LEGGETTE, BRASHEARS & GRAHAM, INC.

PROFESSIONAL GROUND-WATER AND ENVIRONMENTAL SERVICES

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February 27, 1996

Ms. Marilyn Jahnke
Wisconsin Department of Natural Resources
Southern District Headquarters
3911 Fish Hatchery Road
Fitchburg, WI 53711

RE: Mobil Oil Corporation
Station No. 05-EKM
3900 Monona Drive
Madison, WI

Dear Ms. Jahnke:

Enclosed is one copy of the Quarterly Status Report for the above referenced site. If you have any questions regarding the report, please call me.

Very truly yours,

LEGGETTE, BRASHEARS & GRAHAM, INC.

Thomas M. Fitzwilliams
Hydrogeologist

TMF\tmf
Enclosures
cc: Mr. Pete Gates, Mobil Oil Corporation
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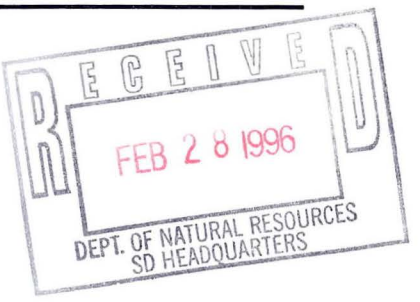

QUARTERLY STATUS REPORT

MOBIL OIL CORPORATION
STATION NO. 05-EKM
3900 MONONA DRIVE
MADISON, WISCONSIN

Prepared for

Mobil Oil Corporation
February 1996

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QUARTERLY SITE STATUS REPORT

MOBIL OIL CORPORATION
STATION NO. 05-EKM
3900 MONONA DRIVE
MADISON, WISCONSIN

1.0 INTRODUCTION

1.1 Purpose

This report describes the soil vapor extraction (SVE) and air sparge (AS) system continued monitoring activities and presents the results of the quarterly ground-water monitoring at Mobil Station No. 05-EKM. This report summarizes the work conducted at the site between October 1995 and December 1995.

1.2 Scope

The scope of services performed include:

- collecting effluent air samples from the SVE system on a monthly basis, as required by the Wisconsin Department of Natural Resources (WDNR);
- collecting air samples from the four SVE wells currently in operation to estimate the hydrocarbon removal rate from each;
- estimating the emissions of benzene and total volatile organic compounds (VOCs) from the SVE system and comparing them to the regulatory limits to ensure compliance;
- measuring carbon dioxide (CO_2) concentrations in the air from each SVE well to estimate the subsurface biodegradation rate;
- recording monthly fluid-level measurements for each monitoring well;
- collecting quarterly ground-water samples from each monitoring well;
- monitoring the operation and evaluating the performance of the SVE and AS systems; and
- preparing this report.

2.0 BACKGROUND INFORMATION

2.1 Location

The site is located at 3900 Monona Drive, Dane County, Madison, Wisconsin, in the NW¼, of the SW¼, of Section 9, Township 7 North, Range 10 East, on the U.S.G.S. Madison East, Wisconsin 7.5-Minute Quadrangle (Figure 1). The area surrounding the site is both residential and commercial. An apartment complex and single family residential homes are situated to the north, and various small businesses are located east, west and south of the site.

2.2 Owner/Occupant

The current owner of the site is Mobil Oil Corporation (Mobil). The Mobil contact person for this site is Mr. Peter Gates, Mobil Oil Corporation, Marketing/Engineering, Schaumberg Corporate Center, 1515 Woodfield Road, Suite 400, Schaumberg, Illinois, 60173. The site is currently occupied by Exhaust Pros Muffler Shop. A site map is attached as Figure 2.

2.3 System Start-Up

The SVE and AS systems were started on June 14, 1995. Following start-up, the SVE system was operated at an air flow rate of approximately 250 standard cubic feet per minute (scfm). The AS system was operated at approximately 2.5 pounds per square inch (psi). Details of the system start-up can be found in the *System Start-up and Site Status Report* that was prepared by LBG in October 1995.

3.0 SOIL VAPOR EXTRACTION SYSTEM

The soil vapor extraction (SVE) system consists of four SVE wells in which air is extracted with a blower and discharged untreated to the atmosphere. SVE wells SVE-1, SVE-2, SVE-3 and SVE-4 are screened from approximately 2 to 17 feet below grade (bg) in natural deposits of the unsaturated zone. SVE wells SVE-2, SVE-3 and SVE-4 are constructed of 4-inch diameter poly vinyl chloride (PVC), while SVE-1 is constructed of 2-inch diameter PVC.

3.1 Effluent Air Quality Monitoring

Effluent air samples have been routinely collected since system start-up. During this reporting period, effluent air samples were collected on October 18, November 7 and December 27, 1995. The samples were collected by drawing a 5-liter volume of air through a laboratory-supplied carbon tube. The front and back ends of the carbon tubes were analyzed for benzene and total VOCs by Montgomery Watson, which subcontracted the work to Swanson Environmental, Inc. and Mid-State Associates, Inc. (December 27 sample). The analysis was completed using the NIOSH 1500 analytical method.

On October 18, 1995, air samples were also collected from the four SVE wells currently in operation. These samples were collected in order to estimate the hydrocarbon recovery rate from each SVE well and based on these recovery rates, evaluate the performance of the SVE system. In addition, a second effluent sample was collected from the outside stack on November 7. This sample was collected in order to evaluate whether representative emission samples were being obtained from the SVE effluent sampling port in the treatment building. The above described samples were also analyzed for benzene and total VOCs by the NIOSH 1500 method.

The laboratory reported that no benzene was present above the MDL in the effluent air collected on November 7. Relatively low concentrations (4.2 and 8.4 ug/l) of benzene were reported for the samples collected on October 18 and December 27, respectively. However, total VOCs were reported to be present in all three samples at concentrations that range from 40 to 1166 ug/l.

The laboratory reported that the air samples collected from the four individual SVE wells contained concentrations of benzene and total VOCs which ranged from <2 to 6.2 ug/l and from 132 to 1536 ug/l, respectively. Air quality analytical reports are included in Appendix I. Air quality results are summarized on Table 1.

3.2 Air Flow Rate Monitoring

Air flow rates were calculated based on measurements obtained from the 2-inch venturi meters for the individual SVE wells. Flow rate calculations are included as Appendix II. Based on the calculated flow rates, the SVE system has been extracting approximately 240 to 260 standard cubic feet per minute (scfm) of air from the unsaturated zone. During this

period, the average flow rates of SVE-1, SVE-2, SVE-3, and SVE-4 were approximately 7, 49, 75 and 114 scfm, respectively.

3.3 Effluent Air Emissions

Based on the air flow rates and air quality analytical results, effluent air emissions were calculated and are included as Appendix III. Air emissions were calculated based on the analytical results for the front ends of the tubes. Summaries of the benzene and VOCs emissions are presented in the calculations. When the laboratory results were below the MDL, the MDL was used to estimate emissions. Based on these calculations, the total benzene emissions from June 15 to December 27, 1995 equal 21 pounds, which is well below the limit of 300 lbs/yr established by the Wisconsin Department of Natural Resources (WDNR). In addition, the total VOC emissions for the same period ranged from 0.036 to 1.07 pounds per hour (lbs/hr), also well below the established limit of 5.7 lbs/hr.

3.4 Biodegradation Enhanced by SVE

Since start-up, the CO_2 concentrations in the SVE wells have been measured three times. A Sensidyne pump was used to draw air from the individual wellhead sampling ports through Sensidyne CO_2 tubes; the CO_2 concentrations were then recorded directly from the tubes. CO_2 concentrations and biodegradation calculations are summarized on Table 2. These CO_2 concentrations are indicative of the amount of hydrocarbons undergoing biodegradation by subsurface microorganisms. Typically, natural biodegradation is significantly enhanced by the vacuum created by SVE systems.

Based on the concentrations recorded prior to December 27, the biodegradation rate was calculated to be approximately 11 to 15 pounds of hydrocarbons per day. The CO_2 concentrations recorded on December 27 were below the baseline CO_2 readings recorded prior to system start-up. These low CO_2 concentrations may have been an anomaly due to variations in sampling procedures. Another reason for the low CO_2 concentrations may be attributed to a reduction in the volume of hydrocarbons. If the volume of hydrocarbons was reduced, there would be a smaller microbial population which would produce less CO_2. As more data becomes available, time-weighted rates will be calculated, providing a more accurate representation of biodegradation rates.

4.0 AIR SPARGE SYSTEM

The air sparge (AS) system consists of seven AS wells in which air is injected into the shallow ground water with a rotary lobe blower. All seven AS wells are screened from approximately 28 to 30 feet below grade (bg) in the saturated zone.

4.1 Dissolved Oxygen Monitoring

Dissolved oxygen readings were measured on July 7, September 25, October 17, November 7 and December 27 following system start-up. Dissolved oxygen readings were collected in all seven ground-water monitoring wells with a down-hole DO meter (YSI Model 57) using a Clark-type polarographic sensor with built-in temperature compensation. Dissolved oxygen readings are summarized in Table 3.

5.0 REMEDIATION SYSTEM PERFORMANCE

As reported in the start-up report, the "silted-in" sparge wells were redeveloped on October 16. After well development and piping modifications, the remediation system was re-started which significantly improved air flow to the saturated zone. Significant increases in DO levels, PID readings and water table elevations were observed (Tables 3, 4 and 7), confirming the improved air injection to the saturated zone. Figure 3 illustrates the ground-water mounding effect created by the improved AS system.

On October 18, 1995 effluent air samples were collected from the individual SVE wells as well as the SVE effluent sampling port. The analytical results from the effluent air samples indicate that the concentrations of benzene and total VOCs increased substantially, most likely due to the system improvements. PID readings (Table 4) also indicate that a significant concentration of hydrocarbons is being removed from the unsaturated source soils by the SVE system.

However, the results from the following two effluent air sampling events (November 7 and December 27) indicate that benzene and total VOC concentrations have decreased to concentrations similar to those from before the system improvements were made. In an effort to

increase the hydrocarbon recovery from the source soils, the vacuum from SVE-2 and SVE-4 should be decreased. This adjustment should increase the air flow rate from SVE-1. It is expected that increasing the air flow rate from SVE-1 will increase the effluent air concentrations and the hydrocarbon recovery rate. The results of the emissions from the effluent and individual SVE wells are summarized in Table 5. The SVE system recovery totals are summarized in Table 6.

6.0 GROUND-WATER FLOW

Fluid-level measurements have been recorded in each monitoring well on a monthly basis since June 14, 1995. Fluid-level measurements recorded ranged from approximately 15 to 18 feet below grade in the monitoring wells. Based on fluid-level measurements, it appears that the water table elevation has not fluctuated significantly when compared with the previous quarter's measurements. A summary of fluid-level data recorded to date is included as Table 7.

Ground-water elevation contours for November 7 are illustrated in Figure 3. The ground-water flow direction appears to be to the west towards Lake Monona, which is consistent with historical data. As expected, a small mound in the water table formed as a result of the air sparging system improvements.

7.0 GROUND-WATER QUALITY

Ground-water samples were collected on December 27 and 28, 1995 from monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6 and MW-7. The samples were analyzed for PVOCs and gasoline range organics (GRO) by Montgomery Watson (State of Wisconsin Laboratory Certification No. 113138300). PVOC and GRO laboratory analytical results are summarized on Table 8.

No analytical parameters were reported above the MDL in samples collected from MW-1, MW-2, MW-3, MW-4 and MW-5 on December 27.

The laboratory reported concentrations of PVOCs above the MDL in ground-water samples from MW-6 and MW-7. However, none of the compounds were detected above the State of Wisconsin enforcement standards (ES) established in NR140.10, Wisconsin Administrative Code. Benzene was detected at 1.2 micrograms per liter (ug/l) in MW-6 and 2.8 ug/l in MW-7. The concentrations of all analytical parameters, except for GRO in MW-7, are the lowest reported since system start-up on June 14.

In addition, no product was observed in any of the ground-water monitoring wells during the October, November and December 1995 system inspections. The water quality analytical report, chain-of-custody forms, and ground-water sampling data sheets are included in Appendix IV.

8.0 SUMMARY AND CONCLUSIONS

1. The SVE system effluent air was sampled monthly following system start-up. Effluent air emissions calculated from the flow rates and air quality analytical results indicate that the total benzene and VOC emission rates have remained well below the WDNR emissions limits.

2. Air samples were collected from the four individual SVE wells to estimate the hydrocarbon recovery rate from each SVE well. Based on the results, it appears the SVE system is effectively removing hydrocarbons from the unsaturated source soils.

3. Carbon dioxide concentrations were measured on October 17 and December 27 from the individual SVE wells. Biodegradation rates were estimated to be approximately 11 to 15 pounds per day.

4. Fluid-levels were recorded monthly. The ground-water flow direction appears to be to the west, which is consistent with historical data. As expected, a small mound in the water table formed after the system improvements (Figure 3).

5. Ground-water samples were collected on December 27 from the monitoring wells and analyzed for GRO and PVOCs. No analytical parameters were reported above the MDL in samples collected from MW-1, MW-2, MW-3, MW-4 and MW-5. PVOCs and GRO were detected above the MDL in the samples from MW-6 and MW-7. However, none of the compounds exceeded the ES. In general, the concentrations of PVOCs from ground-water samples have declined since system start-up.

6. DO readings were measured monthly. After system modifications were made, DO levels and water table elevations indicated that a significant volume of air is being injected into the ground water.

7. The SVE and AS system has operated continuously during this reporting period, with the exception of being off-line between October 13 and 17. PID readings and effluent air sample results indicate that a significant volume of hydrocarbons is being removed from the unsaturated source soils by the system. Improvements were made to the AS system to increase air injection, improve ground-water remediation and, ultimately, to increase the SVE hydrocarbon removal rate.

9.0 RECOMMENDATIONS

LBG recommends that the remediation system continue to operate and that SVE effluent air sampling continue on a monthly basis as required by the WDNR. All air samples should be analyzed for benzene and total VOCs by NIOSH Method 1500. DO readings should continue to be measured monthly to ensure maximum air injection through the AS wells, and depth to the bottom of the AS wells should be measured to ensure that the wells do not become silted-in again. In addition, air flow rates in SVE-2 and SVE-4 should be adjusted to increase the hydrocarbon recovery from SVE-1.

Quarterly sampling of the monitoring wells for GRO and PVOCs should also continue until PVOC concentrations remain below the applicable enforcement standards for four consecutive quarters, as required for site closure. LBG recommends that brief quarterly reports be prepared, as requested by the WDNR, to document the cleanup efforts.

