California Integrated
Waste Management Board

Gas Investigation
Final Monitoring Report
Disposal Gardens, Torrance, CA

SWIS 19-AA-5233

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1.0 History of the Site Investigation

The Remediation, Closure & Technical Services (RCTS) Branch, was requested by Los Angeles County Local Enforcement Agency (LEA) to perform a phase I office investigation and a phase II field investigation, which would include intrusive investigation (borings), waste and soil sampling and characterization, installation and sampling of gas monitoring probes; and to install gas monitoring probes, collect soil samples during drilling, conduct analytical testing of select samples, and to evaluate appropriate remedial measures necessary to protect public health and safety and the environment.

The main objective of this limited assessment has been to generally evaluate by conducting investigative work at specific areas, whether this site is producing methane gas and if this gas is migrating up to the surface. To help make a determination, the installed probes will be monitored monthly for a period of one year to account for temporal variations in the gas production (if any) from the site. The historic documentation indicates fill was placed at various times at the site in association with sand and gravel mining activities and subsequent grading of the site for residential development. However, the composition of the fill is not entirely known and it is also not known if inert solid wastes were also disposed of at the site.

The second objective of this investigation was to conduct a limited characterization of this site by obtaining soil samples during drilling and submitting them for analytical testing. The samples were sent to the CIWMB's contracted certified analytical testing laboratory, ExcelChem Laboratories, Inc. and analyzed for constituents of potential concern (COPC).

The investigation began March 27 and lasted until March 31, 2006. A total of 13 multi-depth gas monitoring wells were installed. During the boring of the wells, soil samples were collected in brass sleeves and sent to the lab for analysis of constituents of concern. It was expected that there was a possibility of elevated levels of hydrocarbons would be found in the soil samples due to a mixture of petroleum and sand that was used as fill when the site was first graded in the early 1970's. Total Petroleum Hydrocarbons were found in the soils at various levels and depths, a statistical analysis shows ranges from 0-183 mg/kg (parts per million), 0-507 mg/kg (ppm) and 0-414 mg/kg (ppm).
The integrated Waste Management Board and Department of Toxic Substances Control does not regulate TPH, the results and the report has been forwarded to the Regional Water Quality Control Board for review. Well locations were chosen using previous site investigation reports and well logs that showed the subsurface soil conditions with any evidence of waste or debris. (See Final Site Investigation Report written by CIWMB)

Figure 1:, Gas Monitoring Well Locations

Day 1 March 27, 2006:

A Health and Safety Tail-gate meeting was held at Deportolla Park on Whiffle Tree Ln., attending was CIWMB, Ninyo and Moore, Layne Drilling Co. Los Angeles County Solid Waste (LEA) and a inspector for the City of Torrance. A Health and Safety Tail Gate meeting was held at location P10 on Candlewood Drive to go over the details of the Health and Safety Plan. Drilling commenced at 10am. The well was completed as a dual completion. The well was originally designed to be a triple completion and drilled to a depth of 51 feet but due to ground water being encountered at 34 feet the decision was made to complete this well as a dual. The shallow probe was screened from 5-15 feet. The Deep probe was screened from 20-30 feet below ground surface (bgs) (see Appendix D for well design). There was no waste encountered in the drilling of this probe.

Day 2 March 28, 2006:

Well P11 is located at the end of the cul-de-sac of Brandywine court. The well was drilled to 51 feet (bgs) and set as a triple completion. The shallow probe was screened from 5-15 feet (bgs). The medium probe was screened from 20-30 feet (bgs). The deep probe was screened from 35-50 feet (bgs). According to the boring logs no solid waste was encountered.

Well P2 is located in the street on Fallenleaf Drive near the back entrance to the Ralphs parking lot. The well was drilled to 51 feet (bgs) and set as a triple

completion. The shallow probe was screened from 5-15 feet (bgs). The medium probe was screened from 20-30 feet (bgs). The deep probe was screened from 35-50 feet (bgs). According to the boring logs no solid waste was encountered.

Day 3 March 29, 2006:

Well P1 is located directly across from 2921 Oakwood Lane, on the southern side of the street about 2 feet from the curb. The well was drilled to 16.5 feet (bgs) and set as a single completion. Ground water was encountered at 13 feet (bgs). The probe was screened from 5-10 feet (bgs). According to the boring logs no solid waste was encountered.

Well P6 is located next to 3113 Singing Wood Drive, approximately 10 feet from the curb to the west. The well was completed as a single construction and drilled to 16.5 feet. Water was encountered at approximately 13 feet (bgs). The probe was screened from 5-15 feet, according to the boring logs no solid waste was encountered.

Well P13 is located next to 25602 Amber leaf drive, The corner of Amber Leaf and Windmill about 5 feet west of the curb. The well was completed as a single construction and drilled to 16.5 feet. Water was encountered at approximately 13 feet (bgs). The probe was screened from 5-15 feet; according to the boring logs no solid waste was encountered.

