345  | Total Phosphorus as PO4 water | 14265-44-2 | 0.44               |             | 0.13            | mg/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method    | Analysis |                  | Analyst             | Dilution Factor |
|---------|--------------------------------|-----------|----------|------------------|---------------------|-----------------|
|         |                                |           | Trial#   | Date and Time    |                     |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2 | 3        | 03/12/2001 13:20 | Matthew J. Mercer   | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2 | 1        | 03/01/2001 19:33 | Brad M. La Placa    | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2 | 1        | 03/08/2001 16:51 | Venia M. McFadden   | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2 | 1        | 03/07/2001 09:15 | Michele L. Hanby    | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3 | 1        | 03/02/2001 08:00 | Michele L. Hanby    | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1 | 1        | 03/05/2001 15:44 | Venia M. McFadden   | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2 | 2        | 03/09/2001 15:27 | Venia M. McFadden   | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1 | 1        | 03/02/2001 12:00 | Patricia J. Weirich | 1               |



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2425 New Holland Pike  
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### Quality Control Summary

Client Name: Kerr-McGee Corporation  
 Reported: 03/13/01 at 04:11 PM

Group Number: 752632

#### Laboratory Compliance Quality Control

| Analysis Name   | Blank Result                                | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCSD/LCSD Limits | RPD | RPD Max |
|---|---|-----------|--------------|----------|-----------|------------------|-----|---------|
| Batch number: 01060105102A<br>Nitrite Nitrogen              | Sample number(s): 3561310-3561313<br>N.D.   | .015      | mg/l         | 96       |           | 90-110           |     |         |
| Batch number: 01060105102B<br>Nitrite Nitrogen              | Sample number(s): 3561314-3561315<br>N.D.   | .015      | mg/l         | 96       |           | 90-110           |     |         |
| Batch number: 01061022601A<br>Ortho-Phosphate as P          | Sample number(s): 3561310-3561315<br>N.D.   | .0028     | mg/l         | 106      |           | 53-147           |     |         |
| Batch number: 01061110101A<br>Total Phosphorus as PO4 water | Sample number(s): 3561310-3561313<br>N.D.   | .13       | mg/l         | 102      |           | 90-110           |     |         |
| Batch number: 01061110101B<br>Total Phosphorus as PO4 water | Sample number(s): 3561314-3561315<br>N.D.   | .13       | mg/l         | 102      |           | 90-110           |     |         |
| Batch number: 01064108101A<br>Kjeldahl Nitrogen             | Sample number(s): 3561310-3561314<br>0.64 J | .3        | mg/l         | 103      |           | 90-110           |     |         |
| Batch number: 01066022101A<br>Ammonia Nitrogen              | Sample number(s): 3561310-3561315<br>N.D.   | .16       | mg/l         | 98       | 96        | 90-102           | 3   | 3       |
| Batch number: 01067106101A<br>Nitrate Nitrogen              | Sample number(s): 3561310-3561311<br>N.D.   | .04       | mg/l         | 99       |           | 89-110           |     |         |
| Batch number: 01067106101B<br>Nitrate Nitrogen              | Sample number(s): 3561312-3561315<br>N.D.   | .04       | mg/l         | 99       |           | 89-110           |     |         |
| Batch number: 01068108102A<br>Kjeldahl Nitrogen             | Sample number(s): 3561315<br>N.D.           | .3        | mg/l         | 94       |           | 90-110           |     |         |

#### Sample Matrix Quality Control

| Analysis Name                                      | MS %REC                                  | MSD %REC | MS/MSD Limits | RPD | BKG MAX | DUP Conc | DUP RPD | Dup RPD Max |   |
|--|--|----------|---------------|-----|---------|----------|---------|-------------|---|
| Batch number: 01060105102A<br>Nitrite Nitrogen     | Sample number(s): 3561310-3561313<br>105 |          | 90-110        |     |         | 0.016 J  | N.D.    | 10* (1)     | 6 |
| Batch number: 01060105102B<br>Nitrite Nitrogen     | Sample number(s): 3561314-3561315<br>106 |          | 90-110        |     |         | N.D.     | N.D.    | 0 (1)       | 6 |
| Batch number: 01061022601A<br>Ortho-Phosphate as P | Sample number(s): 3561310-3561315<br>103 | 102      | 80-114        | 0   | 4       | 0.0046 J | N.D.    | 200* (1)    | 7 |
| Batch number: 01061110101A                         | Sample number(s): 3561310-3561313        |          |               |     |         |          |         |             |   |

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.





**Lancaster Laboratories**

*Where quality is a science*

## Quality Control Summary

Client Name: Kerr-McGee Corporation  
 Reported: 03/13/01 at 04:11 PM

Group Number: 752632

### Sample Matrix Quality Control

| Analysis Name                 | MS<br>%REC                        | MSD<br>%REC | MS/MSD<br>Limits | RPD<br>RPD | BKG<br>MAX | DUP<br>Conc | DUP<br>Conc | DUP<br>RPD | Dup<br>RPD<br>Max |
|-------------------------------|-----------------------------------|-------------|------------------|------------|------------|-------------|-------------|------------|-------------------|
| Total Phosphorus as PO4 water | 101                               |             | 90-110           |            |            | 0.23        | 0.19        | 16* (1)    | 2                 |
| Batch number: 01061110101B    | Sample number(s): 3561314-3561315 |             |                  |            |            |             |             |            |                   |
| Total Phosphorus as PO4 water | 96                                |             | 90-110           |            |            | 0.19        | 0.20        | 4* (1)     | 2                 |
| Batch number: 01064108101A    | Sample number(s): 3561310-3561314 |             |                  |            |            |             |             |            |                   |
| Kjeldahl Nitrogen             | 89*                               |             | 90-110           |            |            | 1.6         | 1.4         | 10 (1)     | 20                |
| Batch number: 01066022101A    | Sample number(s): 3561310-3561315 |             |                  |            |            |             |             |            |                   |
| Ammonia Nitrogen              |                                   |             |                  |            |            | 5.3         | 5.4         | 2          | 8                 |
| Batch number: 01067106101A    | Sample number(s): 3561310-3561311 |             |                  |            |            |             |             |            |                   |
| Nitrate Nitrogen              | 98                                |             | 90-110           |            |            | N.D.        | N.D.        | 168* (1)   | 6                 |
| Batch number: 01067106101B    | Sample number(s): 3561312-3561315 |             |                  |            |            |             |             |            |                   |
| Nitrate Nitrogen              | 97                                |             | 90-110           |            |            | N.D.        | N.D.        | 200* (1)   | 6                 |
| Batch number: 01068108102A    | Sample number(s): 3561315         |             |                  |            |            |             |             |            |                   |
| Kjeldahl Nitrogen             | 75*                               |             | 90-110           |            |            | 32.2        | 26.0        | 21*        | 20                |

\* - Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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

# Analysis Request/ Environmental Services Chain of Custody



For Lancaster Laboratories use only  
 Acct. # 7802 Sample # 3560366-69

Please print. Instructions on reverse side correspond with circled numbers.

| Client: <u>Kerr-McGee</u> Acct. #: _____<br>Project Name/#: <u>Moss American</u> PWSID #: _____<br>Project Manager: <u>Tom Grant</u> P.O.# _____<br>Sampler: <u>Joe Klump</u> Quote #: _____<br>Name of state where samples were collected: <u>WISCONSIN</u> |                 |                |  | Matrix <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">4</span><br><input type="checkbox"/> Potable (check if applicable)<br><input type="checkbox"/> NPDES<br><input type="checkbox"/> Water<br><input type="checkbox"/> Other |      | Analyses Requested <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">5</span><br><div style="display: flex; justify-content: space-around; font-size: 2em; font-weight: bold;"> <span>NH<sub>3</sub></span> <span>TP PD4 + TKN</span> <span>O-PD4</span> <span>NO<sub>2</sub> + NO<sub>3</sub></span> </div> |       |                       |                                     | For lab use only<br>FSC: _____<br>SCR #: <u>1147768</u> |                                     |                                     |  |  |
|--|-----------------|----------------|--|--|------|---|-------|-----------------------|-------------------------------------|---|-------------------------------------|-------------------------------------|--|--|
| Sample Identification  | Date Collected  | Time Collected | Grab <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">3</span> | Composite  | Soil | Water   | Other | Total # of Containers | Remarks                             |   |                                     |                                     | Temperature of samples upon receipt (if requested) |  |
| <u>MA3-TG1-1-270201-01</u>   | <u>02/27/01</u> | <u>1515</u>    | <input checked="" type="checkbox"/>  |  |      | <input checked="" type="checkbox"/>   |       | <u>5</u>              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |  |  |
| <u>MA3-TG2-1-270201-02</u>   | ↓               | <u>1525</u>    | <input checked="" type="checkbox"/>  |  |      | <input checked="" type="checkbox"/>   |       | <u>5</u>              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |  |  |
| <u>MA3-TG2-2-270201-03</u>   | ↓               | <u>1610</u>    | <input checked="" type="checkbox"/>  |  |      | <input checked="" type="checkbox"/>   |       | <u>5</u>              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |  |  |
| <u>MA3-TG2-3-270201-04</u>   | ↓               | <u>1645</u>    | <input checked="" type="checkbox"/>  |  |      | <input checked="" type="checkbox"/>   |       | <u>5</u>              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>                     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |  |  |

|   |  |   |  |  |  |
|---|--|---|--|--|--|
| 7 Turnaround Time Requested (TAT) (please circle): <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Normal</span> Rush<br>(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)<br>Date results are needed: <u>SID TAT</u><br>Rush results requested by (please circle): Phone <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Fax</span><br>Phone #: <u>(647) 918-4000</u> Fax #: <u>(647) 918-4055</u> |  | Relinquished by: <u>K. Becker</u> Date: <u>1-30-01</u> Time: <u>10:40</u><br>Relinquished by: <u>L. A. Min</u> Date: <u>2/27/01</u> Time: <u>1800</u><br>Relinquished by: _____ Date: _____ Time: _____<br>Relinquished by: _____ Date: _____ Time: _____<br>Relinquished by: _____ Date: _____ Time: _____ |  | Received by: <u>[Signature]</u> Date: <u>02/27/01</u> Time: <u>1000</u><br>Received by: <u>FedEx</u> Date: <u>2/27/01</u> Time: <u>1800</u><br>Received by: _____ Date: _____ Time: _____<br>Received by: _____ Date: _____ Time: _____<br>Received by: <u>[Signature]</u> Date: <u>02/28/01</u> Time: <u>0835</u> |  |
| 8 Data Package Options (please circle if requested)<br>QC Summary Type VI (Raw Data) <u>Per Quote</u><br>Type I (Tier I) GLP<br>Type II (Tier II) Other<br>Type III (NJ Red. Del.)<br>Type IV (CLP)   |  | SDG Complete? Yes <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">No</span><br>Site-specific QC required? Yes No<br>(If yes, indicate QC sample and submit triplicate volume.)<br>Internal Chain of Custody required? Yes No   |  |  |  |





# Analysis Request/ Environmental Services Chain of Custody



For Lancaster Laboratories use only  
 Acct. # 1802 Sample # 3561310-15

Please print. Instructions on reverse side correspond with circled numbers.

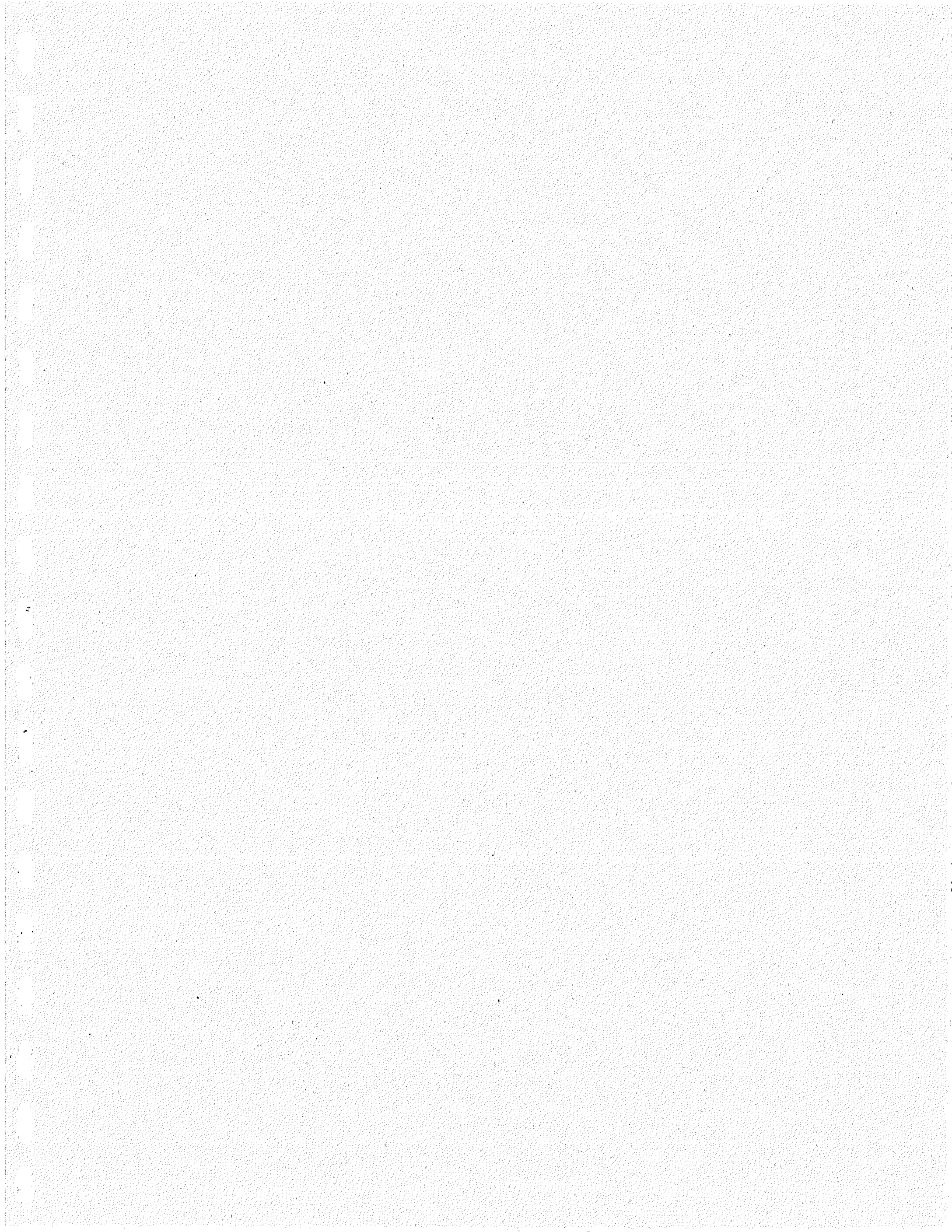
| Client: <u>Kerr-McGee</u> Acct. #: _____<br>Project Name/#: <u>Moss-American</u> PWSID #: _____<br>Project Manager: <u>Tom Graan</u> P.O.# _____<br>Sampler: <u>Joe Klemm</u> Quote #: _____<br>Name of state where samples were collected: <u>WISCONSIN</u> |                |                |  | Matrix <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">4</span>                                   |                       | Analyses Requested <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">5</span> |       |                       |                 |     | For lab use only<br>FSC: _____<br>SCR #: <u>1147370</u> |  |                   |                 |                 |                    |
|--|----------------|----------------|--|--|-----------------------|--|-------|-----------------------|-----------------|-----|---|--|-------------------|-----------------|-----------------|--------------------|
|  |                |                |  | <input type="checkbox"/> Potable (check if applicable)<br><input type="checkbox"/> NPDES<br><input type="checkbox"/> Other | Total # of Containers |  |       |                       |                 |     |   | Temperature of samples upon receipt (if requested) |                   |                 |                 |                    |
| Sample Identification  | Date Collected | Time Collected | Grab <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">3</span> | Composite  | Soil                  | Water  | Other | Total # of Containers | NH <sub>3</sub> | TKN | TP  | PO <sub>4</sub>                                    | O-P <sub>04</sub> | NO <sub>2</sub> | NO <sub>3</sub> | Remarks            |
| MA3-TG3-1-Z80201-01  | 02/28/01       | 0915           | ✓  |  |                       | ✓  |       | 5                     | X               | X   | X   | X  | X                 | X               |                 | Original C.O.C.    |
| MA3-TG6-2-Z80201-02  |                | 0920           | ✓  |  |                       | ✓  |       | 5                     | X               | X   | X   | X  | X                 | X               |                 | in cooler #1 of    |
| MA3-TG6-1-Z80201-03  |                | 1015           | ✓  |  |                       | ✓  |       | 5                     | X               | X   | X   | X  | X                 | X               |                 | 2 Coolers Shipped. |
| MA3-TG6-3-Z80201-04  |                | 1030           | ✓  |  |                       | ✓  |       | 5                     | X               | X   | X   | X  | X                 | X               |                 |                    |
| MA3-TG4-2-Z80201-05  |                | 1300           | ✓  |  |                       | ✓  |       | 5                     | X               | X   | X   | X  | X                 | X               |                 |                    |
| MA3-TG5-3-Z80201-06  |                | 1315           | ✓  |  |                       | ✓  |       | 5                     | X               | X   | X   | X  | X                 | X               |                 |                    |

|  |  |  |  |  |  |
|--|--|--|--|--|--|
| <b>7 Turnaround Time Requested (TAT)</b> (please circle): <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Normal</span> Rush<br>(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)<br>Date results are needed: <u>STD TAT</u><br>Rush results requested by (please circle): Phone <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Fax</span><br>Phone #: <u>(847) 918-4000</u> Fax #: <u>(847) 918-4055</u> |  | Relinquished by: <u>[Signature]</u><br>Date: <u>12/18/00</u> Time: <u>1410</u> |  | Received by: <u>[Signature]</u><br>Date: <u>02/28/01</u> Time: <u>1000</u> |  |
|  |  | Relinquished by: <u>[Signature]</u><br>Date: <u>02/29/01</u> Time: <u>1600</u> |  | Received by: <u>Fedex</u><br>Date: <u>02/28/01</u> Time: <u>1600</u>       |  |
|  |  | Relinquished by: _____<br>Date: _____ Time: _____                              |  | Received by: _____<br>Date: _____ Time: _____                              |  |
|  |  | Relinquished by: _____<br>Date: _____ Time: _____                              |  | Received by: <u>[Signature]</u><br>Date: <u>3/1/01</u> Time: <u>0925</u>   |  |

|  |   |  |
|--|---|--|
| <b>8 Data Package Options</b> (please circle if requested)   |   | SDG Complete? <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Yes</span> No |
| QC Summary Type VI (Raw Data) <u>Per Quote</u><br>Type I (Tier I) GLP<br>Type II (Tier II) Other<br>Type III (NJ Red. Del.)<br>Type IV (CLP) | Site-specific QC required? Yes No<br>(If yes, indicate QC sample and submit triplicate volume.)<br>Internal Chain of Custody required? Yes No |  |

**ATTACHMENT 4**

**MARCH 2001 GROUNDWATER SAMPLE ANALYTICAL RESULTS**



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Hammond, IN 46324  
(219) 932-1770

INDIANA CERTIFICATION NUMBERS: M-45-8 C-45-02

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### CERTIFICATE OF ANALYSIS


Tom Graam  
Roy F. Weston, Inc.  
750 East Bankes Court  
Suite 500  
Vernon Hills, IL 60061

Date Reported: 4/23/01  
P.O. Number:  
Sample ID: 9927-00328  
Date Received: 3/29/01  
Time Received: 09:30

Permit Number

| PARAMETERS                                      | RESULTS           | DATE    | TECH | METHOD         |
|---|-------------------|---------|------|----------------|
| SUBJECT: TG5-1-280301-01, 3/28/01 @ 09:30 by JK |                   |         |      |                |
| Total Aerobic Bacteria                          | 3,400. cfu/ml     | 3/31/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradable Bacteria                   | 1,900. cfu/ml     | 3/31/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG5-3-280301-02, 3/28/01 @ 09:45 by JK |                   |         |      |                |
| Total Aerobic Bacteria                          | 140,000. cfu/ml   | 3/31/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradable Bacteria                   | 5,300. cfu/ml     | 3/31/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG6-1-280301-03, 3/28/01 @ 09:50 by JK |                   |         |      |                |
| Total Aerobic Bacteria                          | 160,000. cfu/ml   | 3/31/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradable Bacteria                   | 3,300. cfu/ml     | 3/31/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG6-1-280301-03, 3/28/01 @ 10:20 by JK |                   |         |      |                |
| Total Aerobic Bacteria                          | 240,000. cfu/ml   | 3/31/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradable Bacteria                   | 110,000. cfu/ml   | 3/31/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG6-2-280301-04, 3/28/01 @ 10:05 by JK |                   |         |      |                |
| Total Aerobic Bacteria                          | 2,300,000. cfu/ml | 3/31/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradable Bacteria                   | 580,000. cfu/ml   | 3/31/01 | DJH  | 9215B MODIFIED |

Submitted with Quality by



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USDA-EPA-NIOSH Testing Food Sanitation Consulting Chemical and Microbiological Analyses and Research

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Hammond, IN 46324  
(219) 932-1770

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### CERTIFICATE OF ANALYSIS

Tom Graam  
Roy F. Weston, Inc.  
750 East Bankes Court  
Suite 500  
Vernon Hills, IL 60061

Date Reported: 4/23/01  
P.O. Number:  
Sample ID: 9927-00310  
Date Received: 3/28/01  
Time Received: 08:45

Permit Number

| PARAMETERS                                     | RESULTS       | DATE    | TECH | METHOD         |
|--|---------------|---------|------|----------------|
| SUBJECT: TG3-2-27301-10, 3/27/01 @ 14:50 by JK |               |         |      |                |
| Total Aerobic Bacteria                         | 960. cfu/ml   | 3/28/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                    | 620. cfu/ml   | 3/28/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG3-3-27301-11, 3/27/01 @ 15:00 by JK |               |         |      |                |
| Total Aerobic Bacteria                         | 5,100. cfu/ml | 3/28/01 | DJH  | 9215B MODIFIED |
| .Aerobic Degradar Bacteria                     | 4,200. cfu/ml | 3/28/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG4-2-27301-12, 3/27/01 @ 16:30 by JK |               |         |      |                |
| Total Aerobic Bacteria                         | 1,900. cfu/ml | 3/28/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                    | 410. cfu/ml   | 3/28/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG4-3-27301-13, 3/27/01 @ 15:15 by JK |               |         |      |                |
| Total Aerobic Bacteria                         | 1,800. cfu/ml | 3/28/01 | DJH  | 9215B MODIFIED |
| .Aerobic Degradar Bacteria                     | 490. cfu/ml   | 3/28/01 | DJH  | 9215B MODIFIED |

Submitted with Quality by \_\_\_\_\_



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### CERTIFICATE OF ANALYSIS

Tom Graam  
Roy F. Weston, Inc.  
750 East Bankes Court  
Suite 500  
Vernon Hills, IL 60061

Date Reported: 4/23/01  
P.O. Number:  
Sample ID: 9927-00310  
Date Received: 3/28/01  
Time Received: 08:45

Permit Number

| PARAMETERS                                     | RESULTS        | DATE    | TECH | METHOD         |
|--|----------------|---------|------|----------------|
| SUBJECT: TG1-1-27301-02, 3/27/01 @ 10:30 by JK |                |         |      |                |
| Total Aerobic Bacteria                         | 26,000. cfu/ml | 3/28/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                    | 1,500. cfu/ml  | 3/28/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG1-2-27301-03, 3/27/01 @ 10:45 by JK |                |         |      |                |
| Total Aerobic Bacteria                         | 1,200. cfu/ml  | 3/28/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                    | 590. cfu/ml    | 3/28/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG1-3-27301-04, 3/27/01 @ 10:50 by JK |                |         |      |                |
| Total Aerobic Bacteria                         | 680. cfu/ml    | 3/28/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                    | 310. cfu/ml    | 3/28/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG2-1-27301-05, 3/27/01 @ 10:55 by JK |                |         |      |                |
| Total Aerobic Bacteria                         | 10,000. cfu/ml | 3/28/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                    | 7,400. cfu/ml  | 3/28/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG2-2-27301-06, 3/27/01 @ 11:20 by JK |                |         |      |                |
| Total Aerobic Bacteria                         | 300. cfu/ml    | 3/28/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                    | 210. cfu/ml    | 3/28/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG2-3-27301-07, 3/27/01 @ 14:30 by JK |                |         |      |                |
| Total Aerobic Bacteria                         | 8,500. cfu/ml  | 3/28/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                    | 2,200. cfu/ml  | 3/28/01 | DJH  | 9215B MODIFIED |
| SUBJECT: TG3-1-27301-09, 3/27/01 @ 14:35 by JK |                |         |      |                |
| Total Aerobic Bacteria                         | 890. cfu/ml    | 3/28/01 | DJH  | 9215B MODIFIED |
| T.Aerobic Degradar Bacteria                    | 40. cfu/ml     | 3/28/01 | DJH  | 9215B MODIFIED |

\*\*\* Certificate Continues On Next Page \*\*\*

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Contact person Tom Graen Sampler Joe Kemp  
 Project name Kerr-McBee / Moss Ave. in Project # \_\_\_\_\_  
 Project location Milwaukee, WISCONSIN  
 (City) (state)

Site contaminant \* BTEX, PAHs  
 (Used in test for degrader microbial populations, give ratios if applicable, e.g. 50:50, gasoline:diesel)

\* If available, a sample of free product is preferred for use as the carbon source for enumerating the degrader microbial populations. Free product included?  yes  No

Requested analyses (✓)

|  |   |  |                                 |                     |
|--|---|--|---------------------------------|---------------------|
| CEA* (soil/gw) see note<br><input type="checkbox"/> Aerobic, <input type="checkbox"/> Anaerobic,<br><input type="checkbox"/> Microaerophilic | Standard nutrient panel (soil/gw)<br>* incl. TKN, ammonium nitrogen, available P,<br>pH, total organic carbon, % moisture (s) | Particle size analysis (soil)<br><input type="checkbox"/> sieve and hydrometer, <input type="checkbox"/> sieve only<br>% air-filled pore space (soil)<br>(includes bulk density) | Intact core                     |                     |
|  |   |  | Soil moisture at field capacity | Bulk density (soil) |
|  |   |  | Microbial Enumeration           |                     |

| MA3-<br>Sample ID         | Lab use<br>only | Date    | Time | (✓)  |    | Sample<br>depth | (#)  |       |      | Additional<br>comments |
|---------------------------|-----------------|---------|------|------|----|-----------------|------|-------|------|------------------------|
|                           |                 |         |      | Soil | GW |                 | Jars | Vials | Core |                        |
| 9<br>T63-3-<br>270301-11  |                 | 3/27/01 | 1500 |      | X  | 10-12'          | 1    |       |      |                        |
| 10<br>T64-2-<br>270301-12 |                 | ↓       | 1630 |      | X  | ↓               | 1    |       |      |                        |
| 11<br>T64-3-<br>270301-13 |                 | ↓       | 1615 |      | X  | ↓               | 1    |       |      |                        |
|                           |                 |         |      |      |    |                 |      |       |      |                        |
|                           |                 |         |      |      |    |                 |      |       |      |                        |
|                           |                 |         |      |      |    |                 |      |       |      |                        |
|                           |                 |         |      |      |    |                 |      |       |      |                        |
|                           |                 |         |      |      |    |                 |      |       |      |                        |
|                           |                 |         |      |      |    |                 |      |       |      |                        |
|                           |                 |         |      |      |    |                 |      |       |      |                        |

Relinquished by: [Signature] Date/time: 3/27/01 1700 Comments: \_\_\_\_\_ Sample condition upon arrival: \_\_\_\_\_  
 Received by: \_\_\_\_\_ Date/time: \_\_\_\_\_ On ice?  Yes,  No

**Microbac Laboratories,  
 HAMMOND DIVISION  
 542-544 Conkey Street  
 Hammond, Indiana 46324  
 219-932-1770**

Send results to:  
 Name Tom Graen  
 Company Roy F. Weston  
 Address 750 E. Bunker Ct. Ste 500  
 City Vernon Hills State IL Zip 60061  
 Phone (847) 918-4000 Fax (847) 918-4055

Send invoice to:  Same as results  
 Name \_\_\_\_\_  
 Company \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Phone \_\_\_\_\_ Fax \_\_\_\_\_

\*CEA : Comparative Enumeration Assay includes total heterotrophic and degrader populations



**Site Information**

|                |                          |                        |           |
|----------------|--------------------------|------------------------|-----------|
| Site Name      | Kerr McGee- Moss America | Date received          | 28-Mar-01 |
| Location       | Milwaukee, WI            | Date of this report    | 23-Apr-01 |
| Consultant     | Roy F Weston             | Microbac Job Code      | 9927-310  |
| Proj. Contact  | Tom Graan                |                        |           |
| Project Ref ID |                          | Number of soil samples | 0         |
| Contaminant    | BTEX-PAH                 | Number of gw samples   | 13        |

**Section I - Summary of Bioremediation Data**

Nutrient/physical factors are as suggested by Wisconsin DNR guidelines for site characterization requirements for natural biodegradation. Microbial factors are shown according to bio-engineering norms.

| Sample ID                 | Soil microbial populations: |        | pH      | % TON / |     |      | % moisture / SWHC | % Air-filled pore space |
|---------------------------|-----------------------------|--------|---------|---------|-----|------|-------------------|-------------------------|
|                           | Exceeds norm for:           |        |         | % OM    | C:N | C:P  |                   |                         |
|                           | Passive                     | Active |         |         |     |      |                   |                         |
|                           | >1E+06                      | >1E+03 | 5.5-8.5 | >1.5    | <40 | <120 | 25-85%            | >10%                    |
| Guideline note reference: | 1                           | 2      | 3       | 4       | 5   | 6    | 7                 | 8                       |

- tg1-1-270301-02 Summary table not applicable for groundwater.
- tg1-2-270301-03 Summary table not applicable for groundwater.
- tg1-3-270301-04 Summary table not applicable for groundwater.
- tg2-1-270301-05 Summary table not applicable for groundwater.
- tg2-2-270301-06 Summary table not applicable for groundwater.
- tg2-3-270301-07 Summary table not applicable for groundwater.
- tg3-1-270301-09 Summary table not applicable for groundwater.
- tg3-2-270301-10 Summary table not applicable for groundwater.

The nutrient/physical parameters summarized above for unsaturated zone soils, reflect suggested minimum Wisconsin DNR "site characterization requirements for natural biodegradation projects" as presented on pp. 6-10 in Naturally Occurring Biodegradation as a Remedial Action Option for *Soil Contamination: Interim Guidance (Revised)* dated August 26, 1994. **BioRenewal stresses that these "suggested guidelines" are only intended to provide a working frame of reference for evaluation.** Each site is unique and requires professional judgement in order to select an appropriate remedial design. We provide this information in recognition that our clients need to work within the guidelines suggested by the state. Further, we hope this will facilitate continued evolution of a working framework for evaluating sites as to the potential for bioremediation whether through site augmentation or natural attenuation.

- ✓ = Sample meets guideline.
- ✗ = Sample does not meet guideline.
- Blank = Below detection limit, not applicable, or not available for that sample.

- NOTES:
- 1) Microbial population levels in soils generally accepted as potentially adequate to support natural biodegradation. These levels are based on bio-engineering norms and not WDNR guidelines.
  - 2) Microbial population levels in soils generally accepted as minimum to serve as an "inoculum" for implementing active bioremediation strategies.
  - 3) See page 7 and 10, WDNR.
  - 4) See pages 8 and 10, WDNR. Total Organic Nitrogen (calculated from TKN minus ammonium nitrogen) divided by % organic matter.
  - 5) See pages 8 and 10, WDNR.
  - 6) See pages 8 and 10, WDNR.
  - 7) See page 6 and 10, WDNR. The suggested optimum range is 50-80% (p. 6).
  - 8) See page 8 and 10, WDNR. WDNR suggests a minimum air-filled porosity in soil of 10% is necessary for adequate oxygen diffusion in the soil gas to support biodegradation.

Section II - Microbial Data Summary continued

All values in cfu/ml\*

Groundwater Samples

Total populations

Low and high indicate 95% confidence range

| Sample ID       | Mean    | Low     | High    | 1.0E+01 | 1.0E+02 | 1.0E+03 | 1.0E+04 | 1.0E+05 | 1.0E+06 | 1.0E+07 | 1.0E+08 | 1.0E+09 |
|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| tg1-1-270301-02 | 2.6E+04 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg1-2-270301-03 | 1.2E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg1-3-270301-04 | 6.8E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg2-1-270301-05 | 1.0E+04 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg2-2-270301-06 | 3.0E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg2-3-270301-07 | 8.5E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg3-1-270301-09 | 8.9E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg3-2-270301-10 | 9.6E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |

Groundwater Samples

Degrader populations

Low and high indicate 95% confidence range

| Sample ID                 | Mean    | Low     | High    | 1.0E+01 | 1.0E+02 | 1.0E+03 | 1.0E+04 | 1.0E+05 | 1.0E+06 | 1.0E+07 | 1.0E+08 | 1.0E+09 |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| tg1-1-270301-02           | 1.5E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg1-2-270301-03           | 5.9E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg1-3-270301-04           | 3.1E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg2-1-270301-05           | 7.4E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg2-2-270301-06           | 2.1E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg2-3-270301-07           | 2.2E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg3-1-270301-09           | 2.4E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg3-2-270301-10           | 6.2E+02 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| Marginal inoculum         |         |         |         |         |         |         |         |         |         |         |         |         |
| Inoculum levels           |         |         |         |         |         |         |         |         |         |         |         |         |
| Active degradation levels |         |         |         |         |         |         |         |         |         |         |         |         |

**Marginal Inoculum** = Degrader populations below 1.0E+03 are indicative of severe limitations. Substantial augmentation of site conditions will likely be required to attain adequate cell mass to attain measurable biotransformation rates.

**Inoculum levels** = Degrader populations between 1.0E+03 and 1.0E+06 are amenable to site augmentation, but are generally insufficient to attain adequate biotransformation without site augmentation.

**Active degradation levels** = Degrader populations greater than 1.0E+06 are generally of sufficient magnitude to support measurable biotransformation without site augmentation. However, site augmentation may still be required to attain desirable rates of transformation due to specific site conditions.

Assay conditions

| Sample ID       | Degrader Media |                | Temp.<br>(Celsius) | Growth<br>Conditions | DOF ** |          | Percent<br>Degraders |
|-----------------|----------------|----------------|--------------------|----------------------|--------|----------|----------------------|
|                 | Carbon source  | % Carbon (v/v) |                    |                      | Total  | Degrader |                      |
| tg1-1-270301-02 | BTEX-PAH       | 1.0            | 22                 | aerobic              | 0      | 0        | 5.8%                 |
| tg1-2-270301-03 | BTEX-PAH       | 1.0            | 22                 | aerobic              | 0      | 0        | 49.2%                |
| tg1-3-270301-04 | BTEX-PAH       | 1.0            | 22                 | aerobic              | 0      | 0        | 45.6%                |
| tg2-1-270301-05 | BTEX-PAH       | 1.0            | 22                 | aerobic              | 0      | 0        | 74.0%                |
| tg2-2-270301-06 | BTEX-PAH       | 1.0            | 22                 | aerobic              | 0      | 0        | 70.0%                |
| tg2-3-270301-07 | BTEX-PAH       | 1.0            | 22                 | aerobic              | 0      | 0        | 25.9%                |
| tg3-1-270301-09 | BTEX-PAH       | 1.0            | 22                 | aerobic              | 0      | 0        | 27.0%                |
| tg3-2-270301-10 | BTEX-PAH       | 1.0            | 22                 | aerobic              | 0      | 0        | 64.6%                |

\* cfu/ml = colony forming units per ml of groundwater

\*\* DOF = Degrees of freedom is number of replicates minus one. This parameter is used in calculation of 95% confidence intervals.

**Site Information**

|                |                          |                        |           |
|----------------|--------------------------|------------------------|-----------|
| Site Name      | Kerr McGee- Moss America | Date received          | 28-Mar-01 |
| Location       | Milwaukee, WI            | Date of this report    | 23-Apr-01 |
| Consultant     | Roy F Weston             | Microbacl Job Code     | 9927-310  |
| Proj. Contact  | Tom Graan                |                        |           |
| Project Ref ID |                          | Number of soil samples | 0         |
| Contaminant    | BTEX-PAH                 | Number of gw samples   | 13        |

**Section I - Summary of Bioremediation Data**

Nutrient/physical factors are as suggested by Wisconsin DNR guidelines for site characterization requirements for natural biodegradation. Microbial factors are shown according to bio-engineering norms.

| Sample ID                 | Soil microbial populations: |        | pH      | % TON / |     |      | % moisture / SWHC | % Air-filled pore space |
|---------------------------|-----------------------------|--------|---------|---------|-----|------|-------------------|-------------------------|
|                           | Exceeds norm for:           |        |         | % OM    | C:N | C:P  |                   |                         |
|                           | Passive                     | Active |         |         |     |      |                   |                         |
|                           | >1E+06                      | >1E+03 | 5.5-8.5 | >1.5    | <40 | <120 | 25-85%            | >10%                    |
| Guideline note reference: | 1                           | 2      | 3       | 4       | 5   | 6    | 7                 | 8                       |

tg3-3-270301-11 Summary table not applicable for groundwater.  
 tg4-2-270301-12 Summary table not applicable for groundwater.  
 tg4-3-270301-13 Summary table not applicable for groundwater.

The nutrient/physical parameters summarized above for unsaturated zone soils, reflect suggested minimum Wisconsin DNR " site characterization requirements for natural biodegradation projects" as presented on pp. 6-10 in Naturally Occurring Biodegradation as a Remedial Action Option for Soil Contamination: Interim Guidance (Revised) dated August 26, 1994. BioRenewal stresses that these "suggested guidelines" are only intended to provide a working frame of reference for evaluation. Each site is unique and requires professional judgement in order to select an appropriate remedial design. We provide this information in recognition that our clients need to work within the guidelines suggested by the state. Further, we hope this will facilitate continued evolution of a working framework for evaluating sites as to the potential for bioremediation whether through site augmentation or natural attenuation.

- ✓ = Sample meets guideline.
- ✗ = Sample does not meet guideline.
- Blank = Below detection limit, not applicable, or not available for that sample.

- NOTES:
- 1) Microbial population levels in soils generally accepted as potentially adequate to support natural biodegradation. These levels are based on bio-engineering norms and not WDNR guidelines.
  - 2) Microbial population levels in soils generally accepted as minimum to serve as an "inoculum" for implementing active bioremediation strategies.
  - 3) See page 7 and 10. WDNR.
  - 4) See pages 8 and 10. WDNR. Total Organic Nitrogen (calculated from TKN minus ammonium nitrogen ) divided by % organic matter.
  - 5) See pages 8 and 10. WDNR.
  - 6) See pages 8 and 10. WDNR.
  - 7) See page 6 and 10. WDNR. The suggested optimum range is 50-80% (p. 6).
  - 8) See page 8 and 10. WDNR. WDNR suggests a minimum air-filled porosity in soil of 10% is necessary for adequate oxygen diffusion in the soil gas to support biodegradation.

Section II - Microbial Data Summary continued

All values in cfu/ml\*

Groundwater Samples

Total populations

Low and high indicate 95% confidence range

| Sample ID       | Mean    | Low     | High    |
|-----------------|---------|---------|---------|
| tg3-3-270301-11 | 5.1E+03 | 0.0E+00 | 0.0E+00 |
| tg4-2-270301-12 | 1.9E+03 | 0.0E+00 | 0.0E+00 |
| tg4-3-270301-13 | 1.8E+03 | 0.0E+00 | 0.0E+00 |

Groundwater Samples

Degrader populations

Low and high indicate 95% confidence range

| Sample ID       | Mean    | Low     | High    |
|-----------------|---------|---------|---------|
| tg3-3-270301-11 | 4.2E+03 | 0.0E+00 | 0.0E+00 |
| tg4-2-270301-12 | 4.1E+02 | 0.0E+00 | 0.0E+00 |
| tg4-3-270301-13 | 4.9E+02 | 0.0E+00 | 0.0E+00 |

Marginal inoculum

Inoculum levels

Active degradation levels

**Marginal Inoculum** = Degrader populations below 1.0E+03 are indicative of severe limitations. Substantial augmentation of site conditions will likely be required to attain adequate cell mass to attain measurable biotransformation rates.

**Inoculum levels** = Degrader populations between 1.0E+03 and 1.0E+06 are amenable to site augmentation, but are generally insufficient to attain adequate biotransformation without site augmentation.

**Active degradation levels** = Degrader populations greater than 1.0E+06 are generally of sufficient magnitude to support measurable biotransformation without site augmentation. However, site augmentation may still be required to attain desirable rates of transformation due to specific site conditions.

Assay conditions

| Sample ID       | Degrader Media |                | Temp.<br>(Celsius) | Growth<br>Conditions | DOF ** |          | Percent<br>Degraders |
|-----------------|----------------|----------------|--------------------|----------------------|--------|----------|----------------------|
|                 | Carbon source  | % Carbon (v/v) |                    |                      | Total  | Degrader |                      |
| tg3-3-270301-11 | BTEX-PAH       | 1.0            | 22                 | aerobic              | 0      | 0        | 82.4%                |
| tg4-2-270301-12 | BTEX-PAH       | 1.0            | 22                 | aerobic              | 0      | 0        | 21.6%                |
| tg4-3-270301-13 | BTEX-PAH       | 1.0            | 22                 | aerobic              | 0      | 0        | 27.2%                |

\* cfu/ml = colony forming units per ml of groundwater

\*\* DOF = Degrees of freedom is number of replicates minus one. This parameter is used in calculation of 95% confidence intervals.