TABLES

TABLE 1

MOBIL OIL CORPORATION
STATION NO. 05-EKM
MADISON, WISCONSIN

AIR QUALITY RESULTS

Date	Sample Location	Reported Mass of Total Benzene (ug)	Reported Mass of Total VOC's (ug)	Air Sample Volume (liters)	Total Benzene Concentration (ug/l)	Total VOC Concentration (ug/l)
6/15/95	Effluent	< 5.0	**10.9**	1	< 5.0	**10.9**
6/16/95	Effluent	< 5.0	**9.3**	1	< 5.0	**9.3**
6/17/95	Effluent	< 5.0	**17.3**	1	< 5.0	**17.3**
6/23/95	Effluent	< 5.0	**6.1**	1	< 5.0	**6.1**
6/30/95	Effluent	< 5.0	< 40	1	< 5.0	< 40
7/7/95	Effluent	< 5.0	< 40	1	< 5.0	< 40
7/17/95	Effluent	< 5.0	**5.3**	1	< 5.0	**5.3**
8/11/95	Effluent	< 10	**20**	5	< 2	**4.0**
9/26/95	Effluent	< 10	**64**	5	< 2	**13**
10/18/95	Effluent	**21**	**5830**	5	**4.2**	**1166**
11/7/95	Effluent	< 10	**198**	5	< 2	**40**
12/27/95	Effluent	-	-	5	**8.4**	**42**
10/18/95	SVE-1	**13**	**5370**	5	**2.6**	**1074**
10/18/95	SVE-2	**10**	**661**	5	**2.0**	**132**
10/18/95	SVE-3	< 10	**4340**	5	< 2	**868**
10/18/95	SVE-4	**31**	**7680**	5	**6.2**	**1536**

ug : micrograms
ug/l : micrograms per liter
VOC : volatile organic compounds
< : less than the laboratory method detection limit
Note : Concentrations for sampling events prior to August 11, 1995 are for total petroleum volatile organic compounds (PVOC).

TABLE 2

MOBIL OIL CORPORATION
STATION NO. 05-EKM
MADISON, WISCONSIN

CARBON DIOXIDE CONCENTRATIONS AND BIODEGRADATION RATES

Date	CO_2 SVE-1 (%)	CO_2 SVE-2 (%)	CO_2 SVE-3 (%)	CO_2 SVE-4 (%)	CO_2 Average (%)	Background CO_2 (%)	CO_2 Above Background (%)	SVE System Flow Rate (scfm)	Average Biodegradation (lbs/ft^3)	Daily Biodegradation (lbs)	Operating Period (Days)	Total Biodegradation (lbs)
6/14/95	0.10	0.10	0.10	0.10	0.10	0.10	0.00	260	0	0	0	0
9/26/95	0.15	0.25	0.13	0.18	0.18	0.10	0.08	266	2.93E-05	11.21	104	1,166
10/17/95	0.10	0.30	0.25	0.18	0.21	0.10	0.11	244	4.14E-05	14.56	21	306
12/27/95	0.06	0.08	0.06	0.04	0.06	0.10	0.00	241	0	0	71	0
										TOTALS	**196**	**1,472**

CO_2 : Carbon dioxide
scfm : Standard cubic feet per minute
lbs : Pounds
ft^3 : Cubic feet
Notes 1) Biodegradation is recorded in pounds of gasoline per cubic foot of air.
2) Calculations derived from WDNR memorandum dated April 5, 1991, "Guidance on Air Sampling and Emission Monitoring for LUST Soil and Ground-Water Remediation Projects with Synopsis on Air Regulations".

TABLE 3

MOBIL OIL CORPORATION
STATION NO. 05-EKM
MADISON, WISCONSIN

DISSOLVED OXYGEN CONCENTRATIONS
(all results are in milligrams per liter (mg/l))

Date	MW-1		MW-2		MW-3		MW-4		MW-5		MW-6		MW-7	
	DO	DO-DO $_{BL}$	DO	DO-DO $_{BL}$	DO	DO-DO $_{BL}$	DO	DO-DO $_{BL}$	DO	DO-DO $_{BL}$	DO	DO-DO $_{BL}$	DO	DO-DO $_{BL}$
6/14/1995 (Baseline)	2.55	0.00	0.65	0.00	0.25	0.00	5.20	0.00	0.20	0.00	0.65	0.00	0.90	0.00
7/7/95	3.40	0.85	3.55	2.90	8.35	8.10	8.80	3.60	3.85	3.65	3.95	3.30	4.80	3.90
9/25/95	1.90	-0.65	0.75	0.10	0.40	0.15	4.20	-1.00	0.65	0.45	0.75	0.10	0.55	-0.35
10/17/95	2.25	-0.30	9.60	8.95	1.00	0.75	2.65	-2.55	1.20	1.00	4.85	4.20	5.40	4.50
11/7/95	5.50	2.95	11.00	10.35	1.30	1.05	7.50	2.30	1.75	1.55	2.90	2.25	1.60	0.70
12/27/95	9.40	6.85	15.60	14.95	0.75	0.50	8.50	3.30	0.75	0.55	4.30	3.65	2.80	1.90

Note: DO = Dissolved Oxygen
DO $_{BL}$ = DO Baseline Concentration
DO-DO $_{BL}$ = Change in DO Concentration from Baseline Concentration

TABLE 4

MOBIL OIL CORPORATION
STATION NO. 05-EKM
MADISON, WISCONSIN

PHOTOIONIZATION DETECTOR READINGS
(all measurements are in parts per million (ppm) as isobutylene)

Date	SVE-1	SVE-2	SVE-3	SVE-4	EFFLUENT
6/14/95	3.6	25.2	11.2	4.6	-
6/15/95	11.0	44.0	7.0	57.0	41.0
6/16/95	1.5	22.2	2.4	38.0	9.0
6/17/95	0.8	21.9	1.1	32.0	20.2
6/23/95	24.4	26.3	5.4	45.3	17.0
6/30/95	0.4	0.5	0.2	5.8	1.8
7/7/95	1.1	0.0	0.5	10.4	23.0
7/17/95	-	-	-	-	-
8/29/95	8.1	6.2	4.6	3.5	1.6
9/26/95	13.8	9.0	0.9	6.7	3.6
10/17/95	7.3	24.8	2.0	24.6	76.6
11/7/95	-	4.3	3.2	5.4	34.0
12/27/95	18.4	13.7	2.1	0.8	8.6

- : Not Sampled

TABLE 5

MOBIL OIL CORPORATION
STATION NO. 05-EKM
MADISON, WISCONSIN

SVE EFFLUENT AND INDIVIDUAL WELL EMISSIONS SUMMARY

Sample Date	Sample Location	Air Flow Rate (scfm)	Benzene Concentration (ug/l)	Benzene Emissions (lbs/day)	% of Total Benzene Recovery	Total VOC Concentration (ug/l)	Total VOC Emissions (lbs/day)	% of Total VOC Recovery
10/18/95	Effluent	244	4	**0.09**	-	1166	**25.58**	-
10/18/95	SVE-1	5	3	0.00	1	1074	0.45	2
10/18/95	SVE-2	46	2	0.01	10	132	0.54	2
10/18/95	SVE-3	81	2	0.01	17	868	6.35	28
10/18/95	SVE-4	112	6	0.06	72	1536	15.50	68
			TOTALS	**0.09**	100		**22.84**	100

SVE : soil vapor extraction
scfm : standard cubic feet per minute
ug/l : micrograms per liter
lbs/day : pounds per day
VOC : volatile organic compounds
Note : The method detection limit was used in calculating the emissions rates if the parameter was not detected.

TABLE 6

MOBIL OIL CORPORATION
STATION NO. 05-EKM
MADISON, WISCONSIN

SVE SYSTEM RECOVERY TOTALS
(all results are in pounds)

Sample Date	Total Benzene Removed by SVE System	Cumulative Total Benzene Removed by SVE System	Total VOCs Removed by SVE System	Cumulative Total VOCs Removed by SVE System
6/15/95	0.11	0.11	0.23	0.23
6/16/95	0.11	0.22	0.20	0.44
6/17/95	0.11	0.32	0.37	0.81
6/23/95	0.64	0.97	0.79	1.59
6/30/95	0.75	1.72	6.01	7.61
7/7/95	0.76	2.48	6.04	13.65
7/17/95	1.81	4.28	1.13	14.78
8/11/95	1.49	5.77	2.13	16.91
9/26/95	2.20	7.97	14.30	31.21
10/18/95	2.03	10.00	562.64	593.85
11/7/95	1.85	11.85	17.42	611.27
12/27/95	9.11	20.96	45.57	656.84
TOTALS	**20.96**		**656.84**	

lbs : pounds
SVE : soil vapor extraction
GRO : gasoline range organics
VOCs : volatile organic compounds

TABLE 7

MOBIL OIL CORPORATION
STATION NO. 05-EKM
MADISON, WISCONSIN

FLUID-LEVEL MEASUREMENTS
(all measurements are in feet)

Location	Date	Depth to Water	Top of Casing Elevation	Water Elevation
MW-1	5/5/89	17.10	863.65	846.55
MW-1	12/19/89	Frozen	863.65	-
MW-1	3/3/92	17.47	863.65	846.18
MW-1	12/15/92	17.65	863.65	846.00
MW-1	3/30/93	17.18	863.65	846.47
MW-1	6/13/95	16.50	863.65	847.15
MW-1	7/17/95	16.92	863.65	846.73
MW-1	9/25/95	17.11	863.65	846.54
MW-1	10/17/95	16.79	863.65	846.86
MW-1	11/7/95	16.84	863.65	846.81
MW-1	12/27/95	17.75	863.65	845.90
MW-2	5/5/89	17.22	863.64	846.42
MW-2	12/19/89	17.75	863.64	845.89
MW-2	3/3/92	17.48	863.64	846.16
MW-2	12/15/92	17.66	863.64	845.98
MW-2	3/30/93	17.20	863.64	846.44
MW-2	6/13/95	16.47	863.64	847.17
MW-2	7/17/95	Blocked	863.64	-
MW-2	9/25/95	17.24	863.64	846.40
MW-2	10/17/95	15.93	863.64	847.71
MW-2	11/7/95	15.54	863.64	848.10
MW-2	12/27/95	15.60	863.64	848.04
MW-3	5/5/89	17.96	864.32	846.36
MW-3	12/19/89	18.45	864.32	845.87
MW-3	3/3/92	18.34	864.32	845.98
MW-3	12/15/92	18.54	864.32	845.78
MW-3	3/30/93	18.05	864.32	846.27
MW-3	6/13/95	17.35	864.32	846.97
MW-3	7/17/95	17.77	864.32	846.55
MW-3	9/25/95	17.97	864.32	846.35
MW-3	10/17/95	17.70	864.32	846.62
MW-3	11/7/95	17.74	864.32	846.58
MW-3	12/27/95	18.52	864.32	845.80
MW-4	5/5/89	15.98	862.55	846.57
MW-4	12/19/89	16.40	862.55	846.15
MW-4	3/3/92	-	862.55	-
MW-4	12/15/92	16.45	862.55	846.10
MW-4	3/30/93	16.01	862.55	846.54
MW-4	6/13/95	14.25	862.55	848.30
MW-4	7/17/95	15.46	862.55	847.09

TABLE 7

MOBIL OIL CORPORATION
STATION NO. 05-EKM
MADISON, WISCONSIN

FLUID-LEVEL MEASUREMENTS
(all measurements are in feet)

Location	Date	Depth to Water	Top of Casing Elevation	Water Elevation
MW-4	9/25/95	15.78	862.55	846.77
MW-4	10/17/95	15.48	862.55	847.07
MW-4	11/7/95	15.43	862.55	847.12
MW-4	12/27/95	16.38	862.55	846.17
MW-5	12/19/89	17.21	863.12	845.91
MW-5	3/3/92	17.10	863.12	846.02
MW-5	12/15/92	17.28	863.12	845.84
MW-5	3/30/93	16.83	863.12	846.29
MW-5	6/13/95	16.09	863.12	847.03
MW-5	7/17/95	16.57	863.12	846.55
MW-5	9/25/95	16.81	863.12	846.31
MW-5	10/17/95	16.46	863.12	846.66
MW-5	11/7/95	16.52	863.12	846.60
MW-5	12/27/95	17.31	863.12	845.81
MW-6	12/19/89	17.66	863.48	845.82
MW-6	3/3/92	17.53	863.48	845.95
MW-6	12/15/92	17.74	863.48	845.74
MW-6	3/30/93	17.24	863.48	846.24
MW-6	6/13/95	16.57	863.48	846.91
MW-6	7/17/95	17.11	863.48	846.37
MW-6	9/25/95	17.28	863.48	846.20
MW-6	10/17/95	16.92	863.48	846.56
MW-6	11/7/95	16.99	863.48	846.49
MW-6	12/28/95	17.81	863.48	845.67
MW-7	12/19/89	18.20	864.12	845.92
MW-7	3/3/92	18.09	864.12	846.03
MW-7	12/15/92	18.27	864.12	845.85
MW-7	3/30/93	17.81	864.12	846.31
MW-7	6/13/95	17.10	864.12	847.02
MW-7	7/17/95	17.47	864.12	846.65
MW-7	9/25/95	17.69	864.12	846.43
MW-7	10/17/95	17.52	864.12	846.60
MW-7	11/7/95	17.53	864.12	846.59
MW-7	12/27/95	18.28	864.12	845.84

TABLE 8

MOBIL OIL CORPORATION
STATION NO. 05-EKM
MADISON, WISCONSIN

WATER QUALITY RESULTS
(all results are in micrograms per liter (ug/L))

