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HAZARDOUS WASTE MANAGEMENT

March 11, 1993

Ms. Theresa Evanson
Wisconsin Department of Natural Resources
Environmental Response and Repair Section
Bureau of Solid and Hazardous Waste Management
101 South Webster Street, GEF II, SE/3
Madison, Wisconsin 53707

Re: **Operation and Maintenance Summary - 1992 Annual Report**
Landfill Gas and Leachate Extraction System
Refuse Hideaway Landfill - Middleton, Wisconsin
Project No. C6024.01

Dear Ms. Evanson:

This letter report summarizes operation and maintenance (O&M) activities performed by Environmental Construction and Remediation Services, Inc. (ECRS) from July to December 1992, at the Refuse Hideaway Landfill. ECRS was awarded the O&M contract in July 1992. Prior to the contract award, Warzyn conducted O&M activities.

This letter report contains summarized 1992 monitoring information as required by NR445. Monitoring information obtained by Warzyn prior to July 1992, is included in this report. Detailed discussions of notable site conditions are presented in the following sections.

GAS MONITORING

Gas Extraction Wells

Gas Wells GW-1 and GW-2 were closed on November 3, 1992. The wells have not been reopened due to a lack of gas generation in this area of the landfill. We are continuing to monitor the southern branch wells to verify that increased vacuum at GW-3, 4 and 5, does not induce oxygen into the landfill. Gas Wells GW-1 and GW-2 will be adjusted if monitored gas concentrations change.

The remaining gas extraction wells are functioning properly with no significant problems detected in their performance. Tables 1A through 1M present gas monitoring data for each of the gas extraction wells. Carbon dioxide concentrations were monitored on November 24, 1992, and will be included in future reports.

Gas Probes

Methane was detected by Warzyn at GP11-s and GP11-d on June 2, 1992. Continued monitoring of these probes confirmed this trend. Individual wells were routinely adjusted in an attempt to control this subsurface migration. When individual well adjustment failed to control detected gas migration, the vacuum to the southern branch of the gas collection system was increased. Gas concentrations decreased to non-detectable levels on December 31, 1992 at the two gas probes.

Ground Flare

Weekly monitoring was conducted at the ground flare in accordance with the O&M schedule. Weekly data was summarized and included with monthly project reports. Ground flare inlet sample port monitoring data from 1992, is summarized and presented in Table 2.

A summary of system alarms is presented in Table 3. System alarms documented by Warzyn are included in Table 3. The percent operating time for the extraction system in 1992 was approximately 95%. There were no uncontrolled emissions since the system does not operate without combustion. The average weekly temperature of the flare from July to December 1992 was 1535 degrees fahrenheit.

LEACHATE MONITORING

Thirteen (13) gas wells were outfitted with access ports (1-inch threaded nipple and cap) on October 1, 1992. The access ports replaced the 1-inch leachate head risers that did not provide accurate depth to leachate measurements. Leachate head measurements obtained prior to October 1992 are not reported due to questionable data validity.

Leachate head monitoring data is reported in Table 4. Gas extraction wells GW-4, 5, and 12 are exhibiting leachate head levels over 10 feet. The leachate pumps in GW-8, 9 and 11 were inspected in December 1992 and repairs made to GW-9. Currently, ECRS is evaluating the impact that repairs conducted on the leachate pumps, during December 1992 and February and March 1993, have on the leachate head at the site before recommending the installation of additional leachate pumps at GW-4, 5 and 12.

Ms. Theresa Evanson
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A total of 229,990 gallons of leachate/condensate was pumped in 1992. Beginning in August, the volume of leachate pumped was determined by measuring the depth of leachate removed from the tank versus assuming a 5,000 gallon loadout. These gallons are reported to the Madison Metropolitan Sewage District (MMSD) for invoicing purposes. A leachate pumping summary for 1992 is presented as Table 5.

Analytical testing of the leachate was conducted according to the O&M schedule. Leachate pumping and analytical results are included as hardcopy and diskette. The wastewater discharge permit with MMSD was renewed in September 1992.

