LIESCH
HYDROGEOLOGISTS ■ ENGINEERS ■ ENVIRONMENTAL SCIENTISTS

July 25, 2006

Mr. Hank Kuehling
WDNR
3911 Fish Hatchery Road
Fitchburg, WI 53711

RE: **Annual Operation and Maintenance Report (July 2005 – June 2006)**
Refuse Hideaway Landfill, Town of Middleton, Dane County, Wisconsin
BRRTS #02-13-000849

Dear Mr. Kuehling:

The purpose of this letter report is to summarize operation and maintenance (O&M) activities performed by Liesch Environmental Services, Inc. (Liesch) at the Refuse Hideaway Landfill (RHL) from July 2005 through June 2006. As monthly O&M reports were previously submitted, this Annual Report provides ranges for operating parameters and highlights changing trends or operating conditions.

SUMMARY

Highlights of O&M activities completed by Liesch during the 2005 – 2006 O&M year included:

- The Blower/Flare System ran approximately 81% of the operating year.
- The Leachate Collection System ran for approximately 99.6% of the operating year.

BACKGROUND

Liesch began routine monitoring of RHL systems on July 1, 2003. Prior to Liesch, SCS Field Services and Environmental Sampling Corporation monitored the landfill from July 1, 1997.

LFG Recovery System

The LFG Recovery System at RHL became operational in 1991. The LFG Recovery System consists of:

- Blower/Flare Station
- Collection System
- Monitoring Locations

The Blower/Flare Station includes one centrifugal LFG blower, an enclosed flare, a candlestick flare (previously used as a backup combustion unit but now out of service), and associated controls and appurtenances. The Collection System consists of 13 extractions wells, four drip legs, and associated gas and pneumatic header piping. The Monitoring Locations include 11 wells located throughout the site and ambient air monitoring within nearby Speedway buildings. Proper operation of the Collection System is verified through testing of the extraction wells. LFG withdrawal rates at individual well are adjusted based on test results. Testing for subsurface gas migration is done at the monitoring locations. Operation of the Blower/Flare Station provides vacuum necessary to withdraw the gas from the landfill, which helps control surface emissions and subsurface migration. Odors and emissions are controlled by combustion of the gas at the flare.

Leachate Collection System

The current leachate collection system was installed in 1996 and is comprised of pneumatic pumps installed in nine of the existing LFG extraction wells (eight wells until GW-10 was added in 2006). A compressor located at the Blower/Flare Station supplies compressed air for the pneumatic pumps. The collected leachate is stored onsite in a 25,000-gallon underground storage tank. Leachate is removed from the tank by a subcontractor and transported to the Madison Metropolitan Sewerage District (MMSD) for treatment and ultimate discharge.

TESTING EQUIPMENT

A Landfill Monitoring Systems (LMS) Multi-gas analyzer Model LMS 40 is utilized at the site to measure methane, carbon dioxide, and oxygen as percent by volume.

Pressure testing is measured in inches of water using Dwyer magnehelic gauges. LFG flow and temperature are measured with an Extech Model 407123 Hot Wire Thermo-Anemometer. Combustion temperatures were obtained from flare control panel instrumentation.

Leachate level was measured in one of two ways:

- For the gas extraction wells that have a leachate extraction pump, leachate levels were obtained indirectly using a bubbler tube.
- For the gas extractions wells that do not contain a leachate extraction pump, leachate levels were measured using an electric water level meter.

ON-SITE ACTIVITIES

Site/system activities generally consisted of inspecting, monitoring, maintaining, and/or

recording data at or from various valves, meters, or sampling ports.

Weekly activities were performed at the following locations:

- Blower/Flare Control Panel
- Blower/Flare Station
- Leachate Tank
- Branch Monitoring Stations
- Flare Inlet Pipe
- Blower Inlet Pipe

Monthly activities were performed at the following locations:

- Extraction Wells
- Gas Probes
- Well Pumps/Controls
- Branch Monitoring Stations
- Flare Inlet Pipe
- Buried Control Valves
- Compressor (oil change)
- Pneumatic System (check for leaks)
- Blower Drive Belts (inspect/tighten)
- Landfill Surface (inspect)
- Monthly Report (including summary tables of system operation)

Quarterly activities were performed at the following locations:

- CV1, CV2, Branch Valves
- Well Valves, Compressor Valves
- Manual Valve (ground flare)
- Compressed Air Filter (inspect)
- Air Dryer Desiccant (inspect)
- Blower

Annual activities were performed at the following locations:

- Well pumps
- Leachate Lines, Driplegs
- Cleanouts
- Tank Loadout Station
- Padlocks

System statistics for the operating year are summarized in **Table 1** and further detailed in **Table 2** through **Table 5**:

- The average methane level at the blower was 23.0%.
- The average oxygen level at the blower was 3.0%

- 175,336 gallons of leachate were removed from the landfill using the Leachate Collection System.
    - Laboratory analysis of leachate samples indicated that all analyzed metal compounds were below permitted discharge levels (see **Table 6**).
    - Laboratory reports were submitted to Madison Metropolitan Sewerage District per permit requirements.

With respect to scheduled repairs and improvements, implementation of recommendations made in June 2005 began in August 2005 and was completed in April 2006. Included in this scope was the following:

1) Replacement air-line filters at each of the leachate extraction wells were installed.

2) New leachate pump (compressed air) meters were installed at each of the leachate extraction wells.

3) All of the air control valves at the individual well heads were replaced due to most having become inoperable. Balancing the gas extraction system is again possible due to being able to fine tune gas flow at each well head. Broken air sampling ports were also replaced as needed.

4) The failed hour meter for the leachate system air compressor was replaced in order to again be able to track hours of operation.

5) The failed hour meter for the extraction blower was replaced in order to again be able to track hours of operation.

6) The broken linkage of buried control valves CV1 and CV2 was replaced. The repaired valves allow for being able to pull gas from one branch via another (as is currently done for south branch gas flow via the central branch).

7) A pneumatic leachate pump was installed in extraction well GW-10 as a substantial amount of leachate buildup was occurring in this well. With the GW-10 pump, leachate control is improved so that leachate is kept from migrating off-site.

8) The failed chart recorder was replaced with a new unit so that flame temperature could once again be continually tracked.

9) The southern branch drip leg piping was partially excavated and inspected to determine if the drip leg was not functioning properly. It was determined that the drip leg was functioning properly and did not appear to be the source of south branch gas flow problems.

10) The header control valves in the blower building were examined and were determined to be extremely difficult to replace due to the piping configuration. Fortunately, the one branch valve that does allow full closure (the south branch) is the one that has needed to be utilized in this fashion.

11) Thermocouple replacement was determined to not be necessary as the problem was a polarity issue in the connection to the chart recorder, which was fixed when the new chart recorder was installed.

The following non-scheduled repairs were made during the O&M year:

1) Flare troubleshooting revealed the 6" pre-blower flame arrestor and 8" post-blower flame arrestor were both clogged beyond being able to be cleaned and were replaced with new units.

2) The thermal valve in the flame trap assembly was replaced three times in the latter half of 2005 due to melting (melt temperature of 260°F), which closed the trap and cut off the flow of gas to the flare. This safety device acted as designed. The reason for its activation appeared to be related to a narrow range of low methane concentrations and increased oxygen concentrations that under the right conditions can have flame blowback occur into the supply line for the flare. The most recent occurrence of thermal valve meltdown was December 16, 2005.

3) Leaking three-inch gas extraction hoses from both the vertical and horizontal well portions for GW-5 were replaced and a leaking air-line fitting was tightened.

4) A failed pressure switch for the air compressor was replaced.

5) Leaking flexible hose sections from GW-12 and GW-13 headers were replaced with new hose and PVC elbows were added to lessen the stress on the hose sections.

6) A loose hose connection at GW-9 was tightened to eliminate a leak.

7) The leaking pneumatic filter bowl assembly at GW-9 was replaced with a new unit.

8) Numerous efforts were made to diagnose why south branch extraction wells GW-1, GW-2, and GW-3 have exhibited atypical flows (low) and pressure (slightly positive to slightly negative) since August 2004. It has been deducted that low spots are present throughout the gas header line between GW-4 and DL-1, allowing liquid to pool and thus block gas flow. These low spots are apparently the result of differential settling occurring in this portion of the landfill. Corrective action has been taken, including pumping liquid out of the line at the GW-1, GW-2, and GW-3 locations, but has not remedied the situation. Except for two weeks, control valve CV-1 has been open since mid-March 2006 in order to pull gas from GW-4 and GW-5 via the central branch.