Location	Date Sampled	Benzene	Toluene	Ethyl Benzene	Xylenes (total)	MTBE	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	GRO	THC Gasoline	Lead
WI Enforcement Standard		**5**	**343**	**700**	**620**	**60**	-	-	-	-	**15**
WI Preventive Action Limit		**0.5**	**68.6**	**140**	**124**	**12**	-	-	-	-	**1.5**
MW-1	5/5/89	**2**	<1.0	<1.0	<1.0	-	-	-	-	**33**	-
MW-1	3/3/92	<1.0	<1.0	<1.0	<3.0	<1.0	-	-	-	<250	-
MW-1	12/14/92	**7.6**	**8.1**	**1.5**	**11.0**	<1.0	**3.7**	**1.3**	<100	-	-
MW-1	3/30/93	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<100	-	-
MW-1	6/13/95	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<100	-	-
MW-1	9/25/95	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<100	-	-
MW-1	12/27/95	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<100	-	-
MW-2	5/5/89	**110**	**68**	**62**	**480**	-	-	-	-	**2,100**	-
MW-2	12/19/89	<1.0	<1.0	<1.0	<1.0	-	-	-	-	**34**	<60
MW-2	3/3/92	**1.2**	<1.0	<1.0	<3.0	**2.3**	-	-	-	<250	-
MW-2	12/14/92	**8.0**	**8.3**	**1.5**	**11**	<1.0	**3.5**	<1.0	<100	-	-
MW-2	3/30/93	<1.0	<1.0	**1.7**	<3.0	<1.0	<1.0	<1.0	<100	-	-
MW-2	6/13/95	**3.6**	**1.2**	**46**	**23**	**1.4**	**31**	<1.0	<100	-	-
MW-2	9/25/95	**4.8**	<1.0	<1.0	<3.0	**2.6**	<1.0	<1.0	<100	-	-
MW-2	12/27/95	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<100	-	-
MW-3	5/5/89	**3**	<1.0	<1.0	<1.0	-	-	-	-	**40**	-
MW-3	12/19/89	<1.0	<1.0	<1.0	<1.0	-	-	-	-	**8**	**160**
MW-3	3/3/92	<1.0	<1.0	<1.0	<3.0	<1.0	-	-	-	<250	-
MW-3	12/14/92	**5.4**	**5.7**	<1.0	**7.9**	<1.0	**2.5**	<1.0	<100	-	-
MW-3	3/30/93	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<100	-	-
MW-3	6/13/95	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<100	-	-
MW-3	9/25/95	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<100	-	-
MW-3	12/27/95	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<100	-	-

TABLE 8

MOBIL OIL CORPORATION
STATION NO. 05-EKM
MADISON, WISCONSIN

WATER QUALITY RESULTS
(all results are in micrograms per liter (ug/L))

Location	Date Sampled	Benzene	Toluene	Ethyl Benzene	Xylenes (total)	MTBE	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	GRO	THC Gasoline	Lead
WI Enforcement Standard		**5**	**343**	**700**	**620**	**60**	-	-	-	-	**15**
WI Preventive Action Limit		**0.5**	**68.6**	**140**	**124**	**12**	-	-	-	-	**1.5**
MW-4	5/5/89	<1.0	<1.0	<1.0	<1.0	-	-	-	-	<1.0	-
MW-4	12/19/89	<1.0	<1.0	<1.0	<1.0	-	-	-	-	<1.0	**80**
MW-4	3/3/92	<1.0	<1.0	<1.0	<3.0	<1.0	-	-	-	<250	-
MW-4	12/14/92	**3.9**	**4.8**	<1.0	**6.7**	<1.0	**2.2**	<1.0	<100	-	-
MW-4	3/30/93	<1.0	**4.1**	<1.0	<3.0	<1.0	<1.0	<1.0	<100	-	-
MW-4	6/13/95	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<100	-	-
MW-4	9/25/95	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<100	-	-
MW-4	12/27/95	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<100	-	-
MW-5	12/19/89	<1.0	<1.0	<1.0	**1**	-	-	-	-	**8**	<60
MW-5	3/3/92	<1.0	<1.0	<1.0	<3.0	<1.0	-	-	-	<250	-
MW-5	12/14/92	**2.6**	**3.1**	<1.0	**4.4**	<1.0	**1.7**	<1.0	<100	-	-
MW-5	3/30/93	**3.7**	**20**	**1.8**	**6.8**	<1.0	<1.0	<1.0	<100	-	-
MW-5	6/13/95	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<100	-	-
MW-5	9/25/95	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<100	-	-
MW-5	12/27/95	<1.0	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<100	-	-
MW-6	12/19/89	**56**	**29**	**350**	**840**	-	-	-	-	**5,300**	**70**
MW-6	3/3/92	**66**	**33**	**560**	**1,700**	**3.4**	-	-	-	**3,800**	-
MW-6	12/14/92	**70**	**53**	**460**	**1,060**	<5.0	**480**	**110**	**4,100**	-	-
MW-6	3/30/93	**23**	**2**	**160**	**20.3**	**3.4**	**64**	**20**	**800**	-	-
MW-6	6/14/95	**24**	**2.6**	**160**	**408**	**6.7**	**110**	**29**	**1,100**	-	-
MW-6	9/25/95	**25**	<1.0	**83**	**90**	<1.0	<1.0	**7.6**	**790**	-	-
MW-6	12/28/95	**1.2**	<1.0	**19**	< 3.0	**1.4**	**12**	**1.8**	<100	-	-

TABLE 8

MOBIL OIL CORPORATION
STATION NO. 05-EKM
MADISON, WISCONSIN

WATER QUALITY RESULTS
(all results are in micrograms per liter (ug/L))

Location	Date Sampled	Benzene	Toluene	Ethyl Benzene	Xylenes (total)	MTBE	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene	GRO	THC Gasoline	Lead
WI Enforcement Standard		**5**	**343**	**700**	**620**	**60**	-	-	-	-	**15**
WI Preventive Action Limit		**0.5**	**68.6**	**140**	**124**	**12**	-	-	-	-	**1.5**
MW-7	12/19/89	**170**	**1,400**	**21**	**2,300**	-	-	-	-	**8,300**	**90**
MW-7	3/3/92	**34**	**1,300**	**420**	**1,390**	**4.6**	-	-	-	**970**	-
MW-7	12/14/92	**240**	**2,200**	**700**	**2,560**	<1.0	**670**	**210**	**5,500**	-	-
MW-7	3/30/93	**19**	**900**	**350**	**1,160**	**7.3**	**300**	**63**	**4,500**	-	-
MW-7	6/13/95	**20**	**530**	**340**	**1,090**	<1.0	**320**	**87**	**4,300**	-	-
MW-7	9/25/95	**8.9**	**440**	**190**	**660**	<1.0	**140**	<1.0	**2,200**	-	-
MW-7	12/28/95	**2.8**	**200**	**100**	**410**	**1.4**	**120**	**30**	**2,500**	-	-

MTBE : Methyl-tert-butyl ether
GRO : Gasoline Range Organics
: Concentration exceeds the State of Wisconsin Enforcement Standard (NR 140.10)
- : Constituent not analyzed
< : Not present above laboratory method detection limit

FIGURES

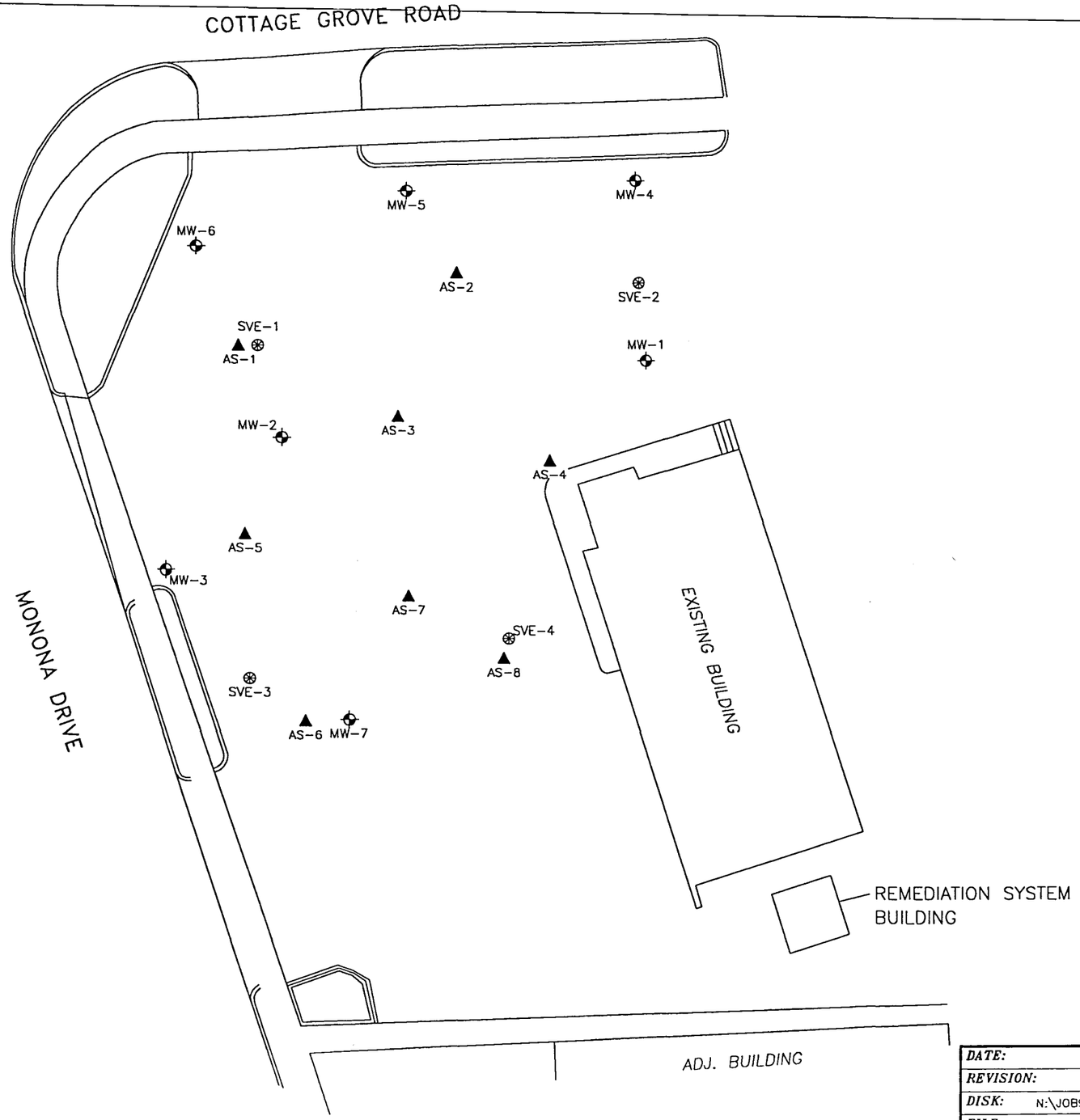
QUADRANGLE LOCATION

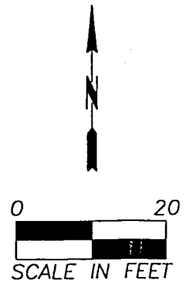
U.S.G.S. TOPOGRAPHIC
MADISON EAST, WIS.
7.5 MINUTE QUADRANGLE

0 2000

SCALE IN FEET

DATE: 10/18/95	*PREPARED BY:*	MOBIL OIL CORPORATION STATION NO. 05-EKM MADISON, WISCONSIN	*FIGURE:*
REVISION: 0	LEGGETTE, BRASHEARS & GRAHAM, INC. Professional Ground-Water and Environmental Services 6525 Grand Teton Plaza Madison, WI 53719 (608) 833-5555	AREA LOCATION MAP	
DISK: N:\JOB95\MOBIL\			
FILE: AREALOC.DWG			
DRAWN: TMF / *CHECKED:* JR			





LEGEND

MW-1	MONITORING WELL LOCATION
SVE-1	SOIL-VAPOR EXTRACTION WELL LOCATION
AS-1	SPARGE WELL LOCATION

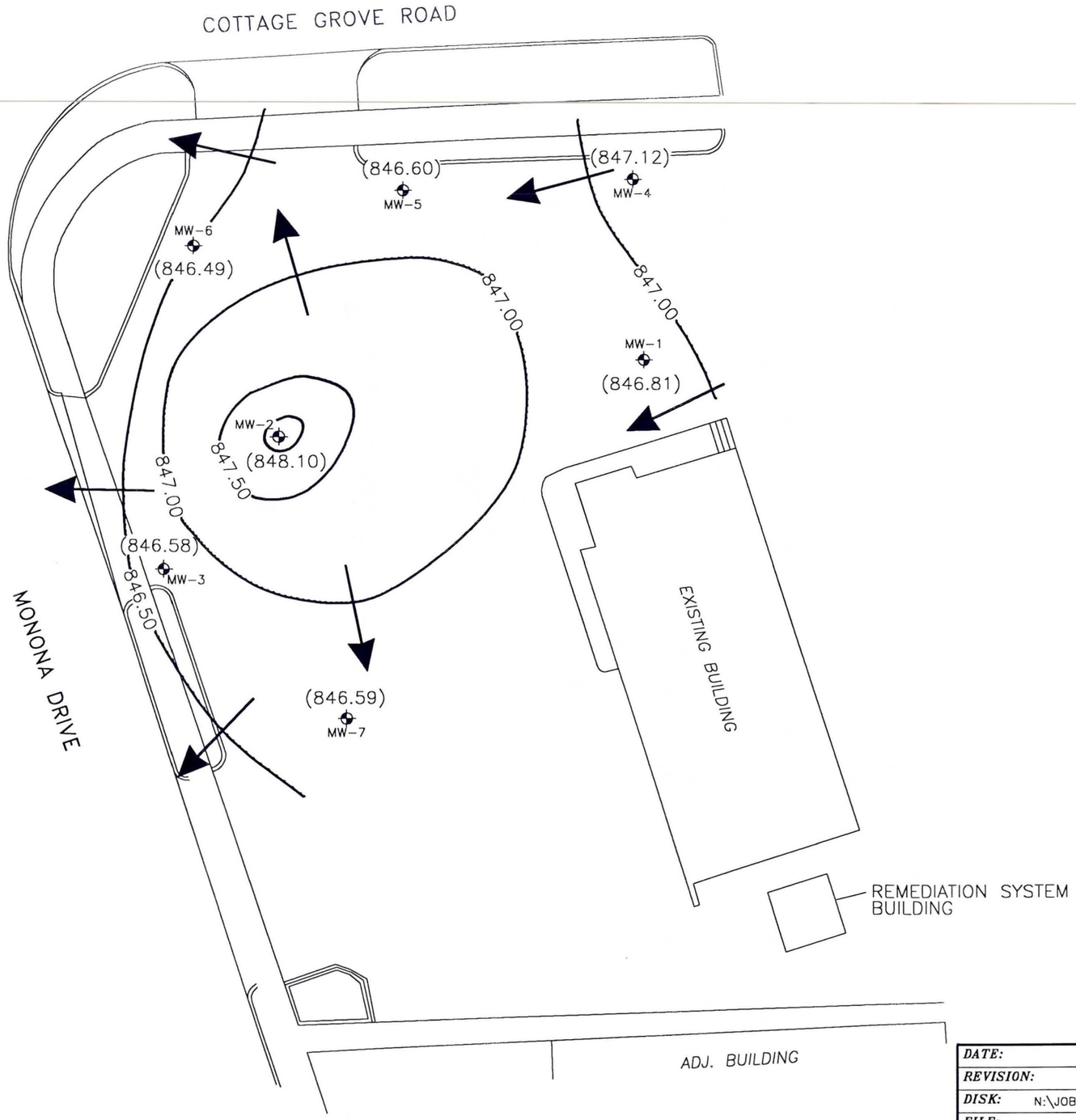
DATE:	1/25/96
REVISION:	1
DISK:	N:\JOB95\MOBIL\
FILE:	SITEMAP.DWG
DRAWN:	TMF
CHECKED:	JC