CONCLUSION

The gas extraction system continues to operate efficiently. No significant changes in gas volumes or composition have been noticed with the exception of reduced volumes from GW-1 and GW-2. Leachate volumes have decreased significantly through the fall months. Future monitoring will reveal whether this is a seasonal trend or if the landfill cap repair has reduced infiltration.

If you have any questions or comments, please feel free to call.

Sincerely,

**ENVIRONMENTAL CONSTRUCTION AND
REMEDIALATION SERVICES, INC.**



Brian J. Hegge
Technical Manager

Enclosures: As Stated

TABLE 1A
 REFUSE HIDEAWAY LANDFILL
 GAS EXTRACTION SYSTEM-WELL HEAD MONITORING
 1992 ANNUAL REPORT

WELL NUMBER: GW-1

DATE	VACUUM (IN. OF H2O)	TEMP. (F)	METHANE (%CH4)	OXYGEN (%O2)	CARBON DIOXIDE (%CO2)	AIR VELOCITY (FT/MIN)	CALCULATED FLOW (CFM)
9/16/91	-1.9		28.0	0.3			
11/21/91	-2.0		17.5	0.0			
12/30/91	-2.2	45.8	5.0	5.0		750	33.8
1/22/92	-1.2	45.8	10.0	0.0		500	22.5
2/27/92	-1.3	57.0	27.5	0.0		250	11.2
3/31/92	-0.9	48.5	25.0	0.0		100	4.5
5/1/92	-7.0	70.3	21.0	0.0		<300	<13.5
6/1/92	-7.0	82.4	31.0	0.0		<200	<9.0
6/25/92	-0.8	81.5	29.0	0.0		<200	<9
7/24/92	0.0	75	27.2	8.7		60	2.7
8/31/92	-0.5	71.9	19.7	11.7		10	0.45
10/2/92	-1	75.7	3.5	19.2		<10	<0.45
10/30/92	-1	51.0	11.7	1.7		<10	<0.45
11/24/92	-2.5	35	11.9	4.9	17.6	0	0
12/30/92	-1	37.0	12.0	1.0		75	3.4

TABLE 1B
REFUSE HIDEAWAY LANDFILL
GAS EXTRACTION SYSTEM-WELL HEAD MONITORING
1992 ANNUAL REPORT

WELL NUMBER: GW-2

DATE	VACUUM (IN. OF H2O)	TEMP. (F)	METHANE (%CH4)	OXYGEN (%O2)	CARBON DIOXIDE (%CO2)	AIR VELOCITY (FT/MIN)	CALCULATED FLOW (CFM)
9/16/91	-2.2		39.0	0.3			
11/21/91	-3.5		20.0	12.5			
12/30/91	-2.9	51.4	10.0	7.5		450	20.3
1/22/92	-1.7	48.2	27.5	0.0		700	31.5
2/27/92	-1.6	55.0	10.0	0.0		1500	67.5
3/31/92	-1.2	51.9	22.0	0.0		200	9.0
5/1/92	-6.6	70.5	18.0	0.0		<300	<13.5
6/1/92	-7.0	84.7	16.0	0.0		<200	<9.0
6/25/92	-0.9	82.4	40.0	0.0		<200	<9.0
7/24/92	-1	78	23.2	1.1		25	1.1
8/31/92	-1.0	70.8	13.0	1.1		40	1.8
10/2/92	-1	76.6	12.0	1.2		25	1.1
10/30/92	-2	57.3	12.6	0.8		250	11.3
11/24/92	-3.5	39	10.0	5.6	16.8	25	1.1
12/30/92	-2	36.1	11.1	1.5		0	0