Well P3 is located in the cul-de-sac of Softwind Way across from 3002 approximately 600 feet down Softwind Way and 600 feet from Fallenleaf Drive. The well was drilled to a depth of 16.5 feet and completed as a single completion. The probe was screened from 5-15 feet, according to the boring logs no solid waste was encountered

Day 4 March 30, 2006

Well P9 is located across from 3244 Whiffle Tree lane about 50 feet north of the street on the grassy hill. The well was drilled to 18.5 feet and completed as a single completion. The probe was screened from 5-15 feet, according to the boring logs no solid waste was encountered.

Well P8 is located across from 3216 Whiffle tree in the grass approximately 3-4 feet from the curb towards the park. The well was drilled to 20.5 feet (bgs). Perched groundwater was encountered during drilling at approximately 2-3 feet (bgs). The probe was screened from 9-19 feet bgs due to the water that was encountered (see appendix D well logs), according to the boring logs no solid waste was encountered.

Well P7 is located In front of the Deportolla park sign, in the grass, approximately 12 feet north of the curb on the corner of Rolling Hills Drive and Whiffletree Lane.

The well was drilled to 31.5 feet (bgs) and was completed as a dual completion. The shallow probe was screened from 5-15 feet (bgs) and the deep probe was screened from 20-30 feet (bgs). There was no ground water encountered and according to the well logs, no waste encountered either.

Well P5 In the corner of the park, 12 feet north-west of the curb in the grass on Rolling Hills Road. The well was drilled to 16.5 feet (bgs) and completed as a single completion probe. The probe was screened from 5-15 feet (bgs). There was no ground water encountered and according to the well logs, no waste encountered either.

Day 5 March 31, 2006

Well P4 is located in the north-east corner of the park. On the corner of Lazy Meadow Drive and Windmill Road approximately 16 ft, north- west of the sidewalk in the grass. The well was drilled to 16.5 feet (bgs) and completed as a single completion. The probe was screened from 5-15 feet (bgs). There was no ground water encountered and according to the well logs, no waste encountered either.

Well P12 is located on the north-east Corner of Rolling Hills Road and Madison, approximately 50 feet NE of rolling hills in the grass. The well was drilled to 33 feet (bgs) and completed as a dual completion. The shallow probe was screened from 5-15 feet (bgs) and the deep probe was screened from 20-30 feet (bgs). There was no ground water encountered and according to the well logs, no waste encountered either. For more information on the construction of the gas wells (see Appendix D well construction)

2.0 Data Collection

Initial gas sampling was conducted in the 13 gas monitoring wells using a gas detection instrument (GEM 2000, capable of measuring methane, carbon dioxide, oxygen and organic vapor up to 1,000 ppm) and gas sampling containers (Summa Canisters and Tedlar Bags) provided by CIWMB's Environmental Laboratory Accreditation Program (ELAP) certified laboratory contractor. Field screening was conducted in accordance with the gas sampling and analysis plan and sample collection and analysis conducted in accordance with EPA technical order 15 (TO-15).

Collected gas samples have been analyzed for typical landfill gas constituents such as methane, carbon dioxide, nitrogen and hydrogen sulfide taken at selected probes. Due to a history of oil production and the historical information indicating the site to be a sump, it was necessary to fingerprint the gas using EPA TO3 (hydro-carbon speciation), EPA 15/16 (hydrogen sulfide) and EPA TIO-15 (VOC's). Trace gases (also referred to as Non-methane organic compounds NMOC) have been analyzed for a suite of Volatile Organic Compounds including

trichloroethylene, perchloroethylene, dichloromethane, tetrachloroethane, benzene, toluene, xylene and ethyl benzene (See Site Investigation Final Report for all previous analysis including soil sample analysis).

3.0 Findings and Recommendations

Monthly monitoring began 4/25/06 and continued until 4/19/07 completing the annual monitoring cycle. From 4/25/06 to 9/26/06 a GEM 2000 and a GMI multi-gas analyzer was used to monitor the gas wells. From 10/24/06 until 4/19/07 the decision was made to utilize only the GEM 2000 while monitoring the site because the GMI was inaccurate in low oxygen conditions. During the last monthly sampling event, Suma Canisters were used to take verification samples of the gas. The samples were analyzed for VOC's using EPA TO15 and ASTMD1946 for fixed gasses. The monthly monitoring results and the final laboratory results are located in **Appendix A** (monthly monitoring results) and **Appendix B** (laboratory results).

The monitoring events showed no levels of methane above 5%, only 1 probe ((P-10) deep at 20-30 feet) showed some low level methane no higher than 4 % v/v 9/26/06 the following three months were: 3.3% v/v for 10/24/06, 2.9 % v/v for 11/17/06, and 2.3% v/v for 12/19/06, the remainder of the monthly monitoring events never exceeded 2% v/v. Probes 1-13 (with the exception of P10 (D), reported below regulatory thresholds and never exceeded 1 % v/v.

Final laboratory results confirmed the monitoring results for Methane, probe P10 (D) showed 2.4 % v/v and all other wells showed no detectable levels of Methane, the main constituent of concern in this investigation.

Trace levels of VOC's were detected in wells P-1, P-2, P-3, P-7, P-8, P-10, P-11, and P-13. Though the Integrated Waste Management Board does not regulate Volatile Organic Compounds, laboratory analysis is generally conducted to validate chemical constituents that are common in landfill gas such as Vinyl Chloride. The information is also provided to the Regional Water Quality Control Board (RWQCB), Department of Toxic Substances Control (DTSC) and the Local Enforcement Agency to further evaluate the site and determine if their standards have been violated and a threat to public health is substantiated.