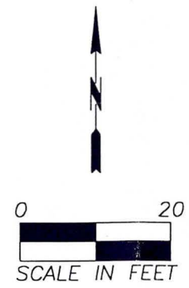
PREPARED BY:
LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water and Environmental Services
6525 Grand Teton Plaza
Madison, WI 53719
(608) 833-5555

MOBIL OIL CORPORATION
STATION NO. 05-EKM
MADISON, WISCONSIN

SITE MAP

FIGURE: 2





LEGEND

- MW-1 — MONITORING WELL LOCATION
- —848.00— GROUND-WATER ELEVATION CONTOUR
- GROUND-WATER FLOW DIRECTION

DATE:	1/25/96
REVISION:	0
DISK:	N:\JOB95\MOBIL\
FILE:	FL110795.DWG
DRAWN:	CHECKED:
TMF	FR

PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water and Environmental Services
6525 Grand Teton Plaza
Madison, WI 53719
(608) 833-5555

MOBIL OIL CORPORATION
STATION NO. 05-EKM
MADISON, WISCONSIN

GROUND-WATER FLOW
11/7/95

FIGURE: 3

	6/13/95	9/25/95	12/27/95
BENZENE	2.8 ug/l	2.8 ug/l	2.8 ug/l
TOLUENE	200 ug/l	200 ug/l	200 ug/l
ETHYLBENZENE	100 ug/l	100 ug/l	100 ug/l
XYLENES	410 ug/l	410 ug/l	410 ug/l
MTBE	1.4 ug/l	1.4 ug/l	1.4 ug/l
GRO	2,500 ug/l	2,500 ug/l	2,500 ug/l

	6/13/95	9/25/95	12/27/95
BENZENE	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
TOLUENE	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
ETHYLBENZENE	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
XYLENES	< 3.0 ug/l	< 3.0 ug/l	< 3.0 ug/l
MTBE	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
GRO	< 100 ug/l	< 100 ug/l	< 100 ug/l

	6/13/95	9/25/95	12/27/95
BENZENE	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
TOLUENE	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
ETHYLBENZENE	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
XYLENES	< 3.0 ug/l	< 3.0 ug/l	< 3.0 ug/l
MTBE	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
GRO	< 100 ug/l	< 100 ug/l	< 100 ug/l

	6/13/95	9/25/95	12/27/95
BENZENE	3.6 ug/l	4.8 ug/l	< 1.0 ug/l
TOLUENE	1.2 ug/l	< 1.0 ug/l	< 1.0 ug/l
ETHYLBENZENE	46 ug/l	< 1.0 ug/l	< 1.0 ug/l
XYLENES	23 ug/l	< 3.0 ug/l	< 3.0 ug/l
MTBE	1.4 ug/l	2.6 ug/l	< 1.0 ug/l
GRO	< 100 ug/l	< 100 ug/l	< 100 ug/l

	6/13/95	9/25/95	12/27/95
BENZENE	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
TOLUENE	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
ETHYLBENZENE	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
XYLENES	< 3.0 ug/l	< 3.0 ug/l	< 3.0 ug/l
MTBE	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
GRO	< 100 ug/l	< 100 ug/l	< 100 ug/l

	6/13/95	9/25/95	12/27/95
BENZENE	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
TOLUENE	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
ETHYLBENZENE	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
XYLENES	< 3.0 ug/l	< 3.0 ug/l	< 3.0 ug/l
MTBE	< 1.0 ug/l	< 1.0 ug/l	< 1.0 ug/l
GRO	< 100 ug/l	< 100 ug/l	< 100 ug/l

	6/13/95	9/25/95	12/27/95
BENZENE	20 ug/l	8.9 ug/l	2.8 ug/l
TOLUENE	530 ug/l	440 ug/l	200 ug/l
ETHYLBENZENE	340 ug/l	190 ug/l	100 ug/l
XYLENES	1,090 ug/l	660 ug/l	410 ug/l
MTBE	< 1.0 ug/l	< 1.0 ug/l	1.4 ug/l
GRO	4,300 ug/l	2,200 ug/l	2,500 ug/l

MW-1 MW-2 MW-3 MW-4 MW-5 MW-6 MW-7

SVE-2 SVE-3 SVE-4

AS-2 AS-3 AS-4 AS-5 AS-6 AS-7 AS-8

MONONA DRIVE

EXISTING BUILDING

REMEDIATION SYSTEM BUILDING

ADJ. BUILDING

N

0 20

SCALE IN FEET

LEGEND

MW-1 MONITORING WELL LOCATION

SVE-1 SOIL-VAPOR EXTRACTION WELL LOCATION

AS-1 SPARGE WELL LOCATION

DATE:	1/26/96
REVISION:	1
DISK:	N:\JOB95\MOBIL\
FILE:	WQ122795.DWG
DRAWN:	CHECKED:
TMF	

PREPARED BY:
LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water and Environmental Services
6525 Grand Teton Plaza
Madison, WI 53719
(608) 833-5555

MOBIL OIL CORPORATION
STATION NO. 05-EKM
MADISON, WISCONSIN

GROUND-WATER QUALITY SUMMARY

FIGURE: 4

APPENDIX I

AIR QUALITY ANALYTICAL REPORTS

MONTGOMERY WATSON
Analytical Testing Services

October 17, 1995

Mr. Marc Haga
Leggette, Brashears & Graham, Inc.
6525 Grand Teton Plaza
Madison, Wisconsin 53719

Re: 10MOCCL/MOCMON

Dear Mr. Haga:

Enclosed are the analytical results and chain-of-custody for the samples collected September 25 & 26, 1995. The chain-of-custody indicates this sample was taken at Mobil Station Number 05-EKM. Please feel free to call if you have any questions.

Sincerely,

MONTGOMERY WATSON LABORATORIES

Chris A. Wautlet

Chris A. Wautlet
Project Services Manager

Enclosures: As Stated

CAW/dsk/SMT
G:\GLAB\DMGMT\LETTERS\30321730.DOC
L11733

University Research Park
One Science Court
Madison, Wisconsin
53711

Tel 608 231 474
Fax 608 231 477

Serving the World's Environmental Needs

SWANSON ENVIRONMENTAL INC.

ANALYTICAL REPORT

Report Date: 10/11/95
Project: Mobil Oil Corp.-Univ.

To: Montgomery Watson
One Science Court
Madison, WI 53711

SEI Project: WL15068
Date Received: 09/28/95
Your Reference:

Attn: Lab Project Manager

Reference: AA19452 **Sample Point:** 11733-001 SVE Eff. **Date Collected:** 09/26/95

Analyte	Method	Units	Analyzed	PQL	Result
Benzene-Front	NIOSH 1500	Total ug	10/10/95	10	ND
Benzene-Back	NIOSH 1500	Total ug	10/10/95	10	ND
Total VOCs as Benzene-Front	NIOSH 1500	Total ug	10/10/95	10	64
Total VOCs as Benzene-Back	NIOSH 1500	Total ug	10/10/95	10	ND

Certified by: Joe R. Swanson, PhD CIH
Laboratory Manager

3150 North Brookfield Road, Brookfield, Wisconsin 53045 Telephone (414) 783-6111 Fax (414) 783-5752
Wisconsin DNR Laboratory Certification #268181760.

MONTGOMERY WATSON

CHAIN OF CUSTODY RECORD

3032.1730

SPECIAL INSTRUCTIONS:
- [x] PECFA
- [x] WI LUST
- [ ] ACT 307
- [ ] REPORT DRY WT
- [ ] OTHER:

TAROUND
- [x] 2 WEEKS (standard)
- [ ] 1 WEEK
- [ ] 3 DAYS
- [ ] 1 DAY

PROJECT NAME: Mobil Oil Corp. #05-EKM
PROJECT #: 10MOCCL/~~BMOMON~~ MOCMON
CITY: Madison
STATE: WI
SAMPLER(S): TMF, MMI

COLLECTION DATE	COLLECTION TIME	GRAB / COMP	SAMPLE ID	NO. OF CONTAINERS	Total VOC's + Benzene (by NIOSH 1500)	PVOC / GRO	REMARKS	LAB USE ONLY MATRIX	LAB USE ONLY LAB NO.
9/26/95	0830	Grab	SVE Effluent (SL)	1	X			11	11733001
9/25/95	1435		MW-1	3		X		1	002
	1645		MW-2	3		X			-003
	1635		MW-3	3		X			-004
	1355		MW-4	3		X			-005
	1540		MW-5	3		X			-006
	1450		MW-6	3		X			-007
	1550		MW-7	3		X			-008
	1650		Field Blank	1		X			-009

SPECIAL INSTRUCTIONS:
Please bill Mobil Oil Corp., Send ~~Excel~~ lab report to LBG.

TAMPER EVIDENT SEAL INTACT? ___YES ___NO ___NOT PRESENT
SEAL NO.: _____
SAMPLES RECEIVED ON ICE? X YES ___NO TEMP: _____°C

PROJ. MGR.: Chris Hoffman
D. Tauscher

	SIGNATURE	DATE	TIME	SIGNATURE	DATE	TIME
RELINQUISHED BY:		9/26/95	1420	RECEIVED BY:		
RELINQUISHED BY				RECEIVED BY:		
RELINQUISHED BY:				RECEIVED BY:		
RELINQUISHED BY				RECEIVED FOR LABORATORY BY:	9/26	2:20

C-O-C No. 013554

NAME OF COURIER: _____
AIRBILL NUMBER: _____

SWANSON ENVIRONMENTAL INC.

ANALYTICAL REPORT

Report Date: 11/13/95
Project: Mobil

To: Montgomery Watson
One Science Court
Madison, WI 53711

SEI Project: WL15126
Date Received: 10/19/95
Your Reference:

Attn: Project Service Manager

			Reference:		AA19658		AA19659
			Collected:		10/18/95		10/18/95
			Sample Point:		SVE-1		SVE-2
Analyte	Method	Units	Analyzed	PQL	Result	PQL	Result
Benzene-Front	NIOSH 1500	Total ug	11/10/95	10	13	10	10
Benzene-Back	NIOSH 1500	Total ug	11/10/95	10	ND	10	ND
Total VOCs as Benzene-Front	NIOSH 1500	Total ug	11/10/95	10	5370	10	661
Total VOCs as Benzene-Back	NIOSH 1500	Total ug	11/10/95	10	ND	10	ND

SWANSON ENVIRONMENTAL INC.

ANALYTICAL REPORT

Report Date: 11/13/95
Project: Mobil

To: Montgomery Watson
One Science Court
Madison, WI 53711

SEI Project: WL15126
Date Received: 10/19/95
Your Reference:

Attn: Project Service Manager

			Reference:		AA19660		AA19661
			Collected:		10/18/95		10/18/95
			Sample Point:		SVE-3		SVE-4
Analyte	**Method**	**Units**	**Analyzed**	**PQL**	**Result**	**PQL**	**Result**
Benzene-Front	NIOSH 1500	Total ug	11/10/95	10	ND	10	31
Benzene-Back	NIOSH 1500	Total ug	11/10/95	10	ND	10	ND
Total VOCs as Benzene-Front	NIOSH 1500	Total ug	11/10/95	10	4340	10	7680
Total VOCs as Benzene-Back	NIOSH 1500	Total ug	11/10/95	10	ND	10	ND

SWANSON ENVIRONMENTAL INC.

ANALYTICAL REPORT

Report Date: 11/13/95
Project: Mobil

To: Montgomery Watson
One Science Court
Madison, WI 53711

SEI Project: WL15126
Date Received: 10/19/95
Your Reference:

Attn: Project Service Manager

Reference: AA19662 **Sample Point:** SVE-Effluent **Date Collected:** 10/18/95

Analyte	Method	Units	Analyzed	PQL	Result
Benzene-Front	NIOSH 1500	Total ug	11/10/95	10	21
Benzene-Back	NIOSH 1500	Total ug	11/10/95	10	ND
Total VOCs as Benzene-Front	NIOSH 1500	Total ug	11/10/95	10	5830
Total VOCs as Benzene-Back	NIOSH 1500	Total ug	11/10/95	10	ND

Certified by: Lee R. Swanson, Ph.D. C.I.H.
Laboratory Manager

3150 North Brookfield Road, Brookfield, Wisconsin 53045 Telephone (414) 783-6111 Fax (414) 783-5752
Wisconsin DNR Laboratory Certification #268181760.

MONTGOMERY WATSON LABORATORIES

November 29, 1995

Mr. Marc Haga
Leggette, Brashears & Graham, Inc.
6525 Grand Teton Plaza
Madison, Wisconsin 53719

Re: 10MOCCL/MOCMON

Dear Mr. Haga:

Enclosed are the analytical results and chain-of-custody for the samples collected November 7, 1995. The chain-of-custody indicates this sample was taken at Mobil Station Number 05-EKM. Please feel free to call if you have any questions.

Sincerely,

MONTGOMERY WATSON LABORATORIES

Sheila M. Tauschek
Laboratory Director

Enclosures: As Stated

SMT/kak/SMT
G:\GLAB\DMGMT\LETTERS\30321730.DOC
L12060

Pasadena Division
555 East Walnut Street
Pasadena, California 91101
Tel: 818 568 6400
Fax: 818 568 6324

Madison Division
1 Science Court
Madison, Wisconsin 53711
Tel: 608 231 4747
Fax: 608 231 4777

SWANSON ENVIRONMENTAL INC.