**Site Information**

|                |                          |                        |           |
|----------------|--------------------------|------------------------|-----------|
| Site Name      | Kerr McGee- Moss America | Date received          | 29-Mar-01 |
| Location       | Milwaukee, WI            | Date of this report    | 23-Apr-01 |
| Consultant     | Roy F Weston             | Microbac Job Code      | 9927-310  |
| Proj. Contact  | Tom Graan                |                        |           |
| Project Ref ID |                          | Number of soil samples | 0         |
| Contaminant    | BTEX-PAH                 | Number of gw samples   | 5         |

**Section I - Summary of Bioremediation Data**

Nutrient/physical factors are as suggested by Wisconsin DNR guidelines for site characterization requirements for natural biodegradation. Microbial factors are shown according to bio-engineering norms.

| Sample ID                 | Soil microbial populations: |        | pH      | % TON / |     |      | % moisture / SWHC | % Air-filled pore space |
|---------------------------|-----------------------------|--------|---------|---------|-----|------|-------------------|-------------------------|
|                           | Exceeds norm for:           |        |         | % OM    | C:N | C:P  |                   |                         |
|                           | Passive                     | Active |         |         |     |      |                   |                         |
|                           | >1E+06                      | >1E+03 | 5.5-8.5 | >1.5    | <40 | <120 | 25-85%            | >10%                    |
| Guideline note reference: | 1                           | 2      | 3       | 4       | 5   | 6    | 7                 | 8                       |

- tg5-1-280301-01 Summary table not applicable for groundwater.
- tg5-3-280301-02 Summary table not applicable for groundwater.
- tg6-1-280301-03 Summary table not applicable for groundwater.
- tg6-3-280301-05 Summary table not applicable for groundwater.
- tg6-2-280301-04 Summary table not applicable for groundwater.

The nutrient/physical parameters summarized above for unsaturated zone soils, reflect suggested minimum Wisconsin DNR " site characterization requirements for natural biodegradation projects" as presented on pp. 6-10 in Naturally Occurring Biodegradation as a Remedial Action Option for *Soil Contamination: Interim Guidance (Revised)* dated August 26, 1994. **BioRenewal stresses that these "suggested guidelines" are only intended to provide a working frame of reference for evaluation.** Each site is unique and requires professional judgement in order to select an appropriate remedial design. We provide this information in recognition that our clients need to work within the guidelines suggested by the state. Further, we hope this will facilitate continued evolution of a working framework for evaluating sites as to the potential for bioremediation whether through site augmentation or natural attenuation.

- ✓ = Sample meets guideline.
- ✗ = Sample does not meet guideline.
- Blank = Below detection limit, not applicable, or not available for that sample.

- NOTES:
- 1) Microbial population levels in soils generally accepted as potentially adequate to support natural biodegradation. These levels are based on bio-engineering norms and not WDNR guidelines.
  - 2) Microbial population levels in soils generally accepted as minimum to serve as an "inoculum" for implementing active bioremediation strategies.
  - 3) See page 7 and 10, WDNR.
  - 4) See pages 8 and 10, WDNR. Total Organic Nitrogen (calculated from TKN minus ammonium nitrogen ) divided by % organic matter.
  - 5) See pages 8 and 10, WDNR.
  - 6) See pages 8 and 10, WDNR.
  - 7) See page 6 and 10, WDNR. The suggested optimum range is 50-80% (p. 6).
  - 8) See page 8 and 10, WDNR. WDNR suggests a minimum air-filled porosity in soil of 10% is necessary for adequate oxygen diffusion in the soil gas to support biodegradation.

Section II - Microbial Data Summary continued

All values in cfu/ml\*

Groundwater Samples

Total populations

Low and high indicate 95% confidence range

| Sample ID       | Mean    | Low     | High    | 1.0E+01 | 1.0E+02 | 1.0E+03 | 1.0E+04 | 1.0E+05 | 1.0E+06 | 1.0E+07 | 1.0E+08 | 1.0E+09 |
|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| tg5-1-280301-01 | 3.4E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg5-3-280301-02 | 1.4E+05 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg6-1-280301-03 | 1.6E+04 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg6-3-280301-05 | 2.4E+05 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg6-2-280301-04 | 2.3E+06 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |

Groundwater Samples

Degrader populations

Low and high indicate 95% confidence range

| Sample ID       | Mean    | Low     | High    | 1.0E+01 | 1.0E+02 | 1.0E+03 | 1.0E+04 | 1.0E+05 | 1.0E+06 | 1.0E+07 | 1.0E+08 | 1.0E+09 |
|-----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| tg5-1-280301-01 | 1.9E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg5-3-280301-02 | 5.3E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg6-1-280301-03 | 3.3E+03 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg6-3-280301-05 | 1.1E+05 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |
| tg6-2-280301-04 | 5.8E+05 | 0.0E+00 | 0.0E+00 |         |         |         |         |         |         |         |         |         |

Marginal inoculum

Inoculum levels

Active degradation levels

**Marginal inoculum** = Degrader populations below 1.0E+03 are indicative of severe limitations. Substantial augmentation of site conditions will likely be required to attain adequate cell mass to attain measurable biotransformation rates.

**Inoculum levels** = Degrader populations between 1.0E+03 and 1.0E+06 are amenable to site augmentation, but are generally insufficient to attain adequate biotransformation without site augmentation.

**Active degradation levels** = Degrader populations greater than 1.0E+06 are generally of sufficient magnitude to support measurable biotransformation without site augmentation. However, site augmentation may still be required to attain desirable rates of transformation due to specific site conditions.

Assay conditions

| Sample ID       | Degrader Media |                | Temp.<br>(Celsius) | Growth<br>Conditions | DOF ** |          | Percent<br>Degraders |
|-----------------|----------------|----------------|--------------------|----------------------|--------|----------|----------------------|
|                 | Carbon source  | % Carbon (v/v) |                    |                      | Total  | Degrader |                      |
| tg5-1-280301-01 | BTEX-PAH       | 1.0            | 22                 | aerobic              | 0      | 0        | 55.9%                |
| tg5-3-280301-02 | BTEX-PAH       | 1.0            | 22                 | aerobic              | 0      | 0        | 3.8%                 |
| tg6-1-280301-03 | BTEX-PAH       | 1.0            | 22                 | aerobic              | 0      | 0        | 20.6%                |
| tg6-3-280301-05 | BTEX-PAH       | 1.0            | 22                 | aerobic              | 0      | 0        | 47.1%                |
| tg6-2-280301-04 | BTEX-PAH       | 1.0            | 22                 | aerobic              | 0      | 0        | 25.2%                |

\* cfu/ml = colony forming units per ml of groundwater

\*\* DOF = Degrees of freedom is number of replicates minus one. This parameter is used in calculation of 95% confidence intervals.





## ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation  
P.O. Box 25861  
Oklahoma City OK 73125

Prepared by:

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

### SAMPLE GROUP

The sample group for this submittal is 756259. Samples arrived at the laboratory on Wednesday, March 28, 2001.

| <u>Client Description</u>               | <u>Lancaster Labs Number</u> |
|---|------------------------------|
| MA3-MW20S-270301-01 Grab Water Sample   | 3578351                      |
| MA3-TG1-1-270301-02 Grab Water Sample   | 3578352                      |
| MA3-TG1-2-270301-03 Grab Water Sample   | 3578353                      |
| MA3-TG1-3-270301-04 Grab Water Sample   | 3578354                      |
| MA3-TG2-1-270301-05 Grab Water Sample   | 3578355                      |
| MA3-TG2-2-270301-06 Grab Water Sample   | 3578356                      |
| MA3-TG2-3-270301-07 Grab Water Sample   | 3578357                      |
| MA3-MW28S-270301-08 Grab Water Sample   | 3578358                      |
| MA3-TG3-1-270301-09 Grab Water Sample   | 3578359                      |
| MA3-MW28S-270301-08DP Grab Water Sample | 3578360                      |
| MA3-TG3-2-270301-10 Grab Water Sample   | 3578361                      |
| MA3-TG3-3-270301-11 Grab Water Sample   | 3578362                      |
| MA3-TG4-2-270301-12 Grab Water Sample   | 3578363                      |
| MA3-TG4-3-270301-13 Grab Water Sample   | 3578364                      |
| Trip Blank Water Sample                 | 3578365                      |

### METHODOLOGY

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

1 COPY TO      Kerr-McGee Corporation  
1 COPY TO      Roy F. Weston  
1 COPY TO      Data Package Group

Attn: Dr. Jeff Ostmeyer  
Attn: Mr. Tom Graan



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Questions? Contact your Client Services Representative  
Kay G. Hower at (717) 656-2300.

Respectfully Submitted,

Christine M. Dulaney  
Sr. Chemist



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Lancaster Laboratories Sample No. WW 3578351

Collected: 03/27/2001 09:00 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:57 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW20S-270301-01 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

20S-- SDG#: MOA50-01

| CAT No.   | Analysis Name          | CAS Number | As Received Result | As Received     |       | Dilution Factor |
|---|------------------------|------------|--------------------|-----------------|-------|-----------------|
|   |                        |            |                    | Method          | Units |                 |
| 08213   | BTEX (8021)            |            |                    | Detection Limit |       |                 |
| 00776   | Benzene                | 71-43-2    | N.D.               | 0.20            | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20            | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20            | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60            | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                 |       |                 |
| 01861   | PAH's in Water         |            |                    |                 |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.81            | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.81            | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.81            | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.17            | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.071           | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.030           | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.030           | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.17            | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.020           | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.060           | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.038           | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.010           | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.020           | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.030           | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.10            | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.068           | ug/l  | 1               |

The RPD for recovery of Naphthalene exceeded QC limits in the LCS/LCSD associated with this sample. The percent recoveries were within QC limits. The data was reported.

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.



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Lancaster Laboratories Sample No. WW 3578351

Collected: 03/27/2001 09:00 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:57 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW20S-270301-01 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

20S-- SDG#: MOA50-01

| 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         |  | Analyst                  | Dilution Factor |
|---------|----------------------|--------------------|--------|------------------|--|--------------------------|-----------------|
|         |                      |                    |        | Date and Time    |  |                          |                 |
| 08213   | BTEX (8021)          | SW-846 8021B/5030B | 1      | 03/29/2001 23:32 |  | Linda C. Pape            | 1               |
| 01861   | PAH's in Water       | SW-846 8310        | 1      | 03/30/2001 13:50 |  | Michelle J. Kolodziejcki | 1               |
| 03337   | PAH Water Extraction | SW-846 3510C       | 1      | 03/29/2001 22:45 |  | Felix C. Arroyo          | 1               |



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Lancaster Laboratories Sample No. WW 3578352

Collected: 03/27/2001 10:30 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:57 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG1-1-270301-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

1-1-2 SDG#: MOA50-02

| CAT No.   | Analysis Name                 | CAS Number | As Received |                        | Units | Dilution Factor |
|---|-------------------------------|------------|-------------|------------------------|-------|-----------------|
|   |                               |            | Result      | Method Detection Limit |       |                 |
| 00217   | Kjeldahl Nitrogen             | 7727-37-9  | 1.1         | 0.30                   | mg/l  | 1               |
| 00219   | Nitrite Nitrogen              | 14797-65-0 | 0.210       | 0.015                  | mg/l  | 1               |
| 00220   | Nitrate Nitrogen              | 14797-55-8 | N.D.        | 0.040                  | mg/l  | 1               |
| 00221   | Ammonia Nitrogen              | 7664-41-7  | 0.98 J      | 0.80                   | mg/l  | 5               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |             |                        |       |                 |
| 00226   | Ortho-Phosphate as P          | 14265-44-2 | 0.0171 J    | 0.0028                 | mg/l  | 1               |
| 00235   | Biochemical Oxygen Demand     | n.a.       | N.D.        | 5.6                    | mg/l  | 1               |
| 00273   | Total Organic Carbon          | n.a.       | 7.9         | 0.40                   | mg/l  | 1               |
| The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC". |                               |            |             |                        |       |                 |
| 00345   | Total Phosphorus as PO4 water | 14265-44-2 | N.D.        | 0.13                   | mg/l  | 1               |
| 01553   | Chemical Oxygen Demand        | n.a.       | 29.4        | 1.7                    | mg/l  | 1               |
| 08213   | BTEX (8021)                   |            |             |                        |       |                 |
| 00776   | Benzene                       | 71-43-2    | 2.8         | 0.20                   | ug/l  | 1               |
| 00777   | Toluene                       | 108-88-3   | 0.68 J      | 0.20                   | ug/l  | 1               |
| 00778   | Ethylbenzene                  | 100-41-4   | 12.         | 0.20                   | ug/l  | 1               |
| 00779   | Total Xylenes                 | 1330-20-7  | 21.         | 0.60                   | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |             |                        |       |                 |
| 01861   | PAH's in Water                |            |             |                        |       |                 |
| 03280   | Naphthalene                   | 91-20-3    | 1,890.      | 16.                    | ug/l  | 20              |
| 03281   | Acenaphthylene                | 208-96-8   | 95. J       | 16.                    | ug/l  | 20              |
| 03282   | Acenaphthene                  | 83-32-9    | 150. J      | 16.                    | ug/l  | 20              |
| 03283   | Fluorene                      | 86-73-7    | 72.         | 3.3                    | ug/l  | 20              |
| 03284   | Phenanthrene                  | 85-01-8    | 45.1        | 1.4                    | ug/l  | 20              |
| 03285   | Anthracene                    | 120-12-7   | 3.57 J      | 0.58                   | ug/l  | 20              |



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Lancaster Laboratories Sample No. WW 3578352

Collected: 03/27/2001 10:30 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:57 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG1-1-270301-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

1-1-2 SDG#: MOA50-02

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|---------|------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|         |                        |            |                    | Method      | Detection Limit |       |                 |
| 03286   | Fluoranthene           | 206-44-0   | 1.64 J             | 0.58        |                 | ug/l  | 20              |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 3.3         |                 | ug/l  | 20              |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.39        |                 | ug/l  | 20              |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 1.2         |                 | ug/l  | 20              |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.74        |                 | ug/l  | 20              |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.19        |                 | ug/l  | 20              |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.39        |                 | ug/l  | 20              |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.58        |                 | ug/l  | 20              |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 1.9         |                 | ug/l  | 20              |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 1.3         |                 | ug/l  | 20              |

The RPD for recovery of Naphthalene exceeded QC limits in the LCS/LCSD associated with this sample. The percent recoveries were within QC limits. The data was reported.

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.

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The Limits of Quantitation (LOQ's) were raised accordingly.

### Laboratory Chronicle

| CAT No. | Analysis Name                 | Method             | Analysis |                  |                    | Dilution Factor |
|---------|-------------------------------|--------------------|----------|------------------|--------------------|-----------------|
|         |                               |                    | Trial#   | Date and Time    | Analyst            |                 |
| 00217   | Kjeldahl Nitrogen             | EPA 351.2          | 2        | 04/07/2001 10:33 | Mark A. Buckwalter | 1               |
| 00219   | Nitrite Nitrogen              | EPA 353.2          | 2        | 03/29/2001 10:22 | Matthew J. Mercer  | 1               |
| 00220   | Nitrate Nitrogen              | EPA 353.2          | 2        | 04/06/2001 09:31 | Venia M. McFadden  | 1               |
| 00221   | Ammonia Nitrogen              | EPA 350.2          | 1        | 04/02/2001 07:00 | Michele L. Hanby   | 5               |
| 00226   | Ortho-Phosphate as P          | EPA 365.3          | 1        | 03/29/2001 00:30 | Daniel S. Smith    | 1               |
| 00235   | Biochemical Oxygen Demand     | EPA 405.1          | 1        | 03/28/2001 22:45 | Nicole R. Bushong  | 1               |
| 00273   | Total Organic Carbon          | EPA 415.1          | 1        | 03/30/2001 07:45 | Timothy M. Petree  | 1               |
| 00345   | Total Phosphorus as PO4 water | EPA 365.1          | 2        | 04/09/2001 16:03 | Venia M. McFadden  | 1               |
| 01553   | Chemical Oxygen Demand        | EPA 410.2          | 1        | 04/09/2001 07:15 | Susan A. Engle     | 1               |
| 08213   | BTEX (8021)                   | SW-846 8021B/5030B | 1        | 03/30/2001 00:09 | Linda C. Pape      | 1               |



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Lancaster Laboratories Sample No. WW 3578352

Collected: 03/27/2001 10:30 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:57 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG1-1-270301-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

1-1-2 SDG#: MOA50-02

|       |                                |              |   |                  |                          |    |
|-------|--------------------------------|--------------|---|------------------|--------------------------|----|
| 01861 | PAH's in Water                 | SW-846 8310  | 1 | 04/02/2001 15:43 | Michelle J. Kolodziejcki | 20 |
| 01460 | Total Kjeldahl Nitrogen Digest | EPA 351.2    | 1 | 04/06/2001 10:40 | Cheryl L. Robinson       | 1  |
| 03337 | PAH Water Extraction           | SW-846 3510C | 1 | 03/29/2001 22:45 | Felix C. Arroyo          | 1  |
| 08264 | Total Phos as PO4 Prep (water) | EPA 365.1    | 1 | 04/03/2001 12:00 | Cheryl L. Robinson       | 1  |



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Lancaster Laboratories Sample No. WW 3578353

Collected: 03/27/2001 10:45 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG1-2-270301-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

1-2-3 SDG#: MOA50-03

| CAT No.   | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|---|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|   |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217   | Kjeldahl Nitrogen             | 7727-37-9  | 1.1                |             | 0.30            | mg/l  | 1               |
| 00219   | Nitrite Nitrogen              | 14797-65-0 | 0.176              |             | 0.015           | mg/l  | 1               |
| 00220   | Nitrate Nitrogen              | 14797-55-8 | N.D.               |             | 0.040           | mg/l  | 1               |
| 00221   | Ammonia Nitrogen              | 7664-41-7  | 0.45 J             |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |                    |             |                 |       |                 |
| 00226   | Ortho-Phosphate as P          | 14265-44-2 | 0.0061 J           |             | 0.0028          | mg/l  | 1               |
| 00235   | Biochemical Oxygen Demand     | n.a.       | N.D.               |             | 4.3             | mg/l  | 1               |
| 00273   | Total Organic Carbon          | n.a.       | 8.1                |             | 0.40            | mg/l  | 1               |
| The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC". |                               |            |                    |             |                 |       |                 |
| 00345   | Total Phosphorus as PO4 water | 14265-44-2 | 0.17               |             | 0.13            | mg/l  | 1               |
| 01553   | Chemical Oxygen Demand        | n.a.       | 22.6               |             | 1.7             | mg/l  | 1               |
| 08213   | BTEX (8021)                   |            |                    |             |                 |       |                 |
| 00776   | Benzene                       | 71-43-2    | N.D.               |             | 0.20            | ug/l  | 1               |
| 00777   | Toluene                       | 108-88-3   | N.D.               |             | 0.20            | ug/l  | 1               |
| 00778   | Ethylbenzene                  | 100-41-4   | 0.23 J             |             | 0.20            | ug/l  | 1               |
| 00779   | Total Xylenes                 | 1330-20-7  | N.D.               |             | 0.60            | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |                    |             |                 |       |                 |
| 01861   | PAH's in Water                |            |                    |             |                 |       |                 |
| 03280   | Naphthalene                   | 91-20-3    | 52.3               |             | 0.82            | ug/l  | 1               |
| 03281   | Acenaphthylene                | 208-96-8   | 2.41 J             |             | 0.82            | ug/l  | 1               |
| 03282   | Acenaphthene                  | 83-32-9    | 16.                |             | 0.82            | ug/l  | 1               |
| 03283   | Fluorene                      | 86-73-7    | 5.39               |             | 0.17            | ug/l  | 1               |
| 03284   | Phenanthrene                  | 85-01-8    | 7.19               |             | 0.071           | ug/l  | 1               |
| 03285   | Anthracene                    | 120-12-7   | 1.05               |             | 0.031           | ug/l  | 1               |





Lancaster Laboratories Sample No. WW 3578353

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P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG1-2-270301-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

1-2-3 SDG#: MOA50-03

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received |                 | Dilution Factor |
|---------|------------------------|------------|--------------------|-------------|-----------------|-----------------|
|         |                        |            |                    | Method      | Detection Limit |                 |
| 03286   | Fluoranthene           | 206-44-0   | 1.72               |             | 0.031           | 1               |
| 03287   | Pyrene                 | 129-00-0   | 1.22               |             | 0.17            | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | 0.072 J            |             | 0.020           | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               |             | 0.061           | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               |             | 0.039           | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               |             | 0.010           | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               |             | 0.020           | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               |             | 0.031           | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               |             | 0.10            | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               |             | 0.068           | 1               |

The RPD for recovery of Naphthalene exceeded QC limits in the LCS/LCSD associated with this sample. The percent recoveries were within QC limits. The data was reported.

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.

### Laboratory Chronicle

| CAT No. | Analysis Name                 | Method             | Analysis |                  | Analyst                  | Dilution Factor |
|---------|-------------------------------|--------------------|----------|------------------|--------------------------|-----------------|
|         |                               |                    | Trial#   | Date and Time    |                          |                 |
| 00217   | Kjeldahl Nitrogen             | EPA 351.2          | 2        | 04/07/2001 10:37 | Mark A. Buckwalter       | 1               |
| 00219   | Nitrite Nitrogen              | EPA 353.2          | 2        | 03/29/2001 10:24 | Matthew J. Mercer        | 1               |
| 00220   | Nitrate Nitrogen              | EPA 353.2          | 3        | 04/06/2001 17:00 | Brad M. La Placa         | 1               |
| 00221   | Ammonia Nitrogen              | EPA 350.2          | 1        | 04/02/2001 07:00 | Michele L. Hanby         | 1               |
| 00226   | Ortho-Phosphate as P          | EPA 365.3          | 1        | 03/29/2001 00:30 | Daniel S. Smith          | 1               |
| 00235   | Biochemical Oxygen Demand     | EPA 405.1          | 1        | 03/28/2001 22:45 | Nicole R. Bushong        | 1               |
| 00273   | Total Organic Carbon          | EPA 415.1          | 1        | 03/30/2001 08:18 | Timothy M. Petree        | 1               |
| 00345   | Total Phosphorus as PO4 water | EPA 365.1          | 2        | 04/09/2001 16:04 | Venia M. McFadden        | 1               |
| 01553   | Chemical Oxygen Demand        | EPA 410.2          | 1        | 04/09/2001 07:15 | Susan A. Engle           | 1               |
| 08213   | BTEX (8021)                   | SW-846 8021B/5030B | 1        | 03/30/2001 00:47 | Linda C. Pape            | 1               |
| 01861   | PAH's in Water                | SW-846 8310        | 1        | 03/30/2001 14:34 | Michelle J. Kolodziejcki | 1               |



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Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG1-2-270301-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

|       |                                |              |   |                  |                    |   |
|-------|--------------------------------|--------------|---|------------------|--------------------|---|
| 1-2-3 | SDG#: MOA50-03                 |              |   |                  |                    |   |
| 01460 | Total Kjeldahl Nitrogen Digest | EPA 351.2    | 1 | 04/06/2001 10:40 | Cheryl L. Robinson | 1 |
| 03337 | PAH Water Extraction           | SW-846 3510C | 1 | 03/29/2001 22:45 | Felix C. Arroyo    | 1 |
| 08264 | Total Phos as PO4 Prep (water) | EPA 365.1    | 1 | 04/03/2001 12:00 | Cheryl L. Robinson | 1 |



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Lancaster Laboratories Sample No. WW 3578354

Collected: 03/27/2001 10:50 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG1-3-270301-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

1-3-4 SDG#: MOA50-04

| 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             | 0.30                               | 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  | 0.63 J             | 0.16                               | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |                    |                                    |       |                 |
| 00226   | Ortho-Phosphate as P          | 14265-44-2 | 0.0096 J           | 0.0028                             | mg/l  | 1               |
| 00235   | Biochemical Oxygen Demand     | n.a.       | N.D.               | 3.2                                | mg/l  | 1               |
| 00273   | Total Organic Carbon          | n.a.       | 5.6                | 0.40                               | mg/l  | 1               |
| The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC". |                               |            |                    |                                    |       |                 |
| 00345   | Total Phosphorus as PO4 water | 14265-44-2 | 0.30               | 0.13                               | mg/l  | 1               |
| 01553   | Chemical Oxygen Demand        | n.a.       | 18.5               | 1.7                                | mg/l  | 1               |
| 08213   | BTEX (8021)                   |            |                    |                                    |       |                 |
| 00776   | Benzene                       | 71-43-2    | N.D.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                       | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene                  | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes                 | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |                    |                                    |       |                 |
| 01861   | PAH's in Water                |            |                    |                                    |       |                 |
| 03280   | Naphthalene                   | 91-20-3    | N.D.               | 0.81                               | ug/l  | 1               |
| 03281   | Acenaphthylene                | 208-96-8   | N.D.               | 0.81                               | ug/l  | 1               |
| 03282   | Acenaphthene                  | 83-32-9    | N.D.               | 0.81                               | ug/l  | 1               |
| 03283   | Fluorene                      | 86-73-7    | N.D.               | 0.17                               | ug/l  | 1               |
| 03284   | Phenanthrene                  | 85-01-8    | N.D.               | 0.071                              | ug/l  | 1               |
| 03285   | Anthracene                    | 120-12-7   | 0.037 J            | 0.030                              | ug/l  | 1               |



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Lancaster Laboratories Sample No. WW 3578354

Collected: 03/27/2001 10:50 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG1-3-270301-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

1-3-4 SDG#: MOA50-04

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|---------|------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|         |                        |            |                    | Method      | Detection Limit |       |                 |
| 03286   | Fluoranthene           | 206-44-0   | 0.041 J            |             | 0.030           | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               |             | 0.17            | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               |             | 0.020           | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               |             | 0.061           | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               |             | 0.038           | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               |             | 0.010           | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               |             | 0.020           | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               |             | 0.030           | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               |             | 0.10            | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               |             | 0.068           | ug/l  | 1               |

The RPD for recovery of Naphthalene exceeded QC limits in the LCS/LCSD associated with this sample. The percent recoveries were within QC limits. The data was reported.

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.

### Laboratory Chronicle

| CAT No. | Analysis Name                 | Method             | Analysis |                  | Analyst                   | Dilution Factor |
|---------|-------------------------------|--------------------|----------|------------------|---------------------------|-----------------|
|         |                               |                    | Trial#   | Date and Time    |                           |                 |
| 00217   | Kjeldahl Nitrogen             | EPA 351.2          | 2        | 04/07/2001 10:38 | Mark A. Buckwalter        | 1               |
| 00219   | Nitrite Nitrogen              | EPA 353.2          | 1        | 03/29/2001 10:25 | Matthew J. Mercer         | 1               |
| 00220   | Nitrate Nitrogen              | EPA 353.2          | 1        | 03/29/2001 17:01 | Venia M. McFadden         | 1               |
| 00221   | Ammonia Nitrogen              | EPA 350.2          | 1        | 04/02/2001 07:00 | Michele L. Hanby          | 1               |
| 00226   | Ortho-Phosphate as P          | EPA 365.3          | 1        | 03/29/2001 00:30 | Daniel S. Smith           | 1               |
| 00235   | Biochemical Oxygen Demand     | EPA 405.1          | 1        | 03/28/2001 22:45 | Nicole R. Bushong         | 1               |
| 00273   | Total Organic Carbon          | EPA 415.1          | 1        | 03/30/2001 08:26 | Timothy M. Petree         | 1               |
| 00345   | Total Phosphorus as PO4 water | EPA 365.1          | 2        | 04/09/2001 16:07 | Venia M. McFadden         | 1               |
| 01553   | Chemical Oxygen Demand        | EPA 410.2          | 1        | 04/09/2001 07:15 | Susan A. Engle            | 1               |
| 08213   | BTEX (8021)                   | SW-846 8021B/5030B | 1        | 03/30/2001 01:24 | Linda C. Pape             | 1               |
| 01861   | PAH's in Water                | SW-846 8310        | 1        | 03/30/2001 14:55 | Michelle J. Kolodziejwski | 1               |



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Lancaster Laboratories Sample No. WW 3578354

Collected: 03/27/2001 10:50 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG1-3-270301-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

|       |                                |              |   |                  |                    |   |
|-------|--------------------------------|--------------|---|------------------|--------------------|---|
| 1-3-4 | SDG#: MOA50-04                 |              |   |                  |                    |   |
| 01460 | Total Kjeldahl Nitrogen Digest | EPA 351.2    | 1 | 04/06/2001 10:40 | Cheryl L. Robinson | 1 |
| 03337 | PAH Water Extraction           | SW-846 3510C | 1 | 03/29/2001 22:45 | Felix C. Arroyo    | 1 |
| 08264 | Total Phos as P04 Prep (water) | EPA 365.1    | 1 | 04/03/2001 12:00 | Cheryl L. Robinson | 1 |



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Lancaster Laboratories Sample No. WW 3578355

Collected: 03/27/2001 10:55 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG2-1-270301-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

2-1-5 SDG#: MOA50-05

| CAT No.   | Analysis Name                 | CAS Number | As Received |   | As Received |       | Dilution Factor |
|---|-------------------------------|------------|-------------|---|-------------|-------|-----------------|
|   |                               |            | Result      |   | Method      | Units |                 |
| 00217   | Kjeldahl Nitrogen             | 7727-37-9  | 0.32        | J | 0.30        | 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.        |   | 0.16        | mg/l  | 1               |
| 00226   | Ortho-Phosphate as P          | 14265-44-2 | 0.0101      | J | 0.0028      | mg/l  | 1               |
| 00235   | Biochemical Oxygen Demand     | n.a.       | N.D.        |   | 2.9         | mg/l  | 1               |
| 00273   | Total Organic Carbon          | n.a.       | 1.8         |   | 0.40        | mg/l  | 1               |
| The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC". |                               |            |             |   |             |       |                 |
| 00345   | Total Phosphorus as PO4 water | 14265-44-2 | N.D.        |   | 0.13        | mg/l  | 1               |
| 01553   | Chemical Oxygen Demand        | n.a.       | 7.7         | J | 1.7         | mg/l  | 1               |
| 08213   | BTEX (8021)                   |            |             |   |             |       |                 |
| 00776   | Benzene                       | 71-43-2    | N.D.        |   | 0.20        | ug/l  | 1               |
| 00777   | Toluene                       | 108-88-3   | N.D.        |   | 0.20        | ug/l  | 1               |
| 00778   | Ethylbenzene                  | 100-41-4   | N.D.        |   | 0.20        | ug/l  | 1               |
| 00779   | Total Xylenes                 | 1330-20-7  | N.D.        |   | 0.60        | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |             |   |             |       |                 |
| 01861   | PAH's in Water                |            |             |   |             |       |                 |
| 03280   | Naphthalene                   | 91-20-3    | N.D.        |   | 0.76        | ug/l  | 1               |
| 03281   | Acenaphthylene                | 208-96-8   | N.D.        |   | 0.76        | ug/l  | 1               |
| 03282   | Acenaphthene                  | 83-32-9    | N.D.        |   | 0.76        | ug/l  | 1               |
| 03283   | Fluorene                      | 86-73-7    | N.D.        |   | 0.16        | ug/l  | 1               |
| 03284   | Phenanthrene                  | 85-01-8    | N.D.        |   | 0.066       | ug/l  | 1               |
| 03285   | Anthracene                    | 120-12-7   | N.D.        |   | 0.028       | ug/l  | 1               |
| 03286   | Fluoranthene                  | 206-44-0   | N.D.        |   | 0.028       | ug/l  | 1               |
| 03287   | Pyrene                        | 129-00-0   | N.D.        |   | 0.16        | ug/l  | 1               |
| 03288   | Benzo (a) anthracene          | 56-55-3    | N.D.        |   | 0.019       | ug/l  | 1               |



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Lancaster Laboratories Sample No. WW 3578355

Collected: 03/27/2001 10:55 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG2-1-270301-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

2-1-5 SDG#: MOA50-05

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received     |       | Dilution Factor |
|---------|------------------------|------------|--------------------|-----------------|-------|-----------------|
|         |                        |            |                    | Method          | Units |                 |
| 03289   | Chrysene               | 218-01-9   | N.D.               | Detection Limit | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.057           | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.036           | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.0095          | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.019           | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.028           | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.095           | ug/l  | 1               |
|         |                        |            |                    | 0.063           | ug/l  | 1               |

The RPD for recovery of Naphthalene exceeded QC limits in the LCS/LCSD associated with this sample. The percent recoveries were within QC limits. The data was reported.

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.

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method             | Analysis |                  |                           | Dilution Factor |
|---------|--------------------------------|--------------------|----------|------------------|---------------------------|-----------------|
|         |                                |                    | Trial#   | Date and Time    | Analyst                   |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2          | 2        | 04/07/2001 10:39 | Mark A. Buckwalter        | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2          | 1        | 03/29/2001 10:26 | Matthew J. Mercer         | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2          | 1        | 03/29/2001 17:02 | Venia M. McFadden         | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2          | 1        | 04/09/2001 09:00 | Michele L. Hanby          | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3          | 1        | 03/29/2001 00:30 | Daniel S. Smith           | 1               |
| 00235   | Biochemical Oxygen Demand      | EPA 405.1          | 1        | 03/28/2001 22:45 | Nicole R. Bushong         | 1               |
| 00273   | Total Organic Carbon           | EPA 415.1          | 1        | 03/30/2001 08:51 | Timothy M. Petree         | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1          | 2        | 04/09/2001 16:08 | Venia M. McFadden         | 1               |
| 01553   | Chemical Oxygen Demand         | EPA 410.2          | 1        | 04/09/2001 07:15 | Susan A. Engle            | 1               |
| 08213   | BTEX (8021)                    | SW-846 8021B/5030B | 1        | 03/30/2001 02:01 | Linda C. Pape             | 1               |
| 01861   | PAH's in Water                 | SW-846 8310        | 1        | 03/30/2001 15:17 | Michelle J. Kolodziejwski | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2          | 1        | 04/06/2001 10:40 | Cheryl L. Robinson        | 1               |
| 03337   | PAH Water Extraction           | SW-846 3510C       | 1        | 03/29/2001 22:45 | Felix C. Arroyo           | 1               |



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Lancaster Laboratories Sample No. WW 3578355

Collected: 03/27/2001 10:55 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG2-1-270301-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

2-1-5 SDG#: MOA50-05

08264 Total Phos as PO4 Prep  
(water)

EPA 365.1

1 04/03/2001 12:00

Cheryl L. Robinson

1



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Lancaster Laboratories Sample No. WW 3578356

Collected: 03/27/2001 11:20 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG2-2-270301-06 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

2-2-6 SDG#: MOA50-06

| CAT No.   | Analysis Name                 | CAS Number | As Received |   | As Received |       | Dilution Factor |
|---|-------------------------------|------------|-------------|---|-------------|-------|-----------------|
|   |                               |            | Result      |   | Method      | Units |                 |
| 00217   | Kjeldahl Nitrogen             | 7727-37-9  | 0.77        | J | 0.30        | 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  | 0.57        | J | 0.16        | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |             |   |             |       |                 |
| 00226   | Ortho-Phosphate as P          | 14265-44-2 | 0.0126      | J | 0.0028      | mg/l  | 1               |
| 00235   | Biochemical Oxygen Demand     | n.a.       | N.D.        |   | 5.4         | mg/l  | 1               |
| 00273   | Total Organic Carbon          | n.a.       | 3.0         |   | 0.40        | mg/l  | 1               |
| The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC". |                               |            |             |   |             |       |                 |
| 00345   | Total Phosphorus as PO4 water | 14265-44-2 | 0.23        |   | 0.13        | mg/l  | 1               |
| 01553   | Chemical Oxygen Demand        | n.a.       | 11.3        |   | 1.7         | mg/l  | 1               |
| 08213   | BTEX (8021)                   |            |             |   |             |       |                 |
| 00776   | Benzene                       | 71-43-2    | N.D.        |   | 0.20        | ug/l  | 1               |
| 00777   | Toluene                       | 108-88-3   | N.D.        |   | 0.20        | ug/l  | 1               |
| 00778   | Ethylbenzene                  | 100-41-4   | N.D.        |   | 0.20        | ug/l  | 1               |
| 00779   | Total Xylenes                 | 1330-20-7  | N.D.        |   | 0.60        | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |             |   |             |       |                 |
| 01861   | PAH's in Water                |            |             |   |             |       |                 |
| 03280   | Naphthalene                   | 91-20-3    | N.D.        |   | 0.75        | ug/l  | 1               |
| 03281   | Acenaphthylene                | 208-96-8   | N.D.        |   | 0.75        | ug/l  | 1               |
| 03282   | Acenaphthene                  | 83-32-9    | N.D.        |   | 0.75        | ug/l  | 1               |
| 03283   | Fluorene                      | 86-73-7    | N.D.        |   | 0.16        | ug/l  | 1               |
| 03284   | Phenanthrene                  | 85-01-8    | 0.084       | J | 0.066       | ug/l  | 1               |
| 03285   | Anthracene                    | 120-12-7   | 0.035       | J | 0.028       | ug/l  | 1               |



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Lancaster Laboratories Sample No. WW 3578356

Collected: 03/27/2001 11:20 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG2-2-270301-06 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

2-2-6 SDG#: MOA50-06

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received Method Detection Limit | Units | Dilution Factor |
|---------|------------------------|------------|--------------------|------------------------------------|-------|-----------------|
| 03286   | Fluoranthene           | 206-44-0   | 0.059 J            | 0.028                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.16                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.019                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.057                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.036                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0094                             | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.019                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.028                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.094                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.063                              | ug/l  | 1               |

The RPD for recovery of Naphthalene exceeded QC limits in the LCS/LCSD associated with this sample. The percent recoveries were within QC limits. The data was reported.

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.

### Laboratory Chronicle

| CAT No. | Analysis Name                 | Method             | Trial# | Analysis Date and Time | Analyst                   | Dilution Factor |
|---------|-------------------------------|--------------------|--------|------------------------|---------------------------|-----------------|
| 00217   | Kjeldahl Nitrogen             | EPA 351.2          | 2      | 04/07/2001 10:41       | Mark A. Buckwalter        | 1               |
| 00219   | Nitrite Nitrogen              | EPA 353.2          | 1      | 03/29/2001 10:30       | Matthew J. Mercer         | 1               |
| 00220   | Nitrate Nitrogen              | EPA 353.2          | 1      | 03/29/2001 17:04       | Venia M. McFadden         | 1               |
| 00221   | Ammonia Nitrogen              | EPA 350.2          | 1      | 04/03/2001 12:30       | Shannon L. Phillips       | 1               |
| 00226   | Ortho-Phosphate as P          | EPA 365.3          | 1      | 03/29/2001 00:30       | Daniel S. Smith           | 1               |
| 00235   | Biochemical Oxygen Demand     | EPA 405.1          | 1      | 03/28/2001 22:45       | Nicole R. Bushong         | 1               |
| 00273   | Total Organic Carbon          | EPA 415.1          | 1      | 03/30/2001 09:15       | Timothy M. Petree         | 1               |
| 00345   | Total Phosphorus as PO4 water | EPA 365.1          | 1      | 04/05/2001 16:17       | Matthew J. Mercer         | 1               |
| 01553   | Chemical Oxygen Demand        | EPA 410.2          | 1      | 04/09/2001 07:15       | Susan A. Engle            | 1               |
| 08213   | BTEX (8021)                   | SW-846 8021B/5030B | 1      | 03/30/2001 02:38       | Linda C. Pape             | 1               |
| 01861   | PAH's in Water                | SW-846 8310        | 1      | 03/30/2001 16:00       | Michelle J. Kolodziejwski | 1               |



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Lancaster Laboratories Sample No. WW 3578356

Collected: 03/27/2001 11:20 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG2-2-270301-06 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

|       |                                |              |   |                  |                    |   |
|-------|--------------------------------|--------------|---|------------------|--------------------|---|
| 2-2-6 | SDG#: MOA50-06                 |              |   |                  |                    |   |
| 01460 | Total Kjeldahl Nitrogen Digest | EPA 351.2    | 1 | 04/06/2001 10:40 | Cheryl L. Robinson | 1 |
| 03337 | PAH Water Extraction           | SW-846 3510C | 1 | 03/29/2001 22:45 | Felix C. Arroyo    | 1 |
| 08264 | Total Phos as PO4 Prep (water) | EPA 365.1    | 1 | 04/03/2001 12:00 | Cheryl L. Robinson | 1 |



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Lancaster Laboratories Sample No. **WW 3578357**

Collected: 03/27/2001 14:30 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG2-3-270301-07 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

2-3-7 SDG#: MOA50-07

| CAT No.   | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|---|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|   |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217   | Kjeldahl Nitrogen             | 7727-37-9  | 0.43 J             |             | 0.30            | 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  | 0.27 J             |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |                    |             |                 |       |                 |
| 00226   | Ortho-Phosphate as P          | 14265-44-2 | 0.027              |             | 0.0028          | mg/l  | 1               |
| 00235   | Biochemical Oxygen Demand     | n.a.       | N.D.               |             | 3.3             | mg/l  | 1               |
| 00273   | Total Organic Carbon          | n.a.       | 5.6                |             | 0.40            | mg/l  | 1               |
| The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC". |                               |            |                    |             |                 |       |                 |
| 00345   | Total Phosphorus as PO4 water | 14265-44-2 | 0.24               |             | 0.13            | mg/l  | 1               |
| 01553   | Chemical Oxygen Demand        | n.a.       | 16.5               |             | 1.7             | mg/l  | 1               |
| 08213   | BTEX (8021)                   |            |                    |             |                 |       |                 |
| 00776   | Benzene                       | 71-43-2    | N.D.               |             | 0.20            | ug/l  | 1               |
| 00777   | Toluene                       | 108-88-3   | N.D.               |             | 0.20            | ug/l  | 1               |
| 00778   | Ethylbenzene                  | 100-41-4   | N.D.               |             | 0.20            | ug/l  | 1               |
| 00779   | Total Xylenes                 | 1330-20-7  | N.D.               |             | 0.60            | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |                    |             |                 |       |                 |
| 01861   | PAH's in Water                |            |                    |             |                 |       |                 |
| 03280   | Naphthalene                   | 91-20-3    | N.D.               |             | 0.80            | ug/l  | 1               |
| 03281   | Acenaphthylene                | 208-96-8   | N.D.               |             | 0.80            | ug/l  | 1               |
| 03282   | Acenaphthene                  | 83-32-9    | N.D.               |             | 0.80            | ug/l  | 1               |
| 03283   | Fluorene                      | 86-73-7    | N.D.               |             | 0.17            | ug/l  | 1               |
| 03284   | Phenanthrene                  | 85-01-8    | N.D.               |             | 0.070           | ug/l  | 1               |
| 03285   | Anthracene                    | 120-12-7   | N.D.               |             | 0.030           | ug/l  | 1               |



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Lancaster Laboratories Sample No. WW 3578357

Collected: 03/27/2001 14:30 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG2-3-270301-07 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

2-3-7 SDG#: MOA50-07

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|---------|------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|         |                        |            |                    | Method      | Detection Limit |       |                 |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               |             | 0.030           | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               |             | 0.17            | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               |             | 0.020           | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               |             | 0.060           | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               |             | 0.038           | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               |             | 0.0100          | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               |             | 0.020           | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               |             | 0.030           | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               |             | 0.100           | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               |             | 0.067           | ug/l  | 1               |

The RPD for recovery of Naphthalene exceeded QC limits in the LCS/LCSD associated with this sample. The percent recoveries were within QC limits. The data was reported.