9) In the spring, troubleshooting efforts were made with respect to all of the original pumps except GW-7. It is well known that pumps do not take well to undergoing long periods of inactivity and it appears that the drought that persisted over much of the operating year resulted in a water table commonly below pump activation levels (GW-7, located in the landfill low spot, escaped this fate). The pumps did not go back into action after water levels rose with spring rains. When examined, many of the pumps had significant scale build up from their roughly ten years of operation, some of which undoubtedly hardened during the drought. A citrus cleaner solution was utilized on four of the removed pumps (GW-4, GW-8, GW-9, and GW-11). Much of the scale was removed but reinstalled pumps failed to function properly. The pump from GW-12 was destroyed during removal efforts (later determined to be from cocked casing, apparently caused by differential landfill settling). The pump from GW-13 was unable to be removed by hand for likely the same reasons and will probably suffer a similar fate upon attempting to remove via hydraulic machinery. The pump from GW-5 was reinstalled in GW-11 but subsequently ceased working.

The following items were also noted throughout the operating year:

1) Inconsistent flows and/or gas concentrations can fool the flame signal eye resulting in false flame failure alarms. With low gas concentrations (especially those below 20%), the auto-dialer alarm is activated up to four times a day even though the flare typically does not go out.

2) The flare re-start sequence is complicated by a continuously alarming high pilot gas pressure transducer. To restart the flare system, the transducer has to be jumped/bypassed to allow the start-up sequence to proceed.

3) The air compressor is slightly undersized for the environment and workload. However, a

technician from Energetics has said that regular oil changes should allow the compressor to operate as needed for the foreseeable future.

4) Visual inspections of the landfill surface did not reveal significant erosion concerns or stressed vegetation, other than the persistent low growth zone along the ridge in the southern portion of the landfill in the vicinity of GW-1, GW-2, and GW-3.

5) Methane detected in the G-1, G-2, and G-11 well nests depended heavily on the time of year. The highest readings were during the summer months with little to no methane detected during the winter months.

CONCLUSIONS / RECOMMENDATIONS

An evaluation of repairs and improvements needed for effectively operating the Blower/Flare System and Leachate Collection System was completed in June 2005 and was successfully implemented during the past operating year. In addition, numerous non-scheduled repairs were made in order to maintain the remedial systems at the landfill. After addressing two remaining issues, the remedial systems should be poised for many additional years of useful life.

First, a permanent solution is needed to restore flow to all south branch wells. This will involve excavating and re-grading gas header piping from GW-4 to GW-1 at a minimum (in order to pull gas via the central branch). Restoring flow via the south branch as originally designed would also involve repairing the line from GW-1 to DL-1.

Second, working leachate pumps are needed for GW-4, GW-5, GW-8, GW-9, GW-11, GW-12, and GW-13. Either additional pump cleaning should be pursued or new pumps should be purchased.

Feel free to call me at (608) 223-1532, extension 21, if you have any questions.

Sincerely,

LIESCH ENVIRONMENTAL SERVICES, INC.

David Nemetz, P.G.
Project Manager

Brian Hinrichs, P.S.S.
Project Principal

Attachments: Table 1 (System Summary)
Table 2 (Methane at Wells)
Table 3 (Velocity at Wells)
Table 4 (System Hours)
Table 5 (Problematic System Components)
Table 6 (Leachate Tank Laboratory Analytical Results)

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TABLE 1
REFUSE HIDEAWAY LANDFILL

OPERATING PARAMETERS SUMMARY
July 2005 - June 2006
System Summary

	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Average	Min.	Max.
% Methane at Blower (average during month)	27.3	23.6	23.6	16.6	26.9	19.6	17.4	17.8	19.4	22.3	32.7	29.0	23.0	16.6	32.7
% Oxygen at Blower (average during month)	4.9	7.7	2.3	2.3	3.1	2.0	2.9	2.0	1.6	2.7	1.3	3.3	3.0	1.3	7.7
Leachate Collected (gallons)	3,633	0	4,930	14,550	9,887	4,923	4,866	14,938	19,684	29,571	39,166	29,189	12,179	0	39,166
											TOTAL Leachate		175,336		