ANALYTICAL REPORT

Report Date: 11/13/95
Client Project: Mobil 05 EKM

To: Montgomery Watson
One Science Court
Madison, WI 53711

SEI Project: WL15197
Date Received: 11/09/95
Your Reference:

Attn: Project Service Manager

			Reference:		AA19932		AA19933
			Collected:		11/07/95		11/07/95
			Sample Point:		SVE Eff. Sample Port		SVE Eff. Stack
Analyte	**Method**	**Units**	**Analyzed**	**PQL**	**Result**	**PQL**	**Result**
Benzene-Front	NIOSH 1500	Total ug	11/10/95	10	ND	10	ND
Benzene-Back	NIOSH 1500	Total ug	11/10/95	10	ND	10	ND
Total VOCs as Benzene-Front	NIOSH 1500	Total ug	11/10/95	10	195	10	198
Total VOCs as Benzene-Back	NIOSH 1500	Total ug	11/10/95	10	ND	10	ND

Certified by: Lee R. Swanson, Ph.D., C.I.H.
Laboratory Manager

RECEIVED
DEC 04 1995

3150 North Brookfield Road, Brookfield, Wisconsin 53045 Telephone (414) 783-6111 Fax (414) 783-5752
Wisconsin DNR Laboratory Certification #268181760

MONTGOMERY WATSON

CHAIN OF CUSTODY RECORD

3032.1730

SPECIAL INSTRUCTIONS:
- [X] PECFA
- [ ] WI LUST
- [ ] ACT 307
- [ ] REPORT DRY WT
- [ ] OTHER:

TURNAROUND
- [X] 2 WEEKS (standard)
- [ ] 1 WEEK
- [ ] 3 DAYS
- [ ] 1 DAY

PROJECT NAME: MOBIL OIL CORP Station # 05-EKM
PROJECT #: 10MOCCL/MOCMON
CITY: Monona
STATE: WI
SAMPLER(S): Tom Fitzwilliams

COLLECTION DATE	COLLECTION TIME	GRAB / COMP	SAMPLE ID	NO. OF CONTAINERS	VOC's / Benzene by NIOSH 1500	REMARKS	LAB USE ONLY MATRIX	LAB USE ONLY LAB NO.
11/7/95	1305	Grab	SVE Eff. @ Sample Port	1	X	5 liter air	11	2060-001
11/7/95	1320	Grab	SVE Eff @ Stack	1	X	" "	↓	↓ -002

SPECIAL INSTRUCTIONS:

TAMPER EVIDENT SEAL INTACT? ___YES ___NO ___NOT PRESENT
SEAL NO.: _____
SAMPLES RECEIVED ON ICE? ___YES X NO TEMP: Room °C

PROJ. MGR.: Chris Hoffman

SIGNATURE	DATE	TIME	SIGNATURE	DATE	TIME
RELINQUISHED BY:	11/7/95	1445	RECEIVED BY:		
RELINQUISHED BY			RECEIVED BY:		
RELINQUISHED BY:			RECEIVED BY:	11/8/95	12:00pm
RELINQUISHED BY			RECEIVED FOR LABORATORY BY: Sammy Reed	2:30	11/7/95

C-O-C N- 014544

NAME OF COURIER: _____
AIRBILL NUMBER: _____

MONTGOMERY WATSON LABORATORIES

February 17, 1996

Mr. Marc Haga
Leggette, Brashears & Graham, Inc.
6525 Grand Teton Plaza
Madison, Wisconsin 53719

Re: 10MOCCL/MOCMON

Dear Mr. Haga:

Enclosed are the reissued analytical results and chain-of-custody for the sample collected December 27, 1995. The chain-of-custody indicates this sample was taken at Mobil Station number 05-EKM. Please feel free to call if you have any questions.

Sincerely,

MONTGOMERY WATSON LABORATORIES

Sheila M. Tauschek
Laboratory Director

Enclosures: As Stated

SMT/kak/SMT
G:\GLAB\DMGMT\LETTERS\30321730.DOC
L12382

Pasadena Division
555 East Walnut Street
Pasadena, California 91101
Tel: 818 568 6400
Fax: 818 568 6324

Madison Division
1 Science Court
Madison, Wisconsin 53711
Tel: 608 231 4747
Fax: 608 231 4777

MID-STATE ASSOCIATES, INC.

REVISED
ANALYTICAL REPORT

Client I.D. No.: LM7700001123

Work Order No.: 9601000104

Report Date: 01/25/96

Date Received: 01/08/96

Arrival Temperature: 16.5

MONTGOMERY WATSON
ONE SCIENCE CT.
MADISON, WI 53711

Project Name: **MOBIL**

Project Number: **3032.1730**

Sample I.D. #: 118421 **Sample Description:** 12382-001 SVE EFFLUENT **Date Sampled:** 12/27/95

Analyte	Result	Units	LOD	LOQ
Benzene in Air - NIOSH 1500	8.4	ug/L	NA	NA
Total VOC's as Gasoline in Air - NIOSH 1500	42	ug/L	NA	NA

Comments for entire Work Order:
None

Submitted By:

[redacted]

* [illegible]

MONTGOMERY WATSON

CHAIN OF COSTODY RECORD

3032.1730

SPECIAL INSTRUCTIONS:
- [X] PECFA
- [ ] WI LUST
- [ ] ACT 307
- [ ] REPORT DRY WT
- [ ] OTHER:

TURNAROUND:
- [X] 2 WEEKS (standard)
- [ ] 1 WEEK
- [ ] 3 DAYS
- [ ] 1 DAY

PROJECT NAME: Mobil Oil Corp., Sta. # 05-EKM

PROJECT #: 10MOCCL / MOCMON

CITY: Monona Drive, Madison,

STATE: WI

SAMPLER(S): Tom Fitzwilliams, Mike Ippolito

COLLECTION DATE	COLLECTION TIME	GRAB / COMP	SAMPLE ID	NO. OF CONTAINERS	Total Benzene and Total VOC's by NIOSH1500	GRO, PVOC	REMARKS	MATRIX (LAB USE ONLY)	LAB NO. (LAB USE ONLY)
12/27/95	0945	Grab	SVE Effluent, 5 L air	1	X		Carbon Tube	11	63582-001
	1455		MW-1	3		X			-002
	1415		MW-2	3		X			-003
	1615		MW-3	3		X			-004
	1500		MW-4	3		X			-005
	1450		MW-5	3		X			-006
12/28/95	1200		MW-6	2		X			-007
	0940		MW-7	3		X			-008
	1150		Field Blank	2		X			-009
12/27/95	1635		Field Blank	3		X			-010

SPECIAL INSTRUCTIONS: Please send invoice to Mobil Oil Corp. & send lab. report to LBG.

RECEIVED: [X] INTACT [X] ON ICE TEMP ________ °F

PROJ. MGR.: Chris Hoffman

	SIGNATURE	PRINT NAME	COMPANY / TITLE	DATE	TIME
RELINQUISHED BY:	Tom Fitzwilliams (signature)	Tom Fitzwilliams	LBG / Hydrogeologist	12/28/95	1410
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:			[signature]	12/29/95	1435

C-O-C No. 012123

NAME OF COURIER: ____________

AIRBILL NUMBER: ____________

APPENDIX II

FLOW RATE CALCULATIONS

Signed: _____ Checked: _____

MOBIL - STATION NO. 05-EKM
MONONA DRIVE
MADISON, WISCONSIN
CALCULATION OF SVE SYSTEM FLOW RATES

Calculated by: Thomas M. Fitzwilliams
Checked by: Christian F. Hoffman

STATEMENT OF PROBLEM:

Calculate the SVE system flow rates in standard cubic feet per minute (scfm) based on air temperature and wellhead vacuums and differential pressures measured in the system venturi meters with magnahelic pressure meters.

PROBLEM CONSTRAINTS:

The air flow rate, Q_a, in scfm is given by

$$Q_a\,(\text{scfm}) = \frac{4 \times Q_w\,(\text{gpm})}{F_p \times F_t}$$

where Q_w is the equivalent water flow rate in gallons per minute, F_p is the pressure conversion factor, and F_t is the temperature conversion factor.

Given: $Q_w\,(\text{gpm}) = 22 \times \text{sqrt}\,(dp / 9.5)$

where dp is the differential pressure (inches of water) and sqrt is the square root.

$$F_p = \frac{-4.133 - pg}{27.798 + pg} + 1.144$$

where pg is the wellhead vacuum in pounds per square inch (psi).

$$F_t = 0.881 - (0.01 \times T) + (6.12\times10^{-5} \times T^2) - (1.523\times10^{-7} \times T^3) + (1.315\times10^{-10} \times T^4)$$

where T is the air temperature in degrees Farenheit.

Notes:
1) The equations for air flow rate (Q_a) and equivalent water flow rate (Q_w) were provided by the manufacturer of the venturi meters (Gerand Engineering Co.).

2) The equations for pressure and temperature conversion factors (F_p and F_t, respectively) were determined empirically based on the conversion tables provided by Gerand Engineering Co.

Signed: _____ Checked: _____

CALCULATIONS AND RESULTS:

Date	Location	Differential Pressure (inches water)	Temperature (degrees Farenheight)	Wellhead Vacuum (inches water)	Wellhead Vacuum (psi)	Equivalent Water Flow Rate (gpm)	Temperature Conversion Factor	Pressure Conversion Factor	Air Flow Rate (scfm)	Total Flow Rate (scfm)
6/14/95	SVE-1	0.7	65	21.5	0.78	5.97	0.99	0.97	24.72	
	SVE-2	1.5	65	21.5	0.78	8.74	0.99	0.97	36.18	
	SVE-3	5.7	65	21.5	0.78	17.04	0.99	0.97	70.53	
	SVE-4	19	65	21.5	0.78	31.11	0.99	0.97	128.77	
										260.20
6/15/95	SVE-1	0.0325	73	32.5	1.17	1.29	1.00	0.96	5.35	
	SVE-2	1.75	73	32	1.15	9.44	1.00	0.96	39.23	
	SVE-3	5.9	73	32	1.15	17.34	1.00	0.96	72.02	
	SVE-4	17	73	31.5	1.14	29.43	1.00	0.96	122.19	
										238.79
6/16/95	SVE-1	0.03	72	33	1.19	1.24	1.00	0.96	5.15	
	SVE-2	1.9	72	33	1.19	9.84	1.00	0.96	40.95	
	SVE-3	6.3	72	32	1.15	17.92	1.00	0.96	74.49	
	SVE-4	16.5	72	31	1.12	28.99	1.00	0.96	120.43	
										241.02
6/17/95	SVE-1	0.03	73.5	33	1.19	1.24	1.00	0.96	5.14	
	SVE-2	2	73.5	32	1.15	10.09	1.00	0.96	41.91	
	SVE-3	6.4	73.5	30.5	1.10	18.06	1.00	0.96	74.86	
	SVE-4	16	73.5	30.5	1.10	28.55	1.00	0.96	118.36	
										240.28
6/23/95	SVE-1	0.015	76	32	1.15	0.87	1.00	0.96	3.62	
	SVE-2	2.2	76	33	1.19	10.59	1.00	0.96	43.90	
	SVE-3	6.1	76	37	1.33	17.63	1.00	0.96	73.42	
	SVE-5	15.5	76	44	1.59	28.10	1.00	0.95	117.89	
										238.83
6/30/95	SVE-1	0.06	78	30	1.08	1.75	1.01	0.96	7.21	
	SVE-2	2.45	78	29	1.05	11.17	1.01	0.96	46.05	
	SVE-3	6.4	78	27	0.97	18.06	1.01	0.97	74.27	
	SVE-4	14.5	78	27	0.97	27.18	1.01	0.97	111.79	
										239.33
7/7/95	SVE-1	0.03	76	32	1.15	1.24	1.00	0.96	5.12	
	SVE-2	2.25	76	31.5	1.14	10.71	1.00	0.96	44.33	
	SVE-3	6.4	76	30	1.08	18.06	1.00	0.96	74.65	
	SVE-4	15.5	76	29.5	1.06	28.10	1.00	0.96	116.11	
										240.20

Signed: _____ Checked: _____

Date	Location	Differential Pressure (inches water)	Temperature (degrees Farenheight)	Wellhead Vacuum (inches water)	Wellhead Vacuum (psi)	Equivalent Water Flow Rate (gpm)	Temperature Conversion Factor	Pressure Conversion Factor	Air Flow Rate (scfm)	Total Flow Rate (scfm)
7/17/95	SVE-1	0.03	82	32	1.15	1.24	1.01	0.96	**5.09**	
	SVE-2	2.4	82	31	1.12	11.06	1.01	0.96	**45.51**	
	SVE-3	6.4	82	30	1.08	18.06	1.01	0.96	**74.23**	
	SVE-4	14.5	82	30	1.08	27.18	1.01	0.96	**111.74**	
										236.57
8/11/95	SVE-1	0.03	78	32	1.15	1.24	1.01	0.96	**5.11**	
	SVE-2	2.2	78	31	1.12	10.59	1.01	0.96	**43.73**	
	SVE-3	6.3	78	30	1.08	17.92	1.01	0.96	**73.92**	
	SVE-4	15	78	30	1.08	27.64	1.01	0.96	**114.07**	
										236.83
9/26/95	SVE-1	1.125	74	30	1.08	7.57	1.00	0.96	**31.35**	
	SVE-2	2.5	74	30	1.08	11.29	1.00	0.96	**46.74**	
	SVE-3	6.9	74	29	1.05	18.75	1.00	0.96	**77.57**	
	SVE-4	14	74	29	1.05	26.71	1.00	0.96	**110.49**	
										266.15
10/17/95	SVE-1	0.025	70	26	0.94	1.13	1.00	0.97	**4.67**	
	SVE-2	2.4	70	26	0.94	11.06	1.00	0.97	**45.77**	
	SVE-3	7.6	70	24.5	0.88	19.68	1.00	0.97	**81.32**	
	SVE-4	14.5	70	24	0.87	27.18	1.00	0.97	**112.27**	
										244.03
11/7/95	SVE-1	0.085	70	30	1.08	2.08	1.00	0.96	**8.65**	
	SVE-2	2.4	70	30	1.08	11.06	1.00	0.96	**45.97**	
	SVE-3	6.5	70	28	1.01	18.20	1.00	0.97	**75.49**	
	SVE-4	15	70	28	1.01	27.64	1.00	0.97	**114.68**	
										244.78
12/27/95	SVE-1	0.08	68	30	1.08	2.02	1.00	0.96	**8.41**	
	SVE-2	3	68	30	1.08	12.36	1.00	0.96	**51.49**	
	SVE-3	5	68	29	1.05	15.96	1.00	0.96	**66.40**	
	SVE-4	15	68	30	1.08	27.64	1.00	0.96	**115.14**	
										241.44

APPENDIX III

AIR EMISSIONS CALCULATIONS

Signed: _____ Checked: _____

MOBIL - STATION NO. 05-EKM
MONONA DRIVE
MADISON, WISCONSIN
CALCULATION OF BENZENE AIR EMISSIONS

Calculated by: Thomas M. Fitzwilliams

Checked by: Christian F. Hoffman

STATEMENT OF PROBLEM:

Calculate benzene emissions from the SVE system and determine if the estimated emissions are within regulatory limits. Wisconsin Regulation NR 445 requires "lowest achievable emission technology" and a permit when benzene emissions exceed 300 lbs/year.