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.

### Laboratory Chronicle

| CAT No. | Analysis Name                 | Method             | Trial# | Analysis         |  | Analyst                   | Dilution Factor |
|---------|-------------------------------|--------------------|--------|------------------|--|---------------------------|-----------------|
|         |                               |                    |        | Date and Time    |  |                           |                 |
| 00217   | Kjeldahl Nitrogen             | EPA 351.2          | 2      | 04/07/2001 10:42 |  | Mark A. Buckwalter        | 1               |
| 00219   | Nitrite Nitrogen              | EPA 353.2          | 1      | 03/29/2001 10:31 |  | Matthew J. Mercer         | 1               |
| 00220   | Nitrate Nitrogen              | EPA 353.2          | 1      | 03/29/2001 17:05 |  | Venia M. McFadden         | 1               |
| 00221   | Ammonia Nitrogen              | EPA 350.2          | 1      | 04/04/2001 09:15 |  | Michele L. Hanby          | 1               |
| 00226   | Ortho-Phosphate as P          | EPA 365.3          | 1      | 03/29/2001 00:30 |  | Daniel S. Smith           | 1               |
| 00235   | Biochemical Oxygen Demand     | EPA 405.1          | 1      | 03/28/2001 22:45 |  | Nicole R. Bushong         | 1               |
| 00273   | Total Organic Carbon          | EPA 415.1          | 1      | 03/30/2001 09:23 |  | Timothy M. Petree         | 1               |
| 00345   | Total Phosphorus as PO4 water | EPA 365.1          | 1      | 04/05/2001 16:17 |  | Matthew J. Mercer         | 1               |
| 01553   | Chemical Oxygen Demand        | EPA 410.2          | 1      | 04/09/2001 07:15 |  | Susan A. Engle            | 1               |
| 08213   | BTEX (8021)                   | SW-846 8021B/5030B | 1      | 03/30/2001 03:52 |  | Linda C. Pape             | 1               |
| 01861   | PAH's in Water                | SW-846 8310        | 1      | 03/30/2001 16:21 |  | Michelle J. Kolodziejwski | 1               |



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Lancaster Laboratories Sample No. WW 3578357

Collected: 03/27/2001 14:30 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG2-3-270301-07 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

2-3-7 SDG#: MOA50-07

|       |                                |              |   |                  |                    |   |
|-------|--------------------------------|--------------|---|------------------|--------------------|---|
| 01460 | Total Kjeldahl Nitrogen Digest | EPA 351.2    | 1 | 04/06/2001 10:40 | Cheryl L. Robinson | 1 |
| 03337 | PAH Water Extraction           | SW-846 3510C | 1 | 03/29/2001 22:45 | Felix C. Arroyo    | 1 |
| 08264 | Total Phos as PO4 Prep (water) | EPA 365.1    | 1 | 04/03/2001 12:00 | Cheryl L. Robinson | 1 |





Lancaster Laboratories Sample No. WW 3578358

Collected: 03/27/2001 14:45 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW28S-270301-08 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28S-8 SDG#: MOA50-08

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.83                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.83                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.83                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.073                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.031                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.031                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.021                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.063                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.040                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.010                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.021                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.031                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.10                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.070                              | ug/l  | 1               |

The RPD for recovery of Naphthalene exceeded QC limits in the LCS/LCSD associated with this sample. The percent recoveries were within QC limits. The data was reported.

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.



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Lancaster Laboratories Sample No. WW 3578358

Collected: 03/27/2001 14:45 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW28S-270301-08 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28S-8 SDG#: MOA50-08

| 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 |
|---------|----------------------|--------------------|--------|------------------------|---------------------------|-----------------|
| 08213   | BTEX (8021)          | SW-846 8021B/5030B | 1      | 03/30/2001 05:44       | Linda C. Pape             | 1               |
| 01861   | PAH's in Water       | SW-846 8310        | 1      | 03/30/2001 16:43       | Michelle J. Kolodziejwski | 1               |
| 03337   | PAH Water Extraction | SW-846 3510C       | 1      | 03/29/2001 22:45       | Felix C. Arroyo           | 1               |



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Lancaster Laboratories Sample No. WW 3578359

Collected: 03/27/2001 14:35 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG3-1-270301-09 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3-1-9 SDG#: MOA50-09

| CAT No.   | Analysis Name                 | CAS Number | As Received Result | As Received Method Detection Limit | Units | Dilution Factor |
|---|-------------------------------|------------|--------------------|------------------------------------|-------|-----------------|
| 00217   | Kjeldahl Nitrogen             | 7727-37-9  | 2.4                | 0.30                               | mg/l  | 1               |
| 00219   | Nitrite Nitrogen              | 14797-65-0 | 0.018 J            | 0.015                              | mg/l  | 1               |
| 00220   | Nitrate Nitrogen              | 14797-55-8 | N.D.               | 0.040                              | mg/l  | 1               |
| 00221   | Ammonia Nitrogen              | 7664-41-7  | 1.9                | 0.16                               | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |                    |                                    |       |                 |
| 00226   | Ortho-Phosphate as P          | 14265-44-2 | 0.0036 J           | 0.0028                             | mg/l  | 1               |
| 00235   | Biochemical Oxygen Demand     | n.a.       | N.D.               | 4.5                                | mg/l  | 1               |
| 00273   | Total Organic Carbon          | n.a.       | 18.6               | 0.40                               | mg/l  | 1               |
| The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC". |                               |            |                    |                                    |       |                 |
| 00345   | Total Phosphorus as PO4 water | 14265-44-2 | 0.63               | 0.13                               | mg/l  | 1               |
| 01553   | Chemical Oxygen Demand        | n.a.       | 49.2               | 1.7                                | mg/l  | 1               |
| 08213   | BTEX (8021)                   |            |                    |                                    |       |                 |
| 00776   | Benzene                       | 71-43-2    | N.D.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                       | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene                  | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes                 | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |                    |                                    |       |                 |
| 01861   | PAH's in Water                |            |                    |                                    |       |                 |
| 03280   | Naphthalene                   | 91-20-3    | N.D.               | 0.75                               | ug/l  | 1               |
| 03281   | Acenaphthylene                | 208-96-8   | N.D.               | 0.75                               | ug/l  | 1               |
| 03282   | Acenaphthene                  | 83-32-9    | N.D.               | 0.75                               | ug/l  | 1               |
| 03283   | Fluorene                      | 86-73-7    | 0.47 J             | 0.16                               | ug/l  | 1               |
| 03284   | Phenanthrene                  | 85-01-8    | 0.280 J            | 0.066                              | ug/l  | 1               |
| 03285   | Anthracene                    | 120-12-7   | 0.21               | 0.028                              | ug/l  | 1               |



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Lancaster Laboratories Sample No. WW 3578359

Collected: 03/27/2001 14:35 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG3-1-270301-09 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3-1-9 SDG#: MOA50-09

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received     |       | Dilution Factor |
|---------|------------------------|------------|--------------------|-----------------|-------|-----------------|
|         |                        |            |                    | Method          | Units |                 |
| 03286   | Fluoranthene           | 206-44-0   | 0.25               | Detection Limit | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | 0.18 J             | 0.16            | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.019           | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.057           | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.036           | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0094          | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.019           | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.028           | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.094           | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.063           | ug/l  | 1               |

The RPD for recovery of Naphthalene exceeded QC limits in the LCS/LCSD associated with this sample. The percent recoveries were within QC limits. The data was reported.

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.

### Laboratory Chronicle

| CAT No. | Analysis Name                 | Method             | Analysis |                  |                          | Dilution Factor |
|---------|-------------------------------|--------------------|----------|------------------|--------------------------|-----------------|
|         |                               |                    | Trial#   | Date and Time    | Analyst                  |                 |
| 00217   | Kjeldahl Nitrogen             | EPA 351.2          | 2        | 04/07/2001 10:46 | Mark A. Buckwalter       | 1               |
| 00219   | Nitrite Nitrogen              | EPA 353.2          | 1        | 03/29/2001 11:19 | Matthew J. Mercer        | 1               |
| 00220   | Nitrate Nitrogen              | EPA 353.2          | 1        | 03/29/2001 17:06 | Venia M. McFadden        | 1               |
| 00221   | Ammonia Nitrogen              | EPA 350.2          | 1        | 04/04/2001 09:15 | Michele L. Hanby         | 1               |
| 00226   | Ortho-Phosphate as P          | EPA 365.3          | 1        | 03/29/2001 00:30 | Daniel S. Smith          | 1               |
| 00235   | Biochemical Oxygen Demand     | EPA 405.1          | 1        | 03/28/2001 22:45 | Nicole R. Bushong        | 1               |
| 00273   | Total Organic Carbon          | EPA 415.1          | 1        | 03/30/2001 09:31 | Timothy M. Petree        | 1               |
| 00345   | Total Phosphorus as PO4 water | EPA 365.1          | 1        | 04/05/2001 16:18 | Matthew J. Mercer        | 1               |
| 01553   | Chemical Oxygen Demand        | EPA 410.2          | 1        | 04/09/2001 07:15 | Susan A. Engle           | 1               |
| 08213   | BTEX (8021)                   | SW-846 8021B/5030B | 1        | 03/30/2001 09:27 | Linda C. Pape            | 1               |
| 01861   | PAH's in Water                | SW-846 8310        | 1        | 03/30/2001 17:04 | Michelle J. Kolodziejcki | 1               |



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Lancaster Laboratories Sample No. WW 3578359

Collected: 03/27/2001 14:35 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG3-1-270301-09 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3-1-9 SDG#: MOA50-09

|       |                                |              |   |                  |                    |   |
|-------|--------------------------------|--------------|---|------------------|--------------------|---|
| 01460 | Total Kjeldahl Nitrogen Digest | EPA 351.2    | 1 | 04/06/2001 10:40 | Cheryl L. Robinson | 1 |
| 03337 | PAH Water Extraction           | SW-846 3510C | 1 | 03/29/2001 22:45 | Felix C. Arroyo    | 1 |
| 08264 | Total Phos as PO4 Prep (water) | EPA 365.1    | 1 | 04/03/2001 12:00 | Cheryl L. Robinson | 1 |



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Lancaster Laboratories Sample No. WW 3578360

Collected: 03/27/2001 14:45 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW28S-270301-08DP Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28S8D SDG#: MOA50-10

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.76                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.76                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.76                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.16                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.067                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.029                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.029                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.16                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.019                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.057                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.036                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0096                             | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.019                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.029                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.096                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.064                              | ug/l  | 1               |

The RPD for recovery of Naphthalene exceeded QC limits in the LCS/LCSD associated with this sample. The percent recoveries were within QC limits. The data was reported.

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.



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Lancaster Laboratories Sample No. WW 3578360

Collected: 03/27/2001 14:45 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW28S-270301-08DP Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28S8D SDG#: MOA50-10

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

### Laboratory Chronicle

| CAT No. | Analysis Name        | Method             | Trial# | Analysis      |       | Analyst                   | Dilution Factor |
|---------|----------------------|--------------------|--------|---------------|-------|---------------------------|-----------------|
|         |                      |                    |        | Date and Time |       |                           |                 |
| 08213   | BTEX (8021)          | SW-846 8021B/5030B | 1      | 03/30/2001    | 06:21 | Linda C. Pape             | 1               |
| 01861   | PAH's in Water       | SW-846 8310        | 1      | 03/30/2001    | 17:26 | Michelle J. Kolodziejwski | 1               |
| 03337   | PAH Water Extraction | SW-846 3510C       | 1      | 03/29/2001    | 22:45 | Felix C. Arroyo           | 1               |



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Lancaster Laboratories Sample No. WW 3578361

Collected: 03/27/2001 14:50 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG3-2-270301-10 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3-210 SDG#: MOA50-11

| 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                | 0.30                               | mg/l  | 1               |
| 00219   | Nitrite Nitrogen              | 14797-65-0 | 0.023 J            | 0.015                              | mg/l  | 1               |
| 00220   | Nitrate Nitrogen              | 14797-55-8 | N.D.               | 0.040                              | mg/l  | 1               |
| 00221   | Ammonia Nitrogen              | 7664-41-7  | 1.0                | 0.16                               | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |                    |                                    |       |                 |
| 00226   | Ortho-Phosphate as P          | 14265-44-2 | N.D.               | 0.0028                             | mg/l  | 1               |
| 00235   | Biochemical Oxygen Demand     | n.a.       | 5.4                | 0.80                               | mg/l  | 1               |
| 00273   | Total Organic Carbon          | n.a.       | 8.6                | 0.40                               | mg/l  | 1               |
| The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC". |                               |            |                    |                                    |       |                 |
| 00345   | Total Phosphorus as PO4 water | 14265-44-2 | 0.27               | 0.13                               | mg/l  | 1               |
| 01553   | Chemical Oxygen Demand        | n.a.       | 24.2               | 1.7                                | mg/l  | 1               |
| 08213   | BTEX (8021)                   |            |                    |                                    |       |                 |
| 00776   | Benzene                       | 71-43-2    | N.D.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                       | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene                  | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes                 | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |                    |                                    |       |                 |
| 01861   | PAH's in Water                |            |                    |                                    |       |                 |
| 03280   | Naphthalene                   | 91-20-3    | N.D.               | 0.79                               | ug/l  | 1               |
| 03281   | Acenaphthylene                | 208-96-8   | N.D.               | 0.79                               | ug/l  | 1               |
| 03282   | Acenaphthene                  | 83-32-9    | N.D.               | 0.79                               | ug/l  | 1               |
| 03283   | Fluorene                      | 86-73-7    | N.D.               | 0.17                               | ug/l  | 1               |
| 03284   | Phenanthrene                  | 85-01-8    | N.D.               | 0.069                              | ug/l  | 1               |
| 03285   | Anthracene                    | 120-12-7   | 0.038 J            | 0.030                              | ug/l  | 1               |



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Lancaster Laboratories Sample No. WW 3578361

Collected: 03/27/2001 14:50 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG3-2-270301-10 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3-210 SDG#: MOA50-11

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received     |       | Dilution Factor |
|---------|------------------------|------------|--------------------|-----------------|-------|-----------------|
|         |                        |            |                    | Method          | Units |                 |
| 03286   | Fluoranthene           | 206-44-0   | 0.058 J            | Detection Limit | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.17            | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.020           | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.059           | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.037           | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0098          | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.020           | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.030           | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.098           | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.066           | ug/l  | 1               |

The RPD for recovery of Naphthalene exceeded QC limits in the LCS/LCSD associated with this sample. The percent recoveries were within QC limits. The data was reported.

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.

### Laboratory Chronicle

| CAT No. | Analysis Name                 | Method             | Analysis |                  | Analyst                  | Dilution Factor |
|---------|-------------------------------|--------------------|----------|------------------|--------------------------|-----------------|
|         |                               |                    | Trial#   | Date and Time    |                          |                 |
| 00217   | Kjeldahl Nitrogen             | EPA 351.2          | 2        | 04/07/2001 10:47 | Mark A. Buckwalter       | 1               |
| 00219   | Nitrite Nitrogen              | EPA 353.2          | 1        | 03/29/2001 11:20 | Matthew J. Mercer        | 1               |
| 00220   | Nitrate Nitrogen              | EPA 353.2          | 1        | 03/29/2001 17:07 | Venia M. McFadden        | 1               |
| 00221   | Ammonia Nitrogen              | EPA 350.2          | 1        | 04/04/2001 09:15 | Michele L. Hanby         | 1               |
| 00226   | Ortho-Phosphate as P          | EPA 365.3          | 1        | 03/29/2001 00:30 | Daniel S. Smith          | 1               |
| 00235   | Biochemical Oxygen Demand     | EPA 405.1          | 1        | 03/28/2001 22:45 | Nicole R. Bushong        | 1               |
| 00273   | Total Organic Carbon          | EPA 415.1          | 1        | 03/30/2001 09:39 | Timothy M. Petree        | 1               |
| 00345   | Total Phosphorus as PO4 water | EPA 365.1          | 1        | 04/05/2001 16:19 | Matthew J. Mercer        | 1               |
| 01553   | Chemical Oxygen Demand        | EPA 410.2          | 1        | 04/09/2001 07:15 | Susan A. Engle           | 1               |
| 08213   | BTEX (8021)                   | SW-846 8021B/5030B | 1        | 03/30/2001 06:58 | Linda C. Pape            | 1               |
| 01861   | PAH's in Water                | SW-846 8310        | 1        | 03/30/2001 17:47 | Michelle J. Kolodziejski | 1               |



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Lancaster Laboratories Sample No. WW 3578361

Collected: 03/27/2001 14:50 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:58 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG3-2-270301-10 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

|       |                                |              |   |                  |                    |   |
|-------|--------------------------------|--------------|---|------------------|--------------------|---|
| 3-210 | SDG#: MOA50-11                 |              |   |                  |                    |   |
| 01460 | Total Kjeldahl Nitrogen Digest | EPA 351.2    | 1 | 04/06/2001 10:40 | Cheryl L. Robinson | 1 |
| 03337 | PAH Water Extraction           | SW-846 3510C | 1 | 03/29/2001 22:45 | Felix C. Arroyo    | 1 |
| 08264 | Total Phos as PO4 Prep (water) | EPA 365.1    | 1 | 04/03/2001 12:00 | Cheryl L. Robinson | 1 |



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Lancaster Laboratories Sample No. WW 3578362

Collected: 03/27/2001 15:00 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:59 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG3-3-270301-11 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3-311 SDG#: MOA50-12

| CAT No.   | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|---|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|   |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217   | Kjeldahl Nitrogen             | 7727-37-9  | 1.6                |             | 0.30            | mg/l  | 1               |
| 00219   | Nitrite Nitrogen              | 14797-65-0 | 0.039 J            |             | 0.015           | mg/l  | 1               |
| 00220   | Nitrate Nitrogen              | 14797-55-8 | N.D.               |             | 0.040           | mg/l  | 1               |
| 00221   | Ammonia Nitrogen              | 7664-41-7  | 0.54 J             |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |                    |             |                 |       |                 |
| 00226   | Ortho-Phosphate as P          | 14265-44-2 | 0.0086 J           |             | 0.0028          | mg/l  | 1               |
| 00235   | Biochemical Oxygen Demand     | n.a.       | 6.3                |             | 0.80            | mg/l  | 1               |
| 00273   | Total Organic Carbon          | n.a.       | 9.2                |             | 0.40            | mg/l  | 1               |
| The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC". |                               |            |                    |             |                 |       |                 |
| 00345   | Total Phosphorus as PO4 water | 14265-44-2 | 0.32               |             | 0.13            | mg/l  | 1               |
| 01553   | Chemical Oxygen Demand        | n.a.       | 24.6               |             | 1.7             | mg/l  | 1               |
| 08213   | BTEX (8021)                   |            |                    |             |                 |       |                 |
| 00776   | Benzene                       | 71-43-2    | N.D.               |             | 0.20            | ug/l  | 1               |
| 00777   | Toluene                       | 108-88-3   | N.D.               |             | 0.20            | ug/l  | 1               |
| 00778   | Ethylbenzene                  | 100-41-4   | N.D.               |             | 0.20            | ug/l  | 1               |
| 00779   | Total Xylenes                 | 1330-20-7  | N.D.               |             | 0.60            | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |                    |             |                 |       |                 |
| 01861   | PAH's in Water                |            |                    |             |                 |       |                 |
| 03280   | Naphthalene                   | 91-20-3    | N.D.               |             | 0.75            | ug/l  | 1               |
| 03281   | Acenaphthylene                | 208-96-8   | N.D.               |             | 0.75            | ug/l  | 1               |
| 03282   | Acenaphthene                  | 83-32-9    | N.D.               |             | 0.75            | ug/l  | 1               |
| 03283   | Fluorene                      | 86-73-7    | N.D.               |             | 0.16            | ug/l  | 1               |
| 03284   | Phenanthrene                  | 85-01-8    | N.D.               |             | 0.066           | ug/l  | 1               |
| 03285   | Anthracene                    | 120-12-7   | 0.040 J            |             | 0.028           | ug/l  | 1               |



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Lancaster Laboratories Sample No. WW 3578362

Collected: 03/27/2001 15:00 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:59 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG3-3-270301-11 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

3-311 SDG#: MOA50-12

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received Method Detection Limit | Units | Dilution Factor |
|---------|------------------------|------------|--------------------|------------------------------------|-------|-----------------|
| 03286   | Fluoranthene           | 206-44-0   | 0.055 J            | 0.028                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.16                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.019                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.056                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.036                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0094                             | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.019                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.028                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.094                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.063                              | ug/l  | 1               |

The RPD for recovery of Naphthalene exceeded QC limits in the LCS/LCSD associated with this sample. The percent recoveries were within QC limits. The data was reported. 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.

### Laboratory Chronicle

| CAT No. | Analysis Name                 | Method             | Trial# | Analysis Date and Time | Analyst                   | Dilution Factor |
|---------|-------------------------------|--------------------|--------|------------------------|---------------------------|-----------------|
| 00217   | Kjeldahl Nitrogen             | EPA 351.2          | 2      | 04/07/2001 10:48       | Mark A. Buckwalter        | 1               |
| 00219   | Nitrite Nitrogen              | EPA 353.2          | 1      | 03/29/2001 11:21       | Matthew J. Mercer         | 1               |
| 00220   | Nitrate Nitrogen              | EPA 353.2          | 1      | 03/29/2001 17:11       | Venia M. McFadden         | 1               |
| 00221   | Ammonia Nitrogen              | EPA 350.2          | 1      | 04/04/2001 09:15       | Michele L. Hanby          | 1               |
| 00226   | Ortho-Phosphate as P          | EPA 365.3          | 1      | 03/29/2001 00:30       | Daniel S. Smith           | 1               |
| 00235   | Biochemical Oxygen Demand     | EPA 405.1          | 1      | 03/28/2001 22:45       | Nicole R. Bushong         | 1               |
| 00273   | Total Organic Carbon          | EPA 415.1          | 1      | 03/30/2001 09:47       | Timothy M. Petree         | 1               |
| 00345   | Total Phosphorus as PO4 water | EPA 365.1          | 1      | 04/05/2001 16:20       | Matthew J. Mercer         | 1               |
| 01553   | Chemical Oxygen Demand        | EPA 410.2          | 1      | 04/09/2001 07:15       | Susan A. Engle            | 1               |
| 08213   | BTEX (8021)                   | SW-846 8021B/5030B | 1      | 03/30/2001 07:35       | Linda C. Pape             | 1               |
| 01861   | PAH's in Water                | SW-846 8310        | 1      | 03/30/2001 18:09       | Michelle J. Kolodziejwski | 1               |



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Lancaster Laboratories Sample No. WW 3578362

Collected: 03/27/2001 15:00 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:59 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG3-3-270301-11 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

|       |                                |              |   |                  |                    |   |
|-------|--------------------------------|--------------|---|------------------|--------------------|---|
| 3-311 | SDG#: MOA50-12                 |              |   |                  |                    |   |
| 01460 | Total Kjeldahl Nitrogen Digest | EPA 351.2    | 1 | 04/06/2001 10:40 | Cheryl L. Robinson | 1 |
| 03337 | PAH Water Extraction           | SW-846 3510C | 1 | 03/29/2001 22:45 | Felix C. Arroyo    | 1 |
| 08264 | Total Phos as PO4 Prep (water) | EPA 365.1    | 1 | 04/03/2001 12:00 | Cheryl L. Robinson | 1 |



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



Lancaster Laboratories Sample No. WW 3578363

Collected: 03/27/2001 16:30 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:59 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG4-2-270301-12 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

4-212 SDG#: MOA50-13

| CAT No.   | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|---|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|   |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217   | Kjeldahl Nitrogen             | 7727-37-9  | 1.2                |             | 0.30            | 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  | 0.84 J             |             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |                    |             |                 |       |                 |
| 00226   | Ortho-Phosphate as P          | 14265-44-2 | N.D.               |             | 0.0028          | mg/l  | 1               |
| 00235   | Biochemical Oxygen Demand     | n.a.       | N.D.               |             | 3.2             | mg/l  | 1               |
| 00273   | Total Organic Carbon          | n.a.       | 6.9                |             | 0.40            | mg/l  | 1               |
| The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC". |                               |            |                    |             |                 |       |                 |
| 00345   | Total Phosphorus as PO4 water | 14265-44-2 | 0.16 J             |             | 0.13            | mg/l  | 1               |
| 01553   | Chemical Oxygen Demand        | n.a.       | 25.0               |             | 1.7             | mg/l  | 1               |
| 08213   | BTEX (8021)                   |            |                    |             |                 |       |                 |
| 00776   | Benzene                       | 71-43-2    | N.D.               |             | 0.20            | ug/l  | 1               |
| 00777   | Toluene                       | 108-88-3   | N.D.               |             | 0.20            | ug/l  | 1               |
| 00778   | Ethylbenzene                  | 100-41-4   | N.D.               |             | 0.20            | ug/l  | 1               |
| 00779   | Total Xylenes                 | 1330-20-7  | N.D.               |             | 0.60            | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |                    |             |                 |       |                 |
| 01861   | PAH's in Water                |            |                    |             |                 |       |                 |
| 03280   | Naphthalene                   | 91-20-3    | N.D.               |             | 0.79            | ug/l  | 1               |
| 03281   | Acenaphthylene                | 208-96-8   | N.D.               |             | 0.79            | ug/l  | 1               |
| 03282   | Acenaphthene                  | 83-32-9    | N.D.               |             | 0.79            | ug/l  | 1               |
| 03283   | Fluorene                      | 86-73-7    | N.D.               |             | 0.17            | ug/l  | 1               |
| 03284   | Phenanthrene                  | 85-01-8    | 0.116 J            |             | 0.069           | ug/l  | 1               |
| 03285   | Anthracene                    | 120-12-7   | 0.115 J            |             | 0.030           | ug/l  | 1               |



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Lancaster Laboratories Sample No. WW 3578363

Collected: 03/27/2001 16:30 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:59 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG4-2-270301-12 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

4-212 SDG#: MOA50-13

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received     |       | Dilution Factor |
|---------|------------------------|------------|--------------------|-----------------|-------|-----------------|
|         |                        |            |                    | Method          | Units |                 |
| 03286   | Fluoranthene           | 206-44-0   | 0.21               | Detection Limit | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.17            | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.020           | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.059           | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.038           | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0099          | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.020           | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.030           | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.099           | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.066           | ug/l  | 1               |

The RPD for recovery of Naphthalene exceeded QC limits in the LCS/LCSD associated with this sample. The percent recoveries were within QC limits. The data was reported.

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.

### Laboratory Chronicle

| CAT No. | Analysis Name                 | Method             | Analysis |                  | Analyst                  | Dilution Factor |
|---------|-------------------------------|--------------------|----------|------------------|--------------------------|-----------------|
|         |                               |                    | Trial#   | Date and Time    |                          |                 |
| 00217   | Kjeldahl Nitrogen             | EPA 351.2          | 2        | 04/07/2001 10:49 | Mark A. Buckwalter       | 1               |
| 00219   | Nitrite Nitrogen              | EPA 353.2          | 1        | 03/29/2001 11:22 | Matthew J. Mercer        | 1               |
| 00220   | Nitrate Nitrogen              | EPA 353.2          | 1        | 03/29/2001 17:12 | Venia M. McFadden        | 1               |
| 00221   | Ammonia Nitrogen              | EPA 350.2          | 1        | 04/04/2001 09:15 | Michele L. Hanby         | 1               |
| 00226   | Ortho-Phosphate as P          | EPA 365.3          | 1        | 03/29/2001 00:30 | Daniel S. Smith          | 1               |
| 00235   | Biochemical Oxygen Demand     | EPA 405.1          | 1        | 03/28/2001 22:45 | Nicole R. Bushong        | 1               |
| 00273   | Total Organic Carbon          | EPA 415.1          | 1        | 03/30/2001 09:55 | Timothy M. Petree        | 1               |
| 00345   | Total Phosphorus as PO4 water | EPA 365.1          | 1        | 04/05/2001 16:21 | Matthew J. Mercer        | 1               |
| 01553   | Chemical Oxygen Demand        | EPA 410.2          | 1        | 04/09/2001 07:15 | Susan A. Engle           | 1               |
| 08213   | BTEX (8021)                   | SW-846 8021B/5030B | 1        | 03/30/2001 08:13 | Linda C. Pape            | 1               |
| 01861   | PAH's in Water                | SW-846 8310        | 1        | 03/30/2001 18:30 | Michelle J. Kolodziejski | 1               |



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Lancaster Laboratories Sample No. WW 3578363

Collected: 03/27/2001 16:30 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Reported: 04/12/01 at 02:59 PM

Discard: 5/13/01

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MA3-TG4-2-270301-12 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

4-212 SDG#: MOA50-13

01460 Total Kjeldahl Nitrogen  
Digest

EPA 351.2

1 04/06/2001 10:40 Cheryl L. Robinson 1

03337 PAH Water Extraction

SW-846 3510C

1 03/29/2001 22:45 Felix C. Arroyo 1

08264 Total Phos as PO4 Prep  
(water)

EPA 365.1

1 04/03/2001 12:00 Cheryl L. Robinson 1



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Lancaster Laboratories Sample No. WW 3578364

Collected: 03/27/2001 16:15 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:59 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG4-3-270301-13 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

4-313 SDG#: MOA50-14

| CAT No.   | Analysis Name                 | CAS Number | As Received Result | As Received     |       | Dilution Factor |
|---|-------------------------------|------------|--------------------|-----------------|-------|-----------------|
|   |                               |            |                    | Method          | Units |                 |
| 00217   | Kjeldahl Nitrogen             | 7727-37-9  | 1.4                | Detection Limit | 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  | 0.99 J             | 0.16            | mg/l  | 1               |
| Sufficient sample volume was not available to perform matrix QC for this analysis. Therefore, an LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |                    |                 |       |                 |
| 00226   | Ortho-Phosphate as P          | 14265-44-2 | N.D.               | 0.0028          | mg/l  | 1               |
| 00235   | Biochemical Oxygen Demand     | n.a.       | N.D.               | 3.2             | mg/l  | 1               |
| 00273   | Total Organic Carbon          | n.a.       | 6.4                | 0.40            | mg/l  | 1               |
| The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC". |                               |            |                    |                 |       |                 |
| 00345   | Total Phosphorus as PO4 water | 14265-44-2 | 0.26               | 0.13            | mg/l  | 1               |
| 01553   | Chemical Oxygen Demand        | n.a.       | 23.8               | 1.7             | mg/l  | 1               |
| 08213   | BTEX (8021)                   |            |                    |                 |       |                 |
| 00776   | Benzene                       | 71-43-2    | N.D.               | 0.20            | ug/l  | 1               |
| 00777   | Toluene                       | 108-88-3   | N.D.               | 0.20            | ug/l  | 1               |
| 00778   | Ethylbenzene                  | 100-41-4   | N.D.               | 0.20            | ug/l  | 1               |
| 00779   | Total Xylenes                 | 1330-20-7  | N.D.               | 0.60            | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.   |                               |            |                    |                 |       |                 |
| 01861   | PAH's in Water                |            |                    |                 |       |                 |
| 03280   | Naphthalene                   | 91-20-3    | N.D.               | 0.81            | ug/l  | 1               |
| 03281   | Acenaphthylene                | 208-96-8   | N.D.               | 0.81            | ug/l  | 1               |
| 03282   | Acenaphthene                  | 83-32-9    | N.D.               | 0.81            | ug/l  | 1               |
| 03283   | Fluorene                      | 86-73-7    | N.D.               | 0.17            | ug/l  | 1               |
| 03284   | Phenanthrene                  | 85-01-8    | N.D.               | 0.071           | ug/l  | 1               |
| 03285   | Anthracene                    | 120-12-7   | 0.031 J            | 0.030           | ug/l  | 1               |



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Lancaster Laboratories Sample No. WW 3578364

Collected: 03/27/2001 16:15 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10  
 Reported: 04/12/01 at 02:59 PM  
 Discard: 5/13/01

Kerr-McGee Corporation  
 P.O. Box 25861  
 Oklahoma City OK 73125

MA3-TG4-3-270301-13 Grab Water Sample  
 Moss American Superfund Site - Milwaukee, WI

4-313 SDG#: MOA50-14

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received     |       | Dilution Factor |
|---------|------------------------|------------|--------------------|-----------------|-------|-----------------|
|         |                        |            |                    | Method          | Units |                 |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | Detection Limit | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.17            | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.020           | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.061           | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.039           | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.010           | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.020           | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.030           | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.10            | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.068           | ug/l  | 1               |

The RPD for recovery of Naphthalene exceeded QC limits in the LCS/LCSD associated with this sample. The percent recoveries were within QC limits. The data was reported.  
 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.

### Laboratory Chronicle

| CAT No. | Analysis Name                 | Method             | Analysis |                  | Analyst                  | Dilut. Factor |
|---------|-------------------------------|--------------------|----------|------------------|--------------------------|---------------|
|         |                               |                    | Trial#   | Date and Time    |                          |               |
| 00217   | Kjeldahl Nitrogen             | EPA 351.2          | 1        | 04/07/2001 10:51 | Mark A. Buckwalter       | 1             |
| 00219   | Nitrite Nitrogen              | EPA 353.2          | 1        | 03/29/2001 11:24 | Matthew J. Mercer        | 1             |
| 00220   | Nitrate Nitrogen              | EPA 353.2          | 1        | 03/29/2001 17:16 | Venia M. McFadden        | 1             |
| 00221   | Ammonia Nitrogen              | EPA 350.2          | 1        | 04/04/2001 09:15 | Michele L. Hanby         | 1             |
| 00226   | Ortho-Phosphate as P          | EPA 365.3          | 1        | 03/29/2001 00:30 | Daniel S. Smith          | 1             |
| 00235   | Biochemical Oxygen Demand     | EPA 405.1          | 1        | 03/28/2001 22:45 | Nicole R. Bushong        | 1             |
| 00273   | Total Organic Carbon          | EPA 415.1          | 1        | 03/30/2001 10:03 | Timothy M. Petree        | 1             |
| 00345   | Total Phosphorus as PO4 water | EPA 365.1          | 1        | 04/05/2001 16:22 | Matthew J. Mercer        | 1             |
| 01553   | Chemical Oxygen Demand        | EPA 410.2          | 1        | 04/09/2001 07:15 | Susan A. Engle           | 1             |
| 08213   | BTEX (8021)                   | SW-846 8021B/5030B | 1        | 03/30/2001 08:50 | Linda C. Pape            | 1             |
| 01861   | PAH's in Water                | SW-846 8310        | 1        | 03/30/2001 18:52 | Michelle J. Kolodziejski | 1             |



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Lancaster Laboratories Sample No. WW 3578364

Collected: 03/27/2001 16:15 by JK

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:59 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG4-3-270301-13 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

|       |                                |              |   |                  |                    |   |
|-------|--------------------------------|--------------|---|------------------|--------------------|---|
| 4-313 | SDG#: MOA50-14                 |              |   |                  |                    |   |
| 01460 | Total Kjeldahl Nitrogen Digest | EPA 351.2    | 1 | 04/06/2001 10:40 | Cheryl L. Robinson | 1 |
| 03337 | PAH Water Extraction           | SW-846 3510C | 1 | 03/29/2001 22:45 | Felix C. Arroyo    | 1 |
| 08264 | Total Phos as PO4 Prep (water) | EPA 365.1    | 1 | 04/03/2001 12:00 | Cheryl L. Robinson | 1 |



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Lancaster Laboratories Sample No. WW 3578365

Collected: n.a.

Account Number: 07802

Submitted: 03/28/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 02:59 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

Trip Blank Water Sample

Moss American Superfund Site - Milwaukee, WI

273TB SDG#: MOA50-15TB

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene       | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene  | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis Date and Time | Analyst       | Dilut Fact |
|---------|---------------|--------------------|--------|------------------------|---------------|------------|
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 03/29/2001 22:55       | Linda C. Pape | 1          |



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## Lancaster Laboratories

*Where quality is a science*

### Quality Control Summary

Client Name: Kerr-McGee Corporation  
 Reported: 04/12/01 at 02:59 PM

Group Number: 756259

### Laboratory Compliance Quality Control

| Analysis Name   | Blank Result  | Blank MDL | Report Units | LCS %REC | LCS/LCSD %REC | LCS/LCSD Limits | RPD | RPD Max      |
|---|---|-----------|--------------|----------|---------------|-----------------|-----|--------------|
| Batch number: 01087023502A<br>Biochemical Oxygen Demand | Sample number(s): 3578352-3578357, 3578359, 3578361-3578364 |           |              | 102      | 103           | 85-115          | 1   | 7            |
| Batch number: 010880008A                                | Sample number(s): 3578351-3578364                           |           |              |          |               |                 |     |              |
| Naphthalene   | N.D.  | .8        | ug/l         | 68       | 93            | 45-111          | 31* | 30           |
| Acenaphthylene  | N.D.  | .8        | ug/l         | 86       | 101           | 59-114          | 16  | 30           |
| Acenaphthene  | N.D.  | .8        | ug/l         | 89       | 103           | 50-120          | 15  | 30           |
| Fluorene  | N.D.  | .17       | ug/l         | 89       | 99            | 64-117          | 11  | 30           |
| Phenanthrene  | N.D.  | .07       | ug/l         | 95       | 104           | 75-114          | 9   | 30           |
| Anthracene  | N.D.  | .03       | ug/l         | 101      | 108           | 53-112          | 7   | 30           |
| Fluoranthene  | N.D.  | .03       | ug/l         | 100      | 109           | 75-120          | 8   | 30           |
| Pyrene  | N.D.  | .17       | ug/l         | 88       | 95            | 74-118          | 8   | 30           |
| Benzo(a)anthracene                                      | N.D.  | .02       | ug/l         | 94       | 102           | 73-117          | 8   | 30           |
| Chrysene  | N.D.  | .06       | ug/l         | 93       | 100           | 68-125          | 8   | 30           |
| Benzo(b)fluoranthene                                    | N.D.  | .038      | ug/l         | 94       | 102           | 71-123          | 8   | 30           |
| Benzo(k)fluoranthene                                    | N.D.  | .01       | ug/l         | 94       | 103           | 75-118          | 9   | 30           |
| Benzo(a)pyrene  | N.D.  | .02       | ug/l         | 96       | 104           | 61-127          | 9   | 30           |
| Dibenzo(a,h)anthracene                                  | N.D.  | .03       | ug/l         | 95       | 105           | 71-121          | 10  | 30           |
| Benzo(g,h,i)perylene                                    | N.D.  | .1        | ug/l         | 86       | 93            | 70-125          | 7   | 30           |
| Indeno(1,2,3-cd)pyrene                                  | N.D.  | .067      | ug/l         | 91       | 99            | 73-125          | 8   | 30           |
| Batch number: 01088022601A<br>Ortho-Phosphate as P      | Sample number(s): 3578352-3578357, 3578359, 3578361-3578364 |           |              | N.D.     | .0028         | mg/l            | 104 | 91-108       |
| Batch number: 01088105101A<br>Nitrite Nitrogen          | Sample number(s): 3578352-3578357, 3578359, 3578361         |           |              | N.D.     | .015          | mg/l            | 101 | 90-110       |
| Batch number: 01088105101B<br>Nitrite Nitrogen          | Sample number(s): 3578362-3578364                           |           |              | N.D.     | .015          | mg/l            | 101 | 90-110       |
| Batch number: 01088106103B<br>Nitrate Nitrogen          | Sample number(s): 3578354-3578357, 3578359, 3578361-3578363 |           |              | N.D.     | .04           | mg/l            | 106 | 89-110       |
| Batch number: 01088106104A<br>Nitrate Nitrogen          | Sample number(s): 3578364                                   |           |              | N.D.     | .04           | mg/l            | 109 | 89-110       |
| Batch number: 01088A55                                  | Sample number(s): 3578351-3578365                           |           |              |          |               |                 |     |              |
| Benzene   | N.D.  | .2        | ug/l         | 106      | 113           | 80-118          | 6   | 30           |
| Toluene   | N.D.  | .2        | ug/l         | 101      | 107           | 82-119          | 6   | 30           |
| Ethylbenzene  | N.D.  | .2        | ug/l         | 100      | 106           | 81-119          | 6   | 30           |
| Total Xylenes   | N.D.  | .6        | ug/l         | 100      | 106           | 82-120          | 6   | 30           |
| Batch number: 01089011111A<br>Total Organic Carbon      | Sample number(s): 3578352-3578357, 3578359, 3578361-3578364 |           |              | N.D.     | .4            | mg/l            | 98  | 98-108       |
| Batch number: 01092022101A<br>Ammonia Nitrogen          | Sample number(s): 3578352-3578354                           |           |              | N.D.     | .16           | mg/l            | 96  | 96<br>90-102 |

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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### Quality Control Summary

Client Name: Kerr-McGee Corporation  
 Reported: 04/12/01 at 02:59 PM

Group Number: 756259

#### Laboratory Compliance Quality Control

| Analysis Name   | Blank Result | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|--------------|-----------|--------------|----------|-----------|-----------------|-----|---------|
| Batch number: 01093022102A<br>Ammonia Nitrogen              | N.D.         | .16       | mg/l         | 96       | 99        | 90-102          | 3   | 3       |
| Batch number: 01093110101A<br>Total Phosphorus as PO4 water | 0.14 J       | .13       | mg/l         | 95       |           | 90-110          |     |         |
| Batch number: 01093110101B<br>Total Phosphorus as PO4 water | 0.14 J       | .13       | mg/l         | 95       |           | 90-110          |     |         |
| Batch number: 01094022101A<br>Ammonia Nitrogen              | N.D.         | .16       | mg/l         | 98       | 95        | 90-102          | 2   | 3       |
| Batch number: 01096106103A<br>Nitrate Nitrogen              | N.D.         | .04       | mg/l         | 104      |           | 89-110          |     |         |
| Batch number: 01096106105A<br>Nitrate Nitrogen              | N.D.         | .04       | mg/l         | 104      |           | 89-110          |     |         |
| Batch number: 01096108102A<br>Kjeldahl Nitrogen             | N.D.         | .3        | mg/l         | 99       |           | 90-110          |     |         |
| Batch number: 01096108102B<br>Kjeldahl Nitrogen             | N.D.         | .3        | mg/l         | 99       |           | 90-110          |     |         |
| Batch number: 01099022101A<br>Ammonia Nitrogen              | N.D.         | .16       | mg/l         | 96       |           | 90-102          |     |         |
| Batch number: 01099155301A<br>Chemical Oxygen Demand        |              |           |              | 98       |           | 65-126          |     |         |

#### Sample Matrix Quality Control

| Analysis Name   | MS %REC | MSD %REC | MS/MSD Limits | RPD | BKG MAX | DUP CONC | DUP RPD | Dup RPD Max |
|---|---------|----------|---------------|-----|---------|----------|---------|-------------|
| Batch number: 01087023502A<br>Biochemical Oxygen Demand | 92      | 95       | 74-114        | 2   | 6       | 304.     | 306.    | 1           |
| Batch number: 01088022601A<br>Ortho-Phosphate as P      | 106     | 106      | 80-114        | 0   | 4       | N.D.     | N.D.    | 0 (1)       |
| Batch number: 01088105101A<br>Nitrite Nitrogen          | 95      |          | 90-110        |     |         | N.D.     | N.D.    | 200* (1)    |
| Batch number: 01088105101B<br>Nitrite Nitrogen          | 98      |          | 90-110        |     |         | N.D.     | N.D.    | 0 (1)       |

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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### Quality Control Summary

Client Name: Kerr-McGee Corporation  
 Reported: 04/12/01 at 02:59 PM

Group Number: 756259

#### Sample Matrix Quality Control

| Analysis Name   | MS          | MSD         | MS/MSD        | RPD        | BKG        | DUP         | DUP         | Dup        |
|---|-------------|-------------|---------------|------------|------------|-------------|-------------|------------|
|   | <u>%REC</u> | <u>%REC</u> | <u>Limits</u> | <u>RPD</u> | <u>MAX</u> | <u>Conc</u> | <u>Conc</u> | <u>RPD</u> |
|   |             |             |               |            |            |             |             | <u>RPD</u> |
| Batch number: 01088106103B<br>Nitrate Nitrogen              | 105         |             | 90-110        |            |            | N.D.        | N.D.        | 0 (1) 6    |
| Batch number: 01088106104A<br>Nitrate Nitrogen              | 104         |             | 90-110        |            |            | N.D.        | N.D.        | 0 (1) 6    |
| Batch number: 01088A55<br>Benzene                           | 107         |             | 66-140        |            |            |             |             |            |
| Toluene   | 103         |             | 72-138        |            |            |             |             |            |
| Ethylbenzene  | 104         |             | 71-138        |            |            |             |             |            |
| Total Xylenes   | 103         |             | 69-140        |            |            |             |             |            |
| Batch number: 01089011111A<br>Total Organic Carbon          | 95          |             | 73-129        |            |            | 5.6         | 5.5         | 2* 1       |
| Batch number: 01092022101A<br>Ammonia Nitrogen              |             |             |               |            |            | 47.2        | 46.4        | 2 8        |
| Batch number: 01093022102A<br>Ammonia Nitrogen              |             |             |               |            |            | 0.57 J      | 0.53 J      | 7 (1) 8    |
| Batch number: 01093110101A<br>Total Phosphorus as PO4 water | 61*         |             | 90-110        |            |            | 1.76        | 1.82        | 3* 2       |
| Batch number: 01093110101B<br>Total Phosphorus as PO4 water | 93          |             | 90-110        |            |            | 0.17        | 0.16 J      | 5* (1) 2   |
| Batch number: 01094022101A<br>Ammonia Nitrogen              |             |             |               |            |            | 1.9         | 1.8         | 5 (1) 8    |
| Batch number: 01096106103A<br>Nitrate Nitrogen              | 103         |             | 90-110        |            |            | N.D.        | N.D.        | 0 (1) 6    |
| Batch number: 01096106105A<br>Nitrate Nitrogen              | 68*         |             | 90-110        |            |            | 0.38        | N.D.        | 184* (1) 6 |
| Batch number: 01096108102A<br>Kjeldahl Nitrogen             | 101         |             | 90-110        |            |            | 1.1         | 0.98 J      | 14 (1) 20  |
| Batch number: 01096108102B<br>Kjeldahl Nitrogen             | 95          |             | 90-110        |            |            | 1.1         | 1.2         | 13 (1) 20  |
| Batch number: 01099022101A<br>Ammonia Nitrogen              | 97          | 97          | 56-127        | 0          | 5          | 13.9        | 14.1        | 1 8        |
| Batch number: 01099155301A<br>Chemical Oxygen Demand        | 97          | 95          | 74-121        | 2          | 6          | 49.2        | 52.0        | 6 8        |

\*- Outside of specification

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- (2) The background result was more than four times the spike added.