4.0 Conclusion

Based on monthly monitoring and analytical laboratory results, this site does not violate State Minimum Standards for methane migration or intrusion. The CIWMB could not determine if this was actually a solid waste site from work performed when the gas wells were installed. Historical information suggests that the site was never permitted to be used as a solid waste site and the site investigation verifies the historical information. This report will be forwarded to RWQCB, DTSC and the LEA to comment or determine if

there will be any further actions to enforce their regulations. We recommend that quarterly monitoring be conducted by the LEA for at least a period of 1 year, further actions to be determined there after.

APPENDIX A

Monthly Monitoring Results

Monitoring Results from 4/25/06 for Disposal Gardens in Torrance

Probe #		CH4	CO2	O2	CO	H2S	Balance	Comments
P1	initial	0.10%	12.80%	8.40%			78.70%	GEM 11.15am
		306 ppm			4.0 ppm	0 ppm		GMI
P2	Shallow							Flooded
	Medium	int. .1%	0%	22.10%			77.90%	GEM 11.30am
		5ppm		16%	0ppm	0ppm		GMI Deep
	Deep	0.20%	24.40%	0.70%			74.60%	GEM
		30ppm		20.60%	0ppm	0ppm		GMI
P3	initial	0.10%	4.10%	17.70%			78.10%	GEM 12:02pm
		200 ppm		16.80%	0 ppm	0 ppm		GMI
P4	initial	0.10%	2.40%	19.10%			78.30%	GEM 11.55am
		165 ppm		18.30%	0 ppm	0 ppm		GMI
P5	initial	0.10%	12.80%	4.00%			83.10%	GEM 11.44am
		220 ppm		2.20%	4 ppm	1 ppm		GMI
P6	initial .1%	0.20%	4.30%	0.60%			94.10%	GEM 11:09am
		405 ppm		2.10%	5 ppm	0 ppm		GMI
P7	Shallow	0.30%	7.90%	7.50%			84.30%	GEM 9.45am
		245 ppm		7%	0 ppm	0 ppm		GMI
	Deep	0.40%	20.90%	0.50%			78.40%	GEM
		445 ppm		14.10%	0 ppm	0 ppm		GMI
P8	initial .2 %	0.40%	12.60%	6.20%			80.60%	GEM 10.08am
		45 ppm		20.30%	0 ppm	0 ppm		GMI
P9	initial	0.10%	6.80%	14.80%			78.50%	GEM 10.16am
		310 ppm		14.50%	0ppm	0ppm		GMI
P10	Shallow	0.10%	0%	21.60%			78.30%	GEM 10:27am
		75ppm		20.50%	0ppm	0ppm		GMI
	Deep							Clogged
P11	Shallow	0.20%	3.30%	4.70%			91.90%	GEM 10.37am
		240ppm		3.00%	7ppm	0ppm		GMI
	Medium	0.10%	9.80%	1.40%			88.70%	GEM
		5ppm		20.70%	7ppm	0ppm		GMI
	Deep	0.10%	12.50%	5.50%			81.90%	GEM
		325 ppm		4.70%	11ppm	1ppm		GMI
P12	Shallow	0.10%	7.60%	10.20%			82.10%	GEM 10.54am
		290 ppm		9.30%	5ppm	0ppm		GMI
	Deep	0.10%	11.00%	1.40%			87.30%	GEM
		360ppm		0.90%	7ppm	0ppm		GMI
P13		0.10%	8.00%	0.60%			91.90%	GEM 12.06pm
		180ppm		1.50%	3ppm	1ppm		GMI