TABLE 1C
 REFUSE HIDEAWAY LANDFILL
 GAS EXTRACTION SYSTEM-WELL HEAD MONITORING
 1992 ANNUAL REPORT

WELL NUMBER: GW-3

DATE	VACUUM (IN. OF H2O)	TEMP. (F)	METHANE (%CH4)	OXYGEN (%O2)	CARBON DIOXIDE (%CO2)	AIR VELOCITY (FT/MIN)	CALCULATED FLOW (CFM)
9/16/91	-3.0		50.0	0.0			
11/21/91	-4.0		45.0	0.0			
12/30/91	-5.0	61.3	22.5	11.0		650	29.3
1/22/92	-3.5	42.4	47.4	0.0		1700	76.5
2/27/92	-4.8	62.9	42.5	0.0		1900	85.5
3/31/92	-4.1	62.9	45.0	0.0		1500	67.5
5/1/92	-5.9	65.6	35.0	3.0		1600	72.0
6/1/92	-6.4	67.6	41.0	0.0		1600	72.0
6/25/92	-4.9	68.3	50.0	0.0		1750	79
7/24/92	-5	72	44.2	0.8		2450	110.3
8/31/92	-5	69.6	37.2	1.3			
10/2/92	-5	70.0	38.7	1.0		1600	72
10/30/92	-5	63.6	40.8	0.3		1500	67.5
11/24/92	-8.5	60.2	37.0	0.3	32.3	3000	135
12/30/92	-7	57.7	37.8	0.4		3000	135

TABLE 1D
 REFUSE HIDEAWAY
 LANDFILL GAS EXTRACTION SYSTEM-WELL HEAD MONITORING
 1992 ANNUAL REPORT

WELL NUMBER: GW-4

DATE	VACUUM (IN. OF H2O)	TEMP. (F)	METHANE (%CH4)	OXYGEN (%O2)	CARBON DIOXIDE (%CO2)	AIR VELOCITY (FT/MIN)	CALCULATED FLOW (CFM)
9/16/91	-3.6		50.0	0.0			
11/21/91	-6.0		55.0	0.0			
12/30/91	-6.0	70.1	17.5	14.0		750	33.8
1/22/92	-4.8	66.3	57.5	0.0		900	40.5
2/27/92	-6.9	68.5	57.5	0.0		2100	94.5
3/31/92	-6.0	66.0	60.0	0.0		1000	45.0
5/1/92	-6.2	71.4	38.0	4.0		800	36.0
6/1/92	-6.4	74.1	52.0	0.0		600	27.0
6/25/92	-7.7	77.0	52.0	0.0		620	28
7/24/92	-8	75	49.7	0.7		800	36.0
8/31/92	-8	80.9	43.2	2.0			
10/2/92	-8	81.0	50.9	1.1		600	27
10/30/92	-8	73.9	50.3	0.5		900	40.5
11/24/92	-14	66	54.8	0.4	38.5	1250	56.3
12/30/92	-14	63.3	49.2	0.3		1250	56.3

TABLE 1E
 REFUSE HIDEAWAY LANDFILL
 GAS EXTRACTION SYSTEM-WELL HEAD MONITORING
 1992 ANNUAL REPORT

WELL NUMBER: GW-5

DATE	VACUUM (IN. OF H2O)	TEMP. (F)	METHANE (%CH4)	OXYGEN (%O2)	CARBON DIOXIDE (%CO2)	AIR VELOCITY (FT/MIN)	CALCULATED FLOW (CFM)
9/16/91							
11/21/91	-4.5						
12/30/91	-4.6	73.6	30.0	10.0		500	22.5
1/22/92	-2.7	40.6	57.5	0.0		1000	45.0
2/27/92	-5.0	77.9	57.5	0.0		2000	90.0
3/31/92	-4.0	77.5	57.5	0.0		900	40.5
5/1/92	-6.0	81.3	40.0	3.0		750	34.0
6/1/92	-6.3	80.6	54.0	0.0		700	32.0
6/25/92	-7.4	85.4	52.0	0.0		605	27
7/24/92	-8	83	53.2	0.9		1100	49.5
8/31/92	-8	86.3	51.7	1.2			
10/2/92	-8	85.0	53.0	1.1		600	27
10/30/92	-8	82.0	56.3	0.5		750	33.8
11/24/92	-14	73.5	56.6	1.0	41.9	1100	49.5
12/30/92	-14	73.0	55.7	0.4		900	40.5