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### Quality Control Summary

Client Name: Kerr-McGee Corporation  
 Reported: 04/12/01 at 02:59 PM

Group Number: 756259

#### Sample Matrix Quality Control

| Analysis Name | MS<br>%REC | MSD<br>%REC | MS/MSD<br>Limits | RPD<br>RPD | BKG<br>MAX | DUP<br>Conc | DUP<br>Conc | DUP<br>RPD | Dup<br>RPD<br>Max |
|---------------|------------|-------------|------------------|------------|------------|-------------|-------------|------------|-------------------|
|---------------|------------|-------------|------------------|------------|------------|-------------|-------------|------------|-------------------|

#### Surrogate Quality Control

Analysis Name: PAH's in Water  
 Batch number: 010880008A

|         | Nitrobenzene | Triphenylene |
|---------|--------------|--------------|
| 3578351 | 66           | 118          |
| 3578352 | 86           | 125          |
| 3578353 | 80           | 130          |
| 3578354 | 83           | 120          |
| 3578355 | 77           | 129          |
| 3578356 | 88           | 127          |
| 3578357 | 77           | 119          |
| 3578358 | 74           | 127          |
| 3578359 | 73           | 118          |
| 3578360 | 70           | 129          |
| 3578361 | 84           | 131          |
| 3578362 | 76           | 120          |
| 3578363 | 72           | 123          |
| 3578364 | 73           | 126          |
| Blank   | 69           | 131          |
| LCS     | 68           | 100          |
| LCSD    | 74           | 110          |
| Limits: | 29-136       | 33-139       |

Analysis Name: BTEX (8021)  
 Batch number: 01088A55

|         | Trifluorotoluene-P |
|---------|--------------------|
| 3578351 | 100                |
| 3578352 | 103                |
| 3578353 | 100                |
| 3578354 | 101                |
| 3578355 | 102                |
| 3578356 | 100                |
| 3578357 | 101                |
| 3578358 | 104                |
| 3578359 | 100                |
| 3578360 | 103                |
| 3578361 | 101                |
| 3578362 | 102                |
| 3578363 | 100                |
| 3578364 | 100                |

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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### Quality Control Summary

Page 5 of 5

Client Name: Kerr-McGee Corporation

Group Number: 756259

Reported: 04/12/01 at 02:59 PM

### Surrogate Quality Control

|         |     |
|---------|-----|
| 3578365 | 104 |
| Blank   | 99  |
| LCS     | 100 |
| LCSD    | 102 |
| MS      | 100 |

---

Limits: 69-134

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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

# Analysis Request/ Environmental Services Chain of Custody



For Lancaster Laboratories use only  
 Acct. # 7802 Sample # 3578351-65

Please print. Instructions on reverse side correspond with circled numbers.

| Client: <u>Jeff McGee</u> Acct. #: _____<br>Project Name/#: <u>Moss American</u> PWSID #: _____<br>Project Manager: <u>Tom Brian</u> P.O.# _____<br>Sampler: <u>Joe Klemo</u> Quote #: _____<br>Name of state where samples were collected: <u>WISCONSIN</u> |                |                |      | Matrix (4)<br><input type="checkbox"/> Potable (Check if applicable)<br><input type="checkbox"/> NPDES<br><input type="checkbox"/> Other |      |       | Analyses Requested (5)<br>BTEX PAHs (B310) NO2, NO3 TOL O-P04, BOD TKN, TP-P04, COD NH3<br>For lab use only<br>FSC: _____<br>SCR #: <u>1150537</u><br>C.O.C #1 of 2<br>Temperature of samples upon receipt (if requested) |                       |      |             |          |     |            |                  |     |         |
|--|----------------|----------------|------|--|------|-------|---|-----------------------|------|-------------|----------|-----|------------|------------------|-----|---------|
| Sample Identification  | Date Collected | Time Collected | Grab | Composite  | Soil | Water | Other   | Total # of Containers | BTEX | PAHs (B310) | NO2, NO3 | TOL | O-P04, BOD | TKN, TP-P04, COD | NH3 | Remarks |
| <del>MA3-205-13</del> MA3-MW205-270301-01  | 3/27/01        | 0900           | X    |  |      | X     |   | 5                     | X    | X           |          |     |            |                  |     |         |
| MA3-T61-1-270301-02  |                | 1030           | X    |  |      | X     |   | 11                    | X    | X           | X        | X   | X          | X                | X   |         |
| MA3-T61-2-270301-03  |                | 1045           | X    |  |      | X     |   | 11                    | X    | X           | X        | X   | X          | X                | X   |         |
| MA3-T61-3-270301-04  |                | 1050           | X    |  |      | X     |   | 11                    | X    | X           | X        | X   | X          | X                | X   |         |
| MA3-T62-1-270301-05  |                | 1055           | X    |  |      | X     |   | 11                    | X    | X           | X        | X   | X          | X                | X   |         |
| MA3-T62-2-270301-06  |                | 1120           | X    |  |      | X     |   | 11                    | X    | X           | X        | X   | X          | X                | X   |         |
| MA3-T62-3-270301-07  |                | 1430           | X    |  |      | X     |   | 11                    | X    | X           | X        | X   | X          | X                | X   |         |
| <del>MA3-205-13</del> MA3-MW205-270301-08  |                | 1445           | X    |  |      | X     |   | 5                     | X    | X           |          |     |            |                  |     |         |
| MA3-T63-1-270301-09  |                | 1435           | X    |  |      | X     |   | 11                    | X    | X           | X        | X   | X          | X                | X   |         |
| MA3-MW205-270301-08DP  |                | 1445           | X    |  |      | X     |   | 5                     | X    | X           |          |     |            |                  |     |         |

|   |   |  |
|---|---|--|
| 7 Turnaround Time Requested (TAT) (please circle): <u>Normal</u> Rush<br>(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)<br>Date results are needed: <u>STD TAT</u><br>Rush results requested by (please circle): Phone <u>(847) 918-4000</u> Fax # <u>(847) 918-4055</u> | Relinquished by: <u>M. Hufford</u> Date: <u>3/27/01</u> Time: <u>8:30</u><br>Relinquished by: <u>M. A. Hufford</u> Date: <u>3/27/01</u> Time: <u>1700</u><br>Relinquished by: _____ Date: _____ Time: _____<br>Relinquished by: _____ Date: _____ Time: _____<br>Relinquished by: _____ Date: _____ Time: _____ | Received by: <u>M. A. Hufford</u> Date: <u>3/27/01</u> Time: <u>1000</u><br>Received by: <u>FedEx</u> Date: <u>3/27/01</u> Time: <u>1700</u><br>Received by: _____ Date: _____ Time: _____<br>Received by: _____ Date: _____ Time: _____<br>Received by: <u>Kathy Binkley</u> Date: <u>3-28-01</u> Time: <u>0910</u> |
| 8 Data Package Options (please circle if requested)<br>QC Summary Type VI (Raw Data) <u>Per Quote</u><br>Type I (Tier I) GLP<br>Type II (Tier II) Other<br>Type III (NJ Red. Del.)<br>Type IV (CLP)   | SDG Complete? Yes <u>No</u><br>Site-specific QC required? Yes No<br>(If yes, indicate QC sample and submit triplicate volume.)<br>Internal Chain of Custody required? Yes No  |  |



# Analysis Request/ Environmental Services Chain of Custody



For Lancaster Laboratories use only  
 Acct. # 7802 Sample # 3578351-65

Please print. Instructions on reverse side correspond with circled numbers.

| Client: <u>Kerr - McGee</u> Acct. #: _____<br>Project Name/#: <u>Moss-American</u> PWSID #: _____<br>Project Manager: <u>Tom Grean</u> P.O.#: _____<br>Sampler: <u>Joe Klump</u> Quote #: _____<br>Name of state where samples were collected: <u>WISCONSIN</u> |                | Matrix (4)<br><input type="checkbox"/> Potable (Check if applicable)<br><input type="checkbox"/> Water<br><input type="checkbox"/> NPDES<br><input type="checkbox"/> Other | Total # of Containers | Analyses Requested (5)<br>BTEX<br>PAHs (B310)<br>NO2, NO3<br>TOC<br>O-P04, BOD<br>TKN, TP-P04, COD<br>NH3 | For lab use only<br>FSC: _____<br>SCR #: _____<br>C.O.C. # <u>2082</u><br>Temperature of samples upon receipt (if requested) |       |       |                       |               |  |
|---|----------------|--|-----------------------|---|--|-------|-------|-----------------------|---------------|--|
| Sample Identification   | Date Collected | Time Collected   | Grab (3)              | Composite   | Soil   | Water | Other | Total # of Containers | Remarks       | Temperature of samples upon receipt (if requested) |
| MA3-TG3-2-270301-10   | 3/27/01        | 1450   | X                     |   |  | X     |       | =                     | X X X X X X X |  |
| MA3-TG3-3-270301-11   | ↓              | 1500   | X                     |   |  | X     |       | =                     | X X X X X X X |  |
| MA3-TG4-2-270301-12   | ↓              | 1630   | X                     |   |  | X     |       | =                     | X X X X X X X |  |
| MA3-TG4-3-270301-13   | ↓              | 1615   | X                     |   |  | X     |       | =                     | X X X X X X X |  |

|   |  |   |  |   |
|---|--|---|--|---|
| Turnaround Time Requested (TAT) (please circle): <u>Normal</u> Rush<br>(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)<br>Date results are needed: <u>STD TAT</u><br>Rush results requested by (please circle): Phone <u>Fax</u><br>Phone #: <u>(847) 918-4000</u> Fax #: <u>(847) 918-4055</u> | Relinquished by:<br><u>J. G. Allen</u><br>Date: <u>3/27/01</u>   | Time: <u>1700</u>                           | Received by:<br><u>FedEx</u><br>Date: <u>3/27/01</u> | Time: <u>1700</u>                           |
| Data Package Options (please circle if requested)<br>QC Summary Type VI (Raw Data) <u>Per Quote</u><br>Type I (Tier I) GLP<br>Type II (Tier II) Other<br>Type III (NJ Red. Del.)<br>Type IV (CLP)   | SDG Complete? Yes <u>NO</u><br>Site-specific QC required? Yes No<br>(If yes, indicate QC sample and submit triplicate volume.)<br>Internal Chain of Custody required? Yes No | Relinquished by:<br>Date: _____ Time: _____ | Received by:<br>Date: _____ Time: _____              | Relinquished by:<br>Date: _____ Time: _____ |
|   |  | Relinquished by:<br>Date: _____ Time: _____ | Received by:<br>Date: _____ Time: _____              | Relinquished by:<br>Date: _____ Time: _____ |

Kathy Binkley 328-01



## ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation  
P.O. Box 25861  
Oklahoma City OK 73125

Prepared by:

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

### SAMPLE GROUP

The sample group for this submittal is 756517. Samples arrived at the laboratory on Thursday, March 29, 2001.

| <u>Client Description</u>                          | <u>Lancaster Labs Number</u> |
|--|------------------------------|
| MA3-TG5-1-280301-01 Grab Water Sample              | 3579537                      |
| MA3-TG5-3-280301-02 Grab Water Sample              | 3579538                      |
| MA3-TG6-1-280301-03 Grab Water Sample              | 3579539                      |
| MA3-TG6-3-280301-05 Grab Water Sample              | 3579540                      |
| MA3-MW9S-280301-06 Grab Water Sample               | 3579541                      |
| MA3-MW9S-280301-06DP Grab Water Sample             | 3579542                      |
| MA3-MW9I-280301-07 Grab Water Sample               | 3579543                      |
| MA3-TG6-2-280301-04 Grab Water Sample              | 3579544                      |
| MA3-MW37S-280301-09 Unspiked Grab Water Sample     | 3579545                      |
| MA3-MW37S-280301-09 Matrix Spike Grab Water Sample | 3579546                      |
| MA3-MW37S-280301-09 Matrix Spike Duplicate Grab    | 3579547                      |
| MA3-MW7S-280301-10 Grab Water Sample               | 3579548                      |
| MA3-MW34S-280301-11 Grab Water Sample              | 3579549                      |
| MA3-MW33S-280301-12 Grab Water Sample              | 3579550                      |
| MA3-MW32S-280301-13 Grab Water Sample              | 3579551                      |
| MA3-MW35S-280301-14 Grab Water Sample              | 3579552                      |
| FB01 Grab Water Sample                             | 3579553                      |
| FB02 Grab Water Sample                             | 3579554                      |
| MA3-MW27S-280301 Grab Water Sample                 | 3579555                      |

### METHODOLOGY

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

1 COPY TO  
1 COPY TO

Kerr-McGee Corporation  
Roy F. Weston

Attn: Dr. Jeff Ostmeyer  
Attn: Mr. Tom Graan



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



1 COPY TO Data Package Group

Questions? Contact your Client Services Representative  
Kay G. Hower at (717) 656-2300.

Respectfully Submitted,



Christine M. Dulaney  
Sr. Chemist



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



Lancaster Laboratories Sample No. WW 3579537

Collected: 03/28/2001 09:30 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:41 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG5-1-280301-01 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28G51 SDG#: MOA51-01

| CAT No.   | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|---|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|   |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217   | Kjeldahl Nitrogen             | 7727-37-9  | 0.71 J             |             | 0.30            | 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  | 0.27 J             |             | 0.16            | mg/l  | 1               |
| 00226   | Ortho-Phosphate as P          | 14265-44-2 | 0.023              |             | 0.0028          | mg/l  | 1               |
| 00235   | Biochemical Oxygen Demand     | n.a.       | N.D.               |             | 2.4             | mg/l  | 1               |
| 00273   | Total Organic Carbon          | n.a.       | 3.9                |             | 0.40            | mg/l  | 1               |
| The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC". |                               |            |                    |             |                 |       |                 |
| 00345   | Total Phosphorus as PO4 water | 14265-44-2 | 0.19               |             | 0.13            | mg/l  | 1               |
| 08213   | BTEX (8021)                   |            |                    |             |                 |       |                 |
| 00776   | Benzene                       | 71-43-2    | N.D.               |             | 0.20            | ug/l  | 1               |
| 00777   | Toluene                       | 108-88-3   | N.D.               |             | 0.20            | ug/l  | 1               |
| 00778   | Ethylbenzene                  | 100-41-4   | N.D.               |             | 0.20            | ug/l  | 1               |
| 00779   | Total Xylenes                 | 1330-20-7  | N.D.               |             | 0.60            | ug/l  | 1               |
| 01861   | PAH's in Water                |            |                    |             |                 |       |                 |
| 03280   | Naphthalene                   | 91-20-3    | 2.64 J             |             | 0.85            | ug/l  | 1               |
| 03281   | Acenaphthylene                | 208-96-8   | N.D.               |             | 0.85            | ug/l  | 1               |
| 03282   | Acenaphthene                  | 83-32-9    | N.D.               |             | 0.85            | ug/l  | 1               |
| 03283   | Fluorene                      | 86-73-7    | N.D.               |             | 0.18            | ug/l  | 1               |
| 03284   | Phenanthrene                  | 85-01-8    | N.D.               |             | 0.075           | ug/l  | 1               |
| 03285   | Anthracene                    | 120-12-7   | N.D.               |             | 0.032           | ug/l  | 1               |
| 03286   | Fluoranthene                  | 206-44-0   | N.D.               |             | 0.032           | ug/l  | 1               |
| 03287   | Pyrene                        | 129-00-0   | N.D.               |             | 0.18            | ug/l  | 1               |
| 03288   | Benzo(a)anthracene            | 56-55-3    | N.D.               |             | 0.021           | ug/l  | 1               |
| 03289   | Chrysene                      | 218-01-9   | N.D.               |             | 0.064           | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene          | 205-99-2   | N.D.               |             | 0.040           | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene          | 207-08-9   | N.D.               |             | 0.011           | ug/l  | 1               |
| 03292   | Benzo(a)pyrene                | 50-32-8    | N.D.               |             | 0.021           | ug/l  | 1               |



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 PO Box 12425  
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 717-656-2300 Fax: 717-656-2681



Lancaster Laboratories Sample No. WW 3579537

Collected: 03/28/2001 09:30 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10  
 Reported: 04/12/01 at 03:41 PM  
 Discard: 5/13/01

Kerr-McGee Corporation  
 P.O. Box 25861  
 Oklahoma City OK 73125

MA3-TG5-1-280301-01 Grab Water Sample  
 Moss American Superfund Site - Milwaukee, WI

28G51 SDG#: MOA51-01

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received     |       | Dilution Factor |
|---------|------------------------|------------|--------------------|-----------------|-------|-----------------|
|         |                        |            |                    | Method          | Units |                 |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | Detection Limit | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.11            | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.071           | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method             | Trial# | Analysis   |       | Analyst                   | Dilution Factor |
|---------|--------------------------------|--------------------|--------|------------|-------|---------------------------|-----------------|
|         |                                |                    |        | Date       | Time  |                           |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2          | 1      | 04/10/2001 | 19:01 | Venia M. McFadden         | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2          | 1      | 03/29/2001 | 19:53 | Brad M. La Placa          | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2          | 1      | 04/06/2001 | 17:18 | Brad M. La Placa          | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2          | 1      | 04/05/2001 | 09:15 | Michele L. Hanby          | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3          | 1      | 03/30/2001 | 01:45 | Daniel S. Smith           | 1               |
| 00235   | Biochemical Oxygen Demand      | EPA 405.1          | 1      | 03/29/2001 | 23:20 | Nicole R. Bushong         | 1               |
| 00273   | Total Organic Carbon           | EPA 415.1          | 1      | 03/30/2001 | 15:41 | Timothy M. Petree         | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1          | 1      | 04/11/2001 | 11:58 | Mark A. Buckwalter        | 1               |
| 08213   | BTEX (8021)                    | SW-846 8021B/5030B | 1      | 03/30/2001 | 18:33 | Melissa Mann              | 1               |
| 01861   | PAH's in Water                 | SW-846 8310        | 1      | 04/05/2001 | 10:59 | Michelle J. Kolodziejwski | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2          | 1      | 04/09/2001 | 09:53 | Cheryl L. Robinson        | 1               |
| 03337   | PAH Water Extraction           | SW-846 3510C       | 1      | 04/01/2001 | 23:00 | Karen L. Beyer            | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1          | 1      | 04/03/2001 | 13:30 | Cheryl L. Robinson        | 1               |





Lancaster Laboratories Sample No. WW 3579538

Collected: 03/28/2001 09:45 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:41 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG5-3-280301-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28G52 SDG#: MOA51-02

| CAT No.   | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|---|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|   |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217   | Kjeldahl Nitrogen             | 7727-37-9  | 0.57 J             |             | 0.30            | 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.               |             | 0.16            | mg/l  | 1               |
| 00226   | Ortho-Phosphate as P          | 14265-44-2 | 0.152              |             | 0.0028          | mg/l  | 1               |
| 00235   | Biochemical Oxygen Demand     | n.a.       | N.D.               |             | 2.4             | mg/l  | 1               |
| 00273   | Total Organic Carbon          | n.a.       | 4.3                |             | 0.40            | mg/l  | 1               |
| The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC". |                               |            |                    |             |                 |       |                 |
| 00345   | Total Phosphorus as PO4 water | 14265-44-2 | 0.24               |             | 0.13            | mg/l  | 1               |
| 08213   | BTEX (8021)                   |            |                    |             |                 |       |                 |
| 00776   | Benzene                       | 71-43-2    | N.D.               |             | 0.20            | ug/l  | 1               |
| 00777   | Toluene                       | 108-88-3   | N.D.               |             | 0.20            | ug/l  | 1               |
| 00778   | Ethylbenzene                  | 100-41-4   | N.D.               |             | 0.20            | ug/l  | 1               |
| 00779   | Total Xylenes                 | 1330-20-7  | N.D.               |             | 0.60            | ug/l  | 1               |
| 01861   | PAH's in Water                |            |                    |             |                 |       |                 |
| 03280   | Naphthalene                   | 91-20-3    | N.D.               |             | 0.82            | ug/l  | 1               |
| 03281   | Acenaphthylene                | 208-96-8   | N.D.               |             | 0.82            | ug/l  | 1               |
| 03282   | Acenaphthene                  | 83-32-9    | N.D.               |             | 0.82            | ug/l  | 1               |
| 03283   | Fluorene                      | 86-73-7    | N.D.               |             | 0.17            | ug/l  | 1               |
| 03284   | Phenanthrene                  | 85-01-8    | N.D.               |             | 0.072           | ug/l  | 1               |
| 03285   | Anthracene                    | 120-12-7   | N.D.               |             | 0.031           | ug/l  | 1               |
| 03286   | Fluoranthene                  | 206-44-0   | N.D.               |             | 0.031           | ug/l  | 1               |
| 03287   | Pyrene                        | 129-00-0   | N.D.               |             | 0.17            | ug/l  | 1               |
| 03288   | Benzo(a)anthracene            | 56-55-3    | N.D.               |             | 0.021           | ug/l  | 1               |
| 03289   | Chrysene                      | 218-01-9   | N.D.               |             | 0.062           | ug/l  | 1               |
| 03290   | Benzo(k)fluoranthene          | 205-99-2   | N.D.               |             | 0.039           | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene          | 207-08-9   | N.D.               |             | 0.010           | ug/l  | 1               |
| 03292   | Benzo(a)pyrene                | 50-32-8    | N.D.               |             | 0.021           | ug/l  | 1               |



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Lancaster Laboratories Sample No. WW 3579538

Collected: 03/28/2001 09:45 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:41 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG5-3-280301-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28G52 SDG#: MOA51-02

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received Method Detection Limit | Units | Dilution Factor |
|---------|------------------------|------------|--------------------|------------------------------------|-------|-----------------|
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.031                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.10                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.069                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method             | Trial# | Analysis   |       | Analyst                   | Dilution Factor |
|---------|--------------------------------|--------------------|--------|------------|-------|---------------------------|-----------------|
|         |                                |                    |        | Date       | Time  |                           |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2          | 1      | 04/10/2001 | 19:02 | Venia M. McFadden         | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2          | 1      | 03/29/2001 | 19:54 | Brad M. La Placa          | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2          | 1      | 04/06/2001 | 17:21 | Brad M. La Placa          | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2          | 1      | 04/05/2001 | 09:15 | Michele L. Hanby          | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3          | 1      | 03/30/2001 | 01:45 | Daniel S. Smith           | 1               |
| 00235   | Biochemical Oxygen Demand      | EPA 405.1          | 1      | 03/29/2001 | 23:20 | Nicole R. Bushong         | 1               |
| 00273   | Total Organic Carbon           | EPA 415.1          | 1      | 03/30/2001 | 15:49 | Timothy M. Petree         | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1          | 1      | 04/11/2001 | 11:59 | Mark A. Buckwalter        | 1               |
| 08213   | BTEX (8021)                    | SW-846 8021B/5030B | 1      | 03/30/2001 | 19:10 | Melissa Mann              | 1               |
| 01861   | PAH's in Water                 | SW-846 8310        | 1      | 04/05/2001 | 11:20 | Michelle J. Kolodziejwski | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2          | 1      | 04/09/2001 | 09:53 | Cheryl L. Robinson        | 1               |
| 03337   | PAH Water Extraction           | SW-846 3510C       | 1      | 04/01/2001 | 23:00 | Karen L. Beyer            | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1          | 1      | 04/03/2001 | 13:30 | Cheryl L. Robinson        | 1               |



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Lancaster Laboratories Sample No. WW 3579539

Collected: 03/28/2001 10:05 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG6-1-280301-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28G61 SDG#: MOA51-03

| CAT No.   | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|---|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|   |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217   | Kjeldahl Nitrogen             | 7727-37-9  | 1.3                |             | 0.30            | 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  | 0.93 J             |             | 0.16            | mg/l  | 1               |
| 00226   | Ortho-Phosphate as P          | 14265-44-2 | 0.228              |             | 0.0028          | mg/l  | 1               |
| 00235   | Biochemical Oxygen Demand     | n.a.       | N.D.               |             | 2.5             | mg/l  | 1               |
| 00273   | Total Organic Carbon          | n.a.       | 6.7                |             | 0.40            | mg/l  | 1               |
| The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC". |                               |            |                    |             |                 |       |                 |
| 00345   | Total Phosphorus as PO4 water | 14265-44-2 | 0.30               |             | 0.13            | mg/l  | 1               |
| 08213   | BTEX (8021)                   |            |                    |             |                 |       |                 |
| 00776   | Benzene                       | 71-43-2    | N.D.               |             | 0.20            | ug/l  | 1               |
| 00777   | Toluene                       | 108-88-3   | N.D.               |             | 0.20            | ug/l  | 1               |
| 00778   | Ethylbenzene                  | 100-41-4   | N.D.               |             | 0.20            | ug/l  | 1               |
| 00779   | Total Xylenes                 | 1330-20-7  | N.D.               |             | 0.60            | ug/l  | 1               |
| 01861   | PAH's in Water                |            |                    |             |                 |       |                 |
| 03280   | Naphthalene                   | 91-20-3    | N.D.               |             | 0.84            | ug/l  | 1               |
| 03281   | Acenaphthylene                | 208-96-8   | N.D.               |             | 0.84            | ug/l  | 1               |
| 03282   | Acenaphthene                  | 83-32-9    | N.D.               |             | 0.84            | ug/l  | 1               |
| 03283   | Fluorene                      | 86-73-7    | N.D.               |             | 0.18            | ug/l  | 1               |
| 03284   | Phenanthrene                  | 85-01-8    | N.D.               |             | 0.074           | ug/l  | 1               |
| 03285   | Anthracene                    | 120-12-7   | 0.115 J            |             | 0.032           | ug/l  | 1               |
| 03286   | Fluoranthene                  | 206-44-0   | N.D.               |             | 0.032           | ug/l  | 1               |
| 03287   | Pyrene                        | 129-00-0   | N.D.               |             | 0.18            | ug/l  | 1               |
| 03288   | Benzo (a) anthracene          | 56-55-3    | N.D.               |             | 0.021           | ug/l  | 1               |
| 03289   | Chrysene                      | 218-01-9   | N.D.               |             | 0.063           | ug/l  | 1               |
| 03290   | Benzo (b) fluoranthene        | 205-99-2   | N.D.               |             | 0.040           | ug/l  | 1               |
| 03291   | Benzo (k) fluoranthene        | 207-08-9   | N.D.               |             | 0.011           | ug/l  | 1               |
| 03292   | Benzo (a) pyrene              | 50-32-8    | N.D.               |             | 0.021           | ug/l  | 1               |



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Lancaster Laboratories Sample No. WW 3579539

Collected: 03/28/2001 10:05 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG6-1-280301-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28G61 SDG#: MOA51-03

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received     |       | Dilution Factor |
|---------|------------------------|------------|--------------------|-----------------|-------|-----------------|
|         |                        |            |                    | Method          | Units |                 |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | Detection Limit | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.032           | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.11            | ug/l  | 1               |
|         |                        |            |                    | 0.071           | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method             | Analysis |                  |                          | Dilution Factor |
|---------|--------------------------------|--------------------|----------|------------------|--------------------------|-----------------|
|         |                                |                    | Trial#   | Date and Time    | Analyst                  |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2          | 1        | 04/10/2001 19:03 | Venia M. McFadden        | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2          | 1        | 03/29/2001 19:56 | Brad M. La Placa         | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2          | 1        | 04/06/2001 17:23 | Brad M. La Placa         | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2          | 1        | 04/05/2001 09:15 | Michele L. Hanby         | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3          | 1        | 03/30/2001 01:45 | Daniel S. Smith          | 1               |
| 00235   | Biochemical Oxygen Demand      | EPA 405.1          | 1        | 03/29/2001 23:20 | Nicole R. Bushong        | 1               |
| 00273   | Total Organic Carbon           | EPA 415.1          | 1        | 03/30/2001 15:57 | Timothy M. Petree        | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1          | 1        | 04/11/2001 12:01 | Mark A. Buckwalter       | 1               |
| 08213   | BTEX (8021)                    | SW-846 8021B/5030B | 1        | 03/30/2001 19:47 | Melissa Mann             | 1               |
| 01861   | PAH's in Water                 | SW-846 8310        | 1        | 04/05/2001 12:56 | Michelle J. Kolodziejcki | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2          | 1        | 04/09/2001 09:53 | Cheryl L. Robinson       | 1               |
| 03337   | PAH Water Extraction           | SW-846 3510C       | 1        | 04/01/2001 23:00 | Karen L. Beyer           | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1          | 1        | 04/03/2001 13:30 | Cheryl L. Robinson       | 1               |



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Lancaster Laboratories Sample No. WW 3579540

Collected: 03/28/2001 10:20 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG6-3-280301-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28G63 SDG#: MOA51-04

| CAT No.   | Analysis Name                 | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|---|-------------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|   |                               |            |                    | Method      | Detection Limit |       |                 |
| 00217   | Kjeldahl Nitrogen             | 7727-37-9  | 1.1                |             | 0.30            | 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  | 0.81 J             |             | 0.16            | mg/l  | 1               |
| 00226   | Ortho-Phosphate as P          | 14265-44-2 | 0.088              |             | 0.0028          | mg/l  | 1               |
| 00235   | Biochemical Oxygen Demand     | n.a.       | N.D.               |             | 2.9             | mg/l  | 1               |
| 00273   | Total Organic Carbon          | n.a.       | 7.0                |             | 0.40            | mg/l  | 1               |
| The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC". |                               |            |                    |             |                 |       |                 |
| 00345   | Total Phosphorus as PO4 water | 14265-44-2 | 0.26               |             | 0.13            | mg/l  | 1               |
| 08213   | BTEX (8021)                   |            |                    |             |                 |       |                 |
| 00776   | Benzene                       | 71-43-2    | N.D.               |             | 0.20            | ug/l  | 1               |
| 00777   | Toluene                       | 108-88-3   | N.D.               |             | 0.20            | ug/l  | 1               |
| 00778   | Ethylbenzene                  | 100-41-4   | N.D.               |             | 0.20            | ug/l  | 1               |
| 00779   | Total Xylenes                 | 1330-20-7  | N.D.               |             | 0.60            | ug/l  | 1               |
| 01861   | PAH's in Water                |            |                    |             |                 |       |                 |
| 03280   | Naphthalene                   | 91-20-3    | N.D.               |             | 0.77            | ug/l  | 1               |
| 03281   | Acenaphthylene                | 208-96-8   | N.D.               |             | 0.77            | ug/l  | 1               |
| 03282   | Acenaphthene                  | 83-32-9    | N.D.               |             | 0.77            | ug/l  | 1               |
| 03283   | Fluorene                      | 86-73-7    | N.D.               |             | 0.16            | ug/l  | 1               |
| 03284   | Phenanthrene                  | 85-01-8    | N.D.               |             | 0.067           | ug/l  | 1               |
| 03285   | Anthracene                    | 120-12-7   | N.D.               |             | 0.029           | ug/l  | 1               |
| 03286   | Fluoranthene                  | 206-44-0   | N.D.               |             | 0.029           | ug/l  | 1               |
| 03287   | Pyrene                        | 129-00-0   | N.D.               |             | 0.16            | ug/l  | 1               |
| 03288   | Benzo(a)anthracene            | 56-55-3    | N.D.               |             | 0.019           | ug/l  | 1               |
| 03289   | Chrysene                      | 218-01-9   | N.D.               |             | 0.058           | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene          | 205-99-2   | N.D.               |             | 0.037           | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene          | 207-08-9   | N.D.               |             | 0.0096          | ug/l  | 1               |
| 03292   | Benzo(a)pyrene                | 50-32-8    | N.D.               |             | 0.019           | ug/l  | 1               |



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Lancaster Laboratories Sample No. WW 3579540

Collected: 03/28/2001 10:20 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG6-3-280301-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28G63 SDG#: MOA51-04

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received     |       | Dilution Factor |
|---------|------------------------|------------|--------------------|-----------------|-------|-----------------|
|         |                        |            |                    | Method          | Units |                 |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | Detection Limit | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.096           | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.064           | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method             | Trial# | Analysis         |  | Analyst                   | Dilution Factor |
|---------|--------------------------------|--------------------|--------|------------------|--|---------------------------|-----------------|
|         |                                |                    |        | Date and Time    |  |                           |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2          | 1      | 04/10/2001 19:05 |  | Venia M. McFadden         | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2          | 1      | 03/29/2001 19:59 |  | Brad M. La Placa          | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2          | 1      | 04/06/2001 17:24 |  | Brad M. La Placa          | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2          | 1      | 04/05/2001 09:15 |  | Michele L. Hanby          | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3          | 1      | 03/30/2001 01:45 |  | Daniel S. Smith           | 1               |
| 00235   | Biochemical Oxygen Demand      | EPA 405.1          | 1      | 03/29/2001 23:20 |  | Nicole R. Bushong         | 1               |
| 00273   | Total Organic Carbon           | EPA 415.1          | 1      | 03/30/2001 16:05 |  | Timothy M. Petree         | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1          | 1      | 04/11/2001 12:02 |  | Mark A. Buckwalter        | 1               |
| 08213   | BTEX (8021)                    | SW-846 8021B/5030B | 1      | 03/30/2001 20:25 |  | Melissa Mann              | 1               |
| 01861   | PAH's in Water                 | SW-846 8310        | 1      | 04/05/2001 13:17 |  | Michelle J. Kolodziejwski | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2          | 1      | 04/09/2001 09:53 |  | Cheryl L. Robinson        | 1               |
| 03337   | PAH Water Extraction           | SW-846 3510C       | 1      | 04/01/2001 23:00 |  | Karen L. Beyer            | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1          | 1      | 04/03/2001 13:30 |  | Cheryl L. Robinson        | 1               |



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Lancaster Laboratories Sample No. WW 3579541

Collected: 03/28/2001 11:00 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW9S-280301-06 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

289S- SDG#: MOA51-05

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.78                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.78                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.78                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.17                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.068                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.029                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.029                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.17                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.020                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.059                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.037                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0098                             | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.020                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.029                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.098                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.065                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Analysis |                  | Analyst      | Dilution Factor |
|---------|---------------|--------------------|----------|------------------|--------------|-----------------|
|         |               |                    | Trial#   | Date and Time    |              |                 |
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1        | 03/30/2001 21:02 | Melissa Mann | 1               |



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Lancaster Laboratories Sample No. WW 3579541

Collected: 03/28/2001 11:00 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW9S-280301-06 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

|       |                      |              |   |                  |                          |   |  |
|-------|----------------------|--------------|---|------------------|--------------------------|---|--|
| 289S- | SDG#: MOA51-05       |              |   |                  |                          |   |  |
| 01861 | PAH's in Water       | SW-846 8310  | 1 | 04/05/2001 13:39 | Michelle J. Kolodziejcki | 1 |  |
| 03337 | PAH Water Extraction | SW-846 3510C | 1 | 04/01/2001 23:00 | Karen L. Beyer           | 1 |  |



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Lancaster Laboratories Sample No. WW 3579542

Collected: 03/28/2001 11:00 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW9S-280301-06DP Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

289SD SDG#: MOA51-06FD

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.78                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.78                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.78                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.17                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.068                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.029                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.029                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.17                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.019                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.058                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.037                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0097                             | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.019                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.029                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.097                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.065                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis Date and Time | Analyst      | Dilution Factor |
|---------|---------------|--------------------|--------|------------------------|--------------|-----------------|
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 03/30/2001 22:53       | Melissa Mann | 1               |



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Lancaster Laboratories Sample No. WW 3579542

Collected: 03/28/2001 11:00 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW9S-280301-06DP Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

289SD SDG#: MOA51-06FD

01861 PAH's in Water

SW-846 8310

1

04/05/2001 14:49

Michelle J.

1

Kolodziejwski

03337 PAH Water Extraction

SW-846 3510C

1

04/01/2001 23:00

Karen L. Beyer

1



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Lancaster Laboratories Sample No. WW 3579543

Collected: 03/28/2001 11:05 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW9I-280301-07 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

289I- SDG#: MOA51-07

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.81                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.81                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.81                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.17                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.071                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.030                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.030                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.17                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.020                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.061                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.038                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.010                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.020                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.030                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.10                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.068                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Analysis |                  | Analyst      | Dilution Factor |
|---------|---------------|--------------------|----------|------------------|--------------|-----------------|
|         |               |                    | Trial#   | Date and Time    |              |                 |
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1        | 03/30/2001 23:30 | Melissa Mann | 1               |



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Lancaster Laboratories Sample No. WW 3579543

Collected: 03/28/2001 11:05 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW9I-280301-07 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

289I- SDG#: MOA51-07

01861 PAH's in Water

SW-846 8310

1 04/05/2001 15:11

Michelle J.