Monitoring Results from 5/24/06 for Disposal Gardens in Torrance

Probe #		CH4 (%)	CO2 (%)	O2 (%)	CO (ppm)	H2S (ppm)	Balance	Comments
P1	initial	0.00%	4.30%	0.50%			95.20%	GEM 10am
		0		8.40%	2ppm	1ppm		GMI
P2	Shallow	0.10%	8.20%	1.20%			90.80%	GEM 10:10am
		440ppm		5%	3ppm	3ppm		GMI
	Medium	0.10%	29%	0.40%			70.60%	GEM
		485ppm		6%	0ppm	0ppm		GMI
	Deep	0.00%	0.00%	22.40%			77.50%	GEM
		0		20.30%	2ppm	1ppm		GMI
P3		0.10%	3.50%	17.80%			78.50%	GEM 10:35am
		100 ppm		17.90%	2 ppm	1 ppm		GMI
P4		0.10%	7.50%	0.60%			91.90%	GEM 10:30am
		130 ppm		18.90%	1 ppm	1 ppm		GMI
P5		0.00%	18.80%	0.50%			80.60%	GEM 10.45am
		160 ppm		3.00%	7 ppm	2 ppm		GMI
P6		0.10%	4.30%	0.50%			95.20%	GEM 9:50am
		0		8.40%	2 ppm	1 ppm		GMI
P7	Shallow	0.00%	6.10%	12.20%			81.60%	GEM 9.40am
		105 ppm		14%	2ppm	1 ppm		GMI
	Deep	0.10%	20.70%	0.40%			78.50%	GEM
		640 ppm		6.70%	12 ppm	2 ppm		GMI
P8		0.10%	18.90%	0.40%			80.70%	GEM 9:30am
		910 ppm		1.20%	3 ppm	1 ppm		GMI
P9		0.10%	6.10%	15.60%			78.20%	GEM 9:35am
		155 ppm		14.90%	2ppm	0ppm		GMI
P10	Shallow	0.00%	0%	22.10%			78.00%	GEM 9:10am
		20ppm		19.80%	2ppm	1ppm		GMI
	Deep	0.20%	9.20%	0.30%			88.00%	GEM
P11	Shallow	0.00%	4.30%	0.00%			95.70%	GEM 8.55am
		185 ppm		5.10%	3ppm	1ppm		GMI
	Medium	0.00%	10.70%	0.60%			88.50%	GEM
		300ppm		2.10%	2ppm	1ppm		GMI
	Deep	0.00%	10.80%	5.10%			84.10%	GEM
		220 ppm		5.10%	28ppm	2ppm		GMI
P12	Shallow	0.00%	7.90%	13.20%			78.90%	GEM 8:30am
		145 ppm		12.50%	1ppm	0ppm		GMI
	Deep	0.00%	10.70%	1.10%			88.10%	GEM
		180ppm		1.60%	2ppm	0ppm		GMI
P13		0.10%	7.50%	0.60%			91.90%	GEM 10.25a
		280ppm		0.50%	3ppm	1ppm		GMI

Monitoring Results from 6/21/06 for Disposal Gardens in Torrance								
Probe #		**CH4 (%)**	**CO2 (%)**	**O2 (%)**	**CO (ppm)**	**H2S (ppm)**	**Balance**	**Comments**
P1	initial	0.10%	5.00%	1.40%			82.90%	GEM 9.35am
		155ppm		2.20%	3ppm	0.00		GMI
P2	Shallow	0.20%	9.40%	1.20%			89.20%	GEM 9.45am
		555 ppm		.0.4	3ppm	0.00		GMI
	Medium	0.10%	0%	20.80%			79.10%	GEM
		0ppm		19%	1ppm	0ppm		GMI
	Deep	0.00%	0.00%	20.90%			79.00%	GEM
		0.10%		0.30%	10ppm	1ppm		GMI
P3		0.00%	4.20%	16.20%			79.60%	GEM 10:18am
		210ppm		16.10%	1ppm	0ppm		GMI
P4		0.00%	1.70%	19.20%			79.10%	GEM 10:10am
		150ppm		19.20%	0	0.00		GMI
P5		0.00%	19.40%	0.60%			79.90%	GEM 10.30am
		270ppm		0.20%	4ppm	1ppm		GMI
P6		0.00%	4.30%	3.00%			92.60%	GEM 10.42am
		0.10%		0.40%	4ppm	1 ppm		GMI
P7	Shallow	0.00%	5.20%	14.30%			80.50%	GEM 10.55am
		150ppm		14%	2ppm	1 ppm		GMI
	Deep	0.10%	22.40%	0.10%			77.70%	GEM
		470ppm		0.20%	13ppm	2ppm		GMI
P8		0.10%	19.10%	0.30%			80.40%	GEM 11.03am
		0.10%		0.20%	5ppm	1 ppm		GMI
P9		0.00%	6.10%	15.60%			78.50%	GEM 11.09am
		120ppm		15.40%	2ppm	1ppm		GMI
P10	Shallow	0.00%	1%	20.60%			79.30%	GEM 11.15am
		360ppm		15.20%	50ppm	3ppm		GMI
	Deep	0.40%	9.90%	0.50%			89.30%	GEM
		0.20%		0.60%	9ppm	2ppm		GMI
P11	Shallow	0.00%	4.50%	0.70%			94.90%	GEM 11.38am
		415ppm		0.30%	11ppm	2ppm		GMI
	Medium	0.00%	13.40%	0.10%			86.50%	GEM
		575ppm		0.90%	56ppm	6ppm		GMI
	Deep	0.00%	0.00%	21.00%			80.00%	GEM
		195ppm		21.00%	2ppm	2ppm		GMI
P12	Shallow	0.00%	8.10%	12.00%			79.20%	GEM 12.00pm
		155ppm		11.40%	3ppm	2ppm		GMI
	Deep	0.00%	10.10%	1.50%			88.20%	GEM
		160ppm		3.90%	20ppm	4ppm		GMI
P13		0.00%	10.20%	0.20%			89.60%	GEM 10.03a
		315ppm		0.20%	3ppm	0.00		GMI