PROBLEM CONSTRAINTS:

Emissions (lbs) = Conc. (ug/l) x 10^{-9} kg/ug x 28.317 l/ft^3 x 2.204 lb/kg x Q (scfm) x Time (days) x 1440 min/day

CALCULATIONS AND RESULTS:

Date	Air Flow Rate (scfm)	Elapsed Time (days)	Air Sample Volume (liters)	Benzene Concentration (ug/l)	Benzene Emissions During Time Period (lbs)	Total Cumulative Emissions Year-to-Date (lbs)
6/15/95	239	1	1	5	0.11	0.11
6/16/95	241	1	1	5	0.11	0.22
6/17/95	240	1	1	5	0.11	0.32
6/23/95	239	6	1	5	0.64	0.97
6/30/95	239	7	1	5	0.75	1.72
7/7/95	240	7	1	5	0.76	2.48
7/17/95	237	17	1	5	1.81	4.28
8/11/95	237	35	5	2	1.49	5.77
9/26/95	266	46	5	2	2.20	7.97
10/18/95	244	22	5	4.2	2.03	10.00
11/7/95	245	42	5	2	1.85	11.85
12/27/95	241	50	5	8.4	9.11	20.96

Notes: 1) If benzene was not detected above the method detection limit (MDL), the MDL was used to calculate the benzene emissions.

scfm : Standard cubic feet per minute

ug/l : Micrograms per liter

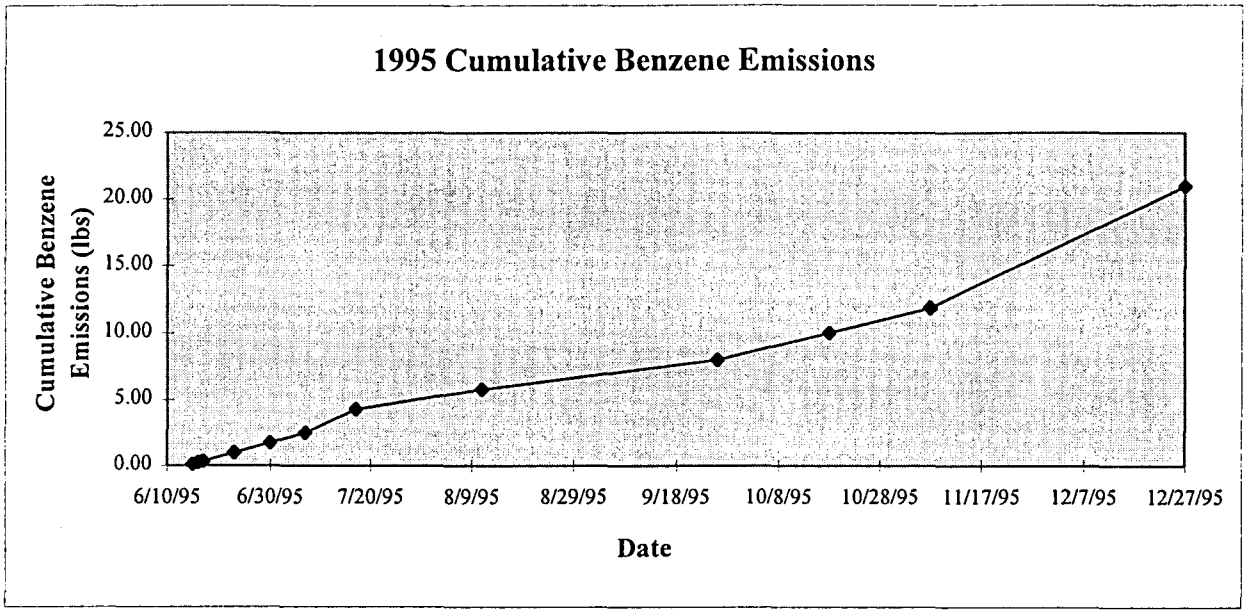
ft^3 : Cubic feet

lbs : Pounds

hr : Hour

kg : Kilograms

GRAPH OF RESULTS:



The calculated benzene emissions are under the 300 lbs/yr limit.

MOBIL - STATION NO. 05-EKM
MONONA DRIVE
MADISON, WISCONSIN
CALCULATION OF VOC AIR EMISSIONS

Calculated by: Thomas M. Fitzwilliams
Checked by: Christian F. Hoffman

STATEMENT OF PROBLEM:

Calculate volatile organic compound (VOC) emissions from the SVE system and determine if the estimated emissions are within regulatory limits. Wisconsin Regulation NR 445 requires "lowest achievable emission technology" and a permit when VOC emissions exceed 5.7 lb/hr.

PROBLEM CONSTRAINTS:

Emissions (lbs) = Conc. (ug/l) x 10^{-9} kg/ug x 28.317 l/ft^3 x 2.204 lb/kg x Q (scfm) x 60 min/hr

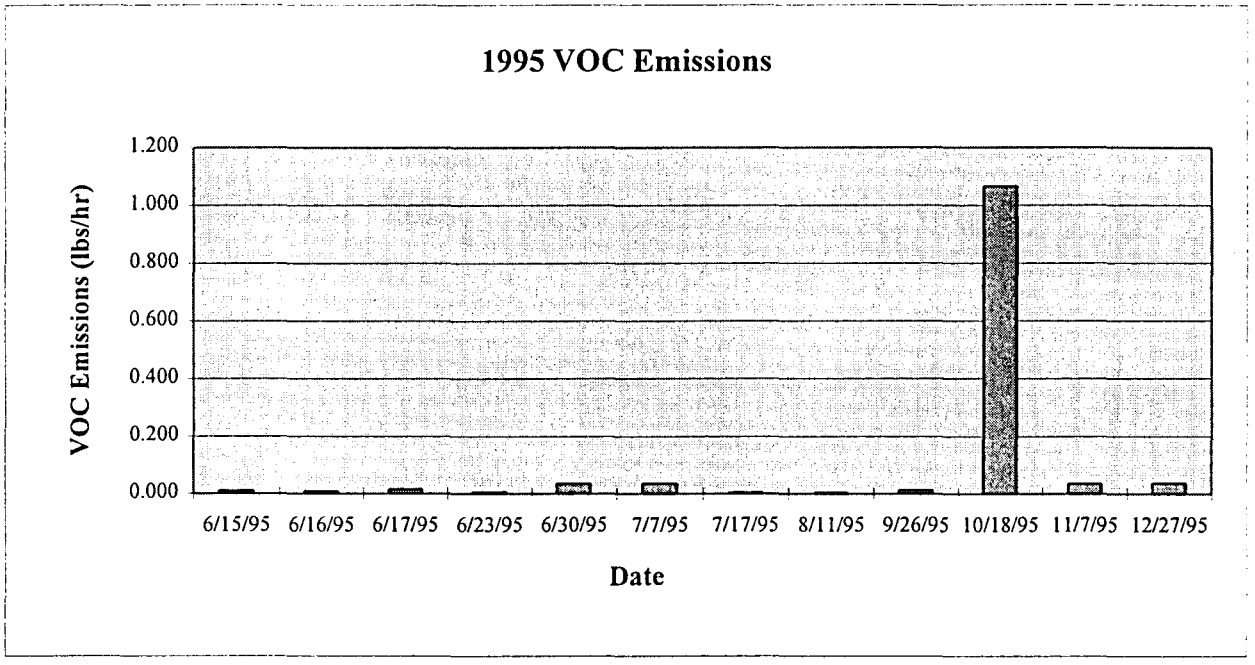
CALCULATIONS AND RESULTS:

Date	Air Flow Rate (scfm)	Elapsed Time (days)	Air Sample Volume (liters)	VOC Concentration (ug/l)	VOC Emissions During Time Period (lbs)	Total Cumulative Emissions Year-to-Date(lbs)	Total VOC Emissions (lbs/hr)
6/15/95	239	1	1	10.9	0.23	0.23	0.010
6/16/95	241	1	1	9.3	0.20	0.44	0.008
6/17/95	240	1	1	17.3	0.37	0.81	0.016
6/23/95	239	6	1	6.1	0.79	1.59	0.005
6/30/95	239	7	1	40	6.01	7.61	0.036
7/7/95	240	7	1	40	6.04	13.65	0.036
7/17/95	237	10	1	5.3	1.13	14.78	0.005
8/11/95	237	25	5	4.0	2.13	16.91	0.004
9/26/95	266	46	5	13	14.30	31.21	0.013
10/18/95	244	22	5	1166	562.64	593.85	1.066
11/7/95	245	20	5	40	17.42	611.27	0.036
12/27/95	241	50	5	42	45.57	656.84	0.038

Notes:
1) The concentrations listed for the sampling events prior to August 11, 1995 are for total PVOC's.
2) If no analytical parameters were detected above the method detection limit (MDL), the sum of the MDL's was used to calculate the VOC emissions.

VOC : Volatile organic compounds
PVOC : Petroleum volatile organic compounds
scfm : Standard cubic feet per minute
ug/l : Micrograms per liter
ft^3 : Cubic feet
lbs : Pounds
hr : Hour
kg : Kilograms

GRAPH OF RESULTS:



The calculated VOC emissions are under the 5.7 lb/hr limit.

APPENDIX IV
GROUND-WATER SAMPLING DATA SHEETS AND WATER QUALITY ANALYTICAL REPORT

MONTGOMERY WATSON LABORATORIES

January 23, 1996

Mr. Marc Haga
Leggette, Brashears & Graham, Inc.
6525 Grand Teton Plaza
Madison, Wisconsin 53719

Re: 10MOCCL/MOCMON

Dear Mr. Haga:

Enclosed are the analytical results and chain-of-custody for the samples collected December 27 and 28, 1995. The chain-of-custody indicates this sample was taken at Mobil Station number 05-EKM. Please feel free to call if you have any questions.

Sincerely,

MONTGOMERY WATSON LABORATORIES

Sheila M. Tauschek
Laboratory Director

Enclosures: As Stated

SMT/pld/SMT
G:\GLAB\DMGMT\LETTERS\30321730.DOC
L12382

Pasadena Division
555 East Walnut Street
Pasadena, California 91101
Tel: 818 568 6400
Fax: 818 568 6324

Madison Division
1 Science Court
Madison, Wisconsin 53711
Tel: 608 231 4747
Fax: 608 231 4777

STANDARD REPORT FOOTNOTES

A1 Elevated quantitation limit due to low sample volume.

A4 Result should be considered estimated due to sample-related problems encountered during analysis.

A11 Sample received past recommended hold time.

A12 Analysis requested past recommended hold time.

A13 Initial analysis performed within hold time; confirmation analysis performed past recommended hold time. Results from repeat analysis are reported.

A14 Initial analysis performed within hold time; necessary dilution performed past recommended hold time. Results from repeat analysis are reported.

A15 Result should be considered estimated; analyte detected in method blank._____@_____

A17 Result should be considered estimated as indicated by method QC.

E1 Elevated quantitation limit due to target and/or non-target compound concentrations.

M3 Total analysis performed due to insufficient solid for TCLP extraction.

G1 Result should be considered estimated, concentration exceeds working calibration range.

G4 Analyte coelutes with _____; result calculated from calibration standards in a 1:1 ratio of these two compounds.

G5 Sample required extensive cleanup; Endrin Aldehyde is not recovered from these techniques.

G6 Petroleum-type odor detected from this sample.

G8 Result should be considered estimated due to coelution with an additional hydrocarbon product.

G9 Results are influenced by the presence of extraneous peaks which are not representative of petroleum hydrocarbon products.

G10 Presence of one or more unidentified peaks eluting earlier than the retention time window.

G11 Presence of one or more unidentified peaks eluting later than the retention time window.

G12 Result is estimated. The method used is a screening procedure for this compound.

G13 Measurement performed using test strips.

G15 n-Nitrosodiphenylamine decomposes in the GC inlet and cannot be separated from Diphenylamine.

G16 Measurement upon receipt performed using test strips. Adjusted to pH <2.

G17 Results are influenced by the presence of extraneous peaks which are not representative of petroleum hydrocarbon products. Final results pending GC/MS confirmation.

G18 An LCS/LCS duplicate was performed in lieu of an MS/MSD due to insufficient sample volume available for the MS/MSD analysis.

G19 Sample was filtered and preserved in the laboratory upon receipt.

METHOD REFERENCES

Compounds	Soil/Groundwater	Wastewater
Alcohol	8015*	8015*
BEXT	8020***	602
DRO	Modified DRO	Modified DRO
GRO	Modified GRO***	Modified GRO
Fatty Acids	8015*	8015*
Herbicides	8150	8150
Pesticides	8080	608
Pesticide/PCBs	8080	608
PCBs	8080**	608
PCBs	8080****	608
PCP/PHEN	8040****	8040****
PNA (GC/MS)	8270	8270
PNA (HPLC)	8310	8310
PVOCs	8020***	8020
SVOCs	8270	8270
TPH	D-3328-78*	D-3328-78*
TRPH	418.1 & 9073	418.1 & 9073
VOCs	8021	8021
VOCs	8010/8020***	601/602
Solids, Total	160.3	160.3

SW846, "Test Methods for Evaluating Solid Waste", 3rd Ed., December 1987.

EPA-600, "Methods for Organic Chemical Analysis of Water and Wastes", March, 1984.

ASTM, "Annual Book of ASTM Standards", 1990.

Wisconsin DNR Modified 9073 TRPH, PUBL-SW-140, Wisconsin DNR, April 1992.

Wisconsin DNR Modified DRO, PUBL-SW-141, Wisconsin DNR, July 1993.

Wisconsin DNR Modified GRO, PUBL-SW-140, Wisconsin DNR, July 1993.