1

Kolodziejwski

03337 PAH Water Extraction

SW-846 3510C

1 04/01/2001 23:00

Karen L. Beyer

1



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Lancaster Laboratories Sample No. WW 3579544

Collected: 03/28/2001 00:00 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG6-2-280301-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28G62 SDG#: MOA51-08

| CAT No.   | Analysis Name                 | CAS Number | As Received |                        | Units | Dilution Factor |
|---|-------------------------------|------------|-------------|------------------------|-------|-----------------|
|   |                               |            | Result      | Method Detection Limit |       |                 |
| 00217   | Kjeldahl Nitrogen             | 7727-37-9  | 0.59 J      | 0.30                   | 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  | 0.24 J      | 0.16                   | mg/l  | 1               |
| 00226   | Ortho-Phosphate as P          | 14265-44-2 | 0.303       | 0.0028                 | mg/l  | 1               |
| 00235   | Biochemical Oxygen Demand     | n.a.       | N.D.        | 2.0                    | mg/l  | 1               |
| 00273   | Total Organic Carbon          | n.a.       | 4.6         | 0.40                   | mg/l  | 1               |
| The Total Organic Carbon (TOC) result reported above was determined by measuring total carbon by a persulfate digestion/infrared detection method on an acidified sample which has been purged of inorganic carbon using nitrogen. It represents "non-purgeable TOC". |                               |            |             |                        |       |                 |
| 00345   | Total Phosphorus as PO4 water | 14265-44-2 | N.D.        | 0.13                   | mg/l  | 1               |
| 08213   | BTEX (8021)                   |            |             |                        |       |                 |
| 00776   | Benzene                       | 71-43-2    | N.D.        | 0.20                   | ug/l  | 1               |
| 00777   | Toluene                       | 108-88-3   | N.D.        | 0.20                   | ug/l  | 1               |
| 00778   | Ethylbenzene                  | 100-41-4   | N.D.        | 0.20                   | ug/l  | 1               |
| 00779   | Total Xylenes                 | 1330-20-7  | N.D.        | 0.60                   | ug/l  | 1               |
| 01861   | PAH's in Water                |            |             |                        |       |                 |
| 03280   | Naphthalene                   | 91-20-3    | N.D.        | 0.78                   | ug/l  | 1               |
| 03281   | Acenaphthylene                | 208-96-8   | N.D.        | 0.78                   | ug/l  | 1               |
| 03282   | Acenaphthene                  | 83-32-9    | N.D.        | 0.78                   | ug/l  | 1               |
| 03283   | Fluorene                      | 86-73-7    | N.D.        | 0.17                   | ug/l  | 1               |
| 03284   | Phenanthrene                  | 85-01-8    | N.D.        | 0.068                  | ug/l  | 1               |
| 03285   | Anthracene                    | 120-12-7   | N.D.        | 0.029                  | ug/l  | 1               |
| 03286   | Fluoranthene                  | 206-44-0   | 0.031 J     | 0.029                  | ug/l  | 1               |
| 03287   | Pyrene                        | 129-00-0   | N.D.        | 0.17                   | ug/l  | 1               |
| 03288   | Benzo(a)anthracene            | 56-55-3    | N.D.        | 0.019                  | ug/l  | 1               |
| 03289   | Chrysene                      | 218-01-9   | N.D.        | 0.058                  | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene          | 205-99-2   | N.D.        | 0.037                  | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene          | 207-08-9   | N.D.        | 0.0097                 | ug/l  | 1               |
| 03292   | Benzo(a)pyrene                | 50-32-8    | N.D.        | 0.019                  | ug/l  | 1               |



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Lancaster Laboratories Sample No. WW 3579544

Collected: 03/28/2001 00:00 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-TG6-2-280301-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28G62 SDG#: MOA51-08

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received     |       | Dilution Factor |
|---------|------------------------|------------|--------------------|-----------------|-------|-----------------|
|         |                        |            |                    | Method          | Units |                 |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | Detection Limit | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.029           | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.097           | ug/l  | 1               |
|         |                        |            |                    | 0.065           | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name                  | Method             | Analysis |                  | Analyst                  | Dilution Factor |
|---------|--------------------------------|--------------------|----------|------------------|--------------------------|-----------------|
|         |                                |                    | Trial#   | Date and Time    |                          |                 |
| 00217   | Kjeldahl Nitrogen              | EPA 351.2          | 1        | 04/10/2001 19:08 | Venia M. McFadden        | 1               |
| 00219   | Nitrite Nitrogen               | EPA 353.2          | 1        | 03/29/2001 20:01 | Brad M. La Placa         | 1               |
| 00220   | Nitrate Nitrogen               | EPA 353.2          | 1        | 04/06/2001 17:25 | Brad M. La Placa         | 1               |
| 00221   | Ammonia Nitrogen               | EPA 350.2          | 1        | 04/05/2001 09:15 | Michele L. Hanby         | 1               |
| 00226   | Ortho-Phosphate as P           | EPA 365.3          | 1        | 03/30/2001 01:45 | Daniel S. Smith          | 1               |
| 00235   | Biochemical Oxygen Demand      | EPA 405.1          | 1        | 03/29/2001 23:20 | Nicole R. Bushong        | 1               |
| 00273   | Total Organic Carbon           | EPA 415.1          | 1        | 03/30/2001 16:30 | Timothy M. Petree        | 1               |
| 00345   | Total Phosphorus as PO4 water  | EPA 365.1          | 1        | 04/11/2001 12:03 | Mark A. Buckwalter       | 1               |
| 08213   | BTEX (8021)                    | SW-846 8021B/5030B | 1        | 03/31/2001 00:07 | Melissa Mann             | 1               |
| 01861   | PAH's in Water                 | SW-846 8310        | 1        | 04/05/2001 15:32 | Michelle J. Kolodziejcki | 1               |
| 01460   | Total Kjeldahl Nitrogen Digest | EPA 351.2          | 1        | 04/09/2001 09:53 | Cheryl L. Robinson       | 1               |
| 03337   | PAH Water Extraction           | SW-846 3510C       | 1        | 04/01/2001 23:00 | Karen L. Beyer           | 1               |
| 08264   | Total Phos as PO4 Prep (water) | EPA 365.1          | 1        | 04/03/2001 13:30 | Cheryl L. Robinson       | 1               |



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Lancaster Laboratories Sample No. WW 3579545

Collected: 03/28/2001 11:10 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW37S-280301-09 Unspiked Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28375 SDG#: MOA51-09BKG

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.91                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.91                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.91                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.19                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.080                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.034                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.034                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.19                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.023                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.069                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.043                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.011                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.023                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.034                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.11                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.077                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Analysis |                  | Analyst      | Dilution Factor |
|---------|---------------|--------------------|----------|------------------|--------------|-----------------|
|         |               |                    | Trial#   | Date and Time    |              |                 |
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1        | 03/30/2001 16:42 | Melissa Mann | 1               |



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Lancaster Laboratories Sample No. WW 3579545

Collected: 03/28/2001 11:10 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Reported: 04/12/01 at 03:42 PM

Discard: 5/13/01

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MA3-MW37S-280301-09 Unspiked Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28375 SDG#: MOA51-09BKG

01861 PAH's in Water

SW-846 8310

1 04/05/2001 09:54

Michelle J.  
Kolodziejcki

1

03337 PAH Water Extraction

SW-846 3510C

1 04/01/2001 23:00

Karen L. Beyer

1



Lancaster Laboratories, Inc.  
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Lancaster Laboratories Sample No. WW 3579546

Collected: 03/28/2001 11:10 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW37S-280301-09 Matrix Spike Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28375 SDG#: MOA51-09MS

| 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    | 23.                | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | 22.                | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | 22.                | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | 66.                | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | 183.               | 0.76                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | 193.               | 0.76                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | 180.               | 0.76                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | 19.                | 0.16                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | 6.14               | 0.066                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | 3.00               | 0.028                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | 3.33               | 0.028                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | 19.0               | 0.16                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | 1.61               | 0.019                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | 6.29               | 0.057                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | 1.31               | 0.036                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | 1.29               | 0.0095                             | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | 1.59               | 0.019                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | 3.36               | 0.028                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | 12.2               | 0.095                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | 6.73               | 0.064                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis Date and Time | Analyst      | Dilution Factor |
|---------|---------------|--------------------|--------|------------------------|--------------|-----------------|
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 03/30/2001 17:19       | Melissa Mann | 1               |



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Lancaster Laboratories Sample No. WW 3579546

Collected: 03/28/2001 11:10 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW37S-280301-09 Matrix Spike Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28375 SDG#: MOA51-09MS

01861 PAH's in Water

SW-846 8310

1 04/05/2001 10:16

Michelle J.  
Kolodziejcki

1

03337 PAH Water Extraction

SW-846 3510C

1 04/01/2001 23:00

Karen L. Beyer

1



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Lancaster Laboratories Sample No. WW 3579547

Collected: 03/28/2001 11:10 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW37S-280301-09 Matrix Spike Duplicate Grab

Moss American Superfund Site - Milwaukee, WI

28375 SDG#: MOA51-09MSD

| 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    | 23.                | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                    | 108-88-3   | 22.                | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene               | 100-41-4   | 22.                | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes              | 1330-20-7  | 67.                | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water             |            |                    |                                    |       |                 |
| 03280   | Naphthalene                | 91-20-3    | 198.               | 0.91                               | ug/l  | 1               |
| 03281   | Acenaphthylene             | 208-96-8   | 216.               | 0.91                               | ug/l  | 1               |
| 03282   | Acenaphthene               | 83-32-9    | 200.               | 0.91                               | ug/l  | 1               |
| 03283   | Fluorene                   | 86-73-7    | 21.                | 0.19                               | ug/l  | 1               |
| 03284   | Phenanthrene               | 85-01-8    | 6.81               | 0.079                              | ug/l  | 1               |
| 03285   | Anthracene                 | 120-12-7   | 3.35               | 0.034                              | ug/l  | 1               |
| 03286   | Fluoranthene               | 206-44-0   | 3.63               | 0.034                              | ug/l  | 1               |
| 03287   | Pyrene                     | 129-00-0   | 20.8               | 0.19                               | ug/l  | 1               |
| 03288   | Benzo (a) anthracene       | 56-55-3    | 1.74               | 0.023                              | ug/l  | 1               |
| 03289   | Chrysene                   | 218-01-9   | 7.05               | 0.068                              | ug/l  | 1               |
| 03290   | Benzo (b) fluoranthene     | 205-99-2   | 1.42               | 0.043                              | ug/l  | 1               |
| 03291   | Benzo (k) fluoranthene     | 207-08-9   | 1.40               | 0.011                              | ug/l  | 1               |
| 03292   | Benzo (a) pyrene           | 50-32-8    | 1.72               | 0.023                              | ug/l  | 1               |
| 03293   | Dibenzo (a, h) anthracene  | 53-70-3    | 3.62               | 0.034                              | ug/l  | 1               |
| 03294   | Benzo (g, h, i) perylene   | 191-24-2   | 13.0               | 0.11                               | ug/l  | 1               |
| 03295   | Indeno (1, 2, 3-cd) pyrene | 193-39-5   | 7.18               | 0.076                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis Date and Time | Analyst      | Dilution Factor |
|---------|---------------|--------------------|--------|------------------------|--------------|-----------------|
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 03/30/2001 17:56       | Melissa Mann | 1               |



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Lancaster Laboratories Sample No. WW 3579547

Collected: 03/28/2001 11:10 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW37S-280301-09 Matrix Spike Duplicate Grab

Moss American Superfund Site - Milwaukee, WI

28375 SDG#: MOA51-09MSD

01861 PAH's in Water

SW-846 8310

1 04/05/2001 10:37

Michelle J.

1

Kolodziejcki

03337 PAH Water Extraction

SW-846 3510C

1 04/01/2001 23:00

Karen L. Beyer

1



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Lancaster Laboratories Sample No. WW 3579548

Collected: 03/28/2001 14:30 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW7S-280301-10 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28-75 SDG#: MOA51-10

| 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    | 5.5 J              | 4.0                                | ug/l  | 20              |
| 00777   | Toluene                | 108-88-3   | N.D.               | 4.0                                | ug/l  | 20              |
| 00778   | Ethylbenzene           | 100-41-4   | 14. J              | 4.0                                | ug/l  | 20              |
| 00779   | Total Xylenes          | 1330-20-7  | 38. J              | 12.                                | ug/l  | 20              |
| Due to dilution of the sample made necessary by the high level of non-target compounds, normal quantitation limits were not attained. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | 3,800.             | 7.7                                | ug/l  | 10              |
| 03281   | Acenaphthylene         | 208-96-8   | 160.               | 7.7                                | ug/l  | 10              |
| 03282   | Acenaphthene           | 83-32-9    | 69. J              | 7.7                                | ug/l  | 10              |
| 03283   | Fluorene               | 86-73-7    | 10.                | 1.6                                | ug/l  | 10              |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.68                               | ug/l  | 10              |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.29                               | ug/l  | 10              |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.29                               | ug/l  | 10              |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 1.6                                | ug/l  | 10              |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.19                               | ug/l  | 10              |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.58                               | ug/l  | 10              |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.37                               | ug/l  | 10              |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.097                              | ug/l  | 10              |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.19                               | ug/l  | 10              |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.29                               | ug/l  | 10              |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 1.0                                | ug/l  | 10              |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.65                               | ug/l  | 10              |

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The Limits of Quantitation (LOQ's) were raised accordingly.



Lancaster Laboratories, Inc.  
 2425 New Holland Pike  
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Lancaster Laboratories Sample No. WW 3579548

Collected: 03/28/2001 14:30 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW7S-280301-10 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28-75 SDG#: MOA51-10

### Laboratory Chronicle

| CAT No. | Analysis Name        | Method             | Analysis |                  | Analyst                     | Diluti<br>Facto |
|---------|----------------------|--------------------|----------|------------------|-----------------------------|-----------------|
|         |                      |                    | Trial#   | Date and Time    |                             |                 |
| 08213   | BTEX (8021)          | SW-846 8021B/5030B | 1        | 03/31/2001 02:35 | Melissa Mann                | 20              |
| 01861   | PAH's in Water       | SW-846 8310        | 1        | 04/06/2001 21:07 | Michelle J.<br>Kolodziejski | 10              |
| 03337   | PAH Water Extraction | SW-846 3510C       | 1        | 04/01/2001 23:00 | Karen L. Beyer              | 1               |



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Lancaster Laboratories Sample No. WW 3579549

Collected: 03/28/2001 14:40 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW34S-280301-11 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28345 SDG#: MOA51-11

| 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    | 9.8 J              | 4.0                                | ug/l  | 20              |
| 00777   | Toluene                | 108-88-3   | N.D.               | 4.0                                | ug/l  | 20              |
| 00778   | Ethylbenzene           | 100-41-4   | 23.                | 4.0                                | ug/l  | 20              |
| 00779   | Total Xylenes          | 1330-20-7  | 72.                | 12.                                | ug/l  | 20              |
| Due to dilution of the sample made necessary by the high level of non-target compounds, normal quantitation limits were not attained. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | 5,900.             | 93.                                | ug/l  | 100             |
| 03281   | Acenaphthylene         | 208-96-8   | 220.               | 9.3                                | ug/l  | 10              |
| 03282   | Acenaphthene           | 83-32-9    | 180.               | 9.3                                | ug/l  | 10              |
| 03283   | Fluorene               | 86-73-7    | 83.                | 2.0                                | ug/l  | 10              |
| 03284   | Phenanthrene           | 85-01-8    | 79.                | 0.81                               | ug/l  | 10              |
| 03285   | Anthracene             | 120-12-7   | 6.4                | 0.35                               | ug/l  | 10              |
| 03286   | Fluoranthene           | 206-44-0   | 6.5                | 0.35                               | ug/l  | 10              |
| 03287   | Pyrene                 | 129-00-0   | 4.1 J              | 2.0                                | ug/l  | 10              |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.23                               | ug/l  | 10              |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.70                               | ug/l  | 10              |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.44                               | ug/l  | 10              |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.12                               | ug/l  | 10              |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.23                               | ug/l  | 10              |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.35                               | ug/l  | 10              |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 1.2                                | ug/l  | 10              |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.78                               | ug/l  | 10              |

Due to the nature of the sample matrix, a reduced aliquot was used for analysis. The Limits of Quantitation (LOQ's) were raised accordingly.



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PO Box 12425  
Lancaster, PA 17605-2425  
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Lancaster Laboratories Sample No. WW 3579549

Collected: 03/28/2001 14:40 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW34S-280301-11 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28345 SDG#: MOA51-11

### Laboratory Chronicle

| CAT No. | Analysis Name        | Method             | Analysis |                  | Analyst                  | Diluti<br>Facto |
|---------|----------------------|--------------------|----------|------------------|--------------------------|-----------------|
|         |                      |                    | Trial#   | Date and Time    |                          |                 |
| 08213   | BTEX (8021)          | SW-846 8021B/5030B | 1        | 03/31/2001 03:49 | Melissa Mann             | 20              |
| 01861   | PAH's in Water       | SW-846 8310        | 1        | 04/06/2001 21:33 | Michelle J. Kolodziejcki | 10              |
| 01861   | PAH's in Water       | SW-846 8310        | 1        | 04/09/2001 09:53 | Michelle J. Kolodziejcki | 100             |
| 03337   | PAH Water Extraction | SW-846 3510C       | 1        | 04/01/2001 23:00 | Karen L. Beyer           | 1               |



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Lancaster Laboratories Sample No. WW 3579550

Collected: 03/28/2001 14:50 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW33S-280301-12 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28335 SDG#: MOA51-12

| 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.               | 4.0                                | ug/l  | 20              |
| 00777   | Toluene                | 108-88-3   | N.D.               | 4.0                                | ug/l  | 20              |
| 00778   | Ethylbenzene           | 100-41-4   | 9.5 J              | 4.0                                | ug/l  | 20              |
| 00779   | Total Xylenes          | 1330-20-7  | 21. J              | 12.                                | ug/l  | 20              |
| Due to dilution of the sample made necessary by the high level of non-target compounds, normal quantitation limits were not attained. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | 2,900.             | 8.2                                | ug/l  | 10              |
| 03281   | Acenaphthylene         | 208-96-8   | 130.               | 8.2                                | ug/l  | 10              |
| 03282   | Acenaphthene           | 83-32-9    | 100.               | 8.2                                | ug/l  | 10              |
| 03283   | Fluorene               | 86-73-7    | 19.                | 1.7                                | ug/l  | 10              |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.71                               | ug/l  | 10              |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.31                               | ug/l  | 10              |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.31                               | ug/l  | 10              |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 1.7                                | ug/l  | 10              |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.20                               | ug/l  | 10              |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.61                               | ug/l  | 10              |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.39                               | ug/l  | 10              |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.10                               | ug/l  | 10              |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.20                               | ug/l  | 10              |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.31                               | ug/l  | 10              |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 1.0                                | ug/l  | 10              |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.68                               | ug/l  | 10              |

### Laboratory Chronicle



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Lancaster Laboratories Sample No. WW 3579550

Collected: 03/28/2001 14:50 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW33S-280301-12 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28335 SDG#: MOA51-12

| CAT   |                      | Analysis           |        |                  |                          | Dilution |
|-------|----------------------|--------------------|--------|------------------|--------------------------|----------|
| No.   | Analysis Name        | Method             | Trial# | Date and Time    | Analyst                  | Factor   |
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1      | 03/31/2001 05:03 | Melissa Mann             | 20       |
| 01861 | PAH's in Water       | SW-846 8310        | 1      | 04/06/2001 21:58 | Michelle J. Kolodziejcki | 10       |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1      | 04/01/2001 23:00 | Karen L. Beyer           | 1        |



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Lancaster, PA 17605-2425  
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Lancaster Laboratories Sample No. WW 3579551

Collected: 03/28/2001 15:00 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW32S-280301-13 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28325 SDG#: MOA51-13

| 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.               | 0.20                               | ug/l  | 1               |
| 00777  | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778  | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779  | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| The vial submitted for volatile analysis did not have a pH < 2 at the time of analysis. Due to the volatile nature of the analytes, it is not appropriate for the laboratory to adjust the pH at the time of sample receipt. |                        |            |                    |                                    |       |                 |
| 01861  | PAH's in Water         |            |                    |                                    |       |                 |
| 03280  | Naphthalene            | 91-20-3    | N.D.               | 0.78                               | ug/l  | 1               |
| 03281  | Acenaphthylene         | 208-96-8   | N.D.               | 0.78                               | ug/l  | 1               |
| 03282  | Acenaphthene           | 83-32-9    | N.D.               | 0.78                               | ug/l  | 1               |
| 03283  | Fluorene               | 86-73-7    | N.D.               | 0.17                               | ug/l  | 1               |
| 03284  | Phenanthrene           | 85-01-8    | N.D.               | 0.068                              | ug/l  | 1               |
| 03285  | Anthracene             | 120-12-7   | N.D.               | 0.029                              | ug/l  | 1               |
| 03286  | Fluoranthene           | 206-44-0   | N.D.               | 0.029                              | ug/l  | 1               |
| 03287  | Pyrene                 | 129-00-0   | N.D.               | 0.17                               | ug/l  | 1               |
| 03288  | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.019                              | ug/l  | 1               |
| 03289  | Chrysene               | 218-01-9   | N.D.               | 0.058                              | ug/l  | 1               |
| 03290  | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.037                              | ug/l  | 1               |
| 03291  | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0097                             | ug/l  | 1               |
| 03292  | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.019                              | ug/l  | 1               |
| 03293  | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.029                              | ug/l  | 1               |
| 03294  | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.097                              | ug/l  | 1               |
| 03295  | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.065                              | ug/l  | 1               |

### Laboratory Chronicle



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Lancaster Laboratories Sample No. WW 3579551

Collected: 03/28/2001 15:00 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:42 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW32S-280301-13 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28325 SDG#: MOA51-13

CAT

| No.   | Analysis Name        | Method             | Trial# | Analysis Date and Time | Analyst                  | Dilution Factor |
|-------|----------------------|--------------------|--------|------------------------|--------------------------|-----------------|
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1      | 03/31/2001 00:45       | Melissa Mann             | 1               |
| 01861 | PAH's in Water       | SW-846 8310        | 1      | 04/05/2001 16:58       | Michelle J. Kolodziejski | 1               |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1      | 04/01/2001 23:00       | Karen L. Beyer           | 1               |



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Lancaster Laboratories Sample No. WW 3579552

Collected: 03/28/2001 15:30 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:43 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW35S-280301-14 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28355 SDG#: MOA51-14

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|---------|------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|         |                        |            |                    | Method      | Detection Limit |       |                 |
| 08213   | BTEX (8021)            |            |                    |             |                 |       |                 |
| 00776   | Benzene                | 71-43-2    | N.D.               |             | 0.20            | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               |             | 0.20            | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               |             | 0.20            | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               |             | 0.60            | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |             |                 |       |                 |
| 03280   | Naphthalene            | 91-20-3    | 2.36 J             |             | 0.91            | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | 1.59 J             |             | 0.91            | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | 1.8 J              |             | 0.91            | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | 0.31 J             |             | 0.19            | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | 0.53               |             | 0.079           | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | 0.29               |             | 0.034           | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | 0.67               |             | 0.034           | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | 0.48 J             |             | 0.19            | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               |             | 0.023           | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               |             | 0.068           | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               |             | 0.043           | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               |             | 0.011           | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               |             | 0.023           | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               |             | 0.034           | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               |             | 0.11            | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               |             | 0.076           | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis      |       | Analyst      | Dilution Factor |
|---------|---------------|--------------------|--------|---------------|-------|--------------|-----------------|
|         |               |                    |        | Date and Time |       |              |                 |
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 03/31/2001    | 01:21 | Melissa Mann | 1               |



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Lancaster Laboratories Sample No. WW 3579552

Collected: 03/28/2001 15:30 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:43 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW35S-280301-14 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28355 SDG#: MOA51-14

01861 PAH's in Water

SW-846 8310

1 04/05/2001 17:20

Michelle J.

1

Kolodziejwski

03337 PAH Water Extraction

SW-846 3510C

1 04/01/2001 23:00

Karen L. Beyer

1



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Lancaster Laboratories Sample No. WW 3579553

Collected: 03/28/2001 11:00 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:43 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

FB01 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28FB1 SDG#: MOA51-15FB

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.79                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.79                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.79                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.17                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.069                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.030                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.030                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.17                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.020                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.059                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.038                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0099                             | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.020                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.030                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.099                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.066                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Analysis |                  | Analyst      | Dilution Factor |
|---------|---------------|--------------------|----------|------------------|--------------|-----------------|
|         |               |                    | Trial#   | Date and Time    |              |                 |
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1        | 03/30/2001 15:28 | Melissa Mann | 1               |



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Lancaster Laboratories Sample No. WW 3579553

Collected: 03/28/2001 11:00 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:43 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

FB01 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

|       |                      |              |   |                  |                          |   |
|-------|----------------------|--------------|---|------------------|--------------------------|---|
| 28FB1 | SDG#: MOA51-15FB     |              |   |                  |                          |   |
| 01861 | PAH's in Water       | SW-846 8310  | 1 | 04/05/2001 17:41 | Michelle J. Kolodziejcki | 1 |
| 03337 | PAH Water Extraction | SW-846 3510C | 1 | 04/01/2001 23:00 | Karen L. Beyer           | 1 |



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Lancaster Laboratories Sample No. WW 3579554

Collected: 03/28/2001 15:00 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:43 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

FB02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28FB2 SDG#: MOA51-16FB

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.79                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.79                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.79                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.17                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.069                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.030                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.030                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.17                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.020                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.059                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.038                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0099                             | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.020                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.030                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.099                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.066                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis Date and Time | Analyst      | Dilution Factor |
|---------|---------------|--------------------|--------|------------------------|--------------|-----------------|
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 03/30/2001 16:05       | Melissa Mann | 1               |



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Lancaster Laboratories Sample No. WW 3579554

Collected: 03/28/2001 15:00 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Reported: 04/12/01 at 03:43 PM

Discard: 5/13/01

FB02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

|       |                      |              |   |                  |                          |   |
|-------|----------------------|--------------|---|------------------|--------------------------|---|
| 28FB2 | SDG#: MOA51-16FB     |              |   |                  |                          |   |
| 01861 | PAH's in Water       | SW-846 8310  | 1 | 04/05/2001 18:03 | Michelle J. Kolodziejcki | 1 |
| 03337 | PAH Water Extraction | SW-846 3510C | 1 | 04/01/2001 23:00 | Karen L. Beyer           | 1 |



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Lancaster Laboratories Sample No. WW 3579555

Collected: 03/28/2001 15:10 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:43 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW27S-280301 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28275 SDG#: MOA51-17\*

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.81                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.81                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.81                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.17                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.071                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.030                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.030                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.17                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.020                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.061                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.038                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.010                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.020                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.030                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.10                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.068                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis Date and Time | Analyst      | Dilution Factor |
|---------|---------------|--------------------|--------|------------------------|--------------|-----------------|
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 03/31/2001 01:58       | Melissa Mann | 1               |



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





Lancaster Laboratories Sample No. WW 3579555

Collected: 03/28/2001 15:10 by JK

Account Number: 07802

Submitted: 03/29/2001 09:10

Kerr-McGee Corporation

Reported: 04/12/01 at 03:43 PM

P.O. Box 25861

Discard: 5/13/01

Oklahoma City OK 73125

MA3-MW27S-280301 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

28275 SDG#: MOA51-17\*

01861 PAH's in Water

SW-846 8310

1 04/05/2001 18:46

Michelle J.

1

Kolodziejwski

03337 PAH Water Extraction

SW-846 3510C

1 04/01/2001 23:00

Karen L. Beyer

1



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



Client Name: Kerr-McGee Corporation  
 Reported: 04/12/01 at 03:43 PM

Group Number: 756517

#### Laboratory Compliance Quality Control

| <u>Analysis Name</u>  | <u>Blank Result</u>                        | <u>Blank MDL</u> | <u>Report Units</u> | <u>LCS %REC</u> | <u>LCSD %REC</u> | <u>LCS/LCSD Limits</u> | <u>RPD</u> | <u>RPD Max</u>  |
|---|--|------------------|---------------------|-----------------|------------------|------------------------|------------|-----------------|
| Batch number: 01088023501A<br>Biochemical Oxygen Demand     | Sample number(s): 3579537-3579540, 3579544 |                  |                     | 102             | 99               | 85-115                 | 3          | 7               |
| Batch number: 01088105104A<br>Nitrite Nitrogen              | N.D.                                       | .015             | mg/l                | 100             |                  | 90-110                 |            |                 |
| Batch number: 01088105104B<br>Nitrite Nitrogen              | N.D.                                       | .015             | mg/l                | 100             |                  | 90-110                 |            |                 |
| Batch number: 01089011112A<br>Total Organic Carbon          | Sample number(s): 3579537-3579540, 3579544 |                  |                     | N.D.            | .4               | mg/l                   | 101        | 98-108          |
| Batch number: 01089022601A<br>Ortho-Phosphate as P          | Sample number(s): 3579537-3579540, 3579544 |                  |                     | N.D.            | .0028            | mg/l                   | 103        | 91-108          |
| Batch number: 01089A55<br>Benzene                           | Sample number(s): 3579537-3579555          |                  |                     | N.D.            | .2               | ug/l                   | 109        | 107 80-118 1 30 |
| Toluene   | N.D.                                       | .2               | ug/l                | 105             | 103              | 82-119                 | 2          | 30              |
| Ethylbenzene  | N.D.                                       | .2               | ug/l                | 105             | 102              | 81-119                 | 2          | 30              |
| Total Xylenes   | N.D.                                       | .6               | ug/l                | 106             | 103              | 82-120                 | 3          | 30              |
| Batch number: 010900001A<br>Naphthalene                     | Sample number(s): 3579537-3579555          |                  |                     | N.D.            | .8               | ug/l                   | 80         | 45-111          |
| Acenaphthylene  | N.D.                                       | .8               | ug/l                | 88              |                  | 59-114                 |            |                 |
| Acenaphthene  | N.D.                                       | .8               | ug/l                | 81              |                  | 50-120                 |            |                 |
| Fluorene  | N.D.                                       | .17              | ug/l                | 88              |                  | 64-117                 |            |                 |
| Phenanthrene  | N.D.                                       | .07              | ug/l                | 97              |                  | 75-114                 |            |                 |
| Anthracene  | N.D.                                       | .03              | ug/l                | 96              |                  | 53-112                 |            |                 |
| Fluoranthene  | N.D.                                       | .03              | ug/l                | 107             |                  | 75-120                 |            |                 |
| Pyrene  | N.D.                                       | .17              | ug/l                | 94              |                  | 74-118                 |            |                 |
| Benzo(a)anthracene  | N.D.                                       | .02              | ug/l                | 104             |                  | 73-117                 |            |                 |
| Chrysene  | N.D.                                       | .06              | ug/l                | 102             |                  | 68-125                 |            |                 |
| Benzo(b)fluoranthene  | N.D.                                       | .038             | ug/l                | 106             |                  | 71-123                 |            |                 |
| Benzo(k)fluoranthene  | N.D.                                       | .01              | ug/l                | 103             |                  | 75-118                 |            |                 |
| Benzo(a)pyrene  | N.D.                                       | .02              | ug/l                | 103             |                  | 61-127                 |            |                 |
| Dibenzo(a,h)anthracene                                      | N.D.                                       | .03              | ug/l                | 107             |                  | 71-121                 |            |                 |
| Benzo(g,h,i)perylene  | N.D.                                       | .1               | ug/l                | 97              |                  | 70-125                 |            |                 |
| Indeno(1,2,3-cd)pyrene                                      | N.D.                                       | .067             | ug/l                | 107             |                  | 73-125                 |            |                 |
| Batch number: 01093110102A<br>Total Phosphorus as PO4 water | Sample number(s): 3579537                  |                  |                     | N.D.            | .13              | mg/l                   | 91         | 90-110          |
| Batch number: 01093110102B<br>Total Phosphorus as PO4 water | Sample number(s): 3579538-3579540, 3579544 |                  |                     | N.D.            | .13              | mg/l                   | 91         | 90-110          |
| Batch number: 01095022101A<br>Ammonia Nitrogen              | Sample number(s): 3579537-3579540, 3579544 |                  |                     | N.D.            | .16              | mg/l                   | 96         | 90-102          |

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.





## Lancaster Laboratories

Where quality is a science.

### Quality Control Summary

Client Name: Kerr-McGee Corporation  
 Reported: 04/12/01 at 03:43 PM

Group Number: 756517

#### Laboratory Compliance Quality Control

| <u>Analysis Name</u>                            | <u>Blank Result</u> | <u>Blank MDL</u> | <u>Report Units</u> | <u>LCS %REC</u> | <u>LCSD %REC</u> | <u>LCS/LCSD Limits</u> | <u>RPD</u> | <u>RPD Max</u> |
|---|---------------------|------------------|---------------------|-----------------|------------------|------------------------|------------|----------------|
| Batch number: 01096106105B<br>Nitrate Nitrogen  | N.D.                | .04              | mg/l                | 104             |                  | 89-110                 |            |                |
| Batch number: 01099108102A<br>Kjeldahl Nitrogen | N.D.                | .3               | mg/l                | 93              |                  | 90-110                 |            |                |
| Batch number: 01099108102B<br>Kjeldahl Nitrogen | N.D.                | .3               | mg/l                | 93              |                  | 90-110                 |            |                |

#### Sample Matrix Quality Control

| <u>Analysis Name</u>                                    | <u>MS %REC</u> | <u>MSD %REC</u> | <u>MS/MSD Limits</u> | <u>RPD</u> | <u>BKG MAX</u> | <u>DUP Conc</u> | <u>DUP RPD</u> | <u>Dup RPD Max</u> |
|---|----------------|-----------------|----------------------|------------|----------------|-----------------|----------------|--------------------|
| Batch number: 01088023501A<br>Biochemical Oxygen Demand | 103            | 93              | 74-114               | 11*        | 6              | 265.            | 242.           | 9*                 |
| Batch number: 01088105104A<br>Nitrite Nitrogen          | 102            |                 | 90-110               |            |                | N.D.            | 0.038 J        | 197* (1)           |
| Batch number: 01088105104B<br>Nitrite Nitrogen          | 91             |                 | 90-110               |            |                | N.D.            | N.D.           | 0 (1)              |
| Batch number: 0108901112A<br>Total Organic Carbon       | 93             |                 | 73-129               |            | 3.0            | 2.8             | 5* (1)         | 1                  |
| Batch number: 01089022601A<br>Ortho-Phosphate as P      | 133*           | 137*            | 80-114               | 2          | 4              | 0.303           | 0.281          | 8*                 |
| Batch number: 01089A55<br>Benzene                       | 115            | 114             | 66-140               | 1          | 30             |                 |                |                    |
| Toluene   | 110            | 110             | 72-138               | 0          | 30             |                 |                |                    |
| Ethylbenzene  | 110            | 111             | 71-138               | 0          | 30             |                 |                |                    |
| Total Xylenes   | 111            | 111             | 69-140               | 0          | 30             |                 |                |                    |
| Batch number: 010900001A<br>Naphthalene                 | 96             | 87              | 59-108               | 8          | 30             |                 |                |                    |
| Acenaphthylene  | 101            | 95              | 38-134               | 11         | 30             |                 |                |                    |
| Acenaphthene  | 95             | 89              | 48-127               | 11         | 30             |                 |                |                    |
| Fluorene  | 101            | 94              | 61-122               | 11         | 30             |                 |                |                    |
| Phenanthrene  | 108            | 100             | 67-122               | 10         | 30             |                 |                |                    |
| Anthracene  | 105            | 98              | 61-107               | 11         | 30             |                 |                |                    |
| Fluoranthene  | 117            | 107             | 64-126               | 9          | 30             |                 |                |                    |
| Pyrene  | 100            | 92              | 80-125               | 9          | 30             |                 |                |                    |
| Benzo (a) anthracene                                    | 113            | 102             | 54-130               | 8          | 30             |                 |                |                    |
| Chrysene  | 111            | 104             | 49-140               | 11         | 30             |                 |                |                    |

\*- Outside of specification

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- (2) The background result was more than four times the spike added.



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 PO Box 12425  
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Client Name: Kerr-McGee Corporation  
 Reported: 04/12/01 at 03:43 PM

Group Number: 756517

#### Sample Matrix Quality Control

| Analysis Name                 | MS   | MSD  | MS/MSD | RPD | BKG | DUP    | DUP    | Dup RPD |    |
|-------------------------------|--|------|--------|-----|-----|--------|--------|---------|----|
|                               | %REC                                       | %REC | Limits | RPD | MAX | Conc   | Conc   | RPD     |    |
|                               |  |      |        |     |     |        |        | Max     |    |
| Benzo (b) fluoranthene        | 115  | 104  | 59-132 | 8   | 30  |        |        |         |    |
| Benzo (k) fluoranthene        | 113  | 103  | 72-120 | 8   | 30  |        |        |         |    |
| Benzo (a) pyrene              | 112  | 101  | 36-147 | 8   | 30  |        |        |         |    |
| Dibenzo (a, h) anthracene     | 118  | 106  | 69-122 | 8   | 30  |        |        |         |    |
| Benzo (g, h, i) perylene      | 107  | 96   | 62-131 | 7   | 30  |        |        |         |    |
| Indeno (1, 2, 3-cd) pyrene    | 118  | 105  | 71-128 | 7   | 30  |        |        |         |    |
|                               |  |      |        |     |     |        |        |         |    |
| Batch number: 01093110102A    | Sample number(s): 3579537                  |      |        |     |     |        |        |         |    |
| Total Phosphorus as PO4 water | 125*                                       |      | 90-110 |     |     | 4.04   | 3.65   | 10*     | 2  |
|                               |  |      |        |     |     |        |        |         |    |
| Batch number: 01093110102B    | Sample number(s): 3579538-3579540, 3579544 |      |        |     |     |        |        |         |    |
| Total Phosphorus as PO4 water | 85*  |      | 90-110 |     |     | 0.24   | 0.25   | 3* (1)  | 2  |
|                               |  |      |        |     |     |        |        |         |    |
| Batch number: 01095022101A    | Sample number(s): 3579537-3579540, 3579544 |      |        |     |     |        |        |         |    |
| Ammonia Nitrogen              | 95   | 94   | 56-127 | 0   | 5   | 0.93 J | 1.1    | 13* (1) | 8  |
|                               |  |      |        |     |     |        |        |         |    |
| Batch number: 01096106105B    | Sample number(s): 3579537-3579540, 3579544 |      |        |     |     |        |        |         |    |
| Nitrate Nitrogen              | 104  |      | 90-110 |     |     | 0.20   | 0.23   | 12* (1) | 6  |
|                               |  |      |        |     |     |        |        |         |    |
| Batch number: 01099108102A    | Sample number(s): 3579537-3579539          |      |        |     |     |        |        |         |    |
| Kjeldahl Nitrogen             | 84*  |      | 90-110 |     |     | 0.46 J | 0.49 J | 5 (1)   | 20 |
|                               |  |      |        |     |     |        |        |         |    |
| Batch number: 01099108102B    | Sample number(s): 3579540, 3579544         |      |        |     |     |        |        |         |    |
| Kjeldahl Nitrogen             | 84*  |      | 90-110 |     |     | 1.1    | 1.1    | 1 (1)   | 20 |

#### Surrogate Quality Control

Analysis Name: BTEX (8021)  
 Batch number: 01089A55  
 Trifluorotoluene-P

|         |     |
|---------|-----|
| 3579537 | 101 |
| 3579538 | 100 |
| 3579539 | 101 |
| 3579540 | 101 |
| 3579541 | 101 |
| 3579542 | 104 |
| 3579543 | 100 |
| 3579544 | 100 |
| 3579545 | 103 |
| 3579546 | 102 |
| 3579547 | 102 |
| 3579548 | 102 |
| 3579549 | 102 |
| 3579550 | 103 |

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.





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### Quality Control Summary

Client Name: Kerr-McGee Corporation  
 Reported: 04/12/01 at 03:43 PM

Group Number: 756517

#### Surrogate Quality Control

|         |     |
|---------|-----|
| 3579551 | 103 |
| 3579552 | 100 |
| 3579553 | 101 |
| 3579554 | 101 |
| 3579555 | 102 |
| Blank   | 101 |
| LCS     | 100 |
| LCSD    | 100 |
| MS      | 102 |
| MSD     | 102 |

---

Limits: 69-134

Analysis Name: PAH's in Water  
 Batch number: 010900001A

|         | Nitrobenzene | Triphenylene |
|---------|--------------|--------------|
| 3579537 | 94           | 118          |
| 3579538 | 96           | 121          |
| 3579539 | 96           | 121          |
| 3579540 | 58           | 74           |
| 3579541 | 98           | 120          |
| 3579542 | 93           | 115          |
| 3579543 | 99           | 122          |
| 3579544 | 97           | 116          |
| 3579545 | 97           | 116          |
| 3579546 | 94           | 121          |
| 3579547 | 90           | 111          |
| 3579548 | 119          | 112          |
| 3579549 | 99           | 129          |
| 3579550 | 94           | 109          |
| 3579551 | 91           | 115          |
| 3579552 | 94           | 114          |
| 3579553 | 92           | 113          |
| 3579554 | 98           | 117          |
| 3579555 | 93           | 115          |
| Blank   | 95           | 117          |
| LCS     | 93           | 120          |
| MS      | 94           | 121          |
| MSD     | 90           | 111          |

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Limits: 29-136 33-139

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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 Lancaster, PA 17605-2425  
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# Analysis Request/ Environmental Services Chain of Custody



For Lancaster Laboratories use only  
 Acct. # 7802 Sample # 3579537-55

Please print. Instructions on reverse side correspond with circled numbers.

| Client: <u>Kerr McGee</u> Acct. #: _____<br>Project Name/#: <u>Moss Amazon</u> PWSID #: _____<br>Project Manager: <u>Tom Grana</u> P.O.# _____<br>Sampler: <u>Joe Klemp</u> Quote #: _____<br>Name of state where samples were collected: <u>Wisconsin</u> |                    |                 |  | Matrix <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">4</span><br><input type="checkbox"/> Potable (Check if applicable)<br><input type="checkbox"/> NPDES<br>Other _____ |      |              | Analyses Requested <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">5</span><br>BTEX PAHs NO <sub>2</sub> , NO <sub>3</sub> TOC O-PD <sub>x</sub> + BOD TKW TP-PD <sub>4</sub> NH <sub>3</sub> |                       |              |              |                                   |     |                         |     |                    |                 | For lab use only<br>FSC: _____<br>SCR #: _____<br>C.O.C. # <u>1 of 2</u><br>Temperature of samples upon receipt (if requested) _____ |  |
|--|--------------------|-----------------|--|---|------|--------------|--|-----------------------|--------------|--------------|-----------------------------------|-----|-------------------------|-----|--------------------|-----------------|--|--|
| Sample Identification  | Date Collected     | Time Collected  | Grab <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">3</span> | Composite   | Soil | Water        | Other  | Total # of Containers | BTEX         | PAHs         | NO <sub>2</sub> , NO <sub>3</sub> | TOC | O-PD <sub>x</sub> + BOD | TKW | TP-PD <sub>4</sub> | NH <sub>3</sub> | Remarks  | Temperature of samples upon receipt (if requested) |
| MA3-T65-1-280301-01  | 3/28/01            | 0930            | X  |   |      | X            |  | 11                    | X            | X            | X                                 | X   | X                       | X   | X                  |                 | 5 Coolers in Set   |  |
| MA3-T65-3-280301-02  | 3/28/01            | 0945            | X  |   |      | X            |  | 11                    | X            | X            | X                                 | X   | X                       | X   | X                  |                 |  |  |
| MA3-T66-1-280301-03  | 3/28/01            | 1005            | X  |   |      | X            |  | 11                    | X            | X            | X                                 | X   | X                       | X   | X                  |                 |  |  |
| MA3-T66-3-280301-05  | 3/28/01            | 1020            | X  |   |      | X            |  | 11                    | X            | X            | X                                 | X   | X                       | X   | X                  |                 |  |  |
| MA3-MW95-280301-06   | 3/28/01            | 1100            | X  |   |      | X            |  | 5                     | X            | X            |                                   |     |                         |     |                    |                 |  |  |
| MA3-MW95-280301-06DP   | 3/28/01            | 1100            | X  |   |      | X            |  | 5                     | X            | X            |                                   |     |                         |     |                    |                 |  |  |
| MA3-MW9I-280301-07   | 3/28/01            | 1105            | X  |   |      | X            |  | 5                     | X            | X            |                                   |     |                         |     |                    |                 |  |  |
| <del>MA3-MW9J-280301-08</del>  | <del>3/28/01</del> | <del>1110</del> | <del>X</del>   |   |      | <del>X</del> |  | <del>5</del>          | <del>X</del> | <del>X</del> |                                   |     |                         |     |                    |                 |  |  |
| MA3-T66-2-280301-04  | 3/28/01            |                 | X  |   |      | X            |  | 5                     | X            | X            | X                                 | X   | X                       | X   | X                  |                 |  |  |
| MA3-MW375-280301-09  | 3/28/01            | 1110            | X  |   |      | X            |  | 5                     | X            | X            |                                   |     |                         |     |                    |                 | MS/MSD   |  |

|   |                                     |         |      |              |         |      |
|---|-------------------------------------|---------|------|--------------|---------|------|
| 7 Turnaround Time Requested (TAT) (please circle): <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Normal</span> Rush<br>(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)<br>Date results are needed: <u>STD TAT</u><br>Rush results requested by (please circle): Phone Fax<br>Phone #: <u>(847) 918-7000</u> Fax #: <u>(847) 918-4055</u> | Relinquished by:                    | Date    | Time | Received by: | Date    | Time |
|   | Relinquished by: <u>M. G. Kelly</u> | 3/28/01 | 1700 | Feil Ex      | 3/29/01 | 1700 |
|   | Relinquished by:                    | Date    | Time | Received by: | Date    | Time |
|   | Relinquished by:                    | Date    | Time | Received by: | Date    | Time |

|   |  |   |  |
|---|--|---|--|
| 8 Data Package Options (please circle if requested)<br>QC Summary Type VI (Raw Data) <u>Per Quote</u><br>Type I (Tier I) GLP<br>Type II (Tier II) Other<br>Type III (NJ Red. Del.)<br>Type IV (CLP) | SDG Complete? Yes <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">No</span> | Site-specific QC required? Yes No<br>(If yes, indicate QC sample and submit triplicate volume.) | Internal Chain of Custody required? Yes No |
|   |  |   |  |
|   |  |   |  |
|   |  |   |  |





## ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation  
P.O. Box 25861  
Oklahoma City OK 73125

Prepared by:

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

### SAMPLE GROUP

The sample group for this submittal is 756814. Samples arrived at the laboratory on Saturday, March 31, 2001.

| <u>Client Description</u>                          | <u>Lancaster Labs Number</u> |
|--|------------------------------|
| MA3-MW25S-300301-01 Unspiked Grab Water Sample     | 3581219                      |
| MA3-MW25S-300301-MS Matrix Spike Grab Water Sample | 3581220                      |
| MA3-MW25S-300301-MSD Matrix Spike Dup. Grab Water  | 3581221                      |
| MA3-MW26S-300301-02 Grab Water Sample              | 3581222                      |
| MA3-MW5S-300301-03 Grab Water Sample               | 3581223                      |
| MA3-MW3S-300301-04 Grab Water Sample               | 3581224                      |
| MA3-MW3I-300301-05 Grab Water Sample               | 3581225                      |
| MA3-MW26S-300301-02DP Grab Water Sample            | 3581226                      |
| MA3-FB04-300301 Field Blank Grab Water Sample      | 3581227                      |
| MA3-TB04-300301 Trip Blank Water Sample            | 3581228                      |

### METHODOLOGY

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

1 COPY TO Kerr-McGee Corporation  
1 COPY TO Roy F. Weston  
1 COPY TO Data Package Group

Attn: Dr. Jeff Ostmeyer  
Attn: Mr. Tom Graan



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





Questions? Contact your Client Services Representative  
Kay G. Hower at (717) 656-2300.