Monitoring Results from 7/25/06 for Disposal Gardens in Torrance								
Probe #		**CH4 (%)**	**CO2 (%)**	**O2 (%)**	**CO (ppm)**	**H2S (ppm)**	**Balance**	**Comments**
P1	initial	0.00%	20.70%	0.90%			78.50%	GEM 11:10am
		50ppm		0.50%	3ppm	2ppm		GMI
P2	Shallow	0.00%	11.20%	1.10%			87.80%	GEM 11.20am
		400 ppm		0.30%	3ppm	1ppm		GMI
	Medium	0.00%	0%	20.20%			79.70%	GEM
		35ppm		20%	0	1ppm		GMI
	Deep	0.00%	42.00%	0.40%			57.70%	GEM
		235ppm		3.30%	35ppm	2ppm		GMI
P3		0.00%	15.50%	4.60%			80.00%	GEM 10:25am
		50ppm		16.40%	0ppm	1ppm		GMI
P4		0.00%	2.20%	17.70%			80.10%	GEM 10:15am
		25ppm		18.30%	0	1ppm		GMI
P5		0.00%	23.70%	0.70%			75.90%	GEM 10.35am
		ppm		0.50%	3ppm	1ppm		GMI
P6		0.00%	6.10%	1.20%			92.70%	GEM 11:00 am
		560ppm%		0.50%	8ppm	1 ppm		GMI
P7	Shallow	0.00%	5.70%	13.50%			81.00%	GEM 10.45am
		15ppm		14%	0ppm	1 ppm		GMI
	Deep	0.00%	25.90%	0.40%			73.70%	GEM
		590ppm		0.50%	22ppm	2ppm		GMI
P8		0.10%	20.10%	0.70%			79.00%	GEM 9.55am
		585ppm		0.30%	3ppm	1 ppm		GMI
P9		0.00%	6.40%	14.50%			79.10%	GEM 10.05am
		60ppm		15.00%	0ppm	1ppm		GMI
P10	Shallow	0.00%	1%	19.10%			80.50%	GEM 9.45am
		190ppm		18.30%	29ppm	1ppm		GMI
	Deep	0.30%	11.10%	0.20%			88.20%	GEM
		0.10%		0.30%	2ppm	1ppm		GMI
P11	Shallow	0.00%	5.90%	1.40%			92.90%	GEM 9.30am
		285ppm		0.20%	2ppm	0ppm		GMI
	Medium	0.00%	14.50%	0.20%			85.40%	GEM
		280ppm		0.30%	29ppm	1ppm		GMI
	Deep	0.00%	0.10%	20.40%			79.50%	GEM
		140ppm		7.00%	43	2ppm		GMI
P12	Shallow	0.00%	8.90%	9.60%			79.20%	GEM 9.15am
		30ppm		9.40%	2ppm	0ppm		GMI
	Deep	0.00%	10.50%	1.10%			88.20%	GEM
		340ppm		1.50%	108ppm	1ppm		GMI
P13		0.00%	14.10%	0.50%			85.80%	11.30a GEM
		120ppm		0.20%	3ppm	1ppm		GMI

Monitoring Results from 8/31/06 for Disposal Gardens in Torrance								
Probe #		**CH4 (%)**	**CO2 (%)**	**O2 (%)**	**CO (ppm)**	**H2S (ppm)**	**Balance**	**Comments**
P1	initial	0.00%	16.60%	1.90%			81.60%	GEM 11:17am
		325		0.70%	7ppm	0ppm		GMI
P2	Shallow	0.00%	13.00%	2.20%			86.20%	Gem 11.30a
		625ppm		0.10%	7ppm	0ppm		GMI
	Medium	0.00%	35%	2.00%			62.60%	GEM
		445ppm		0%	12ppm	0.00		GMI
	Deep	0.00%	26.00%	6.60%			66.70%	GEM
		0.30%		19.20%	9.0ppm	0.00		GMI
P3		0.00%	4.30%	16.10%			79.60%	GEM 10:45am
		205ppm		15.60%	0ppm	0.00		GMI
P4		0.00%	1.70%	17.70%	18.7		79.70%	GEM 10:30am
		20ppm		18.70%	9ppm	0.00		GMI
P5		0.00%	18.20%	2.70%			79.10%	GEM 11.00am
		240ppm		2.50%	9ppm	0.00		GMI
P6		0.00%	2.80%	12.60%			84.50%	GEM 11:08 am
		440ppm		6.80%	9ppm	0.00		GMI
P7	Shallow	0.00%	5.00%	14.30%			80.70%	GEM 10.05am
		145ppm		15%	4ppm	0.00		GMI
	Deep	0.00%	21.00%	0.40%			78.50%	GEM
		665ppm		0.30%	12ppm	0.00		GMI
P8		0.10%	19.80%	0.40%			79.80%	GEM 10.15am
		995ppm		1.20%	7ppm	0.00		GMI
P9		0.00%	6.20%	14.70%			79.10%	GEM 10.20am
		175ppm		14.80%	9ppm	0.00		GMI
P10	Shallow	0.20%	1%	18.40%			80.10%	GEM 9.50am
		160ppm		23.00%	12ppm	0.00		GMI
	Deep	0.70%	10.60%	0.30%			88.30%	GEM
		0.70%		0.50%	6ppm	0.00		GMI
P11	Shallow	0.00%	8.20%	0.20%			91.60%	GEM 9.35am
		210		2.70%	4ppm	0ppm		GMI
	Medium	0.10%	15.20%	0.20%			84.50%	GEM
		465ppm		1.70%	6ppm	0.00		GMI
	Deep	0.20%	11.10%	5.00%			83.70%	GEM
		235ppm		5.5ppm%	34ppm	0.00		GMI
P12	Shallow	0.00%	11.40%	6.30%			82.50%	GEM 9.25am
		215ppm		6.40%	3ppm	0ppm		GMI
	Deep	0.00%	12.10%	0.60%			87.20%	GEM
		295ppm		1.00%	12ppm	0.00		GMI
P13		0.00%	1.80%	19.80%			78.30%	11.40a GEM
		185ppm		19.40%	9ppm	0.00		GMI