TABLE 1F
 REFUSE HIDEAWAY
 LANDFILL GAS EXTRACTION SYSTEM-WELL HEAD MONITORING
 1992 ANNUAL REPORT

WELL NUMBER: GW-6

DATE	VACUUM (IN. OF H2O)	TEMP. (F)	METHANE (%CH4)	OXYGEN (%O2)	CARBON DIOXIDE (%CO2)	AIR VELOCITY (FT/MIN)	CALCULATED FLOW (CFM)
9/16/91	-2.2		45.0	0.0			
11/21/91	-4.0		32.5	0.0			
12/30/91	-3.4	63.1	18.0	8.0		1500	67.5
1/22/92	-2.6	41.1	35.0	0.0		1000	45.0
2/27/92	-2.4	66.3	35.0	0.0		1000	45.0
3/31/92	-2.2	65.3	35.0	0.0		900	40.5
5/1/92	-10.0	71.7	34.0	0.0		350	16.0
6/1/92	-11.8	75.5	30.0	0.0		500	22.5
6/25/92	-2.1	78.4	46.0	0.0		550	25
7/24/92	-2	77	44.9	1.1		600	27.0
8/31/92	-2	75.5	30.3	1.5			
10/2/92	-2	73.2	32.0	0.9		825	37
10/30/92	-3	68.7	24.4	0.5		750	33.8
11/24/92	-3.5	62	22.0	0.5	26.5	800	36
12/30/92	-3.5	63.0	19.3	0.0		900	40.5

TABLE 1G
 REFUSE HIDEAWAY
 LANDFILL GAS EXTRACTION SYSTEM-WELL HEAD MONITORING
 1992 ANNUAL REPORT

WELL NUMBER: GW-7

DATE	VACUUM (IN. OF H2O)	TEMP. (F)	METHANE (%CH4)	OXYGEN (%O2)	CARBON DIOXIDE (%CO2)	AIR VELOCITY (FT/MIN)	CALCULATED FLOW (CFM)
9/16/91	-4.5		47.0	0.0			
11/21/91	-6.5		55.5	0.0			
12/30/91	-6.0	90.1	18.0	15.0		500	22.5
1/22/92	-8.0	43.3	57.5	0.0		1100	49.5
2/27/92	-8.8	93.5	55.0	0.0		1600	72.0
3/31/92	-9.1	89.7	55.0	0.0		950	42.8
5/1/92	-12.0	75.4	34.0	4.0		510	23.0
6/1/92	-11.1	93.3	51.0	0.0		1100	49.5
6/25/92	-11.5	93.9	50.0	0.0		1100	50
7/24/92	-10	86	52.1	0.8		1750	78.8
8/31/92	-11	92.8	49.3	1.5			
10/2/92	-10	91.5	51.9	1.0		1100	50
10/30/92	-12.5	88.5	51.9	0.7		1200	54.0
11/24/92	-13.5	87.4	52.0	0.0	38.0	2000	90
12/30/92	-14	87.2	52.5	0.0		1750	78.8

TABLE 1H
REFUSE HIDEAWAY LANDFILL
GAS EXTRACTION SYSTEM-WELL HEAD MONITORING
1992 ANNUAL REPORT

WELL NUMBER: GW-8

DATE	VACUUM (IN. OF H2O)	TEMP. (F)	METHANE (%CH4)	OXYGEN (%O2)	CARBON DIOXIDE (%CO2)	AIR VELOCITY (FT/MIN)	CALCULATED FLOW (CFM)
9/16/91	-2.9		44.0	1.5			
11/21/91	-5.5		55.0	0.0			
12/30/91	-5.5	90.3	20.0	13.0		500	22.5
1/22/92	-6.6	101.8	60.0	0.0		1400	63.0
2/27/92	-5.6	103.6	55.0	0.0		1000	45.0
3/31/92	-5.9	100.1	57.2	0.0		950	42.8
5/1/92	-13.0	107.9	34.0	4.0		710	32.0
6/1/92	-11.9	104.3	52.0	0.0		700	32.0
6/25/92	-11.9	105.8	50.0	0.0		800	36
7/24/92	-10	103	53.5	0.8		1100	49.5
8/31/92	-11	104.7	53.5	1.2			
10/2/92	-10	103.8	52.8	1.0		600	27
10/30/92	-12	92.6	55.8	0.6		1100	49.5
11/24/92	-13	92.6	56.0	0.9	41.2	1000	45
12/30/92	-14.5	93.0	56.7	0.0		1000	45