Respectfully Submitted,

A handwritten signature in cursive script that reads "Dale R. Rhodes".

Dale R. Rhodes  
Sr. Chemist/Coordinator



Lancaster Laboratories, Inc.  
2425 New Holland Pike  
PO Box 12425  
Lancaster, PA 17605-2425  
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Lancaster Laboratories Sample No. WW 3581219

Collected: 03/29/2001 09:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW25S-300301-01 Unspiked Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW6S- SDG#: MOA53-01BKG

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.82                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.82                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.82                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.17                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.072                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.031                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.031                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.17                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.020                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.061                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.039                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.010                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.020                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.031                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.10                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.069                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis Date and Time | Analyst                 | Dilution Factor |
|---------|---------------|--------------------|--------|------------------------|-------------------------|-----------------|
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 04/03/2001 16:49       | Melissa-Ann S. McAlpine | 1               |



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Lancaster Laboratories Sample No. WW 3581219

Collected: 03/29/2001 09:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW25S-300301-01 Unspiked Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW6S- SDG#: MOA53-01BKG

|       |                      |              |   |                  |                     |   |
|-------|----------------------|--------------|---|------------------|---------------------|---|
| 01861 | PAH's in Water       | SW-846 8310  | 1 | 04/13/2001 07:51 | Michele D. Hamilton | 1 |
| 03337 | PAH Water Extraction | SW-846 3510C | 1 | 04/03/2001 05:30 | Ginelle L. Haines   | 1 |



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Lancaster Laboratories Sample No. WW 3581220

Collected: 03/29/2001 09:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW25S-300301-MS Matrix Spike Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MAWTB SDG#: MOA53-01MS

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received |                 | Units | Dilution Factor |
|---------|------------------------|------------|--------------------|-------------|-----------------|-------|-----------------|
|         |                        |            |                    | Method      | Detection Limit |       |                 |
| 08213   | BTEX (8021)            |            |                    |             |                 |       |                 |
| 00776   | Benzene                | 71-43-2    | 23.                |             | 0.20            | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | 22.                |             | 0.20            | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | 22.                |             | 0.20            | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | 66.                |             | 0.60            | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |             |                 |       |                 |
| 03280   | Naphthalene            | 91-20-3    | 160.               |             | 0.79            | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | 190.               |             | 0.79            | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | 180.               |             | 0.79            | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | 19.                |             | 0.17            | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | 6.2                |             | 0.069           | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | 3.0                |             | 0.030           | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | 3.4                |             | 0.030           | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | 20.                |             | 0.17            | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | 1.6                |             | 0.020           | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | 6.4                |             | 0.059           | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | 1.3                |             | 0.037           | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | 1.3                |             | 0.0099          | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | 1.4                |             | 0.020           | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | 3.3                |             | 0.030           | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | 12.                |             | 0.099           | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | 6.5                |             | 0.066           | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Analysis |                  | Analyst                 | Dilution Factor |
|---------|---------------|--------------------|----------|------------------|-------------------------|-----------------|
|         |               |                    | Trial#   | Date and Time    |                         |                 |
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1        | 04/03/2001 17:26 | Melissa-Ann S. McAlpine | 1               |



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Lancaster Laboratories Sample No. WW 3581220

Collected: 03/29/2001 09:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW25S-300301-MS Matrix Spike Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MAWTB SDG#: MOA53-01MS

|       |                      |              |   |                  |                     |   |
|-------|----------------------|--------------|---|------------------|---------------------|---|
| 01861 | PAH's in Water       | SW-846 8310  | 1 | 04/13/2001 08:13 | Michele D. Hamilton | 1 |
| 03337 | PAH Water Extraction | SW-846 3510C | 1 | 04/03/2001 05:30 | Ginelle L. Haines   | 1 |



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Lancaster Laboratories Sample No. WW 3581221

Collected: 03/29/2001 09:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW25S-300301-MSD Matrix Spike Dup. Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MAWTB SDG#: MOA53-01MSD

| 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    | 23.                | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | 22.                | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | 22.                | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | 66.                | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | 190.               | 0.84                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | 210.               | 0.84                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | 200.               | 0.84                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | 21.                | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | 6.7                | 0.074                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | 3.2                | 0.032                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | 3.7                | 0.032                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | 21.                | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | 1.8                | 0.021                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | 6.8                | 0.063                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | 1.4                | 0.040                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | 1.4                | 0.011                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | 1.6                | 0.021                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | 3.6                | 0.032                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | 12.                | 0.11                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | 7.0                | 0.071                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis Date and Time | Analyst                 | Dilution Factor |
|---------|---------------|--------------------|--------|------------------------|-------------------------|-----------------|
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 04/03/2001 18:03       | Melissa-Ann S. McAlpine | 1               |



Lancaster Laboratories, Inc.  
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Lancaster Laboratories Sample No. WW 3581221

Collected: 03/29/2001 09:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW25S-300301-MSD Matrix Spike Dup. Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MAWTB SDG#: MOA53-01MSD

|       |                      |              |   |                  |                     |   |
|-------|----------------------|--------------|---|------------------|---------------------|---|
| 01861 | PAH's in Water       | SW-846 8310  | 1 | 04/13/2001 08:34 | Michele D. Hamilton | 1 |
| 03337 | PAH Water Extraction | SW-846 3510C | 1 | 04/03/2001 05:30 | Ginelle L. Haines   | 1 |



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Lancaster Laboratories Sample No. WW 3581222

Collected: 03/29/2001 09:10 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW26S-300301-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW26S SDG#: MOA53-02

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.80                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.80                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.80                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.17                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.070                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.030                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.030                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.17                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.020                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.060                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.038                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.010                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.020                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.030                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.100                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.067                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis Date and Time | Analyst                 | Dilution Factor |
|---------|---------------|--------------------|--------|------------------------|-------------------------|-----------------|
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 04/04/2001 00:50       | Melissa-Ann S. McAlpine | 1               |



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 2425 New Holland Pike  
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Lancaster Laboratories Sample No. WW 3581222

Collected: 03/29/2001 09:10 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW26S-300301-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW26S SDG#: MOA53-02

01861 PAH's in Water

SW-846 8310

1 04/13/2001 08:56

Michele D. Hamilton

1

03337 PAH Water Extraction

SW-846 3510C

1 04/03/2001 05:30

Ginelle L. Haines

1





Lancaster Laboratories Sample No. WW 3581223

Collected: 03/29/2001 10:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW5S-300301-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW-5S SDG#: MOA53-03

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.86                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.86                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.86                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.076                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.032                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.032                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.022                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.065                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.041                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.011                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.022                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.032                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.11                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.072                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis Date and Time | Analyst                 | Dilution Factor |
|---------|---------------|--------------------|--------|------------------------|-------------------------|-----------------|
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 04/04/2001 01:27       | Melissa-Ann S. McAlpine | 1               |



Lancaster Laboratories, Inc.  
 2425 New Holland Pike  
 PO Box 12425  
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Lancaster Laboratories Sample No. WW 3581223

Collected: 03/29/2001 10:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW5S-300301-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW-5S SDG#: MOA53-03

01861 PAH's in Water

SW-846 8310

1 04/13/2001 09:17

Michele D. Hamilton

1

03337 PAH Water Extraction

SW-846 3510C

1 04/03/2001 05:30

Ginelle L. Haines

1



Lancaster Laboratories, Inc.  
2425 New Holland Pike  
PO Box 12425  
Lancaster, PA 17605-2425  
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Lancaster Laboratories Sample No. WW 3581224

Collected: 03/29/2001 10:10 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW3S-300301-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW-3S SDG#: MOA53-04

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.79                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.79                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.79                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.17                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.069                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.030                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.030                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.17                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.020                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.059                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.038                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0099                             | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.020                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.030                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.099                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.066                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis Date and Time | Analyst                 | Dilution Factor |
|---------|---------------|--------------------|--------|------------------------|-------------------------|-----------------|
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 04/04/2001 02:04       | Melissa-Ann S. McAlpine | 1               |



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Lancaster Laboratories Sample No. WW 3581224

Collected: 03/29/2001 10:10 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW3S-300301-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW-3S SDG#: MOA53-04

01861 PAH's in Water

SW-846 8310

1 04/13/2001 09:39

Michele D. Hamilton

1

03337 PAH Water Extraction

SW-846 3510C

1 04/03/2001 05:30

Ginelle L. Haines

1





Lancaster Laboratories Sample No. WW 3581225

Collected: 03/29/2001 10:20 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:33 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW3I-300301-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW-3I SDG#: MOA53-05

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.76                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.76                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.76                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.16                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.066                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.028                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | 0.045 J            | 0.028                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.16                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.019                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.057                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.036                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0094                             | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.019                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.028                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.094                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.063                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis Date and Time | Analyst                 | Dilution Factor |
|---------|---------------|--------------------|--------|------------------------|-------------------------|-----------------|
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 04/04/2001 02:41       | Melissa-Ann S. McAlpine | 1               |



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Lancaster Laboratories Sample No. WW 3581225

Collected: 03/29/2001 10:20 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:33 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW3I-300301-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW-3I SDG#: MOA53-05

01861 PAH's in Water

SW-846 8310

1 04/13/2001 10:00

Michele D. Hamilton

1

03337 PAH Water Extraction

SW-846 3510C

1 04/03/2001 05:30

Ginelle L. Haines

1



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Lancaster Laboratories Sample No. WW 3581226

Collected: 03/29/2001 09:10 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:33 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW26S-300301-02DP Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW5SD SDG#: MOA53-06

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | 1.2 J              | 0.76                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.76                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.76                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.16                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.066                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.028                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.028                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.16                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.019                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.057                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.036                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0095                             | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.019                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.028                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.095                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.064                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis Date and Time | Analyst                 | Dilution Factor |
|---------|---------------|--------------------|--------|------------------------|-------------------------|-----------------|
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 04/04/2001 03:18       | Melissa-Ann S. McAlpine | 1               |



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Lancaster Laboratories Sample No. WW 3581226

Collected: 03/29/2001 09:10 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:33 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW26S-300301-02DP Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW5SD SDG#: MOA53-06

01861 PAH's in Water

SW-846 8310

1 04/13/2001 10:22

Michele D. Hamilton

1

03337 PAH Water Extraction

SW-846 3510C

1 04/03/2001 05:30

Ginelle L. Haines

1



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Lancaster Laboratories Sample No. WW 3581227

Collected: 03/29/2001 11:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:33 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-FB04-300301 Field Blank Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW-FB SDG#: MOA53-07FB

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.84                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.84                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.84                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.073                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.031                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.031                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.021                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.063                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.040                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.010                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.021                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.031                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.10                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.070                              | ug/l  | 1               |

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.

### Laboratory Chronicle



Lancaster Laboratories, Inc.  
 2425 New Holland Pike  
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Lancaster Laboratories Sample No. WW 3581227

Collected: 03/29/2001 11:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:33 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-FB04-300301 Field Blank Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW-FB SDG#: MOA53-07FB

| CAT   |                      |                    |        | Analysis         |                         | Dilution |
|-------|----------------------|--------------------|--------|------------------|-------------------------|----------|
| No.   | Analysis Name        | Method             | Trial# | Date and Time    | Analyst                 | Factor   |
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1      | 04/04/2001 03:55 | Melissa-Ann S. McAlpine | 1        |
| 01861 | PAH's in Water       | SW-846 8310        | 1      | 04/09/2001 23:42 | Michelle J. Kolodziejki | 1        |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1      | 04/03/2001 12:30 | Roxanne M. Roth         | 1        |



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Lancaster Laboratories Sample No. WW 3581228

Collected: n.a.

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:33 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-TB04-300301 Trip Blank Water Sample

Moss American Superfund Site - Milwaukee, WI

MAWTB SDG#: MOA53-08TB

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene       | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene  | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis Date and Time | Analyst                 | Dilution Factor |
|---------|---------------|--------------------|--------|------------------------|-------------------------|-----------------|
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 04/03/2001 16:12       | Melissa-Ann S. McAlpine | 1               |



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### Quality Control Summary

Client Name: Kerr-McGee Corporation  
 Reported: 04/18/01 at 01:33 PM

Group Number: 756814

#### Laboratory Compliance Quality Control

| Analysis Name   | Blank Result | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|--------------|-----------|--------------|----------|-----------|-----------------|-----|---------|
| Batch number: 010920013A      Sample number(s): 3581227         |              |           |              |          |           |                 |     |         |
| Naphthalene   | N.D.         | .8        | ug/l         | 66       | 83        | 45-111          | 23  | 30      |
| Acenaphthylene  | N.D.         | .8        | ug/l         | 77       | 87        | 59-114          | 12  | 30      |
| Acenaphthene  | N.D.         | .8        | ug/l         | 73       | 81        | 50-120          | 11  | 30      |
| Fluorene  | N.D.         | .17       | ug/l         | 83       | 88        | 64-117          | 6   | 30      |
| Phenanthrene  | N.D.         | .07       | ug/l         | 97       | 99        | 75-114          | 2   | 30      |
| Anthracene  | N.D.         | .03       | ug/l         | 96       | 96        | 53-112          | 0   | 30      |
| Fluoranthene  | N.D.         | .03       | ug/l         | 107      | 108       | 75-120          | 1   | 30      |
| Pyrene  | N.D.         | .17       | ug/l         | 92       | 94        | 74-118          | 2   | 30      |
| Benzo (a) anthracene  | N.D.         | .02       | ug/l         | 103      | 103       | 73-117          | 1   | 30      |
| Chrysene  | N.D.         | .06       | ug/l         | 102      | 102       | 68-125          | 0   | 30      |
| Benzo (b) fluoranthene  | N.D.         | .038      | ug/l         | 105      | 106       | 71-123          | 0   | 30      |
| Benzo (k) fluoranthene  | N.D.         | .01       | ug/l         | 105      | 105       | 75-118          | 0   | 30      |
| Benzo (a) pyrene  | N.D.         | .02       | ug/l         | 104      | 104       | 61-127          | 1   | 30      |
| Dibenzo (a, h) anthracene                                       | N.D.         | .03       | ug/l         | 108      | 108       | 71-121          | 0   | 30      |
| Benzo (g, h, i) perylene  | N.D.         | .1        | ug/l         | 97       | 97        | 70-125          | 1   | 30      |
| Indeno (1, 2, 3-cd) pyrene                                      | N.D.         | .067      | ug/l         | 105      | 105       | 73-125          | 0   | 30      |
|   |              |           |              |          |           |                 |     |         |
| Batch number: 010920015A      Sample number(s): 3581219-3581226 |              |           |              |          |           |                 |     |         |
| Naphthalene   | N.D.         | .8        | ug/l         | 52       |           | 45-111          |     |         |
| Acenaphthylene  | N.D.         | .8        | ug/l         | 70       |           | 59-114          |     |         |
| Acenaphthene  | N.D.         | .8        | ug/l         | 67       |           | 50-120          |     |         |
| Fluorene  | N.D.         | .17       | ug/l         | 82       |           | 64-117          |     |         |
| Phenanthrene  | N.D.         | .07       | ug/l         | 99       |           | 75-114          |     |         |
| Anthracene  | N.D.         | .03       | ug/l         | 97       |           | 53-112          |     |         |
| Fluoranthene  | N.D.         | .03       | ug/l         | 112      |           | 75-120          |     |         |
| Pyrene  | N.D.         | .17       | ug/l         | 98       |           | 74-118          |     |         |
| Benzo (a) anthracene  | N.D.         | .02       | ug/l         | 109      |           | 73-117          |     |         |
| Chrysene  | N.D.         | .06       | ug/l         | 106      |           | 68-125          |     |         |
| Benzo (b) fluoranthene  | N.D.         | .038      | ug/l         | 111      |           | 71-123          |     |         |
| Benzo (k) fluoranthene  | N.D.         | .01       | ug/l         | 109      |           | 75-118          |     |         |
| Benzo (a) pyrene  | N.D.         | .02       | ug/l         | 98       |           | 61-127          |     |         |
| Dibenzo (a, h) anthracene                                       | N.D.         | .03       | ug/l         | 109      |           | 71-121          |     |         |
| Benzo (g, h, i) perylene  | N.D.         | .1        | ug/l         | 96       |           | 70-125          |     |         |
| Indeno (1, 2, 3-cd) pyrene                                      | N.D.         | .067      | ug/l         | 107      |           | 73-125          |     |         |
|   |              |           |              |          |           |                 |     |         |
| Batch number: 01093A55      Sample number(s): 3581219-3581228   |              |           |              |          |           |                 |     |         |
| Benzene   | N.D.         | .2        | ug/l         | 111      | 109       | 80-118          | 1   | 30      |
| Toluene   | N.D.         | .2        | ug/l         | 106      | 104       | 82-119          | 2   | 30      |
| Ethylbenzene  | N.D.         | .2        | ug/l         | 105      | 103       | 81-119          | 2   | 30      |
| Total Xylenes   | N.D.         | .6        | ug/l         | 105      | 103       | 82-120          | 2   | 30      |

#### Sample Matrix Quality Control

| MS | MSD | MS/MSD | RPD | BKG | DUP | DUP | Dup RPD |
|----|-----|--------|-----|-----|-----|-----|---------|
|----|-----|--------|-----|-----|-----|-----|---------|

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.





### Quality Control Summary

Client Name: Kerr-McGee Corporation  
 Reported: 04/18/01 at 01:33 PM

Group Number: 756814

| Analysis Name            | %REC | %REC                              | Limits | RPD | MAX | Conc | Conc | RPD | Max |
|--------------------------|------|-----------------------------------|--------|-----|-----|------|------|-----|-----|
| Batch number: 010920015A |      | Sample number(s): 3581219-3581226 |        |     |     |      |      |     |     |
| Naphthalene              | 80   | 88                                | 59-108 | 16  | 30  |      |      |     |     |
| Acenaphthylene           | 95   | 98                                | 38-134 | 9   | 30  |      |      |     |     |
| Acenaphthene             | 92   | 94                                | 48-127 | 9   | 30  |      |      |     |     |
| Fluorene                 | 98   | 99                                | 61-122 | 8   | 30  |      |      |     |     |
| Phenanthrene             | 106  | 107                               | 67-122 | 7   | 30  |      |      |     |     |
| Anthracene               | 102  | 103                               | 61-107 | 7   | 30  |      |      |     |     |
| Fluoranthene             | 115  | 116                               | 64-126 | 7   | 30  |      |      |     |     |
| Pyrene                   | 101  | 101                               | 80-125 | 7   | 30  |      |      |     |     |
| Benzo(a)anthracene       | 111  | 112                               | 54-130 | 8   | 30  |      |      |     |     |
| Chrysene                 | 108  | 108                               | 49-140 | 7   | 30  |      |      |     |     |
| Benzo(b)fluoranthene     | 111  | 113                               | 59-132 | 8   | 30  |      |      |     |     |
| Benzo(k)fluoranthene     | 110  | 111                               | 72-120 | 7   | 30  |      |      |     |     |
| Benzo(a)pyrene           | 98   | 99                                | 36-147 | 8   | 30  |      |      |     |     |
| Dibenzo(a,h)anthracene   | 111  | 113                               | 69-122 | 8   | 30  |      |      |     |     |
| Benzo(g,h,i)perylene     | 98   | 98                                | 62-131 | 7   | 30  |      |      |     |     |
| Indeno(1,2,3-cd)pyrene   | 109  | 110                               | 71-128 | 7   | 30  |      |      |     |     |
| Batch number: 01093A55   |      | Sample number(s): 3581219-3581228 |        |     |     |      |      |     |     |
| Benzene                  | 114  | 115                               | 66-140 | 0   | 30  |      |      |     |     |
| Toluene                  | 110  | 110                               | 72-138 | 1   | 30  |      |      |     |     |
| Ethylbenzene             | 110  | 111                               | 71-138 | 1   | 30  |      |      |     |     |
| Total Xylenes            | 110  | 111                               | 69-140 | 1   | 30  |      |      |     |     |

### Surrogate Quality Control

Analysis Name: PAH's in Water  
 Batch number: 010920013A

|         | Nitrobenzene | Triphenylene |
|---------|--------------|--------------|
| 3581227 | 88           | 107          |
| Blank   | 85           | 106          |
| LCS     | 92           | 109          |
| LCSD    | 90           | 110          |
| Limits: | 29-136       | 33-139       |

Analysis Name: PAH's in Water  
 Batch number: 010920015A

|         | Nitrobenzene | Triphenylene |
|---------|--------------|--------------|
| 3581219 | 95           | 112          |
| 3581220 | 89           | 113          |
| 3581221 | 94           | 112          |
| 3581222 | 93           | 115          |
| 3581223 | 92           | 108          |
| 3581224 | 92           | 111          |
| 3581225 | 100          | 121          |

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.





### Quality Control Summary

Client Name: Kerr-McGee Corporation

Group Number: 756814

Reported: 04/18/01 at 01:33 PM

#### Surrogate Quality Control

|         |    |     |
|---------|----|-----|
| 3581226 | 98 | 119 |
| Blank   | 88 | 107 |
| LCS     | 88 | 113 |
| MS      | 89 | 113 |
| MSD     | 94 | 112 |

---

Limits: 29-136 33-139

Analysis Name: BTEX (8021)

Batch number: 01093A55

Trifluorotoluene-P

---

|         |     |
|---------|-----|
| 3581219 | 101 |
| 3581220 | 100 |
| 3581221 | 100 |
| 3581222 | 100 |
| 3581223 | 102 |
| 3581224 | 102 |
| 3581225 | 102 |
| 3581226 | 103 |
| 3581227 | 102 |
| 3581228 | 101 |
| Blank   | 101 |
| LCS     | 100 |
| LCSD    | 100 |
| MS      | 100 |
| MSD     | 100 |

---

Limits: 69-134

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



# Analysis Request/ Environmental Services Chain of Custody



For Lancaster Laboratories use only  
 Acct. # 7802 Sample # 3580505-19

Please print. Instructions on reverse side correspond with circled numbers.

| Client: <u>Kerr McGee</u> Acct. #: _____<br>Project Name/ #: <u>Moss American</u> PWSID #: _____<br>Project Manager: <u>Tom Grazan</u> P.O. #: _____<br>Sampler: <u>Joe Klemp</u> Quote #: _____<br>Name of state where samples were collected: <u>WISCONSIN</u> |                |                |   | Matrix <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">4</span><br><input type="checkbox"/> Potable (Check if applicable)<br><input type="checkbox"/> NPDES<br><input type="checkbox"/> Water<br><input type="checkbox"/> Other |   | Analyses Requested <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">5</span><br><div style="display: flex; justify-content: space-between; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">                         Total # of Containers                     </div> <div style="text-align: center;"> <span style="font-size: 2em; font-weight: bold;">BTEX</span><br/> <span style="font-size: 2em; font-weight: bold;">PAHs (8310)</span> </div> </div> |       |                       |   | For lab use only<br>FSC: _____<br>SCR #: _____ |                |  |
|--|----------------|----------------|---|--|---|--|-------|-----------------------|---|--|----------------|--|
| <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">2</span>  |                |                | <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">3</span> |  | <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">6</span> |  |       |                       | <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">7</span> |  |                |  |
| Sample Identification  | Date Collected | Time Collected | Grab  | Composite  | Soil  | Water  | Other | Total # of Containers | BTEX  | PAHs (8310)                                    | Remarks        | Temperature of samples upon receipt (if requested) |
| MA3-MW65-290301-01   | 3-29-01        | 0900           | X   |  |   | X  |       | 5                     | X   | X  | 3 Casks in set |  |
| MA3-MW315-290301-02  |                | 0910           | X   |  |   | X  |       | 5                     | X   | X  |                |  |
| MA3-TW05-290301-03   |                | 0920           | X   |  |   | X  |       | 5                     | X   | X  |                |  |
| MA3-MW295-290301-04  |                | 0950           | X   |  |   | X  |       | 5                     | X   | X  |                |  |
| MA3-MW365-290301-05  |                | 1000           | X   |  |   | X  |       | 5                     | X   | X  |                |  |
| MA3-MW105-290301-06  |                | 1045           | X   |  |   | X  |       | 5                     | X   | X  |                |  |
| MA3-MW71I-290301-08  |                | 1320           | X   |  |   | X  |       | 5                     | X   | X  |                |  |
| MA3-MW20I-290301-07  |                | 1145           | X   |  |   | X  |       | 5                     | X   | X  |                |  |
| MA3-MW135-290301-09  |                | 1530           | X   |  |   | X  |       | 5                     | X   | X  |                |  |
| MA3-MW45-290301-10   |                | 1545           | X   |  |   | X  |       | 5                     | X   | X  |                |  |

|   |  |  |  |   |  |
|---|--|--|--|---|--|
| <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">7</span> Turnaround Time Requested (TAT) (please circle): <u>Normal</u> Rush<br>(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)<br>Date results are needed: <u>STD TAT</u><br>Rush results requested by (please circle): Phone <u>(847) 918-4000</u> Fax <u>(847) 918-4055</u> |  | Relinquished by: <u>[Signature]</u> Date: <u>3/29/01</u> Time: <u>1800</u> |  | Received by: <u>Fed Ex</u> Date: <u>3/29/01</u> Time: <u>1800</u> |  |
| <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">8</span> Data Package Options (please circle if requested)   |  | Relinquished by: _____ Date: _____ Time: _____                             |  | Received by: _____ Date: _____ Time: _____                        |  |
| QC Summary Type VI (Raw Data) <u>Per Quote</u> SDG Complete? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br>Type I (Tier I) GLP<br>Type II (Tier II) Other<br>Type III (NJ Red. Del.)<br>Type IV (CLP)  |  | Relinquished by: _____ Date: _____ Time: _____                             |  | Received by: _____ Date: _____ Time: _____                        |  |
| Site-specific QC required? Yes No<br>(If yes, indicate QC sample and submit triplicate volume.)<br>Internal Chain of Custody required? Yes No   |  | Relinquished by: _____ Date: _____ Time: _____                             |  | Received by: <u>Kathy Binkley</u> <u>3-30-01</u> <u>0910</u>      |  |



# Analysis Request/ Environmental Services Chain of Custody



For Lancaster Laboratories use only  
 Acct. # 7802 Sample # 3580505-19

Please print. Instructions on reverse side correspond with circled numbers.

| Client: <u>Kerr-McGee</u> Acct. #: _____<br>Project Name/#: <u>Moss American</u> PWSID #: _____<br>Project Manager: <u>Tom Giza</u> P.O.# _____<br>Sampler: <u>Joe Kump</u> Quote #: _____<br>Name of state where samples were collected: <u>WISCONSIN</u> |                |                |  | Matrix <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">4</span><br><input type="checkbox"/> Potable (Check if applicable)<br><input type="checkbox"/> Water <input type="checkbox"/> NPDES<br><input type="checkbox"/> Other |      |                                     | Analyses Requested <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">5</span><br><div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; transform: rotate(-45deg); font-weight: bold;">BTEX</div> <div style="border: 1px solid black; padding: 5px; transform: rotate(-45deg); font-weight: bold;">PAH 5</div> </div> |                       |                                     |                                     |  | For lab use only<br>FSC: _____<br>SCR #: _____<br><br>C.O.C. # <u>2052</u><br><br>Temperature of samples upon receipt (if requested) |  |         |                        |  |
|--|----------------|----------------|--|---|------|-------------------------------------|--|-----------------------|-------------------------------------|-------------------------------------|--|--|--|---------|------------------------|--|
| Sample Identification  | Date Collected | Time Collected | <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">3</span> Grab | Composite   | Soil | Water                               | Other  | Total # of Containers |                                     |                                     |  |  |  | Remarks |                        |  |
| <u>MA3-MW4I-290301-11</u>  | <u>3-29-01</u> | <u>1600</u>    | <input checked="" type="checkbox"/>  |   |      | <input checked="" type="checkbox"/> |  | <u>5</u>              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |  |  |  |         | <u>3 Colets in Set</u> |  |
| <del>MA3-MWBS-290301-10 DP</del>   |                |                |  |   |      |                                     |  |                       |                                     |                                     |  |  |  |         |                        |  |
| <u>MA3-MW13S-290301-09 DP</u>  | <u>3-29-01</u> | <u>1530</u>    | <input checked="" type="checkbox"/>  |   |      | <input checked="" type="checkbox"/> |  | <u>5</u>              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |  |  |  |         |                        |  |
| <u>FBD3</u>  | <u>3-29-01</u> | <u>1500</u>    | <input checked="" type="checkbox"/>  |   |      | <input checked="" type="checkbox"/> |  | <u>5</u>              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |  |  |  |         |                        |  |
| <u>MA3-MW30S-290301-12</u>   | <u>3-29-01</u> | <u>1640</u>    | <input checked="" type="checkbox"/>  |   |      | <input checked="" type="checkbox"/> |  | <u>5</u>              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |  |  |  |         |                        |  |

|  |  |  |  |   |  |  |  |  |  |
|--|--|--|--|---|--|--|--|--|--|
| <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">7</span> <b>Turnaround Time Requested (TAT)</b> (please circle): <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Normal</span> Rush<br>(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)<br>Date results are needed: <u>STD TAT</u><br>Rush results requested by (please circle): Phone <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Fax</span><br>Phone #: <u>(847)918-4000</u> Fax #: <u>(847)918-4055</u> |  | Relinquished by: <u>[Signature]</u><br>Date: <u>3/27/01</u> Time: <u>1600</u><br>Received by: <u>Fcd Ex</u><br>Date: <u>3/27/01</u> Time: <u>1800</u>  |  | Relinquished by: _____<br>Date: _____ Time: _____<br>Received by: _____<br>Date: _____ Time: _____  |  | Relinquished by: _____<br>Date: _____ Time: _____<br>Received by: _____<br>Date: _____ Time: _____ |  |  |  |
| <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">8</span> <b>Data Package Options</b> (please circle if requested)   |  | Type VI (Raw Data) <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Per Quote</span><br>Type I (Tier I) GLP<br>Type II (Tier II) Other<br>Type III (NJ Red. Del.)<br>Type IV (CLP) |  | SDG Complete? Yes <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">No</span><br>Site-specific QC required? Yes No<br>(If yes, indicate QC sample and submit triplicate volume.)<br>Internal Chain of Custody required? Yes No |  | Relinquished by: _____<br>Date: _____ Time: _____<br>Received by: _____<br>Date: _____ Time: _____ |  | Relinquished by: _____<br>Date: _____ Time: _____<br>Received by: <u>Kathy Binkley</u><br>Date: <u>3/30/01</u> Time: <u>0910</u> |  |



## ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation  
P.O. Box 25861  
Oklahoma City OK 73125

Prepared by:

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

### SAMPLE GROUP

The sample group for this submittal is 756679. Samples arrived at the laboratory on Friday, March 30, 2001.

| <u>Client Description</u>               | <u>Lancaster Labs Number</u> |
|---|------------------------------|
| MA3-MW6S-290301-01 Grab Water Sample    | 3580505                      |
| MA3-MW31S-290301-02 Grab Water Sample   | 3580506                      |
| MA3-TW05-290301-03 Grab Water Sample    | 3580507                      |
| MA3-MW29S-290301-04 Grab Water Sample   | 3580508                      |
| MA3-MW36S-290301-05 Grab Water Sample   | 3580509                      |
| MA3-MW10S-290301-06 Grab Water Sample   | 3580510                      |
| MA3-MW7I-290301-08 Grab Water Sample    | 3580511                      |
| MA3-MW20I-290301-07 Grab Water Sample   | 3580512                      |
| MA3-MW13S-290301-09 Grab Water Sample   | 3580513                      |
| MA3-MW4S-290301-10 Grab Water Sample    | 3580514                      |
| MA3-MW4I-290301-11 Grab Water Sample    | 3580515                      |
| MA3-MW13S-290301-09DP Grab Water Sample | 3580516                      |
| FB03 Grab Water Sample                  | 3580517                      |
| MA3-MW30S-290301-12 Grab Water Sample   | 3580518                      |
| Trip Blank Water Sample                 | 3580519                      |

### METHODOLOGY

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

1 COPY TO Kerr-McGee Corporation  
1 COPY TO Roy F. Weston  
1 COPY TO Data Package Group

Attn: Dr. Jeff Ostmeyer  
Attn: Mr. Tom Graan



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



Questions? Contact your Client Services Representative  
Kay G. Hower at (717) 656-2300.

Respectfully Submitted,

Matthew E. Barton  
Sr. Chemist/Coordinator



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



Lancaster Laboratories Sample No. WW 3580505

Collected: 03/29/2001 09:00 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10  
 Reported: 04/23/01 at 11:26 AM  
 Discard: 5/24/01

Kerr-McGee Corporation  
 P.O. Box 25861  
 Oklahoma City OK 73125

MA3-MW6S-290301-01 Grab Water Sample  
 Moss American Superfund Site - Milwaukee, WI

6S-01 SDG#: MOA52-01

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 1.0                                | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 1.0                                | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 1.0                                | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.20                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.084                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.036                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.036                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.20                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.024                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.072                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.045                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.012                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.024                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.036                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.12                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.080                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---------|---------------|--------|--------|------------------------|---------|-----------------|
|---------|---------------|--------|--------|------------------------|---------|-----------------|

MEMBER  

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



Lancaster Laboratories Sample No. WW 3580505

Collected: 03/29/2001 09:00 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/23/01 at 11:26 AM

P.O. Box 25861

Discard: 5/24/01

Oklahoma City OK 73125

MA3-MW6S-290301-01 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

6S-01 SDG#: MOA52-01

08213 BTEX (8021)

SW-846 8021B/5030B

1 04/02/2001 17:39

Melissa Mann

1

01861 PAH's in Water

SW-846 8310

1 04/13/2001 02:06

Michele D. Hamilton

1

03337 PAH Water Extraction

SW-846 3510C

1 04/03/2001 05:30

Ginelle L. Haines

1



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



Lancaster Laboratories Sample No. WW 3580506

Collected: 03/29/2001 09:10 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:26 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW31S-290301-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

31S02 SDG#: MOA52-02

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.86                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.86                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.86                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.075                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.032                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.032                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.022                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.065                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.041                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.011                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.022                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.032                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.11                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.072                              | ug/l  | 1               |

### Laboratory Chronicle



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2425 New Holland Pike  
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Lancaster Laboratories Sample No. WW 3580506

Collected: 03/29/2001 09:10 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:26 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW31S-290301-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

31S02 SDG#: MOA52-02

| CAT<br>No. | Analysis Name        | Method             | Analysis |                  |                     | Dilution<br>Factor |
|------------|----------------------|--------------------|----------|------------------|---------------------|--------------------|
|            |                      |                    | Trial#   | Date and Time    | Analyst             |                    |
| 08213      | BTEX (8021)          | SW-846 8021B/5030B | 1        | 04/02/2001 18:16 | Melissa Mann        | 1                  |
| 01861      | PAH's in Water       | SW-846 8310        | 1        | 04/13/2001 02:28 | Michele D. Hamilton | 1                  |
| 03337      | PAH Water Extraction | SW-846 3510C       | 1        | 04/03/2001 05:30 | Ginelle L. Haines   | 1                  |



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Lancaster Laboratories Sample No. WW 3580507

Collected: 03/29/2001 09:20 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:26 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-TW05-290301-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

05-03 SDG#: MOA52-03

| CAT No. | Analysis Name          | CAS Number | As Received |                        | Units | Dilution Factor |
|---------|------------------------|------------|-------------|------------------------|-------|-----------------|
|         |                        |            | Result      | Method Detection Limit |       |                 |
| 08213   | BTEX (8021)            |            |             |                        |       |                 |
| 00776   | Benzene                | 71-43-2    | N.D.        | 0.20                   | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.        | 0.20                   | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.        | 0.20                   | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.        | 0.60                   | ug/l  | 1               |
| 01861   | PAH's in Water         |            |             |                        |       |                 |
| 03280   | Naphthalene            | 91-20-3    | 8.6 J       | 4.2                    | ug/l  | 5               |
| 03281   | Acenaphthylene         | 208-96-8   | 10. J       | 4.2                    | ug/l  | 5               |
| 03282   | Acenaphthene           | 83-32-9    | 64.         | 4.2                    | ug/l  | 5               |
| 03283   | Fluorene               | 86-73-7    | 43.         | 0.90                   | ug/l  | 5               |
| 03284   | Phenanthrene           | 85-01-8    | 1.5 J       | 0.37                   | ug/l  | 5               |
| 03285   | Anthracene             | 120-12-7   | 1.3         | 0.16                   | ug/l  | 5               |
| 03286   | Fluoranthene           | 206-44-0   | 7.6         | 0.16                   | ug/l  | 5               |
| 03287   | Pyrene                 | 129-00-0   | 4.6         | 0.90                   | ug/l  | 5               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | 0.11 J      | 0.11                   | ug/l  | 5               |
| 03289   | Chrysene               | 218-01-9   | N.D.        | 0.32                   | ug/l  | 5               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.        | 0.20                   | ug/l  | 5               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.        | 0.053                  | ug/l  | 5               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.        | 0.11                   | ug/l  | 5               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.        | 0.16                   | ug/l  | 5               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.        | 0.53                   | ug/l  | 5               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.        | 0.35                   | ug/l  | 5               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Analysis |                  | Analyst                 | Dilution Factor |
|---------|---------------|--------------------|----------|------------------|-------------------------|-----------------|
|         |               |                    | Trial#   | Date and Time    |                         |                 |
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1        | 04/04/2001 06:23 | Melissa-Ann S. McAlpine | 1               |



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Lancaster Laboratories Sample No. WW 3580507

Collected: 03/29/2001 09:20 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

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Discard: 5/18/01

Oklahoma City OK 73125

MA3-TW05-290301-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

05-03 SDG#: MOA52-03

01861 PAH's in Water

SW-846 8310

1 04/17/2001 10:43

Michele D. Hamilton

5

03337 PAH Water Extraction

SW-846 3510C

1 04/03/2001 05:30

Ginelle L. Haines

1



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Lancaster Laboratories Sample No. WW 3580508

Collected: 03/29/2001 09:50 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:26 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW29S-290301-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

29S04 SDG#: MOA52-04

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.87                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.87                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.87                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.076                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.033                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.033                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.022                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.065                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.041                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.011                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.022                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.033                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.11                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.073                              | ug/l  | 1               |

### Laboratory Chronicle



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Lancaster Laboratories Sample No. WW 3580508

Collected: 03/29/2001 09:50 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

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Reported: 04/17/01 at 09:26 PM

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Discard: 5/18/01

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MA3-MW29S-290301-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

29S04 SDG#: MOA52-04

| CAT   |                      | Analysis           |        |                  |                     | Dilution |
|-------|----------------------|--------------------|--------|------------------|---------------------|----------|
| No.   | Analysis Name        | Method             | Trial# | Date and Time    | Analyst             | Factor   |
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1      | 04/02/2001 23:55 | Melissa Mann        | 1        |
| 01861 | PAH's in Water       | SW-846 8310        | 1      | 04/13/2001 03:33 | Michele D. Hamilton | 1        |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1      | 04/03/2001 05:30 | Ginelle L. Haines   | 1        |