Monitoring Results from 9/26/06 for Disposal Gardens in Torrance

Probe #		CH4 (%)	CO2 (%)	O2 (%)	CO (ppm)	H2S (ppm)	Balance	Comments
P1	initial	0.00%	16.60%	1.90%			81.60%	GEM 11:11am
		325ppm		0.70%	7ppm	0.00		GMI
P2	Shallow	0.00%	13.00%	2.20%			84.80%	Gem 11.30a
		625ppm		0.10%	7ppm	0.00		GMI
	Medium	0.00%	35%	2.00%			62.60%	GEM
		445ppm		0%	12ppm	0.00		GMI
	Deep	0.00%	26.00%	6.60%			66.70%	GEM
		0.30%		19.20%	9ppm%	0.00		GMI
P3		0.00%	2.90%	17.70%			79.30%	GEM 10:36am
		205ppm		17.10%	6ppm%	0.00		GMI
P4		0.00%	1.00%	20.10%	0	0.00	79.70%	GEM 10:30am
		20ppm		19.80%	6ppm	0.00		GMI
P5		0.00%	17.30%	3.30%			79.40%	GEM 10.48am
		325ppm		3.00%	1ppm	0.00		GMI
P6		0.00%	6.70%	1.40%			92.20%	GEM 11:04 am
		735ppm		0.20%	7ppm	0.00		GMI
P7	Shallow	0.00%	4.70%	15.90%			79.50%	GEM 10.00am
		205ppm		15%	4ppm	0.00		GMI
	Deep	0.00%	18.90%	2.80%			78.40%	GEM
		780		0.20%	12ppm	0.00		GMI
P8		0.10%	18.10%	2.90%			78.70%	GEM 10.10am
		1000ppm		0.20%	6ppm	0.00		GMI
P9		0.00%	6.10%	15.40%			79.10%	GEM 10.20am
		205ppm		14.90%	6ppm	0.00		GMI
P10	Shallow	0.00%	1%	18.30%			80.60%	GEM 9.49am
		110ppm						GMI couldn't draw sample
	Deep	4.00%	9.40%	0.30%			86.30%	GEM
		1.80%		0.10%	6ppm	0.00		GMI
P11	Shallow	0.00%	9.30%	0.40%			90.30%	GEM 9.32am
		210		1.20%	6ppm	0.00		GMI
	Medium	0.00%	14.40%	1.70%			83.90%	GEM
		465ppm		0.10%	7ppm	0.00		GMI
	Deep	0.00%	11.50%	5.60%			82.90%	GEM
		240		4.60%	34ppm	0.00		GMI
P12	Shallow	0.00%	11.90%	6.40%			81.70%	GEM 9.21am
		235ppm		5.90%	4ppm	0.00		GMI
	Deep	0.00%	11.50%	1.20%			86.30%	GEM
		355ppm		0.70%	12ppm	0.00		GMI
P13		0.00%	10.60%	1.10%			88.50%	11.42a GEM
		320		0.50%	9ppm	0.00		GMI

Monitoring Results from 10/24/06 for Disposal Gardens in Torrance

Probe #		CH4 (%)	CO2 (%)	O2 (%)	CO (ppm)	H2S (ppm)	Balance	Comments
P1	intital	0.00%	3.40%	16.30%			80.50%	GEM 11:00am
P2	Shallow	0.00%	0.40%	19.60%			80.00%	Gem 11.10a
	Medium	0.00%	0%	20.50%			79.50%	GEM
	Deep	0.00%	33.40%	0.50%			66.00%	GEM
P3		0.00%	3.60%	16.50%			80.10%	GEM 10:30am
P4		0.00%	1.20%	18.90%	0		79.90%	GEM 10:30am
P5		0.00%	17.60%	1.50%			80.80%	GEM 10.43am
P6		0.00%	6.80%	0.30%			93.80%	GEM 10.50 am h2o in line
P7	Shallow	0.00%	6.40%	11.10%			82.60%	GEM 9.57am
	Deep	0.00%	20.20%	0.50%			78.90%	GEM
P8		0.10%	20.30%	0.00%			80.00%	GEM 10.10am
P9		0.00%	6.60%	14.50%			78.90%	GEM 10.15am
P10	Shallow	0.00%	1%	19.20%			80.30%	GEM 9.50am
	Deep	3.30%	9.80%	0.20%			86.70%	GEM
P11	Shallow	0.00%	9.90%	3.00%			90.00%	GEM 9.40am
	Medium	0.00%	14.30%	0.50%			84.90%	GEM
	Deep	0.00%	10.40%	6.10%			83.60%	GEM
P12	Shallow	0.00%	11.70%	0.80%			87.70%	GEM 9.30am
	Deep	0.00%	11.70%	5.60%			82.80%	GEM
P13		0.00%	33.40%	0.50%			66.00%	11.30a GEM