		Average	Min.	Max.
% Methane	GW1	32.4	0.0	54.0
at Extraction Wells	GW2	32.4	0.8	57.0
	GW3	26.3	0.1	62.0
	GW4(1)	17.8	4.9	29.5
	GW5(1)	39.8	0.1	57.0
	GW6	38.5	1.6	59.0
	GW7(1)	26.8	6.0	61.0
	GW8(1)	31.0	11.5	62.0
	GW9(1)	35.5	26.5	50.0
	GW10(1)	13.0	0.0	35.0
	GW11(1)	35.0	7.1	72.0
	GW12(1)	15.5	9.9	34.0
	GW13(1)	28.2	0.0	43.5

		Average	Min.	Max.
Velocity (fpm)	GW1	105	11	290
at Extraction Wells	GW2	124	52	210
	GW3	241	70	381
	GW4(1)	1041	130	4500
	GW5(1)	1138	300	2595
	GW6	1623	114	2800
	GW7(1)	2118	973	4500
	GW8(1)	1960	0	4500
	GW9(1)	2001	650	4500
	GW10(1)	1658	555	3271
	GW11(1)	1144	75	2729
	GW12(1)	2184	1318	4015
	GW13(1)	1397	440	3232
	TOTAL	16735		

	Average	Min.	Max.
Flow (cfm)	4.0	0.4	13.1
	4.5	2.3	9.5
	8.8	3.2	16.2
	39.8	5.9	168.0
	44.3	10.3	94.6
	59.4	5.1	102.1
	81.7	35.0	168.0
	75.7	0.0	168.0
	77.1	29.3	168.0
	61.9	22.4	120.7
	45.6	2.5	103.7
	85.1	47.4	150.0
	52.7	19.8	119.3
TOTAL	640.5		

	Average	Min.	Max.
LFG Blower (%)	81	7	100
LFG Hours per month	662.9	473.3	817.2
Leachate Compressor (%)	99.6	97	100

(1) wells with pneumatic leachate pumps installed.

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TABLE 2
REFUSE HIDEAWAY LANDFILL

OPERATING PARAMETERS SUMMARY
July 2005 - June 2006
Methane (%) at Wells

	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Average	Min	Max
GW1	54.0	54.0	51.0	50.0	19.0	52.0	0.4	5.1	20.5	0.0	39.9	43.0	32.4	0.0	54.0
GW2	55.0	53.0	54.0	57.0	0.8	55.0	30.5	3.5	1.1	31.5	17.7	30.0	32.4	0.8	57.0
GW3	60.0	54.0	60.0	62.0	1.8	49.0	0.1	5.0	4.4	17.0	0.2	1.5	26.3	0.1	62.0
GW4 (1)	14.0	15.5	28.0	5.5	4.9	24.0	14.0	15.0	24.0	19.5	29.5	19.5	17.8	4.9	29.5
GW5 (1)	35.0	44.0	57.0	38.0	30.0	29.0	49.5	39.0	53.0	52.0	0.1	51.0	39.8	0.1	57.0
GW6	59.0	52.0	55.0	56.0	35.0	1.6	26.5	28.5	33.0	37.0	36.8	42.0	38.5	1.6	59.0
GW7 (1)	39.5	44.5	61.0	28.0	21.0	12.5	18.0	12.5	10.0	28.5	6.0	40.5	26.8	6.0	61.0
GW8 (1)	52.0	43.0	62.0	11.5	22.0	23.0	36.0	34.0	17.0	18.0	closed	23.0	31.0	11.5	62.0
GW9 (1)	35.0	39.0	35.0	31.0	32.0	28.5	34.5	33.5	39.0	42.5	26.5	50.0	35.5	26.5	50.0
GW10 (1)	12.0	25.5	35.0	0.0	15.0	9.4	4.6	23.5	4.2	5.2	10.2	11.5	13.0	0.0	35.0
GW11 (1)	NA	7.3	7.1	7.7	33.0	70.0	12.0	72.0	54.0	46.5	24.5	51.0	35.0	7.1	72.0
GW12 (1)	16.5	22.5	34.0	12.0	10.0	15.5	11.0	9.9	11.0	10.0	18.2	15.5	15.5	9.9	34.0
GW13 (1)	41.5	38.5	30.0	43.5	40.5	43.5	29.0	25.0	23.0	23.5	0.1	0.0	28.2	0.0	43.5

(1) wells with pneumatic leachate pumps installed.