TABLE 11
 REFUSE HIDEAWAY LANDFILL
 GAS EXTRACTION SYSTEM-WELL HEAD MONITORING
 1992 ANNUAL REPORT

WELL NUMBER: GW-9

DATE	VACUUM (IN. OF H2O)	TEMP. (F)	METHANE (%CH4)	OXYGEN (%O2)	CARBON DIOXIDE (%CO2)	AIR VELOCITY (FT/MIN)	CALCULATED FLOW (CFM)
9/16/91	-0.6		45.0	1.3			
11/21/91	-3.0		55.0	0.0			
12/30/91	-3.8	100.9	32.5	9.0		1500	67.5
1/22/92	-5.0	114.4	57.5	0.0		1100	49.5
2/27/92	-5.5	100.4	55.0	0.0		2400	108.0
3/31/92	-6.2	114.4	57.5	0.0		850	38.3
5/1/92	-10.0	108.9	34.0	5.0		660	30.0
6/1/92	-11.8	118.4	53.0	0.0		600	27.0
6/25/92	-13.0	117.6	52.0	0.0		500	23
7/24/92	-12.0	117	53.0	0.9		750	33.8
8/31/92	-12.5	117.1	52.0	1.2			
10/2/92	-11.5	113.1	53.2	1.1		600	27
10/30/92	-13	110.6	55.3	0.6		1100	49.5
11/24/92	-14	109.7	57.0	0.4	41.5	750	33.8
12/30/92	-13.5	108	56.8	0.5		750	33.8

TABLE 1J
REFUSE HIDEAWAY LANDFILL
GAS EXTRACTION SYSTEM-WELL HEAD MONITORING
1992 ANNUAL REPORT

WELL NUMBER: GW-10

DATE	VACUUM (IN. OF H2O)	TEMP. (F)	METHANE (%CH4)	OXYGEN (%O2)	CARBON DIOXIDE (%CO2)	AIR VELOCITY (FT/MIN)	CALCULATED FLOW (CFM)
9/16/91	-2.6		46.0	0.0			
11/21/91	-5.0		42.5	0.0			
12/30/91	-3.8	94.1	25.0	7.5		2000	90.0
1/22/92	-2.8	92.3	45.0	0.0		2200	99.0
2/27/92	-4.0	93.3	40.0	0.0		1000	45.0
3/31/92	-4.2	91.4	40.0	0.0		1100	49.5
5/1/92	-6.7	95.4	28.0	3.0		1050	47.0
6/1/92	-6.7	95.7	40.0	0.0		1100	49.5
6/25/92	-5.1	96.9	40.0	0.0		1200	54
7/24/92	-4	96	40.4	0.8		1500	67.5
8/31/92	-4	96.6	39.0	1.2			
10/2/92	-3.5	96.0	39.1	1.1		800	36
10/30/92	-3	94.4	41.0	0.5		750	33.8
11/24/92	-4	82	38.9	0.2	32.8	1250	56.3
12/30/92	-3	90.0	43.4	0.0		1250	56.3