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Lancaster Laboratories Sample No. WW 3580509

Collected: 03/29/2001 10:00 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:26 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW36S-290301-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

36S05 SDG#: MOA52-05

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                    | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene               | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes              | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                            |            |                    |                                    |       |                 |
| 01861   | PAH's in Water             |            |                    |                                    |       |                 |
| 03280   | Naphthalene                | 91-20-3    | N.D.               | 0.82                               | ug/l  | 1               |
| 03281   | Acenaphthylene             | 208-96-8   | N.D.               | 0.82                               | ug/l  | 1               |
| 03282   | Acenaphthene               | 83-32-9    | N.D.               | 0.82                               | ug/l  | 1               |
| 03283   | Fluorene                   | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene               | 85-01-8    | N.D.               | 0.072                              | ug/l  | 1               |
| 03285   | Anthracene                 | 120-12-7   | N.D.               | 0.031                              | ug/l  | 1               |
| 03286   | Fluoranthene               | 206-44-0   | N.D.               | 0.031                              | ug/l  | 1               |
| 03287   | Pyrene                     | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo (a) anthracene       | 56-55-3    | N.D.               | 0.021                              | ug/l  | 1               |
| 03289   | Chrysene                   | 218-01-9   | N.D.               | 0.062                              | ug/l  | 1               |
| 03290   | Benzo (b) fluoranthene     | 205-99-2   | N.D.               | 0.039                              | ug/l  | 1               |
| 03291   | Benzo (k) fluoranthene     | 207-08-9   | N.D.               | 0.010                              | ug/l  | 1               |
| 03292   | Benzo (a) pyrene           | 50-32-8    | N.D.               | 0.021                              | ug/l  | 1               |
| 03293   | Dibenzo (a, h) anthracene  | 53-70-3    | N.D.               | 0.031                              | ug/l  | 1               |
| 03294   | Benzo (g, h, i) perylene   | 191-24-2   | N.D.               | 0.10                               | ug/l  | 1               |
| 03295   | Indeno (1, 2, 3-cd) pyrene | 193-39-5   | N.D.               | 0.069                              | ug/l  | 1               |

### Laboratory Chronicle



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Lancaster Laboratories Sample No. WW 3580509

Collected: 03/29/2001 10:00 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

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Discard: 5/18/01

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MA3-MW36S-290301-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

36S05 SDG#: MOA52-05

| CAT | No.   | Analysis Name        | Method             | Analysis |                  | Analyst             | Dilution Factor |
|-----|-------|----------------------|--------------------|----------|------------------|---------------------|-----------------|
|     |       |                      |                    | Trial#   | Date and Time    |                     |                 |
|     | 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1        | 04/03/2001 00:32 | Melissa Mann        | 1               |
|     | 01861 | PAH's in Water       | SW-846 8310        | 1        | 04/13/2001 03:54 | Michele D. Hamilton | 1               |
|     | 03337 | PAH Water Extraction | SW-846 3510C       | 1        | 04/03/2001 05:30 | Ginelle L. Haines   | 1               |



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Lancaster Laboratories Sample No. WW 3580510

Collected: 03/29/2001 10:45 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:26 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW10S-290301-06 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

10S06 SDG#: MOA52-06

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.86                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.86                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.86                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.075                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.032                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.032                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.022                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.065                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.041                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.011                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.022                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.032                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.11                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.072                              | ug/l  | 1               |

## Laboratory Chronicle



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Lancaster Laboratories Sample No. WW 3580510

Collected: 03/29/2001 10:45 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:26 PM

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Discard: 5/18/01

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MA3-MW10S-290301-06 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

10S06 SDG#: MOA52-06

| CAT   |                      | Analysis           |        |                  |                     | Dilution |
|-------|----------------------|--------------------|--------|------------------|---------------------|----------|
| No.   | Analysis Name        | Method             | Trial# | Date and Time    | Analyst             | Factor   |
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1      | 04/03/2001 01:09 | Melissa Mann        | 1        |
| 01861 | PAH's in Water       | SW-846 8310        | 1      | 04/13/2001 04:16 | Michele D. Hamilton | 1        |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1      | 04/03/2001 05:30 | Ginelle L. Haines   | 1        |



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Lancaster Laboratories Sample No. **WW 3580511**

Collected: 03/29/2001 13:20 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW7I-290301-08 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

7I-08 SDG#: MOA52-07

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.83                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.83                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.83                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.072                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.031                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.031                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.021                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.062                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.039                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.010                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.021                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.031                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.10                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.069                              | ug/l  | 1               |

## Laboratory Chronicle



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Lancaster Laboratories Sample No. WW 3580511

Collected: 03/29/2001 13:20 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW7I-290301-08 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

7I-08 SDG#: MOA52-07

| CAT   |                      | Analysis           |        |                  |                     | Dilution |
|-------|----------------------|--------------------|--------|------------------|---------------------|----------|
| No.   | Analysis Name        | Method             | Trial# | Date and Time    | Analyst             | Facto    |
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1      | 04/03/2001 01:46 | Melissa Mann        | 1        |
| 01861 | PAH's in Water       | SW-846 8310        | 1      | 04/13/2001 04:37 | Michele D. Hamilton | 1        |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1      | 04/03/2001 05:30 | Ginelle L. Haines   | 1        |



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Lancaster Laboratories Sample No. WW 3580512

Collected: 03/29/2001 11:45 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW20I-290301-07 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

20-07 SDG#: MOA52-08

| CAT No.   | Analysis Name          | CAS Number | As Received Result | As Received            |  | Units | Dilution Factor |
|---|------------------------|------------|--------------------|------------------------|--|-------|-----------------|
|   |                        |            |                    | Method Detection Limit |  |       |                 |
| 08213   | BTEX (8021)            |            |                    |                        |  |       |                 |
| 00776   | Benzene                | 71-43-2    | N.D.               | 0.20                   |  | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                   |  | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                   |  | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                   |  | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                        |  |       |                 |
| 01861   | PAH's in Water         |            |                    |                        |  |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.87                   |  | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.87                   |  | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.87                   |  | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                   |  | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.076                  |  | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.033                  |  | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.033                  |  | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                   |  | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.022                  |  | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.065                  |  | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.041                  |  | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.011                  |  | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.022                  |  | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.033                  |  | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.11                   |  | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.073                  |  | ug/l  | 1               |

## Laboratory Chronicle



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Lancaster Laboratories Sample No. WW 3580512

Collected: 03/29/2001 11:45 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW20I-290301-07 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

20-07 SDG#: MOA52-08

| CAT   |                      | Analysis           |        |                  |                     | Dilution |
|-------|----------------------|--------------------|--------|------------------|---------------------|----------|
| No.   | Analysis Name        | Method             | Trial# | Date and Time    | Analyst             | Factor   |
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1      | 04/03/2001 04:14 | Melissa Mann        | 1        |
| 01861 | PAH's in Water       | SW-846 8310        | 1      | 04/13/2001 04:59 | Michele D. Hamilton | 1        |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1      | 04/03/2001 05:30 | Ginelle L. Haines   | 1        |



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Lancaster Laboratories Sample No. WW 3580513

Collected: 03/29/2001 15:30 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW13S-290301-09 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

13S09 SDG#: MOA52-09

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.76                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.76                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.76                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.16                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.066                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.028                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.028                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.16                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.019                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.057                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.036                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0095                             | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.019                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.028                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.095                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.064                              | ug/l  | 1               |

### Laboratory Chronicle



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Lancaster Laboratories Sample No. WW 3580513

Collected: 03/29/2001 15:30 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

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Reported: 04/17/01 at 09:27 PM

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Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW13S-290301-09 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

13S09 SDG#: MOA52-09

| CAT   |                      | Analysis           |        |                  |                     | Dilution |
|-------|----------------------|--------------------|--------|------------------|---------------------|----------|
| No.   | Analysis Name        | Method             | Trial# | Date and Time    | Analyst             | Factor   |
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1      | 04/03/2001 04:51 | Melissa Mann        | 1        |
| 01861 | PAH's in Water       | SW-846 8310        | 1      | 04/13/2001 05:20 | Michele D. Hamilton | 1        |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1      | 04/03/2001 05:30 | Ginelle L. Haines   | 1        |



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Lancaster Laboratories Sample No. WW 3580514

Collected: 03/29/2001 15:45 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW4S-290301-10 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

4S-10 SDG#: MOA52-10

| 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    | 5.1 J              |                    | 5.0             | ug/l  | 25              |
| 00777  | Toluene                    | 108-88-3   | 8.6 J              |                    | 5.0             | ug/l  | 25              |
| 00778  | Ethylbenzene               | 100-41-4   | 11. J              |                    | 5.0             | ug/l  | 25              |
| 00779  | Total Xylenes              | 1330-20-7  | 21. J              |                    | 15.             | ug/l  | 25              |
| Due to excessive foaming of the sample, normal reporting limits were not attained. |                            |            |                    |                    |                 |       |                 |
| 01861  | PAH's in Water             |            |                    |                    |                 |       |                 |
| 03280  | Naphthalene                | 91-20-3    | 830.               |                    | 39.             | ug/l  | 50              |
| 03281  | Acenaphthylene             | 208-96-8   | 97. J              |                    | 39.             | ug/l  | 50              |
| 03282  | Acenaphthene               | 83-32-9    | 460.               |                    | 39.             | ug/l  | 50              |
| 03283  | Fluorene                   | 86-73-7    | 210.               |                    | 8.2             | ug/l  | 50              |
| 03284  | Phenanthrene               | 85-01-8    | 6.0 J              |                    | 3.4             | ug/l  | 50              |
| 03285  | Anthracene                 | 120-12-7   | 2.7 J              |                    | 1.5             | ug/l  | 50              |
| 03286  | Fluoranthene               | 206-44-0   | 23.                |                    | 1.5             | ug/l  | 50              |
| 03287  | Pyrene                     | 129-00-0   | 14. J              |                    | 8.2             | ug/l  | 50              |
| 03288  | Benzo (a) anthracene       | 56-55-3    | N.D.               |                    | 1.0             | ug/l  | 50              |
| 03289  | Chrysene                   | 218-01-9   | N.D.               |                    | 2.9             | ug/l  | 50              |
| 03290  | Benzo (b) fluoranthene     | 205-99-2   | N.D.               |                    | 1.8             | ug/l  | 50              |
| 03291  | Benzo (k) fluoranthene     | 207-08-9   | N.D.               |                    | 0.48            | ug/l  | 50              |
| 03292  | Benzo (a) pyrene           | 50-32-8    | N.D.               |                    | 1.0             | ug/l  | 50              |
| 03293  | Dibenzo (a, h) anthracene  | 53-70-3    | N.D.               |                    | 1.5             | ug/l  | 50              |
| 03294  | Benzo (g, h, i) perylene   | 191-24-2   | N.D.               |                    | 4.8             | ug/l  | 50              |
| 03295  | Indeno (1, 2, 3-cd) pyrene | 193-39-5   | N.D.               |                    | 3.2             | ug/l  | 50              |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method | Analysis Trial# | Date and Time | Analyst | Dilution Factor |
|---------|---------------|--------|-----------------|---------------|---------|-----------------|
|---------|---------------|--------|-----------------|---------------|---------|-----------------|



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Lancaster Laboratories Sample No. WW 3580514

Collected: 03/29/2001 15:45 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW4S-290301-10 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

|       |                      |                    |   |                  |                         |    |
|-------|----------------------|--------------------|---|------------------|-------------------------|----|
| 4S-10 | SDG#: MOA52-10       |                    |   |                  |                         |    |
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1 | 04/04/2001 08:14 | Melissa-Ann S. McAlpine | 25 |
| 01861 | PAH's in Water       | SW-846 8310        | 1 | 04/17/2001 11:08 | Michele D. Hamilton     | 50 |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1 | 04/03/2001 05:30 | Ginelle L. Haines       | 1  |



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Lancaster Laboratories Sample No. WW 3580515

Collected: 03/29/2001 16:00 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW4I-290301-11 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

4I-11 SDG#: MOA52-11

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.86                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.86                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.86                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.075                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.032                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.032                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.021                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.064                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.041                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.011                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.021                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.032                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.11                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.072                              | ug/l  | 1               |

### Laboratory Chronicle



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Lancaster Laboratories Sample No. WW 3580515

Collected: 03/29/2001 16:00 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

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Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW4I-290301-11 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

4I-11 SDG#: MOA52-11

| CAT   |                      | Analysis           |        |                  | Dilution            |        |
|-------|----------------------|--------------------|--------|------------------|---------------------|--------|
| No.   | Analysis Name        | Method             | Trial# | Date and Time    | Analyst             | Factor |
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1      | 04/02/2001 20:13 | Melissa Mann        | 1      |
| 01861 | PAH's in Water       | SW-846 8310        | 1      | 04/13/2001 06:03 | Michele D. Hamilton | 1      |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1      | 04/03/2001 05:30 | Ginelle L. Haines   | 1      |



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Lancaster Laboratories Sample No. **WW 3580516**

Collected: 03/29/2001 15:30 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW13S-290301-09DP Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

13S9D SDG#: MOA52-12FD

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.77                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.77                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.77                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.16                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.068                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.029                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.029                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.16                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.019                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.058                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.037                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0097                             | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.019                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.029                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.097                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.065                              | ug/l  | 1               |

### Laboratory Chronicle



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



Lancaster Laboratories Sample No. WW 3580516

Collected: 03/29/2001 15:30 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW13S-290301-09DP Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

13S9D SDG#: MOA52-12FD

| CAT   |                      | Analysis           |        |                  | Dilution            |        |
|-------|----------------------|--------------------|--------|------------------|---------------------|--------|
| No.   | Analysis Name        | Method             | Trial# | Date and Time    | Analyst             | Factor |
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1      | 04/02/2001 14:12 | Melissa Mann        | 1      |
| 01861 | PAH's in Water       | SW-846 8310        | 1      | 04/13/2001 06:25 | Michele D. Hamilton | 1      |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1      | 04/03/2001 05:30 | Ginelle L. Haines   | 1      |



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Lancaster Laboratories Sample No. WW 3580517

Collected: 03/29/2001 15:00 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

FB03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

FBXX3 SDG#: MOA52-13FB

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.82                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.82                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.82                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.072                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.031                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.031                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.021                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.062                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.039                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.010                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.021                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.031                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.10                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.069                              | ug/l  | 1               |

### Laboratory Chronicle



Lancaster Laboratories, Inc.  
 2425 New Holland Pike  
 PO Box 12425  
 Lancaster, PA 17605-2425  
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Lancaster Laboratories Sample No. WW 3580517

Collected: 03/29/2001 15:00 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

FB03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

FBXX3 SDG#: MOA52-13FB

| CAT   |                      | Analysis           |        |                  | Dilution            |        |
|-------|----------------------|--------------------|--------|------------------|---------------------|--------|
| No.   | Analysis Name        | Method             | Trial# | Date and Time    | Analyst             | Factor |
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1      | 04/02/2001 20:50 | Melissa Mann        | 1      |
| 01861 | PAH's in Water       | SW-846 8310        | 1      | 04/13/2001 06:46 | Michele D. Hamilton | 1      |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1      | 04/03/2001 05:30 | Ginelle L. Haines   | 1      |



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Lancaster, PA 17605-2425  
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Lancaster Laboratories Sample No. **WW 3580518**

Collected: 03/29/2001 16:40 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW30S-290301-12 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

30S12 SDG#: MOA52-14

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.85                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.85                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.85                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.074                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.032                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.032                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.021                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.064                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.040                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.011                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.021                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.032                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.11                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.071                              | ug/l  | 1               |

### Laboratory Chronicle



Lancaster Laboratories, Inc.  
 2425 New Holland Pike  
 PO Box 12425  
 Lancaster, PA 17605-2425  
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Lancaster Laboratories Sample No. WW 3580518

Collected: 03/29/2001 16:40 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW30S-290301-12 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

30S12 SDG#: MOA52-14

| CAT   |                      | Analysis           |        |                  |                     | Dilution |
|-------|----------------------|--------------------|--------|------------------|---------------------|----------|
| No.   | Analysis Name        | Method             | Trial# | Date and Time    | Analyst             | Factor   |
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1      | 04/02/2001 15:26 | Melissa Mann        | 1        |
| 01861 | PAH's in Water       | SW-846 8310        | 1      | 04/13/2001 07:30 | Michele D. Hamilton | 1        |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1      | 04/03/2001 05:30 | Ginelle L. Haines   | 1        |



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Lancaster Laboratories Sample No. WW 3580519

Collected: n.a.

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

Trip Blank Water Sample

Moss American Superfund Site - Milwaukee, WI

329TB SDG#: MOA52-15TB\*

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene       | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene  | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

## Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis Date and Time | Analyst      | Dilution Factor |
|---------|---------------|--------------------|--------|------------------------|--------------|-----------------|
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 04/02/2001 12:58       | Melissa Mann | 1               |



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





Client Name: Kerr-McGee Corporation  
 Reported: 04/17/01 at 09:27 PM

Group Number: 756679

#### Laboratory Compliance Quality Control

| Analysis Name   | Blank Result | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|--------------|-----------|--------------|----------|-----------|-----------------|-----|---------|
| Batch number: 010920015A      Sample number(s): 3580505-3580518                               |              |           |              |          |           |                 |     |         |
| Naphthalene   | N.D.         | .8        | ug/l         | 52       |           | 45-111          |     |         |
| Acenaphthylene  | N.D.         | .8        | ug/l         | 70       |           | 59-114          |     |         |
| Acenaphthene  | N.D.         | .8        | ug/l         | 67       |           | 50-120          |     |         |
| Fluorene  | N.D.         | .17       | ug/l         | 82       |           | 64-117          |     |         |
| Phenanthrene  | N.D.         | .07       | ug/l         | 99       |           | 75-114          |     |         |
| Anthracene  | N.D.         | .03       | ug/l         | 97       |           | 53-112          |     |         |
| Fluoranthene  | N.D.         | .03       | ug/l         | 112      |           | 75-120          |     |         |
| Pyrene  | N.D.         | .17       | ug/l         | 98       |           | 74-118          |     |         |
| Benzo(a)anthracene  | N.D.         | .02       | ug/l         | 109      |           | 73-117          |     |         |
| Chrysene  | N.D.         | .06       | ug/l         | 106      |           | 68-125          |     |         |
| Benzo(b)fluoranthene  | N.D.         | .038      | ug/l         | 111      |           | 71-123          |     |         |
| Benzo(k)fluoranthene  | N.D.         | .01       | ug/l         | 109      |           | 75-118          |     |         |
| Benzo(a)pyrene  | N.D.         | .02       | ug/l         | 98       |           | 61-127          |     |         |
| Dibenzo(a,h)anthracene  | N.D.         | .03       | ug/l         | 109      |           | 71-121          |     |         |
| Benzo(g,h,i)perylene  | N.D.         | .1        | ug/l         | 96       |           | 70-125          |     |         |
| Indeno(1,2,3-cd)pyrene  | N.D.         | .067      | ug/l         | 107      |           | 73-125          |     |         |
|   |              |           |              |          |           |                 |     |         |
| Batch number: 01092A55      Sample number(s): 3580505-3580506,3580508-3580513,3580515-3580519 |              |           |              |          |           |                 |     |         |
| Benzene   | N.D.         | .2        | ug/l         | 113      | 107       | 80-118          | 5   | 30      |
| Toluene   | N.D.         | .2        | ug/l         | 107      | 102       | 82-119          | 5   | 30      |
| Ethylbenzene  | N.D.         | .2        | ug/l         | 107      | 102       | 81-119          | 5   | 30      |
| Total Xylenes   | N.D.         | .6        | ug/l         | 106      | 102       | 82-120          | 5   | 30      |
|   |              |           |              |          |           |                 |     |         |
| Batch number: 01093A55      Sample number(s): 3580507,3580514                                 |              |           |              |          |           |                 |     |         |
| Benzene   | N.D.         | .2        | ug/l         | 111      | 109       | 80-118          | 1   | 30      |
| Toluene   | N.D.         | .2        | ug/l         | 106      | 104       | 82-119          | 2   | 30      |
| Ethylbenzene  | N.D.         | .2        | ug/l         | 105      | 103       | 81-119          | 2   | 30      |
| Total Xylenes   | N.D.         | .6        | ug/l         | 105      | 103       | 82-120          | 2   | 30      |

#### Sample Matrix Quality Control

| Analysis Name   | MS %REC | MSD %REC | MS/MSD Limits | RPD | BKG MAX | DUP Conc | DUP RPD | Dup RPD Max |
|---|---------|----------|---------------|-----|---------|----------|---------|-------------|
| Batch number: 010920015A      Sample number(s): 3580505-3580518 |         |          |               |     |         |          |         |             |
| Naphthalene   | 80      | 88       | 59-108        | 16  | 30      |          |         |             |
| Acenaphthylene  | 95      | 98       | 38-134        | 9   | 30      |          |         |             |
| Acenaphthene  | 92      | 94       | 48-127        | 9   | 30      |          |         |             |
| Fluorene  | 98      | 99       | 61-122        | 8   | 30      |          |         |             |
| Phenanthrene  | 106     | 107      | 67-122        | 7   | 30      |          |         |             |
| Anthracene  | 102     | 103      | 61-107        | 7   | 30      |          |         |             |
| Fluoranthene  | 115     | 116      | 64-126        | 7   | 30      |          |         |             |
| Pyrene  | 101     | 101      | 80-125        | 7   | 30      |          |         |             |
| Benzo(a)anthracene  | 111     | 112      | 54-130        | 8   | 30      |          |         |             |

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



Client Name: Kerr-McGee Corporation  
Reported: 04/17/01 at 09:27 PM

Group Number: 756679

### Sample Matrix Quality Control

| Analysis Name             | MS   | MSD   | MS/MSD | RPD | BKG | DUP  | DUP  | Dup |
|---------------------------|------|---|--------|-----|-----|------|------|-----|
|                           | %REC | %REC  | Limits | RPD | MAX | Conc | Conc | RPD |
| Chrysene                  | 108  | 108   | 49-140 | 7   | 30  |      |      | RPD |
| Benzo(b) fluoranthene     | 111  | 113   | 59-132 | 8   | 30  |      |      | Max |
| Benzo(k) fluoranthene     | 110  | 111   | 72-120 | 7   | 30  |      |      |     |
| Benzo(a) pyrene           | 98   | 99  | 36-147 | 8   | 30  |      |      |     |
| Dibenzo(a, h) anthracene  | 111  | 113   | 69-122 | 8   | 30  |      |      |     |
| Benzo(g, h, i) perylene   | 98   | 98  | 62-131 | 7   | 30  |      |      |     |
| Indeno(1, 2, 3-cd) pyrene | 109  | 110   | 71-128 | 7   | 30  |      |      |     |
| Batch number: 01092A55    |      | Sample number(s): 3580505-3580506, 3580508-3580513, 3580515-3580519 |        |     |     |      |      |     |
| Benzene                   | 114  |   | 66-140 |     |     |      |      |     |
| Toluene                   | 109  |   | 72-138 |     |     |      |      |     |
| Ethylbenzene              | 109  |   | 71-138 |     |     |      |      |     |
| Total Xylenes             | 109  |   | 69-140 |     |     |      |      |     |
| Batch number: 01093A55    |      | Sample number(s): 3580507, 3580514                                  |        |     |     |      |      |     |
| Benzene                   | 114  | 115   | 66-140 | 0   | 30  |      |      |     |
| Toluene                   | 110  | 110   | 72-138 | 1   | 30  |      |      |     |
| Ethylbenzene              | 110  | 111   | 71-138 | 1   | 30  |      |      |     |
| Total Xylenes             | 110  | 111   | 69-140 | 1   | 30  |      |      |     |

### Surrogate Quality Control

Analysis Name: PAH's in Water  
Batch number: 010920015A

|         | Nitrobenzene | Triphenylene |
|---------|--------------|--------------|
| 3580505 | 95           | 111          |
| 3580506 | 89           | 111          |
| 3580507 | 70           | 116          |
| 3580508 | 86           | 111          |
| 3580509 | 99           | 111          |
| 3580510 | 90           | 110          |
| 3580511 | 93           | 114          |
| 3580512 | 88           | 110          |
| 3580513 | 89           | 113          |
| 3580514 | 102          | 144*         |
| 3580515 | 87           | 113          |
| 3580516 | 89           | 111          |
| 3580517 | 94           | 116          |
| 3580518 | 93           | 112          |
| Blank   | 88           | 107          |
| LCS     | 88           | 113          |
| MS      | 89           | 113          |
| MSD     | 94           | 112          |

- \*- Outside of specification
- (1) The result for one or both determinations was less than five times the LOQ.
  - (2) The background result was more than four times the spike added.





### Quality Control Summary

Client Name: Kerr-McGee Corporation  
Reported: 04/17/01 at 09:27 PM

Group Number: 756679

#### Surrogate Quality Control

Limits: 29-136 33-139

Analysis Name: BTEX (8021)  
Batch number: 01092A55  
Trifluorotoluene-P

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|         |     |
|---------|-----|
| 3580505 | 101 |
| 3580506 | 101 |
| 3580508 | 102 |
| 3580509 | 101 |
| 3580510 | 101 |
| 3580511 | 102 |
| 3580512 | 101 |
| 3580513 | 102 |
| 3580515 | 103 |
| 3580516 | 101 |
| 3580517 | 101 |
| 3580518 | 101 |
| 3580519 | 101 |
| Blank   | 101 |
| LCS     | 100 |
| LCSD    | 101 |
| MS      | 100 |

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Limits: 69-134

Analysis Name: BTEX (8021)  
Batch number: 01093A55  
Trifluorotoluene-P

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|         |     |
|---------|-----|
| 3580507 | 100 |
| 3580514 | 102 |
| Blank   | 101 |
| LCS     | 100 |
| LCSD    | 100 |
| MS      | 100 |
| MSD     | 100 |

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Limits: 69-134

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.





## ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation  
P.O. Box 25861  
Oklahoma City OK 73125

Prepared by:

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

## SAMPLE GROUP

The sample group for this submittal is 756814. Samples arrived at the laboratory on Saturday, March 31, 2001.

| <u>Client Description</u>                          | <u>Lancaster Labs Number</u> |
|--|------------------------------|
| MA3-MW25S-300301-01 Unspiked Grab Water Sample     | 3581219                      |
| MA3-MW25S-300301-MS Matrix Spike Grab Water Sample | 3581220                      |
| MA3-MW25S-300301-MSD Matrix Spike Dup. Grab Water  | 3581221                      |
| MA3-MW26S-300301-02 Grab Water Sample              | 3581222                      |
| MA3-MW5S-300301-03 Grab Water Sample               | 3581223                      |
| MA3-MW3S-300301-04 Grab Water Sample               | 3581224                      |
| MA3-MW3I-300301-05 Grab Water Sample               | 3581225                      |
| MA3-MW26S-300301-02DP Grab Water Sample            | 3581226                      |
| MA3-FB04-300301 Field Blank Grab Water Sample      | 3581227                      |
| MA3-TB04-300301 Trip Blank Water Sample            | 3581228                      |

## METHODOLOGY

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

1 COPY TO Kerr-McGee Corporation  
1 COPY TO Roy F. Weston  
1 COPY TO Data Package Group

Attn: Dr. Jeff Ostmeyer  
Attn: Mr. Tom Graan

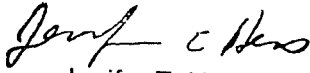


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Questions? Contact your Client Services Representative  
Kay G. Hower at (717) 656-2300.

Respectfully Submitted,



Jenifer E. Hess  
Group Leader



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Lancaster Laboratories Sample No. WW 3581219

Collected: 03/29/2001 09:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW25S-300301-01 Unspiked Grab Water Sample  
Moss American Superfund Site - Milwaukee, WI

MW6S- SDG#: MOA53-01BKG

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received     |       | Dilution Factor |
|---------|------------------------|------------|--------------------|-----------------|-------|-----------------|
|         |                        |            |                    | Method          | Units |                 |
|         |                        |            |                    | Detection Limit |       |                 |
| 08213   | BTEX (8021)            |            |                    |                 |       |                 |
| 00776   | Benzene                | 71-43-2    | N.D.               | 0.20            | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20            | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20            | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60            | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                 |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.82            | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.82            | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.82            | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.17            | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.072           | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.031           | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.031           | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.17            | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.020           | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.061           | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.039           | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.010           | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.020           | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.031           | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.10            | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.069           | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name        | Method             | Trial# | Analysis         |  | Analyst                 | Dilution Factor |
|---------|----------------------|--------------------|--------|------------------|--|-------------------------|-----------------|
|         |                      |                    |        | Date and Time    |  |                         |                 |
| 08213   | BTEX (8021)          | SW-846 8021B/5030B | 1      | 04/03/2001 16:49 |  | Melissa-Ann S. McAlpine | 1               |
| 01861   | PAH's in Water       | SW-846 8310        | 1      | 04/13/2001 07:51 |  | Michele D. Hamilton     | 1               |
| 03337   | PAH Water Extraction | SW-846 3510C       | 1      | 04/03/2001 05:30 |  | Ginelle L. Haines       | 1               |



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Lancaster Laboratories Sample No. WW 3581219

Collected: 03/29/2001 09:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Reported: 04/18/01 at 01:32 PM

Discard: 5/19/01

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MA3-MW25S-300301-01 Unspiked Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW6S- SDG#: MOA53-01BKG



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Lancaster Laboratories Sample No. WW 3581220

Collected: 03/29/2001 09:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW25S-300301-MS Matrix Spike Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MAWTB SDG#: MOA53-01MS

| 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    | 23.                | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | 22.                | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | 22.                | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | 66.                | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | 160.               | 0.79                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | 190.               | 0.79                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | 180.               | 0.79                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | 19.                | 0.17                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | 6.2                | 0.069                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | 3.0                | 0.030                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | 3.4                | 0.030                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | 20.                | 0.17                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | 1.6                | 0.020                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | 6.4                | 0.059                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | 1.3                | 0.037                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | 1.3                | 0.0099                             | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | 1.4                | 0.020                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | 3.3                | 0.030                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | 12.                | 0.099                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | 6.5                | 0.066                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name        | Method             | Trial# | Analysis Date and Time | Analyst                 | Dilution Factor |
|---------|----------------------|--------------------|--------|------------------------|-------------------------|-----------------|
| 08213   | BTEX (8021)          | SW-846 8021B/5030B | 1      | 04/03/2001 17:26       | Melissa-Ann S. McAlpine | 1               |
| 01861   | PAH's in Water       | SW-846 8310        | 1      | 04/13/2001 08:13       | Michele D. Hamilton     | 1               |
| 03337   | PAH Water Extraction | SW-846 3510C       | 1      | 04/03/2001 05:30       | Ginelle L. Haines       | 1               |



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Collected: 03/29/2001 09:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

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Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW25S-300301-MS Matrix Spike Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MAWTB SDG#: MOA53-01MS



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Lancaster Laboratories Sample No. **WW 3581221**

Collected: 03/29/2001 09:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Reported: 04/18/01 at 01:32 PM

Discard: 5/19/01

MA3-MW25S-300301-MSD Matrix Spike Dup. Grab Water Sample

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

Moss American Superfund Site - Milwaukee, WI

MAWTB SDG#: MOA53-01MSD

| 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    | 23.                | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | 22.                | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | 22.                | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | 66.                | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | 190.               | 0.84                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | 210.               | 0.84                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | 200.               | 0.84                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | 21.                | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | 6.7                | 0.074                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | 3.2                | 0.032                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | 3.7                | 0.032                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | 21.                | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | 1.8                | 0.021                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | 6.8                | 0.063                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | 1.4                | 0.040                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | 1.4                | 0.011                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | 1.6                | 0.021                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | 3.6                | 0.032                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | 12.                | 0.11                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | 7.0                | 0.071                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name        | Method             | Trial# | Analysis Date and Time | Analyst                 | Dilution Factor |
|---------|----------------------|--------------------|--------|------------------------|-------------------------|-----------------|
| 08213   | BTEX (8021)          | SW-846 8021B/5030B | 1      | 04/03/2001 18:03       | Melissa-Ann S. McAlpine | 1               |
| 01861   | PAH's in Water       | SW-846 8310        | 1      | 04/13/2001 08:34       | Michele D. Hamilton     | 1               |
| 03337   | PAH Water Extraction | SW-846 3510C       | 1      | 04/03/2001 05:30       | Ginelle L. Haines       | 1               |



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Lancaster Laboratories Sample No. WW 3581222

Collected: 03/29/2001 09:10 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Reported: 04/18/01 at 01:32 PM

Discard: 5/19/01

MA3-MW26S-300301-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MW26S SDG#: MOA53-02



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Lancaster Laboratories Sample No. **WW 3581223**

Collected: 03/29/2001 10:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW5S-300301-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW-5S SDG#: MOA53-03

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.86                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.86                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.86                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.076                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.032                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.032                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.022                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.065                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.041                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.011                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.022                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.032                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.11                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.072                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name        | Method             | Trial# | Analysis Date and Time | Analyst                 | Dilution Factor |
|---------|----------------------|--------------------|--------|------------------------|-------------------------|-----------------|
| 08213   | BTEX (8021)          | SW-846 8021B/5030B | 1      | 04/04/2001 01:27       | Melissa-Ann S. McAlpine | 1               |
| 01861   | PAH's in Water       | SW-846 8310        | 1      | 04/13/2001 09:17       | Michele D. Hamilton     | 1               |
| 03337   | PAH Water Extraction | SW-846 3510C       | 1      | 04/03/2001 05:30       | Ginelle L. Haines       | 1               |



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Lancaster Laboratories Sample No. WW 3581223

Collected: 03/29/2001 10:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW5S-300301-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW-5S SDG#: MOA53-03



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Lancaster Laboratories Sample No. WW 3581224

Collected: 03/29/2001 10:10 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:32 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW3S-300301-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW-3S SDG#: MOA53-04

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.79                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.79                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.79                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.17                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.069                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.030                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.030                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.17                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.020                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.059                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.038                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0099                             | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.020                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.030                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.099                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.066                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name        | Method             | Trial# | Analysis Date and Time | Analyst                 | Dilution Factor |
|---------|----------------------|--------------------|--------|------------------------|-------------------------|-----------------|
| 08213   | BTEX (8021)          | SW-846 8021B/5030B | 1      | 04/04/2001 02:04       | Melissa-Ann S. McAlpine | 1               |
| 01861   | PAH's in Water       | SW-846 8310        | 1      | 04/13/2001 09:39       | Michele D. Hamilton     | 1               |
| 03337   | PAH Water Extraction | SW-846 3510C       | 1      | 04/03/2001 05:30       | Ginelle L. Haines       | 1               |



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Lancaster Laboratories Sample No. WW 3581224

Collected: 03/29/2001 10:10 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Reported: 04/18/01 at 01:32 PM

Discard: 5/19/01

MA3-MW3S-300301-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MW-3S SDG#: MOA53-04



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



Lancaster Laboratories Sample No. WW 3581225

Collected: 03/29/2001 10:20 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15  
Reported: 04/18/01 at 01:33 PM  
Discard: 5/19/01

Kerr-McGee Corporation  
P.O. Box 25861  
Oklahoma City OK 73125

MA3-MW3I-300301-05 Grab Water Sample  
Moss American Superfund Site - Milwaukee, WI

MW-3I SDG#: MOA53-05

| CAT No. | Analysis Name          | CAS Number | As Received Result | As Received            |       | Dilution Factor |
|---------|------------------------|------------|--------------------|------------------------|-------|-----------------|
|         |                        |            |                    | Method Detection Limit | Units |                 |
| 08213   | BTEX (8021)            |            |                    |                        |       |                 |
| 00776   | Benzene                | 71-43-2    | N.D.               | 0.20                   | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                   | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                   | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                   | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                        |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.76                   | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.76                   | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.76                   | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.16                   | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.066                  | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.028                  | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | 0.045 J            | 0.028                  | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.16                   | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.019                  | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.057                  | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.036                  | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0094                 | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.019                  | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.028                  | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.094                  | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.063                  | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name        | Method             | Trial# | Analysis         |  | Analyst                 | Dilution Factor |
|---------|----------------------|--------------------|--------|------------------|--|-------------------------|-----------------|
|         |                      |                    |        | Date and Time    |  |                         |                 |
| 08213   | BTEX (8021)          | SW-846 8021B/5030B | 1      | 04/04/2001 02:41 |  | Melissa-Ann S. McAlpine | 1               |
| 01861   | PAH's in Water       | SW-846 8310        | 1      | 04/13/2001 10:00 |  | Michele D. Hamilton     | 1               |
| 03337   | PAH Water Extraction | SW-846 3510C       | 1      | 04/03/2001 05:30 |  | Ginelle L. Haines       | 1               |



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Lancaster Laboratories Sample No. WW 3581225

Collected: 03/29/2001 10:20 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:33 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW3I-300301-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW-3I SDG#: MOA53-05



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



Lancaster Laboratories Sample No. **WW 3581226**

Collected: 03/29/2001 09:10 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:33 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW26S-300301-02DP Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW5SD SDG#: MOA53-06

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | 1.2 J              | 0.76                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.76                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.76                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.16                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.066                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.028                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.028                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.16                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.019                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.057                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.036                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0095                             | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.019                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.028                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.095                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.064                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name        | Method             | Analysis |                  | Analyst                 | Dilution Factor |
|---------|----------------------|--------------------|----------|------------------|-------------------------|-----------------|
|         |                      |                    | Trial#   | Date and Time    |                         |                 |
| 08213   | BTEX (8021)          | SW-846 8021B/5030B | 1        | 04/04/2001 03:18 | Melissa-Ann S. McAlpine | 1               |
| 01861   | PAH's in Water       | SW-846 8310        | 1        | 04/13/2001 10:22 | Michele D. Hamilton     | 1               |
| 03337   | PAH Water Extraction | SW-846 3510C       | 1        | 04/03/2001 05:30 | Ginelle L. Haines       | 1               |



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Lancaster Laboratories Sample No. WW 3581226

Collected: 03/29/2001 09:10 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:33 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-MW26S-300301-02DP Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW5SD SDG#: MOA53-06



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



Lancaster Laboratories Sample No. WW 3581227

Collected: 03/29/2001 11:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Reported: 04/18/01 at 01:33 PM

Discard: 5/19/01

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MA3-FB04-300301 Field Blank Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

MW-FB SDG#: MOA53-07FB

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.84                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.84                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.84                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.073                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.031                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.031                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.021                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.063                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.040                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.010                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.021                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.031                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.10                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.070                              | ug/l  | 1               |

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.

### Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---------|---------------|--------|--------|------------------------|---------|-----------------|
|---------|---------------|--------|--------|------------------------|---------|-----------------|



Lancaster Laboratories, Inc.  
 2425 New Holland Pike  
 PO Box 12425  
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Lancaster Laboratories Sample No. WW 3581227

Collected: 03/29/2001 11:00 by JK

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:33 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-FB04-300301 Field Blank Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

|       |                      |                    |   |                  |                          |   |  |
|-------|----------------------|--------------------|---|------------------|--------------------------|---|--|
| MW-FB | SDG#: MOA53-07FB     |                    |   |                  |                          |   |  |
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1 | 04/04/2001 03:55 | Melissa-Ann S. McAlpine  | 1 |  |
| 01861 | PAH's in Water       | SW-846 8310        | 1 | 04/09/2001 23:42 | Michelle J. Kolodziejski | 1 |  |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1 | 04/03/2001 12:30 | Roxanne M. Roth          | 1 |  |



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Lancaster Laboratories Sample No. WW 3581228

Collected: n.a.