Monitoring Results from 11/17/06 for Disposal Gardens in Torrance

Probe #		CH4 (%)	CO2 (%)	O2 (%)	CO (ppm)	H2S (ppm)	Balance	Comments
P1		0.00%	16.80%	3.10%			80.50%	GEM 10:50am
P2	Shallow	0.00%	16.60%	0.50%			82.90%	Gem 11.00a
	Medium	0.00%	0%	20.70%			79.20%	GEM
	Deep	0.00%	14.20%	10.30%			75.20%	GEM
P3		0.00%	3.90%	16.50%			79.50%	GEM 10:20am
P4		0.00%	1.80%	18.60%			79.70%	GEM 10:13am
P5		0.00%	19.20%	1.50%			79.30%	GEM 10.30am
P6		0.00%	3.60%	15.60%			80.80%	GEM 10.40 am h2o in line
P7	Shallow	0.00%	7.80%	7.40%			84.90%	GEM 9.51am
	Deep	0.00%	20.10%	0.30%			79.40%	GEM
P8		0.10%	20.10%	0.20%			79.80%	GEM 10.00am
P9		0.00%	6.20%	14.70%			79.00%	GEM 10.06am
P10	Shallow	0.00%	1%	20.00%			79.80%	GEM 9.42am
	Deep	2.90%	8.90%	0.00%			88.20%	GEM
P11	Shallow	0.00%	9.20%	60.00%			90.30%	GEM 9.24am
	Medium	0.00%	13.00%	1.00%			86.10%	GEM
	Deep	0.00%	9.60%	5.70%			84.60%	GEM
P12	Shallow	0.00%	10.40%	5.40%			84.20%	GEM 9.24am
	Deep	0.00%	10.30%	0.60%			88.80%	GEM
P13		0.00%	13.10%	0.90%			86.10%	11.06a GEM

Monitoring Results from 12/19/06 for Disposal Gardens in Torrance								
Probe #		**CH4 (%)**	**CO2 (%)**	**O2 (%)**	**CO (ppm)**	**H2S (ppm)**	**Balance**	**Comments**
P1		0.00%	14.50%	3.70%			81.90%	GEM 10:50am
P2	Shallow	0.00%	15.90%	0.70%			83.80%	Gem 8.30a
	Medium	0.00%	0%	20.10%			80.00%	GEM
	Deep	0.00%	24.30%	4.00%			71.30%	GEM
P3		0.00%	2.70%	17.70%			79.60%	GEM 11.05am
P4		0.00%	0.90%	19.70%			79.40%	11.10am
P5		0.00%	12.90%	7.10%			79.80%	GEM 10.55am
P6		0.00%	2.00%	16.20%			81.90%	GEM 10.40 am h2o in line
P7	Shallow	0.00%	5.00%	17.10%			77.90%	GEM 10.31am
	Deep	0.10%	21.10%	0.10%			78.10%	GEM
P8		0.20%	19.00%	0.00%			79.80%	GEM 10.25am
P9		0.00%	4.70%	16.60%			78.70%	GEM 10.20am
P10	Shallow	0.00%	2%	15.30%			82.70%	GEM 10.15am
	Deep	2.30%	9.10%	0.10%			88.40%	GEM
P11	Shallow	0.00%	9.80%	3.00%			87.20%	GEM 87.2am
	Medium	0.00%	15.40%	0.30%			84.40%	GEM
	Deep	0.00%	11.10%	5.60%			83.30%	GEM
P12	Shallow	0.00%	0.00%	20.10%			79.90%	GEM 9.55am
	Deep	0.00%	12.20%	9.70%			78.10%	GEM
P13		0.00%	12.60%	0.20%			87.10%	11.15a GEM

Monitoring Results from 1/30/07 for Disposal Gardens in Torrance

Probe #		CH4 (%)	CO2 (%)	O2 (%)	CO (ppm)	H2S (ppm)	Balance	Comments
P1		0.00%	13.10%	5.30%			81.50%	GEM
P2	Shallow	0.00%	14.90%	0.60%			84.40%	Gem
	Medium	0	0.1	21.00%			78.90%	GEM
	Deep	0.00%	24%	4.30%			71.10%	GEM
P3		0.00%	3.70%	17.80%			78.40%	GEM
P4		0.00%	2.00%	19.00%			78.90%	
P5		0.00%	11.80%	4.86%			83.40%	GEM
P6								GEM h2o in line
P7	Shallow	0.00%	1.10%	20.10%			78.80%	GEM
	Deep	0.00%	4.00%	17.70%				GEM
P8		0.00%	1.20%	20.10%			78.70%	GEM
P9		0.00%	0.90%	20.80%			78.20%	GEM
P10	Shallow	0.00%	0.90%	21.60%			78.30%	GEM
	Deep	0.80%	3.40%	13.40%			82.40%	GEM lots of vaccuum
P11	Shallow	0.00%	1.30%	19.10%			79.50%	GEM
	Medium	0.00%	3.40%	17.30%			79.30%	GEM
	Deep	0.00%	2.30%	18.60%			79.10%	GEM
P12	Shallow	0.00%	1.60%	20.10%			78.30%	GEM
	Deep	0.00%	3.10%	16.90%			79.90%	GEM
P13		0.00%	12.30%	0.50%			87.30%	GEM