TABLE 1K
 REFUSE HIDEAWAY LANDFILL
 GAS EXTRACTION SYSTEM-WELL HEAD MONITORING
 1992 ANNUAL REPORT

WELL NUMBER: GW-11

DATE	VACUUM (IN. OF H2O)	TEMP. (F)	METHANE (%CH4)	OXYGEN (%O2)	CARBON DIOXIDE (%CO2)	AIR VELOCITY (FT/MIN)	CALCULATED FLOW (CFM)
9/16/91	-4.0		45.0	1.3			
11/21/91	-6.0		52.5	0.0			
12/30/91	-5.8	111.2	20.0	14.0		2000	90.0
1/22/92	-4.8	110.3	57.5	0.0		2500	112.5
2/27/92	-6.0	107.6	57.5	0.0		2000	90.0
3/31/92	-6.4	100.0	58.0	0.0		500	22.5
5/1/92	-6.1	113.4	35.0	5.0		500	23.0
6/1/92	-6.0	114.9	53.0				
6/25/92	-7.8	114.2	55.0	0.0		440	20
7/24/92	-6.5	110	53.8	0.9		600	27.0
8/31/92	-6.5	111.2	52.1	1.3			
10/2/92	-7	108.3	53.5	1.0		500	23
10/30/92	-7	102.7	56.0	0.6		600	27.0
11/24/92	-8	96.8	57.3	0.3	41.3	600	27
12/30/92	-9	93.0	57.3	0.0		500	22.5

TABLE 1L
REFUSE HIDEAWAY LANDFILL
GAS EXTRACTION SYSTEM-WELL HEAD MONITORING
1992 ANNUAL REPORT

WELL NUMBER: GW-12

DATE	VACUUM (IN. OF H2O)	TEMP. (F)	METHANE (%CH4)	OXYGEN (%O2)	CARBON DIOXIDE (%CO2)	AIR VELOCITY (FT/MIN)	CALCULATED FLOW (CFM)
9/16/91	-2.5		46.0	0.0			
11/21/91	-4.5		45.0	0.0			
12/30/91	-4.0	105.4	5.0	10.0		2200	99.0
1/22/92	-3.2	103.6	52.5	0.0		2000	90.0
2/27/92	-4.4	103.8	50.0	0.0		2100	94.5
3/31/92	-4.7	102.3	50.0	0.0		1050	47.3
5/1/92	-5.8	103.4	35.0	4.0		1200	54.0
6/1/92	-5.7	103.2	48.0	0.0		1300	58.2
6/25/92	-5.8	115.0	48.0	0.0		1200	54
7/24/92	-6	102	48.1	0.8		2000	90.0
8/31/92	-4.5	102.5	44.2	1.3			
10/2/92	-5	101.1	47.8	1.1		1250	56
10/30/92	-5	99.3	46.1	0.5		1375	61.9
11/24/92	-6.5	97.3	52.3	0.1	37.8	2250	101.3
12/30/92	-6.5	96.6	47.1	0.0		2000	90.0

TABLE 1M
REFUSE HIDEAWAY LANDFILL
GAS EXTRACTION SYSTEM-WELL HEAD MONITORING
1992 ANNUAL REPORT

WELL NUMBER: GW-13

DATE	VACUUM (IN. OF H2O)	TEMP. (F)	METHANE (%CH4)	OXYGEN (%O2)	CARBON DIOXIDE (%CO2)	AIR VELOCITY (FT/MIN)	CALCULATED FLOW (CFM)
9/16/91	-3.0		49.0	0.0			
11/21/91	-4.5		50.0	0.0			
12/30/91	-4.2	84.3	30.0	9.0		1100	49.5
1/22/92	-3.2	85.8	55.0	0.0		1200	54.0
2/27/92	-4.6	85.8	52.5	0.0		2000	90.0
3/31/92	-5.0	77.7	52.5	0.0		900	40.5
5/1/92	-5.9	88.8	35.0	4.0		950	43.0
6/1/92	-6.0	90.1	51.0	0.0		900	40.5
6/25/92	-6.7	90.6	51.0	0.0		1000	45
7/24/92	-7	87	51.8	0.9		1500	67.5
8/31/92	-5.5	89.4	50.0	1.2			
10/2/92	-6	88.1	50.4	1.1		1000	45
10/30/92	-6.5	86.7	52.4	0.6		900	40.5
11/24/92	-7.5	84	53.0	0.5	39.9	1550	69.7
12/30/92	-8	82.0	51.2	0.0		1500	67.5