* With Modifications
** With Modfications for Oil Matrix
*** With Modfications for Soil Gas Matrix
**** With Modifications for Wipe Matrix

MONTGOMERY WATSON LABORATORIES

Madison Division
1 Science Court
Madison, Wisconsin 53711
Tel: 608 231 4747
Fax: 608 231 4777

GASOLINE RANGE ORGANICS (GRO)
MOBIL/LBG/MONONA 05-EKM
MONONA WI
Project Number: 3032.1730

Sample #	Description	Test	Result	Reporting Limit	Matrix	Units	Petroleum Odor	Footnotes
L12382-002	MW-1	Gasoline Range Organics	< 100	100	GroundH2O	ug/L	None	
		pH	< 2.0	2.0	GroundH2O	S.U.		G13
		Sample Date: 27-DEC-95						
		Analysis Date: 05-JAN-96						
L12382-003	MW-2	Gasoline Range Organics	< 100	100	GroundH2O	ug/L	None	
		pH	< 2.0	2.0	GroundH2O	S.U.		G13
		Sample Date: 27-DEC-95						
		Analysis Date: 05-JAN-96						
L12382-004	MW-3	Gasoline Range Organics	< 100	100	GroundH2O	ug/L	None	
		pH	< 2.0	2.0	GroundH2O	S.U.		G13
		Sample Date: 27-DEC-95						
		Analysis Date: 05-JAN-96						
L12382-005	MW-4	Gasoline Range Organics	< 100	100	GroundH2O	ug/L	None	
		pH	< 2.0	2.0	GroundH2O	S.U.		G13
		Sample Date: 27-DEC-95						
		Analysis Date: 05-JAN-96						
L12382-006	MW-5	Gasoline Range Organics	< 100	100	GroundH2O	ug/L	None	
		pH	< 2.0	2.0	GroundH2O	S.U.		G13
		Sample Date: 27-DEC-95						
		Analysis Date: 05-JAN-96						
L12382-007	MW-6	Gasoline Range Organics	< 100	100	GroundH2O	ug/L	None	
		pH	< 2.0	2.0	GroundH2O	S.U.		G13
		Sample Date: 28-DEC-95						
		Analysis Date: 05-JAN-96						

WI Lab Certification ID#: 113138300

Chk'd: [illegible] App'd: [illegible]
Date App'd: 1/24/96

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GASOLINE RANGE ORGANICS (GRO)
MOBIL/LBG/MONONA 05-EKM
MONONA WI
Project Number: 3032.1730

Sample #	Description	Test	Result	Reporting Limit	Matrix	Units	Petroleum Odor	Footnotes
L12382-008	MW-7	Gasoline Range Organics	2500	100	GroundH2O	ug/L	None	G1, G10, G11
		pH	< 2.0	2.0	GroundH2O	S.U.		G13
		Sample Date:	28-DEC-95					
		Analysis Date:	05-JAN-96					
L12382-009	FIELD BLANK	Gasoline Range Organics	< 100	100	GroundH2O	ug/L	None	
		pH	< 2.0	2.0	GroundH2O	S.U.		G13
		Sample Date:	28-DEC-95					
		Analysis Date:	05-JAN-96					
L12382-010	FIELD BLANK	Gasoline Range Organics	< 100	100	GroundH2O	ug/L	None	
		pH	< 2.0	2.0	GroundH2O	S.U.		G13
		Sample Date:	27-DEC-95					
		Analysis Date:	06-JAN-96					

WI Lab Certification ID#: 113138300

Chk'd: [illegible] App'd: [illegible]
Date App'd: 1/24/96

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ORGANIC REPORT
VOLATILE
MOBIL/LBG/MONONA 05-EKM
MONONA WI
Project Number: 3032.1730

Sample ID	Compound	Result	Dilution	Reporting Limit	Analysis Date	Units	Footnotes
L12382-002	Benzene	< 1.0	1	1.0	05-JAN-96	ug/L	
GroundH2O	Methyl tert-butyl ether	< 1.0	1	1.0	05-JAN-96	ug/L	
MW-1	Ethylbenzene	< 1.0	1	1.0	05-JAN-96	ug/L	
	Toluene	< 1.0	1	1.0	05-JAN-96	ug/L	
	1,2,4-Trimethylbenzene	< 1.0	1	1.0	05-JAN-96	ug/L	
	1,3,5-Trimethylbenzene	< 1.0	1	1.0	05-JAN-96	ug/L	
	m + p-Xylene	< 2.0	1	2.0	05-JAN-96	ug/L	
	o-Xylene	< 1.0	1	1.0	05-JAN-96	ug/L	
	pH	< 2		2	05-JAN-96	S.U.	G13

Sample Date : 27-DEC-95
Analyst : JB

Method Reference : SW846 Method 8020

Footnote codes :

G13 = Measurement performed using test strips.

Chk'd: PD App'd: [illegible]
Date App'd: 1/24/96

WI Lab Certification ID#: 113138300

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ORGANIC REPORT
VOLATILE
MOBIL/LBG/MONONA 05-EKM
MONONA WI
Project Number: 3032.1730

Sample ID	Compound	Result	Dilution	Reporting Limit	Analysis Date	Units	Footnotes
L12382-003	Benzene	< 1.0	1	1.0	05-JAN-96	ug/L	
GroundH2O	Methyl tert-butyl ether	< 1.0	1	1.0	05-JAN-96	ug/L	
MW-2	Ethylbenzene	< 1.0	1	1.0	05-JAN-96	ug/L	
	Toluene	< 1.0	1	1.0	05-JAN-96	ug/L	
	1,2,4-Trimethylbenzene	< 1.0	1	1.0	05-JAN-96	ug/L	
	1,3,5-Trimethylbenzene	< 1.0	1	1.0	05-JAN-96	ug/L	
	m + p-Xylene	< 2.0	1	2.0	05-JAN-96	ug/L	
	o-Xylene	< 1.0	1	1.0	05-JAN-96	ug/L	
	pH	< 2		2	05-JAN-96	S.U.	G13

Sample Date : 27-DEC-95
Analyst : JB

Method Reference : SW846 Method 8020

Footnote codes :

G13 = Measurement performed using test strips.

Chk'd: PD App'd: DWT
Date App'd: 1/24/96

WI Lab Certification ID#: 113138300

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ORGANIC REPORT
VOLATILE
MOBIL/LBG/MONONA 05-EKM
MONONA WI
Project Number: 3032.1730

Sample ID	Compound	Result	Dilution	Reporting Limit	Analysis Date	Units	Footnotes
L12382-004	Benzene	< 1.0	1	1.0	05-JAN-96	ug/L	
GroundH2O	Methyl tert-butyl ether	< 1.0	1	1.0	05-JAN-96	ug/L	
MW-3	Ethylbenzene	< 1.0	1	1.0	05-JAN-96	ug/L	
	Toluene	< 1.0	1	1.0	05-JAN-96	ug/L	
	1,2,4-Trimethylbenzene	< 1.0	1	1.0	05-JAN-96	ug/L	
	1,3,5-Trimethylbenzene	< 1.0	1	1.0	05-JAN-96	ug/L	
	m + p-Xylene	< 2.0	1	2.0	05-JAN-96	ug/L	
	o-Xylene	< 1.0	1	1.0	05-JAN-96	ug/L	
	pH	< 2		2	05-JAN-96	S.U.	G13

Sample Date : 27-DEC-95
Analyst : JB

Method Reference : SW846 Method 8020

Footnote codes :

G13 = Measurement performed using test strips.

WI Lab Certification ID#: 113138300

Chk'd: PD App'd: [illegible]
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ORGANIC REPORT
VOLATILE
MOBIL/LBG/MONONA 05-EKM
MONONA WI
Project Number: 3032.1730

Sample ID	Compound	Result	Dilution	Reporting Limit	Analysis Date	Units	Footnotes
L12382-005	Benzene	< 1.0	1	1.0	05-JAN-96	ug/L	
GroundH2O	Methyl tert-butyl ether	< 1.0	1	1.0	05-JAN-96	ug/L	
MW-4	Ethylbenzene	< 1.0	1	1.0	05-JAN-96	ug/L	
	Toluene	< 1.0	1	1.0	05-JAN-96	ug/L	
	1,2,4-Trimethylbenzene	< 1.0	1	1.0	05-JAN-96	ug/L	
	1,3,5-Trimethylbenzene	< 1.0	1	1.0	05-JAN-96	ug/L	
	m + p-Xylene	< 2.0	1	2.0	05-JAN-96	ug/L	
	o-Xylene	< 1.0	1	1.0	05-JAN-96	ug/L	
	pH	< 2		2	05-JAN-96	S.U.	G13

Sample Date : 27-DEC-95
Analyst : JB

Method Reference : SW846 Method 8020

Footnote codes :

G13 = Measurement performed using test strips.

WI Lab Certification ID#: 113138300

Chk'd: AP App'd: [illegible]
Date App'd: 1/24/96

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ORGANIC REPORT
VOLATILE
MOBIL/LBG/MONONA 05-EKM
MONONA WI
Project Number: 3032.1730

Sample ID	Compound	Result	Dilution	Reporting Limit	Analysis Date	Units	Footnotes
L12382-006	Benzene	< 1.0	1	1.0	08-JAN-96	ug/L	
GroundH2O	Methyl tert-butyl ether	< 1.0	1	1.0	08-JAN-96	ug/L	
MW-5	Ethylbenzene	< 1.0	1	1.0	08-JAN-96	ug/L	
	Toluene	< 1.0	1	1.0	08-JAN-96	ug/L	
	1,2,4-Trimethylbenzene	< 1.0	1	1.0	08-JAN-96	ug/L	
	1,3,5-Trimethylbenzene	< 1.0	1	1.0	08-JAN-96	ug/L	
	m + p-Xylene	< 2.0	1	2.0	08-JAN-96	ug/L	
	o-Xylene	< 1.0	1	1.0	08-JAN-96	ug/L	
	pH	< 2		2	08-JAN-96	S.U.	G13

Sample Date : 27-DEC-95
Analyst : RT

Method Reference : SW846 Method 8020

Footnote codes :

G13 = Measurement performed using test strips.

WI Lab Certification ID#: 113138300

Chk'd: PD App'd: DWT
Date App'd: 1/24/96

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ORGANIC REPORT
VOLATILE
MOBIL/LBG/MONONA 05-EKM
MONONA WI
Project Number: 3032.1730

Sample ID	Compound	Result	Dilution	Reporting Limit	Analysis Date	Units	Footnotes
L12382-007	Benzene	1.2	1	1.0	08-JAN-96	ug/L	
GroundH2O	Methyl tert-butyl ether	1.4	1	1.0	08-JAN-96	ug/L	
MW-6	Ethylbenzene	19	1	1.0	08-JAN-96	ug/L	
	Toluene	< 1.0	1	1.0	08-JAN-96	ug/L	
	1,2,4-Trimethylbenzene	12	1	1.0	08-JAN-96	ug/L	A17
	1,3,5-Trimethylbenzene	1.8	1	1.0	08-JAN-96	ug/L	
	m + p-Xylene	< 2.0	1	2.0	08-JAN-96	ug/L	
	o-Xylene	< 1.0	1	1.0	08-JAN-96	ug/L	
	pH	< 2		2	08-JAN-96	S.U.	G13

Sample Date : 28-DEC-95
Analyst : RT

Method Reference : SW846 Method 8020

Footnote codes :

A17 = Result should be considered estimated as indicated by method QC.
G13 = Measurement performed using test strips.

WI Lab Certification ID#: 113138300

Chk'd: AD App'd: AT
Date App'd: 1/24/96

MONTGOMERY WATSON LABORATORIES

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ORGANIC REPORT
VOLATILE
MOBIL/LBG/MONONA 05-EKM
MONONA WI
Project Number: 3032.1730

Sample ID	Compound	Result	Dilution	Reporting Limit	Analysis Date	Units	Footnotes
L12382-008	Benzene	2.8	1	1.0	08-JAN-96	ug/L	
GroundH2O	Methyl tert-butyl ether	1.4	1	1.0	08-JAN-96	ug/L	
MW-7	Ethylbenzene	100	20	1.0	10-JAN-96	ug/L	
	Toluene	200	20	1.0	10-JAN-96	ug/L	
	1,2,4-Trimethylbenzene	120	20	1.0	10-JAN-96	ug/L	
	1,3,5-Trimethylbenzene	30	1	1.0	08-JAN-96	ug/L	
	m + p-Xylene	310	20	2.0	10-JAN-96	ug/L	
	o-Xylene	100	20	1.0	10-JAN-96	ug/L	
	pH	< 2		2	08-JAN-96	S.U.	G13

Sample Date : 28-DEC-95
Analyst : RT

Method Reference : SW846 Method 8020

Footnote codes :

G13 = Measurement performed using test strips.

WI Lab Certification ID#: 113138300

Chk'd: RJ App'd: DMT
Date App'd: 1/24/96

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ORGANIC REPORT
VOLATILE
MOBIL/LBG/MONONA 05-EKM
MONONA WI
Project Number: 3032.1730

Sample ID	Compound	Result	Dilution	Reporting Limit	Analysis Date	Units	Footnotes
L12382-009	Benzene	< 1.0	1	1.0	08-JAN-96	ug/L	
GroundH2O	Methyl tert-butyl ether	< 1.0	1	1.0	08-JAN-96	ug/L	
FIELD BLANK	Ethylbenzene	< 1.0	1	1.0	08-JAN-96	ug/L	
	Toluene	< 1.0	1	1.0	08-JAN-96	ug/L	
	1,2,4-Trimethylbenzene	< 1.0	1	1.0	08-JAN-96	ug/L	
	1,3,5-Trimethylbenzene	< 1.0	1	1.0	08-JAN-96	ug/L	
	m + p-Xylene	< 2.0	1	2.0	08-JAN-96	ug/L	
	o-Xylene	< 1.0	1	1.0	08-JAN-96	ug/L	
	pH	< 2		2	08-JAN-96	S.U.	G13

Sample Date : 28-DEC-95
Analyst : RT

Method Reference : SW846 Method 8020

Footnote codes :

G13 = Measurement performed using test strips.