Account Number: 07802

Submitted: 03/31/2001 10:15

Kerr-McGee Corporation

Reported: 04/18/01 at 01:33 PM

P.O. Box 25861

Discard: 5/19/01

Oklahoma City OK 73125

MA3-TB04-300301 Trip Blank Water Sample

Moss American Superfund Site - Milwaukee, WI

MAWTB SDG#: MOA53-08TB

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene       | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene  | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis Date and Time | Analyst                 | Dilution Factor |
|---------|---------------|--------------------|--------|------------------------|-------------------------|-----------------|
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 04/03/2001 16:12       | Melissa-Ann S. McAlpine | 1               |



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## Lancaster Laboratories

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Quality Control Summary

Client Name: Kerr-McGee Corporation  
Reported: 04/18/01 at 01:33 PM

Group Number: 756814

### Laboratory Compliance Quality Control

| Analysis Name            | Blank Result | Blank MDL                         | Report Units | LCS %REC | LCS D %REC | LCS/LCS D Limits | RPD | RPD Max |
|--------------------------|--------------|-----------------------------------|--------------|----------|------------|------------------|-----|---------|
| Batch number: 010920013A |              | Sample number(s): 3581227         |              |          |            |                  |     |         |
| Naphthalene              | N.D.         | .8                                | ug/l         | 66       | 83         | 45-111           | 23  | 30      |
| Acenaphthylene           | N.D.         | .8                                | ug/l         | 77       | 87         | 59-114           | 12  | 30      |
| Acenaphthene             | N.D.         | .8                                | ug/l         | 73       | 81         | 50-120           | 11  | 30      |
| Fluorene                 | N.D.         | .17                               | ug/l         | 83       | 88         | 64-117           | 6   | 30      |
| Phenanthrene             | N.D.         | .07                               | ug/l         | 97       | 99         | 75-114           | 2   | 30      |
| Anthracene               | N.D.         | .03                               | ug/l         | 96       | 96         | 53-112           | 0   | 30      |
| Fluoranthene             | N.D.         | .03                               | ug/l         | 107      | 108        | 75-120           | 1   | 30      |
| Pyrene                   | N.D.         | .17                               | ug/l         | 92       | 94         | 74-118           | 2   | 30      |
| Benzo(a)anthracene       | N.D.         | .02                               | ug/l         | 103      | 103        | 73-117           | 1   | 30      |
| Chrysene                 | N.D.         | .06                               | ug/l         | 102      | 102        | 68-125           | 0   | 30      |
| Benzo(b)fluoranthene     | N.D.         | .038                              | ug/l         | 105      | 106        | 71-123           | 0   | 30      |
| Benzo(k)fluoranthene     | N.D.         | .01                               | ug/l         | 105      | 105        | 75-118           | 0   | 30      |
| Benzo(a)pyrene           | N.D.         | .02                               | ug/l         | 104      | 104        | 61-127           | 1   | 30      |
| Dibenzo(a,h)anthracene   | N.D.         | .03                               | ug/l         | 108      | 108        | 71-121           | 0   | 30      |
| Benzo(g,h,i)perylene     | N.D.         | .1                                | ug/l         | 97       | 97         | 70-125           | 1   | 30      |
| Indeno(1,2,3-cd)pyrene   | N.D.         | .067                              | ug/l         | 105      | 105        | 73-125           | 0   | 30      |
| Batch number: 010920015A |              | Sample number(s): 3581219-3581226 |              |          |            |                  |     |         |
| Naphthalene              | N.D.         | .8                                | ug/l         | 52       |            | 45-111           |     |         |
| Acenaphthylene           | N.D.         | .8                                | ug/l         | 70       |            | 59-114           |     |         |
| Acenaphthene             | N.D.         | .8                                | ug/l         | 67       |            | 50-120           |     |         |
| Fluorene                 | N.D.         | .17                               | ug/l         | 82       |            | 64-117           |     |         |
| Phenanthrene             | N.D.         | .07                               | ug/l         | 99       |            | 75-114           |     |         |
| Anthracene               | N.D.         | .03                               | ug/l         | 97       |            | 53-112           |     |         |
| Fluoranthene             | N.D.         | .03                               | ug/l         | 112      |            | 75-120           |     |         |
| Pyrene                   | N.D.         | .17                               | ug/l         | 98       |            | 74-118           |     |         |
| Benzo(a)anthracene       | N.D.         | .02                               | ug/l         | 109      |            | 73-117           |     |         |
| Chrysene                 | N.D.         | .06                               | ug/l         | 106      |            | 68-125           |     |         |
| Benzo(b)fluoranthene     | N.D.         | .038                              | ug/l         | 111      |            | 71-123           |     |         |
| Benzo(k)fluoranthene     | N.D.         | .01                               | ug/l         | 109      |            | 75-118           |     |         |
| Benzo(a)pyrene           | N.D.         | .02                               | ug/l         | 98       |            | 61-127           |     |         |
| Dibenzo(a,h)anthracene   | N.D.         | .03                               | ug/l         | 109      |            | 71-121           |     |         |
| Benzo(g,h,i)perylene     | N.D.         | .1                                | ug/l         | 96       |            | 70-125           |     |         |
| Indeno(1,2,3-cd)pyrene   | N.D.         | .067                              | ug/l         | 107      |            | 73-125           |     |         |
| Batch number: 01093A55   |              | Sample number(s): 3581219-3581228 |              |          |            |                  |     |         |
| Benzene                  | N.D.         | .2                                | ug/l         | 111      | 109        | 80-118           | 1   | 30      |
| Toluene                  | N.D.         | .2                                | ug/l         | 106      | 104        | 82-119           | 2   | 30      |
| Ethylbenzene             | N.D.         | .2                                | ug/l         | 105      | 103        | 81-119           | 2   | 30      |
| Total Xylenes            | N.D.         | .6                                | ug/l         | 105      | 103        | 82-120           | 2   | 30      |

### Sample Matrix Quality Control

| Analysis Name | MS %REC | MSD %REC | MS/MSD Limits | RPD | BKG MAX | DUP Conc | DUP RPD | Dup RPD Max |
|---------------|---------|----------|---------------|-----|---------|----------|---------|-------------|
|---------------|---------|----------|---------------|-----|---------|----------|---------|-------------|

Batch number: 010920015A      Sample number(s): 3581219-3581226

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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## Lancaster Laboratories

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### Quality Control Summary

Client Name: Kerr-McGee Corporation  
 Reported: 04/18/01 at 01:33 PM

Group Number: 756814

#### Sample Matrix Quality Control

| Analysis Name          | MS                                | MSD  | MS/MSD | RPD | BKG | DUP  | DUP  | Dup |
|------------------------|-----------------------------------|------|--------|-----|-----|------|------|-----|
|                        | %REC                              | %REC | Limits | RPD | MAX | Conc | Conc | RPD |
|                        |                                   |      |        |     |     |      |      | RPD |
|                        |                                   |      |        |     |     |      |      | Max |
| Naphthalene            | 80                                | 88   | 59-108 | 16  | 30  |      |      |     |
| Acenaphthylene         | 95                                | 98   | 38-134 | 9   | 30  |      |      |     |
| Acenaphthene           | 92                                | 94   | 48-127 | 9   | 30  |      |      |     |
| Fluorene               | 98                                | 99   | 61-122 | 8   | 30  |      |      |     |
| Phenanthrene           | 106                               | 107  | 67-122 | 7   | 30  |      |      |     |
| Anthracene             | 102                               | 103  | 61-107 | 7   | 30  |      |      |     |
| Fluoranthene           | 115                               | 116  | 64-126 | 7   | 30  |      |      |     |
| Pyrene                 | 101                               | 101  | 80-125 | 7   | 30  |      |      |     |
| Benzo(a)anthracene     | 111                               | 112  | 54-130 | 8   | 30  |      |      |     |
| Chrysene               | 108                               | 108  | 49-140 | 7   | 30  |      |      |     |
| Benzo(b)fluoranthene   | 111                               | 113  | 59-132 | 8   | 30  |      |      |     |
| Benzo(k)fluoranthene   | 110                               | 111  | 72-120 | 7   | 30  |      |      |     |
| Benzo(a)pyrene         | 98                                | 99   | 36-147 | 8   | 30  |      |      |     |
| Dibenzo(a,h)anthracene | 111                               | 113  | 69-122 | 8   | 30  |      |      |     |
| Benzo(g,h,i)perylene   | 98                                | 98   | 62-131 | 7   | 30  |      |      |     |
| Indeno(1,2,3-cd)pyrene | 109                               | 110  | 71-128 | 7   | 30  |      |      |     |
|                        |                                   |      |        |     |     |      |      |     |
| Batch number: 01093A55 | Sample number(s): 3581219-3581228 |      |        |     |     |      |      |     |
| Benzene                | 114                               | 115  | 66-140 | 0   | 30  |      |      |     |
| Toluene                | 110                               | 110  | 72-138 | 1   | 30  |      |      |     |
| Ethylbenzene           | 110                               | 111  | 71-138 | 1   | 30  |      |      |     |
| Total Xylenes          | 110                               | 111  | 69-140 | 1   | 30  |      |      |     |

#### Surrogate Quality Control

Analysis Name: PAH's in Water  
 Batch number: 010920013A

|         | Nitrobenzene | Triphenylene |
|---------|--------------|--------------|
| 3581227 | 88           | 107          |
| Blank   | 85           | 106          |
| LCS     | 92           | 109          |
| LCSD    | 90           | 110          |
|         |              |              |
| Limits: | 29-136       | 33-139       |

Analysis Name: PAH's in Water  
 Batch number: 010920015A

|         | Nitrobenzene | Triphenylene |
|---------|--------------|--------------|
| 3581219 | 95           | 112          |
| 3581220 | 89           | 113          |
| 3581221 | 94           | 112          |
| 3581222 | 93           | 115          |
| 3581223 | 92           | 108          |
| 3581224 | 92           | 111          |
| 3581225 | 100          | 121          |
| 3581226 | 98           | 119          |

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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## Lancaster Laboratories

Where quality is a science.

### Quality Control Summary

Page 3 of 3

Client Name: Kerr-McGee Corporation  
Reported: 04/18/01 at 01:33 PM

Group Number: 756814

#### Surrogate Quality Control

|       |    |     |
|-------|----|-----|
| Blank | 88 | 107 |
| LCS   | 88 | 113 |
| MS    | 89 | 113 |
| MSD   | 94 | 112 |

---

Limits: 29-136 33-139

Analysis Name: BTEX (8021)  
Batch number: 01093A55  
Trifluorotoluene-P

---

|         |     |
|---------|-----|
| 3581219 | 101 |
| 3581220 | 100 |
| 3581221 | 100 |
| 3581222 | 100 |
| 3581223 | 102 |
| 3581224 | 102 |
| 3581225 | 102 |
| 3581226 | 103 |
| 3581227 | 102 |
| 3581228 | 101 |
| Blank   | 101 |
| LCS     | 100 |
| LCSD    | 100 |
| MS      | 100 |
| MSD     | 100 |

---

Limits: 69-134

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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## ANALYTICAL RESULTS

Prepared for:

Kerr-McGee Corporation  
P.O. Box 25861  
Oklahoma City OK 73125

Prepared by:

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

### SAMPLE GROUP

The sample group for this submittal is 756679. Samples arrived at the laboratory on Friday, March 30, 2001.

### Client Description

### Lancaster Labs Number

|   |         |
|---|---------|
| MA3-MW6S-290301-01 Grab Water Sample    | 3580505 |
| MA3-MW31S-290301-02 Grab Water Sample   | 3580506 |
| MA3-TW05-290301-03 Grab Water Sample    | 3580507 |
| MA3-MW29S-290301-04 Grab Water Sample   | 3580508 |
| MA3-MW36S-290301-05 Grab Water Sample   | 3580509 |
| MA3-MW10S-290301-06 Grab Water Sample   | 3580510 |
| MA3-MW7I-290301-08 Grab Water Sample    | 3580511 |
| MA3-MW20I-290301-07 Grab Water Sample   | 3580512 |
| MA3-MW13S-290301-09 Grab Water Sample   | 3580513 |
| MA3-MW4S-290301-10 Grab Water Sample    | 3580514 |
| MA3-MW4I-290301-11 Grab Water Sample    | 3580515 |
| MA3-MW13S-290301-09DP Grab Water Sample | 3580516 |
| FB03 Grab Water Sample                  | 3580517 |
| MA3-MW30S-290301-12 Grab Water Sample   | 3580518 |
| Trip Blank Water Sample                 | 3580519 |

### METHODOLOGY

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

1 COPY TO Kerr-McGee Corporation  
1 COPY TO Roy F. Weston  
1 COPY TO Data Package Group

Attn: Dr. Jeff Ostmeyer  
Attn: Mr. Tom Graan

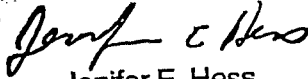


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Questions? Contact your Client Services Representative  
Kay G. Hower at (717) 656-2300.

Respectfully Submitted,



Jenifer E. Hess  
Group Leader



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



Lancaster Laboratories Sample No. WW 3580505

Collected: 03/29/2001 09:00 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Reported: 04/23/01 at 11:26 AM

Discard: 5/24/01

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

MA3-MW6S-290301-01 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

6S-01 SDG#: MOA52-01

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 1.0                                | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 1.0                                | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 1.0                                | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.20                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.084                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.036                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.036                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.20                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.024                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.072                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.045                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.012                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.024                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.036                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.12                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.080                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---------|---------------|--------|--------|------------------------|---------|-----------------|
|---------|---------------|--------|--------|------------------------|---------|-----------------|



Lancaster Laboratories, Inc.  
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Lancaster Laboratories Sample No. WW 3580505

Collected: 03/29/2001 09:00 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/23/01 at 11:26 AM

P.O. Box 25861

Discard: 5/24/01

Oklahoma City OK 73125

MA3-MW6S-290301-01 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

6S-01 SDG#: MOA52-01

|       |                      |                    |   |                  |                     |   |
|-------|----------------------|--------------------|---|------------------|---------------------|---|
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1 | 04/02/2001 17:39 | Melissa Mann        | 1 |
| 01861 | PAH's in Water       | SW-846 8310        | 1 | 04/13/2001 02:06 | Michele D. Hamilton | 1 |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1 | 04/03/2001 05:30 | Ginelle L. Haines   | 1 |



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Lancaster Laboratories Sample No. WW 3580506

Collected: 03/29/2001 09:10 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:26 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW31S-290301-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

31S02 SDG#: MOA52-02

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.86                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.86                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.86                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.075                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.032                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.032                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.022                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.065                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.041                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.011                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.022                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.032                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.11                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.072                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---------|---------------|--------|--------|------------------------|---------|-----------------|
|---------|---------------|--------|--------|------------------------|---------|-----------------|



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Lancaster Laboratories Sample No. WW 3580506

Collected: 03/29/2001 09:10 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:26 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW31S-290301-02 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

31S02 SDG#: MOA52-02

08213 BTEX (8021)

SW-846 8021B/5030B

1 04/02/2001 18:16

Melissa Mann

1

01861 PAH's in Water

SW-846 8310

1 04/13/2001 02:28

Michele D. Hamilton

1

03337 PAH Water Extraction

SW-846 3510C

1 04/03/2001 05:30

Ginelle L. Haines

1



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



Lancaster Laboratories Sample No. WW 3580507

Collected: 03/29/2001 09:20 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:26 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-TW05-290301-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

05-03 SDG#: MOA52-03

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | 8.6 J              | 4.2                                | ug/l  | 5               |
| 03281   | Acenaphthylene         | 208-96-8   | 10. J              | 4.2                                | ug/l  | 5               |
| 03282   | Acenaphthene           | 83-32-9    | 64.                | 4.2                                | ug/l  | 5               |
| 03283   | Fluorene               | 86-73-7    | 43.                | 0.90                               | ug/l  | 5               |
| 03284   | Phenanthrene           | 85-01-8    | 1.5 J              | 0.37                               | ug/l  | 5               |
| 03285   | Anthracene             | 120-12-7   | 1.3                | 0.16                               | ug/l  | 5               |
| 03286   | Fluoranthene           | 206-44-0   | 7.6                | 0.16                               | ug/l  | 5               |
| 03287   | Pyrene                 | 129-00-0   | 4.6                | 0.90                               | ug/l  | 5               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | 0.11 J             | 0.11                               | ug/l  | 5               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.32                               | ug/l  | 5               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.20                               | ug/l  | 5               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.053                              | ug/l  | 5               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.11                               | ug/l  | 5               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.16                               | ug/l  | 5               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.53                               | ug/l  | 5               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.35                               | ug/l  | 5               |

### Laboratory Chronicle

| CAT No. | Analysis Name        | Method             | Analysis |                  | Analyst                 | Dilution Factor |
|---------|----------------------|--------------------|----------|------------------|-------------------------|-----------------|
|         |                      |                    | Trial#   | Date and Time    |                         |                 |
| 08213   | BTEX (8021)          | SW-846 8021B/5030B | 1        | 04/04/2001 06:23 | Melissa-Ann S. McAlpine | 1               |
| 01861   | PAH's in Water       | SW-846 8310        | 1        | 04/17/2001 10:43 | Michele D. Hamilton     | 5               |
| 03337   | PAH Water Extraction | SW-846 3510C       | 1        | 04/03/2001 05:30 | Ginelle L. Haines       | 1               |



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





Lancaster Laboratories Sample No. WW 3580507

Collected: 03/29/2001 09:20 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:26 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-TW05-290301-03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

05-03 SDG#: MOA52-03



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



Lancaster Laboratories Sample No. WW 3580508

Collected: 03/29/2001 09:50 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:26 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW29S-290301-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

29S04 SDG#: MOA52-04

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.87                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.87                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.87                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.076                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.033                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.033                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.022                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.065                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.041                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.011                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.022                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.033                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.11                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.073                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---------|---------------|--------|--------|------------------------|---------|-----------------|
|---------|---------------|--------|--------|------------------------|---------|-----------------|



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



Lancaster Laboratories Sample No. WW 3580508

Collected: 03/29/2001 09:50 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:26 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW29S-290301-04 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

29S04 SDG#: MOA52-04

08213 BTEX (8021)

SW-846 8021B/5030B

1

04/02/2001 23:55

Melissa Mann

1

01861 PAH's in Water

SW-846 8310

1

04/13/2001 03:33

Michele D. Hamilton

1

03337 PAH Water Extraction

SW-846 3510C

1

04/03/2001 05:30

Ginelle L. Haines

1



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



Lancaster Laboratories Sample No. WW 3580509

Collected: 03/29/2001 10:00 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10  
 Reported: 04/17/01 at 09:26 PM  
 Discard: 5/18/01

Kerr-McGee Corporation  
 P.O. Box 25861  
 Oklahoma City OK 73125

MA3-MW36S-290301-05 Grab Water Sample  
 Moss American Superfund Site - Milwaukee, WI

36S05 SDG#: MOA52-05

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.82                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.82                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.82                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.072                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.031                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.031                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.021                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.062                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.039                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.010                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.021                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.031                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.10                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.069                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---------|---------------|--------|--------|------------------------|---------|-----------------|
|---------|---------------|--------|--------|------------------------|---------|-----------------|



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



Lancaster Laboratories Sample No. WW 3580509

Collected: 03/29/2001 10:00 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:26 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW36S-290301-05 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

36S05 SDG#: MOA52-05

08213 BTEX (8021)

SW-846 8021B/5030B

1

04/03/2001 00:32

Melissa Mann

1

01861 PAH's in Water

SW-846 8310

1

04/13/2001 03:54

Michele D. Hamilton

1

03337 PAH Water Extraction

SW-846 3510C

1

04/03/2001 05:30

Ginelle L. Haines

1



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



Lancaster Laboratories Sample No. WW 3580510

Collected: 03/29/2001 10:45 by JK Account Number: 07802

Submitted: 03/30/2001 09:10  
 Reported: 04/17/01 at 09:26 PM  
 Discard: 5/18/01  
 MA3-MW10S-290301-06 Grab Water Sample  
 Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation  
 P.O. Box 25861  
 Oklahoma City OK 73125

10S06 SDG#: MOA52-06

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.86                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.86                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.86                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.075                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.032                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.032                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.022                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.065                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.041                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.011                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.022                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.032                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.11                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.072                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---------|---------------|--------|--------|------------------------|---------|-----------------|
|---------|---------------|--------|--------|------------------------|---------|-----------------|



Lancaster Laboratories, Inc.  
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Lancaster Laboratories Sample No. WW 3580510

Collected: 03/29/2001 10:45 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:26 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW10S-290301-06 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

10S06 SDG#: MOA52-06

|       |                      |                    |   |                  |                     |   |
|-------|----------------------|--------------------|---|------------------|---------------------|---|
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1 | 04/03/2001 01:09 | Melissa Mann        | 1 |
| 01861 | PAH's in Water       | SW-846 8310        | 1 | 04/13/2001 04:16 | Michele D. Hamilton | 1 |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1 | 04/03/2001 05:30 | Ginelle L. Haines   | 1 |



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2425 New Holland Pike  
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Lancaster, PA 17605-2425  
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Lancaster Laboratories Sample No. WW 3580511

Collected: 03/29/2001 13:20 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW7I-290301-08 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

7I-08 SDG#: MOA52-07

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.83                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.83                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.83                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.072                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.031                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.031                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.021                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.062                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.039                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.010                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.021                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.031                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.10                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.069                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---------|---------------|--------|--------|------------------------|---------|-----------------|
|---------|---------------|--------|--------|------------------------|---------|-----------------|



Lancaster Laboratories, Inc.  
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Lancaster Laboratories Sample No. WW 3580511

Collected: 03/29/2001 13:20 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW7I-290301-08 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

7I-08 SDG#: MOA52-07

08213 BTEX (8021)

SW-846 8021B/5030B

1 04/03/2001 01:46

Melissa Mann

1

01861 PAH's in Water

SW-846 8310

1 04/13/2001 04:37

Michele D. Hamilton

1

03337 PAH Water Extraction

SW-846 3510C

1 04/03/2001 05:30

Ginelle L. Haines

1



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



Lancaster Laboratories Sample No. WW 3580512

Collected: 03/29/2001 11:45 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW20I-290301-07 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

20-07 SDG#: MOA52-08

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.87                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.87                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.87                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.076                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.033                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.033                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.022                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.065                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.041                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.011                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.022                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.033                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.11                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.073                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---------|---------------|--------|--------|------------------------|---------|-----------------|
|---------|---------------|--------|--------|------------------------|---------|-----------------|



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



Lancaster Laboratories Sample No. WW 3580512

Collected: 03/29/2001 11:45 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW20I-290301-07 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

20-07 SDG#: MOA52-08

08213 BTEX (8021)

SW-846 8021B/5030B

1 04/03/2001 04:14

Melissa Mann

1

01861 PAH's in Water

SW-846 8310

1 04/13/2001 04:59

Michele D. Hamilton

1

03337 PAH Water Extraction

SW-846 3510C

1 04/03/2001 05:30

Ginelle L. Haines

1



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



Lancaster Laboratories Sample No. **WW 3580513**

Collected: 03/29/2001 15:30 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10  
 Reported: 04/17/01 at 09:27 PM  
 Discard: 5/18/01

Kerr-McGee Corporation  
 P.O. Box 25861  
 Oklahoma City OK 73125

MA3-MW13S-290301-09 Grab Water Sample  
 Moss American Superfund Site - Milwaukee, WI

13S09 SDG#: MOA52-09

| CAT No.   | Analysis Name          | CAS Number | As Received Result | As Received |       | Dilution Factor |
|---|------------------------|------------|--------------------|-------------|-------|-----------------|
|   |                        |            |                    | Method      | Units |                 |
| 08213   | BTEX (8021)            |            |                    |             |       |                 |
| 00776   | Benzene                | 71-43-2    | N.D.               | 0.20        | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20        | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20        | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60        | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |             |       |                 |
| 01861   | PAH's in Water         |            |                    |             |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.76        | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.76        | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.76        | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.16        | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.066       | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.028       | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.028       | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.16        | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.019       | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.057       | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.036       | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0095      | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.019       | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.028       | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.095       | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.064       | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method | Analysis |               | Analyst | Dilution Factor |
|---------|---------------|--------|----------|---------------|---------|-----------------|
|         |               |        | Trial#   | Date and Time |         |                 |



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



Lancaster Laboratories Sample No. WW 3580513

Collected: 03/29/2001 15:30 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW13S-290301-09 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

13S09 SDG#: MOA52-09

08213 BTEX (8021)

SW-846 8021B/5030B

1

04/03/2001 04:51

Melissa Mann

1

01861 PAH's in Water

SW-846 8310

1

04/13/2001 05:20

Michele D. Hamilton

1

03337 PAH Water Extraction

SW-846 3510C

1

04/03/2001 05:30

Ginelle L. Haines

1



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



Lancaster Laboratories Sample No. WW 3580514

Collected: 03/29/2001 15:45 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW4S-290301-10 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

4S-10 SDG#: MOA52-10

| 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    | 5.1 J              | 5.0                                | ug/l  | 25              |
| 00777  | Toluene                | 108-88-3   | 8.6 J              | 5.0                                | ug/l  | 25              |
| 00778  | Ethylbenzene           | 100-41-4   | 11. J              | 5.0                                | ug/l  | 25              |
| 00779  | Total Xylenes          | 1330-20-7  | 21. J              | 15.                                | ug/l  | 25              |
| Due to excessive foaming of the sample, normal reporting limits were not attained. |                        |            |                    |                                    |       |                 |
| 01861  | PAH's in Water         |            |                    |                                    |       |                 |
| 03280  | Naphthalene            | 91-20-3    | 830.               | 39.                                | ug/l  | 50              |
| 03281  | Acenaphthylene         | 208-96-8   | 97. J              | 39.                                | ug/l  | 50              |
| 03282  | Acenaphthene           | 83-32-9    | 460.               | 39.                                | ug/l  | 50              |
| 03283  | Fluorene               | 86-73-7    | 210.               | 8.2                                | ug/l  | 50              |
| 03284  | Phenanthrene           | 85-01-8    | 6.0 J              | 3.4                                | ug/l  | 50              |
| 03285  | Anthracene             | 120-12-7   | 2.7 J              | 1.5                                | ug/l  | 50              |
| 03286  | Fluoranthene           | 206-44-0   | 23.                | 1.5                                | ug/l  | 50              |
| 03287  | Pyrene                 | 129-00-0   | 14. J              | 8.2                                | ug/l  | 50              |
| 03288  | Benzo(a)anthracene     | 56-55-3    | N.D.               | 1.0                                | ug/l  | 50              |
| 03289  | Chrysene               | 218-01-9   | N.D.               | 2.9                                | ug/l  | 50              |
| 03290  | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 1.8                                | ug/l  | 50              |
| 03291  | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.48                               | ug/l  | 50              |
| 03292  | Benzo(a)pyrene         | 50-32-8    | N.D.               | 1.0                                | ug/l  | 50              |
| 03293  | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 1.5                                | ug/l  | 50              |
| 03294  | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 4.8                                | ug/l  | 50              |
| 03295  | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 3.2                                | ug/l  | 50              |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---------|---------------|--------|--------|------------------------|---------|-----------------|
|---------|---------------|--------|--------|------------------------|---------|-----------------|



Lancaster Laboratories, Inc.  
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Lancaster Laboratories Sample No. WW 3580514

Collected: 03/29/2001 15:45 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW4S-290301-10 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

4S-10 SDG#: MOA52-10

08213 BTEX (8021)

SW-846 8021B/5030B

1 04/04/2001 08:14

Melissa-Ann S. McAlpine

25

01861 PAH's in Water

SW-846 8310

1 04/17/2001 11:08

Michele D. Hamilton

50

03337 PAH Water Extraction

SW-846 3510C

1 04/03/2001 05:30

Ginelle L. Haines

1



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Lancaster Laboratories Sample No. WW 3580515

Collected: 03/29/2001 16:00 by JK Account Number: 07802

Submitted: 03/30/2001 09:10 Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM P.O. Box 25861

Discard: 5/18/01 Oklahoma City OK 73125

MA3-MW4I-290301-11 Grab Water Sample  
Moss American Superfund Site - Milwaukee, WI

4I-11 SDG#: MOA52-11

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.86                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.86                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.86                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.075                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.032                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.032                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.021                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.064                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.041                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.011                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.021                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.032                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.11                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.072                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---------|---------------|--------|--------|------------------------|---------|-----------------|
|---------|---------------|--------|--------|------------------------|---------|-----------------|



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Lancaster Laboratories Sample No. WW 3580515

Collected: 03/29/2001 16:00 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW4I-290301-11 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

4I-11 SDG#: MOA52-11

08213 BTEX (8021)

SW-846 8021B/5030B

1 04/02/2001 20:13

Melissa Mann

1

01861 PAH's in Water

SW-846 8310

1 04/13/2001 06:03

Michele D. Hamilton

1

03337 PAH Water Extraction

SW-846 3510C

1 04/03/2001 05:30

Ginelle L. Haines

1



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Lancaster Laboratories Sample No. WW 3580516

Collected: 03/29/2001 15:30 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW13S-290301-09DP Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

13S9D SDG#: MOA52-12FD

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.77                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.77                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.77                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.16                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.068                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.029                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.029                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.16                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.019                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.058                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.037                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.0097                             | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.019                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.029                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.097                              | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.065                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---------|---------------|--------|--------|------------------------|---------|-----------------|
|---------|---------------|--------|--------|------------------------|---------|-----------------|



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Lancaster Laboratories Sample No. WW 3580516

Collected: 03/29/2001 15:30 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW13S-290301-09DP Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

13S9D SDG#: MOA52-12FD

|       |                      |                    |   |                  |                     |   |
|-------|----------------------|--------------------|---|------------------|---------------------|---|
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1 | 04/02/2001 14:12 | Melissa Mann        | 1 |
| 01861 | PAH's in Water       | SW-846 8310        | 1 | 04/13/2001 06:25 | Michele D. Hamilton | 1 |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1 | 04/03/2001 05:30 | Ginelle L. Haines   | 1 |



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Lancaster Laboratories Sample No. WW 3580517

Collected: 03/29/2001 15:00 by JK Account Number: 07802

Submitted: 03/30/2001 09:10 Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM P.O. Box 25861

Discard: 5/18/01 Oklahoma City OK 73125

FB03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

FBXX3 SDG#: MOA52-13FB

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.82                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.82                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.82                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.072                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.031                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.031                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.021                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.062                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.039                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.010                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.021                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.031                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.10                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.069                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---------|---------------|--------|--------|------------------------|---------|-----------------|
|---------|---------------|--------|--------|------------------------|---------|-----------------|



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Lancaster Laboratories Sample No. WW 3580517

Collected: 03/29/2001 15:00 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

FB03 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

FBXX3 SDG#: MOA52-13FB

|       |                      |                    |   |                  |                     |   |
|-------|----------------------|--------------------|---|------------------|---------------------|---|
| 08213 | BTEX (8021)          | SW-846 8021B/5030B | 1 | 04/02/2001 20:50 | Melissa Mann        | 1 |
| 01861 | PAH's in Water       | SW-846 8310        | 1 | 04/13/2001 06:46 | Michele D. Hamilton | 1 |
| 03337 | PAH Water Extraction | SW-846 3510C       | 1 | 04/03/2001 05:30 | Ginelle L. Haines   | 1 |



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Lancaster Laboratories Sample No. WW 3580518

Collected: 03/29/2001 16:40 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

MA3-MW30S-290301-12 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

30S12 SDG#: MOA52-14

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene                | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene           | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes          | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |
| Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level. |                        |            |                    |                                    |       |                 |
| 01861   | PAH's in Water         |            |                    |                                    |       |                 |
| 03280   | Naphthalene            | 91-20-3    | N.D.               | 0.85                               | ug/l  | 1               |
| 03281   | Acenaphthylene         | 208-96-8   | N.D.               | 0.85                               | ug/l  | 1               |
| 03282   | Acenaphthene           | 83-32-9    | N.D.               | 0.85                               | ug/l  | 1               |
| 03283   | Fluorene               | 86-73-7    | N.D.               | 0.18                               | ug/l  | 1               |
| 03284   | Phenanthrene           | 85-01-8    | N.D.               | 0.074                              | ug/l  | 1               |
| 03285   | Anthracene             | 120-12-7   | N.D.               | 0.032                              | ug/l  | 1               |
| 03286   | Fluoranthene           | 206-44-0   | N.D.               | 0.032                              | ug/l  | 1               |
| 03287   | Pyrene                 | 129-00-0   | N.D.               | 0.18                               | ug/l  | 1               |
| 03288   | Benzo(a)anthracene     | 56-55-3    | N.D.               | 0.021                              | ug/l  | 1               |
| 03289   | Chrysene               | 218-01-9   | N.D.               | 0.064                              | ug/l  | 1               |
| 03290   | Benzo(b)fluoranthene   | 205-99-2   | N.D.               | 0.040                              | ug/l  | 1               |
| 03291   | Benzo(k)fluoranthene   | 207-08-9   | N.D.               | 0.011                              | ug/l  | 1               |
| 03292   | Benzo(a)pyrene         | 50-32-8    | N.D.               | 0.021                              | ug/l  | 1               |
| 03293   | Dibenzo(a,h)anthracene | 53-70-3    | N.D.               | 0.032                              | ug/l  | 1               |
| 03294   | Benzo(g,h,i)perylene   | 191-24-2   | N.D.               | 0.11                               | ug/l  | 1               |
| 03295   | Indeno(1,2,3-cd)pyrene | 193-39-5   | N.D.               | 0.071                              | ug/l  | 1               |

### Laboratory Chronicle

| CAT No. | Analysis Name | Method | Trial# | Analysis Date and Time | Analyst | Dilution Factor |
|---------|---------------|--------|--------|------------------------|---------|-----------------|
|---------|---------------|--------|--------|------------------------|---------|-----------------|



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Lancaster Laboratories Sample No. WW 3580518

Collected: 03/29/2001 16:40 by JK

Account Number: 07802

Submitted: 03/30/2001 09:10

Reported: 04/17/01 at 09:27 PM

Discard: 5/18/01

MA3-MW30S-290301-12 Grab Water Sample

Moss American Superfund Site - Milwaukee, WI

Kerr-McGee Corporation

P.O. Box 25861

Oklahoma City OK 73125

30S12 SDG#: MOA52-14

08213 BTEX (8021)

01861 PAH's in Water

03337 PAH Water Extraction

SW-846 8021B/5030B

SW-846 8310

SW-846 3510C

|   |                  |                     |   |
|---|------------------|---------------------|---|
| 1 | 04/02/2001 15:26 | Melissa Mann        | 1 |
| 1 | 04/13/2001 07:30 | Michele D. Hamilton | 1 |
| 1 | 04/03/2001 05:30 | Ginelle L. Haines   | 1 |



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2425 New Holland Pike  
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Lancaster Laboratories Sample No. WW 3580519

Collected: n.a.

Account Number: 07802

Submitted: 03/30/2001 09:10

Kerr-McGee Corporation

Reported: 04/17/01 at 09:27 PM

P.O. Box 25861

Discard: 5/18/01

Oklahoma City OK 73125

Trip Blank Water Sample

Moss American Superfund Site - Milwaukee, WI

329TB SDG#: MOA52-15TB\*

| 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.               | 0.20                               | ug/l  | 1               |
| 00777   | Toluene       | 108-88-3   | N.D.               | 0.20                               | ug/l  | 1               |
| 00778   | Ethylbenzene  | 100-41-4   | N.D.               | 0.20                               | ug/l  | 1               |
| 00779   | Total Xylenes | 1330-20-7  | N.D.               | 0.60                               | ug/l  | 1               |

Sufficient sample volume was not available to perform a MSD for this analysis. However, a MS was performed. In addition, a LCS/LCSD was performed to demonstrate precision and accuracy at a batch level.

## Laboratory Chronicle

| CAT No. | Analysis Name | Method             | Trial# | Analysis Date and Time | Analyst      | Dilution Factor |
|---------|---------------|--------------------|--------|------------------------|--------------|-----------------|
| 08213   | BTEX (8021)   | SW-846 8021B/5030B | 1      | 04/02/2001 12:58       | Melissa Mann | 1               |



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### Quality Control Summary

Client Name: Kerr-McGee Corporation  
 Reported: 04/17/01 at 09:27 PM

Group Number: 756679

#### Laboratory Compliance Quality Control

| Analysis Name   | Blank Result | Blank MDL | Report Units | LCS %REC | LCSD %REC | LCS/LCSD Limits | RPD | RPD Max |
|---|--------------|-----------|--------------|----------|-----------|-----------------|-----|---------|
| Batch number: 010920015A      Sample number(s): 3580505-3580518                                 |              |           |              |          |           |                 |     |         |
| Naphthalene   | N.D.         | .8        | ug/l         | 52       |           | 45-111          |     |         |
| Acenaphthylene  | N.D.         | .8        | ug/l         | 70       |           | 59-114          |     |         |
| Acenaphthene  | N.D.         | .8        | ug/l         | 67       |           | 50-120          |     |         |
| Fluorene  | N.D.         | .17       | ug/l         | 82       |           | 64-117          |     |         |
| Phenanthrene  | N.D.         | .07       | ug/l         | 99       |           | 75-114          |     |         |
| Anthracene  | N.D.         | .03       | ug/l         | 97       |           | 53-112          |     |         |
| Fluoranthene  | N.D.         | .03       | ug/l         | 112      |           | 75-120          |     |         |
| Pyrene  | N.D.         | .17       | ug/l         | 98       |           | 74-118          |     |         |
| Benzo(a)anthracene  | N.D.         | .02       | ug/l         | 109      |           | 73-117          |     |         |
| Chrysene  | N.D.         | .06       | ug/l         | 106      |           | 68-125          |     |         |
| Benzo(b)fluoranthene  | N.D.         | .038      | ug/l         | 111      |           | 71-123          |     |         |
| Benzo(k)fluoranthene  | N.D.         | .01       | ug/l         | 109      |           | 75-118          |     |         |
| Benzo(a)pyrene  | N.D.         | .02       | ug/l         | 98       |           | 61-127          |     |         |
| Dibenzo(a,h)anthracene  | N.D.         | .03       | ug/l         | 109      |           | 71-121          |     |         |
| Benzo(g,h,i)perylene  | N.D.         | .1        | ug/l         | 96       |           | 70-125          |     |         |
| Indeno(1,2,3-cd)pyrene  | N.D.         | .067      | ug/l         | 107      |           | 73-125          |     |         |
|   |              |           |              |          |           |                 |     |         |
| Batch number: 01092A55      Sample number(s): 3580505-3580506, 3580508-3580513, 3580515-3580519 |              |           |              |          |           |                 |     |         |
| Benzene   | N.D.         | .2        | ug/l         | 113      | 107       | 80-118          | 5   | 30      |
| Toluene   | N.D.         | .2        | ug/l         | 107      | 102       | 82-119          | 5   | 30      |
| Ethylbenzene  | N.D.         | .2        | ug/l         | 107      | 102       | 81-119          | 5   | 30      |
| Total Xylenes   | N.D.         | .6        | ug/l         | 106      | 102       | 82-120          | 5   | 30      |
|   |              |           |              |          |           |                 |     |         |
| Batch number: 01093A55      Sample number(s): 3580507, 3580514                                  |              |           |              |          |           |                 |     |         |
| Benzene   | N.D.         | .2        | ug/l         | 111      | 109       | 80-118          | 1   | 30      |
| Toluene   | N.D.         | .2        | ug/l         | 106      | 104       | 82-119          | 2   | 30      |
| Ethylbenzene  | N.D.         | .2        | ug/l         | 105      | 103       | 81-119          | 2   | 30      |
| Total Xylenes   | N.D.         | .6        | ug/l         | 105      | 103       | 82-120          | 2   | 30      |

#### Sample Matrix Quality Control

| Analysis Name   | MS %REC | MSD %REC | MS/MSD Limits | RPD | MAX | BKG Conc | DUP Conc | DUP RPD | Dup RPD Max |
|---|---------|----------|---------------|-----|-----|----------|----------|---------|-------------|
| Batch number: 010920015A      Sample number(s): 3580505-3580518 |         |          |               |     |     |          |          |         |             |
| Naphthalene   | 80      | 88       | 59-108        | 16  | 30  |          |          |         |             |
| Acenaphthylene  | 95      | 98       | 38-134        | 9   | 30  |          |          |         |             |
| Acenaphthene  | 92      | 94       | 48-127        | 9   | 30  |          |          |         |             |
| Fluorene  | 98      | 99       | 61-122        | 8   | 30  |          |          |         |             |
| Phenanthrene  | 106     | 107      | 67-122        | 7   | 30  |          |          |         |             |
| Anthracene  | 102     | 103      | 61-107        | 7   | 30  |          |          |         |             |
| Fluoranthene  | 115     | 116      | 64-126        | 7   | 30  |          |          |         |             |
| Pyrene  | 101     | 101      | 80-125        | 7   | 30  |          |          |         |             |
| Benzo(a)anthracene  | 111     | 112      | 54-130        | 8   | 30  |          |          |         |             |
| Chrysene  | 108     | 108      | 49-140        | 7   | 30  |          |          |         |             |
| Benzo(b)fluoranthene  | 111     | 113      | 59-132        | 8   | 30  |          |          |         |             |
| Benzo(k)fluoranthene  | 110     | 111      | 72-120        | 7   | 30  |          |          |         |             |

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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### Quality Control Summary

Client Name: Kerr-McGee Corporation  
 Reported: 04/17/01 at 09:27 PM

Group Number: 756679

#### Sample Matrix Quality Control

| Analysis Name          | MS          | MSD   | MS/MSD        | RPD        | BKG        | DUP         | DUP         | Dup        |
|------------------------|-------------|---|---------------|------------|------------|-------------|-------------|------------|
|                        | <u>%REC</u> | <u>%REC</u>   | <u>Limits</u> | <u>RPD</u> | <u>MAX</u> | <u>Conc</u> | <u>Conc</u> | <u>RPD</u> |
|                        |             |   |               |            |            |             |             | <u>Max</u> |
| Benzo(a)pyrene         | 98          | 99  | 36-147        | 8          | 30         |             |             |            |
| Dibenzo(a,h)anthracene | 111         | 113   | 69-122        | 8          | 30         |             |             |            |
| Benzo(g,h,i)perylene   | 98          | 98  | 62-131        | 7          | 30         |             |             |            |
| Indeno(1,2,3-cd)pyrene | 109         | 110   | 71-128        | 7          | 30         |             |             |            |
| Batch number: 01092A55 |             | Sample number(s): 3580505-3580506,3580508-3580513,3580515-3580519 |               |            |            |             |             |            |
| Benzene                | 114         |   | 66-140        |            |            |             |             |            |
| Toluene                | 109         |   | 72-138        |            |            |             |             |            |
| Ethylbenzene           | 109         |   | 71-138        |            |            |             |             |            |
| Total Xylenes          | 109         |   | 69-140        |            |            |             |             |            |
| Batch number: 01093A55 |             | Sample number(s): 3580507,3580514                                 |               |            |            |             |             |            |
| Benzene                | 114         | 115   | 66-140        | 0          | 30         |             |             |            |
| Toluene                | 110         | 110   | 72-138        | 1          | 30         |             |             |            |
| Ethylbenzene           | 110         | 111   | 71-138        | 1          | 30         |             |             |            |
| Total Xylenes          | 110         | 111   | 69-140        | 1          | 30         |             |             |            |

#### Surrogate Quality Control

Analysis Name: PAH's in Water  
 Batch number: 010920015A

|         | Nitrobenzene | Triphenylene |
|---------|--------------|--------------|
| 3580505 | 95           | 111          |
| 3580506 | 89           | 111          |
| 3580507 | 70           | 116          |
| 3580508 | 86           | 111          |
| 3580509 | 99           | 111          |
| 3580510 | 90           | 110          |
| 3580511 | 93           | 114          |
| 3580512 | 88           | 110          |
| 3580513 | 89           | 113          |
| 3580514 | 102          | 144*         |
| 3580515 | 87           | 113          |
| 3580516 | 89           | 111          |
| 3580517 | 94           | 116          |
| 3580518 | 93           | 112          |
| Blank   | 88           | 107          |
| LCS     | 88           | 113          |
| MS      | 89           | 113          |
| MSD     | 94           | 112          |
| Limits: | 29-136       | 33-139       |

Analysis Name: BTEX (8021)  
 Batch number: 01092A55  
 Trifluorotoluene-P

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The background result was more than four times the spike added.



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### Quality Control Summary

Page 3 of 3

Client Name: Kerr-McGee Corporation  
Reported: 04/17/01 at 09:27 PM

Group Number: 756679

#### Surrogate Quality Control

|         |     |
|---------|-----|
| 3580505 | 101 |
| 3580506 | 101 |
| 3580508 | 102 |
| 3580509 | 101 |
| 3580510 | 101 |
| 3580511 | 102 |
| 3580512 | 101 |
| 3580513 | 102 |
| 3580515 | 103 |
| 3580516 | 101 |
| 3580517 | 101 |
| 3580518 | 101 |
| 3580519 | 101 |
| Blank   | 101 |
| LCS     | 100 |
| LCSD    | 101 |
| MS      | 100 |

---

Limits: 69-134

Analysis Name: BTEX (8021)

Batch number: 01093A55

Trifluorotoluene-P

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|         |     |
|---------|-----|
| 3580507 | 100 |
| 3580514 | 102 |
| Blank   | 101 |
| LCS     | 100 |
| LCSD    | 100 |
| MS      | 100 |
| MSD     | 100 |

---

Limits: 69-134

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
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