TABLE 2
 REFUSE HIDEAWAY LANDFILL
 GROUND FLARE INLET SAMPLE PORT MONITORING
 1992 ANNUAL REPORT

DATE	PRESSURE (in. WC)	METHANE (%CH ₄)	OXYGEN (%O ₂)	FLOW (cfm)	FLOW (scfm)	GAS TEMP. (F)
1/22/92	+3.2	50	0	380	387	65
1/30/92	+3.4	47.5	0	390	397	65
2/6/92	+3.5	47.5	0	400	412	59.0
2/13/92	+4.8	45.0	0	470	486	59.0
2/19/92	+3.0	50.0	0	370	380	60.4
2/27/92	+3.3	47.5	0	390	400	61.3
3/5/92	+3.4	47.5	0	395	401	66.0
3/19/92	+3.2	47.5	0	380	385	66.9
3/31/92	+3.5	47.5	0	400	404	68.7
4/20/92	+3.1	47	0	375	374	76.0
4/30/92	+3.2	43	0	380	373	84.5
5/8/92	+3.5	50	0	395	398	
5/14/92	+3.6	49	0	400	394	82.7
5/19/92	+3.4	50	0	390	376	94.4
6/1/92	+3.2	47	0	380	366	95.3
6/8/92	+4.0	41	0	425	411	93.2
6/16/92	+4.3	55	0	440	416	90.5
6/25/92	+4.1	48	0	430	403	95.1

TABLE 2
 REFUSE HIDEAWAY LANDFILL
 GROUND FLARE INLET SAMPLE PORT MONITORING
 1992 ANNUAL REPORT
 (Continued)

DATE	PRESSURE (in. WC)	METHANE (%CH4)	OXYGEN (%O2)	FLOW (cfm)	FLOW (scfm)	GAS TEMP. (F)
7/24/92	+3.5	49.0	1.0			
8/31/92	+3.5	52.9	1.0	322	313	93.2
10/2/92	+4	46.0	0.9	342	331	93.3
10/30/92	+4	46.0	0.4	296	297	77.0
11/24/92	+3.5	47.5	0.0	601.3	600	61.1
12/30/92	+3.5	44.8	0.0	481.0	499.5	56.6

TABLE 3
REFUSE HIDEAWAY LANDFILL
SYSTEM ALARM SUMMARY
1992 ANNUAL REPORT

ALARM DATES	ALARM CAUSE	DURATION OF SYSTEM INTERRUPTION (hours)
1/3-6/92	short power failures	96 ⁽¹⁾
3/11/92	power failure	24 ⁽¹⁾
4/5/92	power failure	24 ⁽¹⁾
4/19/92	high leachate level	none
5/17/92	power failure or flame failure	24 ⁽¹⁾
7/2/92	power failure	24 ⁽¹⁾
7/16/92	unknown, Verbatim battery malfunction, no alarm condition received	100
8/5/92	power failure	64
8/26/92	power failure	6
9/10/92	general alarm	12
9/16/92	high leachate level	none
9/18/92	power failure	4
10/17/92	general alarm	9
11/1/92	unknown, possible high winds	14
TOTAL HOURS		401
PERCENT OPERATING TIME-1992		95%

(1) Hours are estimated.

TABLE 4
 REFUSE HIDEAWAY LANDFILL
 LEACHATE HEAD MONITORING
 1992 ANNUAL REPORT

DATE	LEACHATE HEAD (feet)												
	GW-1	GW-2	GW-3	GW-4	GW-5	GW-6	GW-7	GW-8	GW-9	GW-10	GW-11	GW-12	GW-13
10/2/92	0	3.3	0	9.6	8.2	0	3.2	17.8	17	5.1	2.5	13.1	5.6
10/30/92	1.8	4.8	0	9.3	8.5	0	4.4	5.3	17.6	4.1	0	12.9	6.2
11/24/92	1.9	0	0	10.1	9.6	0	4.1	18.1	18.2	4.1	16.6	14.3	6.1
12/30/92	2.4	4.5	0.5	11.2	10.5	0	4.6	19.2	27.2	4.8	19.3	28	7.4