WI Lab Certification ID#: 113138300

Chk'd: PM App'd: [illegible]
Date App'd: 1/24/96

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MOBIL/LBG/MONONA 05-EKM
MONONA WI
Project Number: 3032.1730

Sample ID	Compound	Result	Dilution	Reporting Limit	Analysis Date	Units	Footnotes
L12382-010	Benzene	< 1.0	1	1.0	08-JAN-96	ug/L	
GroundH2O	Methyl tert-butyl ether	< 1.0	1	1.0	08-JAN-96	ug/L	
FIELD BLANK	Ethylbenzene	< 1.0	1	1.0	08-JAN-96	ug/L	
	Toluene	< 1.0	1	1.0	08-JAN-96	ug/L	
	1,2,4-Trimethylbenzene	< 1.0	1	1.0	08-JAN-96	ug/L	
	1,3,5-Trimethylbenzene	< 1.0	1	1.0	08-JAN-96	ug/L	
	m + p-Xylene	< 2.0	1	2.0	08-JAN-96	ug/L	
	o-Xylene	< 1.0	1	1.0	08-JAN-96	ug/L	
	pH	< 2		2	08-JAN-96	S.U.	G13

Sample Date : 27-DEC-95
Analyst : RT

Method Reference : SW846 Method 8020

Footnote codes :

G13 = Measurement performed using test strips.

Chk'd: RP App'd: [illegible]
Date App'd: 1/24/96

WI Lab Certification ID#: 113138300

MONTGOMERY WATSON

CHAIN OF CUSTODY RECORD

3032.1730

SPECIAL INSTRUCTIONS:
- [x] PECFA
- [ ] WI LUST
- [ ] ACT 307
- [ ] REPORT DRY WT
- [ ] OTHER:

TURNAROUND
- [x] 2 WEEKS (standard)
- [ ] 1 WEEK
- [ ] 3 DAYS
- [ ] 1 DAY

PROJECT NAME: Mobil Oil Corp., Sta. # 05-EKM
PROJECT #: 10MOCCL / MOCMON
CITY: Monona Drive, Madison,
STATE: WI
SAMPLER(S): Tom Fitzwilliams, Mike Ippolito

COLLECTION DATE	COLLECTION TIME	GRAB / COMP	SAMPLE ID	NO. OF CONTAINERS	Total Benzene and Total VOC's by NR511500	GRO, PVOC	REMARKS	LAB USE ONLY MATRIX	LAB USE ONLY LAB NO.
12/27/95	0945	Grab	SVE Effluent, 5 L air	1	X		Carbon Tube	11	12382-001
	1455		mw-1	3		X		1	-002
	1415		mw-2	3		X		1	-003
	1615		mw-3	3		X			-004
	1500		mw-4	3		X			-005
	1450		mw-5	3		X			-006
12/28/95	1200		mw-6	2		X			-007
	0940		mw-7	3		X			-008
	1150		Field Blank	2		X			-009
12/27/95	1635		Field Blank	3		X			-010

SPECIAL INSTRUCTIONS:
Please send invoice to Mobil Oil Corp't
Send lab. report to LBG.

RECEIVED: [x] INTACT [x] ON ICE TEMP _____ OF

PROJ. MGR.: Chris Hoffman

	SIGNATURE	PRINT NAME	COMPANY / TITLE	DATE	TIME
RELINQUISHED BY:	Tom Fitz	Tom Fitzwilliams	LBG / Hydrogeologist	12/28/95	1410
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:				12/29/95	1435

C-O-C No. 01125

NAME OF COURIER: _____

AIRBILL NUMBER: _____

GROUND-WATER SAMPLING DATA SHEET

CLIENT CODE: **10MOCCL**	PROJECT TITLE: MOBIL OIL CORPORATION # 05-EKM
JOB CODE: **MOCMON**	ADDRESS: 3900 MONONA DRIVE
DATE: 12/27/95	CITY, STATE, ZIP: MADSION, WI 53716

GENERAL DATA	STABILIZATION DATA					
LOCATION ID: MW-1	VOLUME (GALLONS)	WELL VOLUMES	TIME	TEMP. C	SC umhos	pH
KEY NUMBER: 2106	5		1418			
CASING DIAMETER (IN): 2	10		1430			
WELL DEPTH (FT): 23.0	15		1441			
DEPTH TO WATER (FT): 17.75	19		1450			
COLUMN LENGTH (FT): 5.25						
CASING GALLONS/LINEAR FT.: 0.1632						
WELL VOLUME (GAL.): ~~7~~ —						
BOREHOLE DIAMETER (IN): 8.25						
BOREHOLE GALLONS/LINEAR FT.: 2.61						
BOREHOLE VOLUME (GAL.): —						
BOREHOLE +WELL VOLUME (GAL): 4.71						
TOTAL VOLUME PURGED (GAL): 19						

MISCELLANEOUS

PURGE METHOD: disp. bailer	
SAMPLING METHOD: disp. bailer	
ANALYSIS REQUESTED: GRO / PVOC	
WEATHER CONDITIONS: sunny, ~20 °F	
SAMPLE DESCRIPTION: slightly silty, no odor	
REMARKS: 18.8 gal = 4 volumes	
SAMPLER: MMI	TIME SAMPLE COLLECTED: 1455

LEGGETTE, BRASHEARS & GRAHAM, INC.
6525 GRAND TETON PLAZA
MADISON, WI 53719

GROUND-WATER SAMPLING DATA SHEET

CLIENT CODE: 10MOCCL	PROJECT TITLE: MOBIL OIL CORPORATION # 05-EKM
JOB CODE: MOCMON	ADDRESS: 3900 MONONA DRIVE
DATE: 12/27/95	CITY, STATE, ZIP: MADSION, WI 53716

GENERAL DATA	STABILIZATION DATA					
	VOLUME (GALLONS)	WELL VOLUMES	TIME	TEMP. C	SC umhos	pH
LOCATION ID: MW-2						
KEY NUMBER: [illegible]						
CASING DIAMETER (IN): 2						
WELL DEPTH (FT): 23.1						
DEPTH TO WATER (FT): 15.60*						
COLUMN LENGTH (FT): 7.5						
CASING GALLONS/LINEAR FT.: 0.1632						
WELL VOLUME (GAL.): –						
BOREHOLE DIAMETER (IN): 8.25						
BOREHOLE GALLONS/LINEAR FT.: 2.61						
BOREHOLE VOLUME (GAL.): –						
BOREHOLE +WELL VOLUME (GAL): 6.73						
TOTAL VOLUME PURGED (GAL): 25						

* approx. depth – fluctuates

MISCELLANEOUS

PURGE METHOD:	Disp. Bailer
SAMPLING METHOD:	Disp. Bailer
ANALYSIS REQUESTED:	GRO, PVOC
WEATHER CONDITIONS:	20°F Sunny
SAMPLE DESCRIPTION:	Clear. No odor
REMARKS:	26.[illegible] gal = 4 well volumes 25 gal.
SAMPLER: TMF	TIME SAMPLE COLLECTED: 1415

LEGGETTE, BRASHEARS & GRAHAM, INC.
6525 GRAND TETON PLAZA
MADISON, WI 53719

GROUND-WATER SAMPLING DATA SHEET

CLIENT CODE: 10MOCCL	PROJECT TITLE: MOBIL OIL CORPORATION # 05-EKM
JOB CODE: MOCMON	ADDRESS: 3900 MONONA DRIVE
DATE: 12/27/95	CITY, STATE, ZIP: MADSION, WI 53716

GENERAL DATA		STABILIZATION DATA					
LOCATION ID: MW-3		VOLUME (GALLONS)	WELL VOLUMES	TIME	TEMP. C	SC umhos	pH
KEY NUMBER: 2106		5		1543			
CASING DIAMETER (IN): 2		10		1551			
WELL DEPTH (FT): 24.0		15		1600			
DEPTH TO WATER (FT): 18.52		20		[illegible]			
COLUMN LENGTH (FT): 5.48							
CASING GALLONS/LINEAR FT.: 0.1632							
WELL VOLUME (GAL.): —							
BOREHOLE DIAMETER (IN): 8.25							
BOREHOLE GALLONS/LINEAR FT.: 2.61							
BOREHOLE VOLUME (GAL.): —							
BOREHOLE +WELL VOLUME (GAL): 4.92							
TOTAL VOLUME PURGED (GAL): 20							

MISCELLANEOUS

PURGE METHOD:	disp. bailer
SAMPLING METHOD:	disp. bailer
ANALYSIS REQUESTED:	GRO, PVOC
WEATHER CONDITIONS:	sunny, but cold, ~20° F
SAMPLE DESCRIPTION:	slightly turbid, no odor
REMARKS:	19.7 gal = 4 well vols.
SAMPLER: MMI	TIME SAMPLE COLLECTED: 1615

LEGGETTE, BRASHEARS & GRAHAM, INC.
6525 GRAND TETON PLAZA
MADISON, WI 53719

GROUND-WATER SAMPLING DATA SHEET

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JOB CODE: **MOCMON**	ADDRESS: 3900 MONONA DRIVE
DATE: 12/27/95	CITY, STATE, ZIP: MADSION, WI 53716

GENERAL DATA	STABILIZATION DATA					
LOCATION ID: MW-4	VOLUME (GALLONS)	WELL VOLUMES	TIME	TEMP. C	SC umhos	pH
KEY NUMBER: 2106						
CASING DIAMETER (IN): **2**						
WELL DEPTH (FT): 20.5						
DEPTH TO WATER (FT): 16.38						
COLUMN LENGTH (FT): 4.12						
CASING GALLONS/LINEAR FT.: **0.1632**						
WELL VOLUME (GAL.): —						
BOREHOLE DIAMETER (IN): **8.25**						
BOREHOLE GALLONS/LINEAR FT.: **2.61**						
BOREHOLE VOLUME (GAL.): —						
BOREHOLE +WELL VOLUME (GAL): 3.70						
TOTAL VOLUME PURGED (GAL): 1.5						

MISCELLANEOUS

PURGE METHOD:	Disposable Bailer
SAMPLING METHOD:	Disposable Bailer
ANALYSIS REQUESTED:	GRO, PVOC
WEATHER CONDITIONS:	20°E, Sunny
SAMPLE DESCRIPTION:	Yellowish Brown. Little silt. No odor.
REMARKS:	14.8 gal = 4 well vols. / Purged dry @ ~ 1.5 gal. Let recharge for 45 min. & sampled
SAMPLER: TMF	TIME SAMPLE COLLECTED: ~ 1500

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JOB CODE: MOCMON	ADDRESS: 3900 MONONA DRIVE
DATE: 12/27/95	CITY, STATE, ZIP: MADSION, WI 53716

GENERAL DATA	STABILIZATION DATA					
LOCATION ID: MW-5	VOLUME (GALLONS)	WELL VOLUMES	TIME	TEMP. C	SC umhos	pH
KEY NUMBER: 2106						
CASING DIAMETER (IN): 2						
WELL DEPTH (FT): 23.4						
DEPTH TO WATER (FT): 17.31						
COLUMN LENGTH (FT): 6.09						
CASING GALLONS/LINEAR FT.: 0.1632						
WELL VOLUME (GAL.): —						
BOREHOLE DIAMETER (IN): 8.25						
BOREHOLE GALLONS/LINEAR FT.: 2.61						
BOREHOLE VOLUME (GAL.): —						
BOREHOLE +WELL VOLUME (GAL): 5.47						
TOTAL VOLUME PURGED (GAL): 22 gal						

MISCELLANEOUS

PURGE METHOD:	Disp. Bailer
SAMPLING METHOD:	Disp. Bailer
ANALYSIS REQUESTED:	GRO, PVOC
WEATHER CONDITIONS:	20°F, Sunny
SAMPLE DESCRIPTION:	Clear - No odor.
REMARKS:	21.9 gal = 4 well volumes. Purged 22 gal - Sampled
SAMPLER: TMF	TIME SAMPLE COLLECTED: 1450

LEGGETTE, BRASHEARS & GRAHAM, INC.
6525 GRAND TETON PLAZA
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GROUND-WATER SAMPLING DATA SHEET

CLIENT CODE: **10MOCCL**	PROJECT TITLE: MOBIL OIL CORPORATION # 05-EKM
JOB CODE: **MOCMON**	ADDRESS: 3900 MONONA DRIVE
DATE: ~~12/27/95~~ 12/28/95	CITY, STATE, ZIP: MADSION, WI 53716

GENERAL DATA	STABILIZATION DATA					
LOCATION ID: MW-6	VOLUME (GALLONS)	WELL VOLUMES	TIME	TEMP. C	SC umhos	pH
KEY NUMBER: 2106						
CASING DIAMETER (IN): 2						
WELL DEPTH (FT): 24.0						
DEPTH TO WATER (FT): 17.81						
COLUMN LENGTH (FT): 6.19						
CASING GALLONS/LINEAR FT.: 0.1632						
WELL VOLUME (GAL.): 1.01						
BOREHOLE DIAMETER (IN): 8.25						
BOREHOLE GALLONS/LINEAR FT.: 2.61						
BOREHOLE VOLUME (GAL.): 4.95						
BOREHOLE +WELL VOLUME (GAL): 5.86						
TOTAL VOLUME PURGED (GAL): 25 gal						

MISCELLANEOUS

PURGE METHOD:	Disp. Bailer
SAMPLING METHOD:	Disp. Bailer
ANALYSIS REQUESTED:	GRO, PDC
WEATHER CONDITIONS:	20°F - Snow
SAMPLE DESCRIPTION:	Clear. Slight odor.
REMARKS:	4 w.v. = 23.4 gal
SAMPLER: TM F	TIME SAMPLE COLLECTED: 1200

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DATE: 12/28/95	CITY, STATE, ZIP: MADSION, WI 53716

GENERAL DATA	STABILIZATION DATA					
LOCATION ID: MW-7	VOLUME (GALLONS)	WELL VOLUMES	TIME	TEMP. C	SC umhos	pH
KEY NUMBER: 2106	5		0902			
CASING DIAMETER (IN): 2	10		0911			
WELL DEPTH (FT): 24.1	15		0920			
DEPTH TO WATER (FT): 18.28	20		0930			
COLUMN LENGTH (FT): 5.82	21		0932			
CASING GALLONS/LINEAR FT.: 0.1632						
WELL VOLUME (GAL.): —						
BOREHOLE DIAMETER (IN): 8.25						
BOREHOLE GALLONS/LINEAR FT.: 2.61						
BOREHOLE VOLUME (GAL.): —						
BOREHOLE +WELL VOLUME (GAL): 5.22						
TOTAL VOLUME PURGED (GAL): 21						

MISCELLANEOUS

PURGE METHOD:	disp. bailer
SAMPLING METHOD:	disp. bailer
ANALYSIS REQUESTED:	GRO, PVOC
WEATHER CONDITIONS:	sunny, ~ 5°F
SAMPLE DESCRIPTION:	slightly turbid, fuel odor
REMARKS:	20.9 gal = 4 well volumes
SAMPLER: MMI	TIME SAMPLE COLLECTED: 0940

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