TABLE 3
REFUSE HIDEAWAY LANDFILL

OPERATING PARAMETERS SUMMARY
July 2005 - June 2006
Velocity (fpm) and Flow (cfm) at Wells

VELOCITY	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Average	Min	Max
	*	*	*	**	**	**	**	**	**	**	**	**			
GW1	113	290	35	126	11	21	64	48	60	131	192	173	105	11	290
GW2	52	210	120	159	96	93	126	150	87	117	134	145	124	52	210
GW3	359	212	70	285	299	193	206	320	381	226	130	208	241	70	381
GW4 (1)	850	1750	130	4500	691	246	236	475	600	685	1310	1024	1041	130	4500
GW5 (1)	1282	1700	1500	886	890	745	442	531	300	2595	686	2100	1138	300	2595
GW6	114	158	200	1282	2020	1597	2645	1975	2800	2666	1830	2190	1623	114	2800
GW7 (1)	2730	1272	1400	4500	1687	1392	1482	1259	4500	973	1245	2981	2118	973	4500
GW8 (1)	2385	1750	1100	1770	1777	1521	1247	1365	4500	2166	0	3940	1960	0	4500
GW9 (1)	2307	2100	650	4500	1220	946	935	969	4500	1250	1550	3085	2001	650	4500
GW10 (1)	865	650	555	3271	638	2014	2400	2351	2178	2666	1183	1129	1658	555	3271
GW11 (1)	2305	2050	600	508	130	frozen	75	frozen	658	1230	1150	2729	1144	75	2729
GW12 (1)	2460	2260	2500	3190	2600	1550	1390	1850	1318	1504	1569	4015	2184	1318	4015
GW13 (1)	1249	950	440	1182	2026	1124	1346	784	1112	1921	1398	3232	1397	440	3232
TOTAL	**17,071**	**15,352**	**9,300**	**26,159** minimum	**14,085**	**11,442**	**12,594**	**12,077**	**22,994** minimum	**18,130**	**12,377**	**26,951**			
FLOW	(Calculated)														
GW1	5.1	13.1	1.6	4.2	0.4	0.7	2.1	1.6	2.0	4.4	6.5	5.8	4.0	0.4	13.1
GW2	2.3	9.5	5.4	5.3	3.2	3.1	4.2	5.0	2.9	3.9	4.5	4.8	4.5	2.3	9.5
GW3	16.2	9.5	3.2	9.7	10.2	6.5	7.0	10.9	13.2	7.6	4.3	7.0	8.8	3.2	16.2
GW4 (1)	38.3	78.8	5.9	168.0	24.6	8.3	8.0	16.7	21.1	24.4	47.2	36.9	39.8	5.9	168.0
GW5 (1)	57.7	76.5	67.5	31.9	32.0	26.5	15.3	18.6	10.3	94.6	24.1	76.5	44.3	10.3	94.6
GW6	5.1	7.1	9.0	46.2	73.6	58.2	96.4	72.0	102.1	97.2	66.7	79.8	59.4	5.1	102.1
GW7 (1)	122.9	57.2	63.0	168.0	61.5	50.1	54.0	45.3	168.0	35.0	44.8	110.0	81.7	35.0	168.0
GW8 (1)	107.3	78.8	49.5	64.5	64.8	55.4	44.9	49.1	168.0	79.0	0.0	147.2	75.7	0.0	168.0
GW9 (1)	103.8	94.5	29.3	168.0	43.9	34.1	33.7	34.9	168.0	45.0	56.5	113.8	77.1	29.3	168.0
GW10 (1)	38.9	29.3	25.0	120.7	22.4	73.4	87.5	85.7	79.4	97.2	42.6	40.6	61.9	22.4	120.7
GW11 (1)	103.7	92.3	27.0	17.8	4.3	frozen	2.5	frozen	23.4	44.3	41.4	99.5	45.6	2.5	103.7
GW12 (1)	110.7	101.7	112.5	117.7	94.8	56.5	50.0	67.4	47.4	54.8	57.2	150.0	85.1	47.4	150.0
GW13 (1)	56.2	42.8	19.8	42.6	73.8	40.5	48.5	28.2	40.0	70.0	50.3	119.3	52.7	19.8	119.3
TOTAL	**768**	**691**	**419**	**965**	**510**	**413**	**454**	**436**	**846**	**657**	**446**	**991**	**633**		