TABLE 5
REFUSE HIDEAWAY LANDFILL
LEACHATE PUMPING SUMMARY
1992 ANNUAL REPORT

DATE	VOLUME	DATE	VOLUME
1/6/92	5,000	6/3/92	5,000
1/8/92	10,000	6/18/92	5,000
1/14/92	5,000	June Total	10,000
1/15/92	5,000	7/8/92	5,000
1/17/92	5,000	7/9/92	5,000
1/20/92	5,000	7/20/92	10,000
1/27/92	5,000	7/24/92	5,000
January Total	40,000	July Total	25,000
2/4/92	5,000	8/2/92	5,000
2/10/92	5,000	8/18/92	4,238
2/17/92	5,000	August Total	9,238
2/26/92	5,000	9/17/92	12,600
February Total	20,000	9/18/92	4,200
3/10/92	10,000	9/25/92	4,277
3/11/92	5,000	September Total	21,077
3/12/92	5,000	10/1/92	4,007
3/13/92	5,000	10/15/92	5,000
3/31/92	10,000	10/22/92	4,142
March Total	35,000	10/30/92	4,031
4/20/92	15,000	October Total	17,180
4/21/92	5,000	11/13/92	4,360
4/23/92	10,000	11/28/92	5,149
4/25/92	5,000	November Total	9,509
April Total	35,000	12/21/92	2,986
5/9/92	5,000	December Total	2,986
May Total	5,000		
		TOTAL GALLONS	229,990

SECTION I-SITE IDENTIFICATION

Facility Name Refuse Hideaway Landfill	Monitoring No./License No. 0 1 9 5 3	County Dane
Location ___ 1/4 ___ 1/4 Section 8 T 7N R 8E	OR Hazardous waste ID No. _____	District Southern

SECTION II-PERSON RESPONSIBLE FOR SUBMITTAL OF SAMPLE RESULTS

Name Brian Hegge	Facility Name Environmental Const. Remediation Services
Title Technical Manager	Street, Box or Route (Mailing) 2201 Vondron Road
Telephone No. (Include area code) 608-221-3551	City, State, Zip Code Madison, WI 53704-6795

SECTION III-REQUIRED SAMPLING INFORMATION

Months Sampling Required (✓ as required)

<input type="checkbox"/> January	<input type="checkbox"/> April	<input type="checkbox"/> July	<input type="checkbox"/> October
<input type="checkbox"/> February	<input type="checkbox"/> May	<input type="checkbox"/> August	<input type="checkbox"/> November
<input checked="" type="checkbox"/> March	<input checked="" type="checkbox"/> June	<input checked="" type="checkbox"/> September	<input checked="" type="checkbox"/> December

Shortest Presently Required Sampling Frequency

- | | |
|---|---|
| 1 <input type="checkbox"/> Bi-weekly | 6 <input type="checkbox"/> Annual |
| 2 <input type="checkbox"/> Monthly | 7 <input type="checkbox"/> Bi-annual |
| 3 <input type="checkbox"/> Bi-monthly | 8 <input type="checkbox"/> Other: _____ |
| 4 <input checked="" type="checkbox"/> Quarterly | |
| 5 <input type="checkbox"/> Semi-annual | |

Sampling Schedule Comments:

Quarterly and Annual

Parameter Lists

SECTION IV-SITE LOCATORS

Number of Sampling Points: 0 0 1

Benchmark Elevation: 9 6 6 . 3 1 Feet

1 Mean Sea Level
2 Site Datum

Distance from Benchmark to Grid Origin: _____ Feet

(+) East
(-) West

_____ Feet

(+) North
(-) South

Horizontal Control: Latitude: _____ ° _____ ' _____ "

Longitude: _____ ° _____ ' _____ "

State Plane Coordinates:

2 1 1 2 8 0 0 Feet East

4 0 0 6 0 0 Feet North

Sampling Points Comments:

Leachate holding tank

Benchmark Comments:

Benchmark is chisel mark on top steel plate at north end of loading dock on south side of building

Horizontal Control Point Comments:

Form Completed By
Brian Hegge

Brian Hegge

Date Signed

3/11/93

F/M Completed By

Date Signed