Monitoring Results from 2/20/07 for Disposal Gardens in Torrance

Probe #		CH4 (%)	CO2 (%)	O2 (%)	CO (ppm)	H2S (ppm)	Balance	Comments
P1		0.00%	13.50%	6.60%			80.10%	GEM
P2	Shallow	0.00%	15.40%	0.90%			83.70%	Gem
	Medium	0.00%	0.10%	21.00%			78.70%	GEM
	Deep	0.00%	23%	5.80%			70.70%	GEM
P3		0.00%	3.00%	17.60%			79.40%	GEM
P4		0.00%	1.30%	19.20%			79.40%	
P5		0.00%	13.20%	1.80%			84.90%	GEM
P6								GEM h2o in line
P7	Shallow	0.00%	5.00%	16.60%			78.20%	GEM
	Deep	0.00%	21.50%	0.30%			78.20%	GEM
P8		0.20%	16.90%	0.50%			82.40%	GEM
P9		0.00%	3.00%	17.80%			79.20%	GEM
P10	Shallow	0.00%	1.00%	17.30%			81.50%	GEM
	Deep	1.70%	8.60%	0.10%			89.50%	GEM lots of vaccuum
P11	Shallow	0.00%	8.50%	7.10%			84.40%	GEM
	Medium	0.00%	16.30%	0.60%			83.20%	GEM
	Deep	0.00%	11.50%	5.70%			82.90%	GEM
P12	Shallow	0.00%	5.90%	17.20%			76.90%	GEM
	Deep	0.00%	12.40%	1.50%			86.10%	GEM
P13		0.00%	12.70%	0.60%			86.80%	GEM

Monitoring Results from 3/20/07 for Disposal Gardens in Torrance

Probe #		CH4 (%)	CO2 (%)	O2 (%)	CO (ppm)	H2S (ppm)	Balance	Comments
P1		0.00%	13.90%	6.80%			79.10%	GEM
P2	Shallow	0.00%	13.50%	0.20%			86.20%	Gem
	Medium	0.00%	0.00%	21.00%			78.70%	GEM
	Deep	0.00%	21.80%	6.50%			71.00%	GEM
P3		0.00%	2.80%	18.40%			79.10%	GEM
P4		0.00%	1.50%	19.20%			79.30%	
P5		0.00%	15.50%	0.30%			84.00%	GEM
P6								GEM h2o in line
P7	Shallow	0.00%	6.40%	12.80%			80.00%	GEM
	Deep	0.00%	21.20%	0.40%			78.30%	GEM
P8		0.20%	16.40%	0.00%			83.40%	GEM
P9		0.00%	3.20%	18.30%			78.40%	GEM
P10	Shallow	0.00%	1.60%	15.40%			82.90%	GEM
	Deep	1.90%	9.40%	0.00%			88.60%	GEM lots of vaccuum
P11	Shallow	0.00%	8.90%	4.50%			86.50%	GEM
	Medium	0.00%	16.50%	0.00%			83.40%	GEM
	Deep	0.00%	12.00%	5.70%			82.50%	GEM
P12	Shallow	0.00%	7.60%	12.40%			80.00%	GEM
	Deep	0.00%	12.70%	0.80%			86.40%	GEM
P13		0.00%	13.00%	0.10%			86.80%	GEM

Monitoring Results from4/19/07 for Disposal Gardens in Torrance								
Probe #		**CH4 (%)**	**CO2 (%)**	**O2 (%)**	**CO (ppm)**	**H2S (ppm)**	**Balance**	**Comments**
P1		0.00%	13.80%	6.40%			79.60%	GEM
P2	Shallow	0.10%	10.40%	0.30%			89.10%	Gem
	Medium	0.00%	0.00%	21.00%			79.80%	Probe is non-functional
	Deep	0.00%	24.40%	4.50%			71.00%	GEM
P3		0.00%	3.50%	16.50%			79.70%	GEM
P4		0.10%	1.60%	18.40%			79.80%	
P5		0.10%	12.40%	0.40%			82.70%	GEM
P6								GEM h2o in line
P7	Shallow	0.00%	8.20%	7.70%			83.90%	GEM
	Deep	0.10%	20.60%	0.50%			78.60%	GEM
P8		0.20%	15.40%	0.20%			84.10%	GEM
P9		0.00%	6.40%	14.70%			78.80%	GEM
P10	Shallow	0.00%	0.90%	16.90%			82.00%	GEM
	Deep	2.00%	9.40%	0.00%			88.50%	GEM lots of vaccuum
P11	Shallow	0.00%	9.50%	4.50%			86.00%	GEM
	Medium	0.00%	17.00%	0.00%			83.00%	GEM
	Deep	0.00%	12.20%	5.30%			82.30%	GEM
P12	Shallow	0.00%	9.10%	11.80%			78.00%	GEM
	Deep	0.00%	13.30%	0.60%			85.80%	GEM
P13		0.00%	12.40%	0.60%			86.80%	GEM

Appendix B

Laboratory Results