(1) wells with pneumatic leachate pumps installed
*Average velocity (manually with meter)
**Centerpoint velocity
Boxed value indicates minimum (capacity of meter)

J:\5905600\Tables\System Averages 2005-2006.xls [Velocity (fpm) and Flow (cfm)]

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TABLE 4
REFUSE HIDEAWAY LANDFILL

OPERATING PARAMETERS SUMMARY
July 2005 - June 2006
System Hours

	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Average	Min	Max
LFG Blower (%)	75	60	7	100	53	83	98	100	100	100	90	100	80.5	7	100
Blower Counter end	broken	broken	broken	4893.5	5366.8	5963.4	6611.8	7280.2	8097.4	8766.2	9529.4	10196.3			
Blower Hours	NA	NA	NA	NA	473.3	596.6	648.4	668.4	817.2	668.79	763.21	666.9	662.85	473.3	817.2
Leachate Compressor (%)	100	100	100	100	100	97	98	100	100	100	100	100	99.6	97	100
Compressor Counter end	broken	broken	broken	broken	broken	broken	broken	235.6	500.2	715.0	975.8	1135.3			
Compressor Hours	NA	NA	NA	NA	NA	NA	NA	NA	264.6	214.8	260.8	159.5	224.93	159.5	264.6

TABLE 5
REFUSE HIDEAWAY LANDFILL

OPERATING PARAMETERS SUMMARY
July 2005 - June 2006
Problematic System Components

	Problematic air flow control valve	Problematic counter
GW1		
GW2		
GW3		
GW4 (1)		
GW5 (1)		
GW6		
GW7 (1)		
GW8 (1)		
GW9 (1)		
GW10 (1)		
GW11 (1)		
GW12 (1)		
GW13 (1)		
South Branch		
Central Branch	Yes	
North Branch	Yes	
Compressor Meter		
CV1 and CV2		

(1) wells with pneumatic leachate pumps installed. J:\5905600\Tables\System Averages 2005-2006.xls [Problematic System Components]

Table 6
Leachate Tank Laboratory Analytical Results
Refuse Hideaway Landfill
Town of Middleton, Wisconsin

	PARAMETER										
DATE	Cadmium (ug/L)	Total Chromium (ug/L)	Hexavalent Chromium (ug/L)	Copper (ug/L)	Lead (ug/L)	Mercury (ug/L)	Nickel (ug/L)	Selenium (ug/L)	Silver (ug/L)	Zinc (ug/L)	Cyanide (ug/L)
Permitted Levels	**250**	**10000**	**500**	**1500**	**5000**	**20**	**2000**	**300**	**3000**	**8000**	**100**
9/30/2003	<0.88	54		8	<2.2	<0.030	150	<8.0	<1.8	54	
10/9/2003			<260,000								5.8
2/23/2004	<0.53	30	<270	24	<1.3	<0.030	93	<4.8	6.5	40	16
8/5/2004	<0.17	21	<27	4.1	1.9	<0.028	54	6.5	0.21	19	15
11/4/2004	<1.7	33	<2.7		2.8	<0.30		13	<0.49		5.4
12/21/2004	<1.7	52	<2.7	8.6	5.4	<0.028	180	21	<0.49	36	9.1
3/31/2005	0.68	15	<2.7	6.9*	12	<0.028					5.5*
6/30/2005	<1.00	12.8	<40	6.20	1.70	<0.07	40.5	16.7	<1.00	458	7
9/21/2005	<1.00	17.8	<40	13.5	8.30	<0.07	46.5	20.1	4.20	95.1	<5
11/16/2005	<1.00	14.2	<40	3.04	<1.50	<0.07	44.6	31.6	5.20	<10.0	10*
2/9/2006	<1.00	16.3	<40	<3.00	<1.50	<0.07	59.3	28.8	<1.00	17.9	17
5/18/2006	<1.00	24.4*	<40	3.40*	<1.50	<0.07	38.3	21.1	1.32*	8.0*	9*

Notes

Results in **bold** indicate levels above permit limitations.
Blank cell indicates parameter not analyzed.
ug/l = micrograms per liter
* = Analyte detected between limit of detection and limit of quantitation.