

**3R – 312**

**2008 AGWMR**

**04 / 05 / 2009**



Environmental Services  
188 CR 4900  
Bloomfield, NM 87413

RECEIVED  
2009 APR 16 AM 10 18

April 14, 2009

Mr. Glen Von Gonten  
Hydrologist  
Oil Conservation Division  
1220 S. St. Francis Dr.  
Santa Fe, NM 87505

**RE: 2008 GROUND WATER SUMMARY REPORT**

Dear Mr. Von Gonten:

Enclosed for your review is the Williams 2008 Ground Water Summary Report. The report presents monitoring data for eight sites having petroleum hydrocarbon impacted ground water resulting from past use of unlined surface impoundments. The sites included in the report are identified in separate folders in the electronic delivery of documents (CD enclosed).

Four of the eight sites have known or suspected upgradient contaminant sources which continue to influence conditions affecting the rate of natural attenuation. Upgradient contamination at the Florence 40 has been recognized by the OCD with a directive to the leaseholder / producer to address this condition. At the Jicarilla 147-6, a condensate liquid release in the fourth quarter of 2007 has resulted in measured spikes of contaminant concentrations. Upgradient contamination at the Pritchard 2 indicates other sources of contaminants likely exist which are unrelated to the retired unlined impoundment. And at the Florence 47X, the continuing accumulation of LNAPL in well MW-3, directly adjacent to former producer equipment and an unlined pit, suggest that earlier closure actions may not have addressed all contamination. Until such time as the other responsible parties address these matters, efforts by Williams are invariably extended.

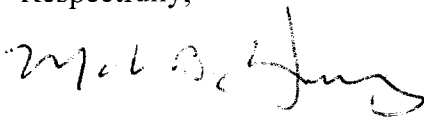
Two sites (Florence 47X and Davis #1) have episodic accumulations of LNAPL in one monitoring well at each location. Since 2002, passive collection devices have been deployed in all wells containing measurable accumulations of LNAPL. Periodic emptying of the collection devices along with active bailing of LNAPL during the quarterly sampling events continues at the aforementioned sites and at times when observed at any other site.

One site previously monitored (Patterson A COM #1A) met closure criteria in 2008 and a closure request was submitted earlier this year. Two of the remaining sites continue to show BTEX contamination in only one well with measured contamination diminishing. These sites will likely satisfy closure conditions relatively soon. The other two sites show declining trends and conditions indicative of effective natural attenuation.

As noted in the site summaries, laboratory reports have not been included in the annual report. Lab results reports are retained in project files until such time as a site closure report is developed, but are available anytime upon request.

Thank you for your time to review this submittal. If you have any questions regarding the content of the report, or about specific conditions at any site, you may call me at (801) 232-8985 or David Bays at (505) 634-4951.

Respectfully,

A handwritten signature in black ink, appearing to read "Mark B. Harvey", written in a cursive style.

Mark B. Harvey  
Project Manager

Enclosure - CD

c: Bill Liess, BLM Farmington District Office  
David Bays, Williams FCA Office

# Site Summary Report

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**Site Name:** Dogie East Pit

**Reporting Period:** 2008

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**Location:** Unit D, Sec 4, Twn 25N, Rng 6W  
**Canyon:** Largo  
**Operator:** Williams

**Vulnerable Class:** original  
**OCD Ranking:** 40  
**Lead Agency:** NMOCD

## Status Narrative

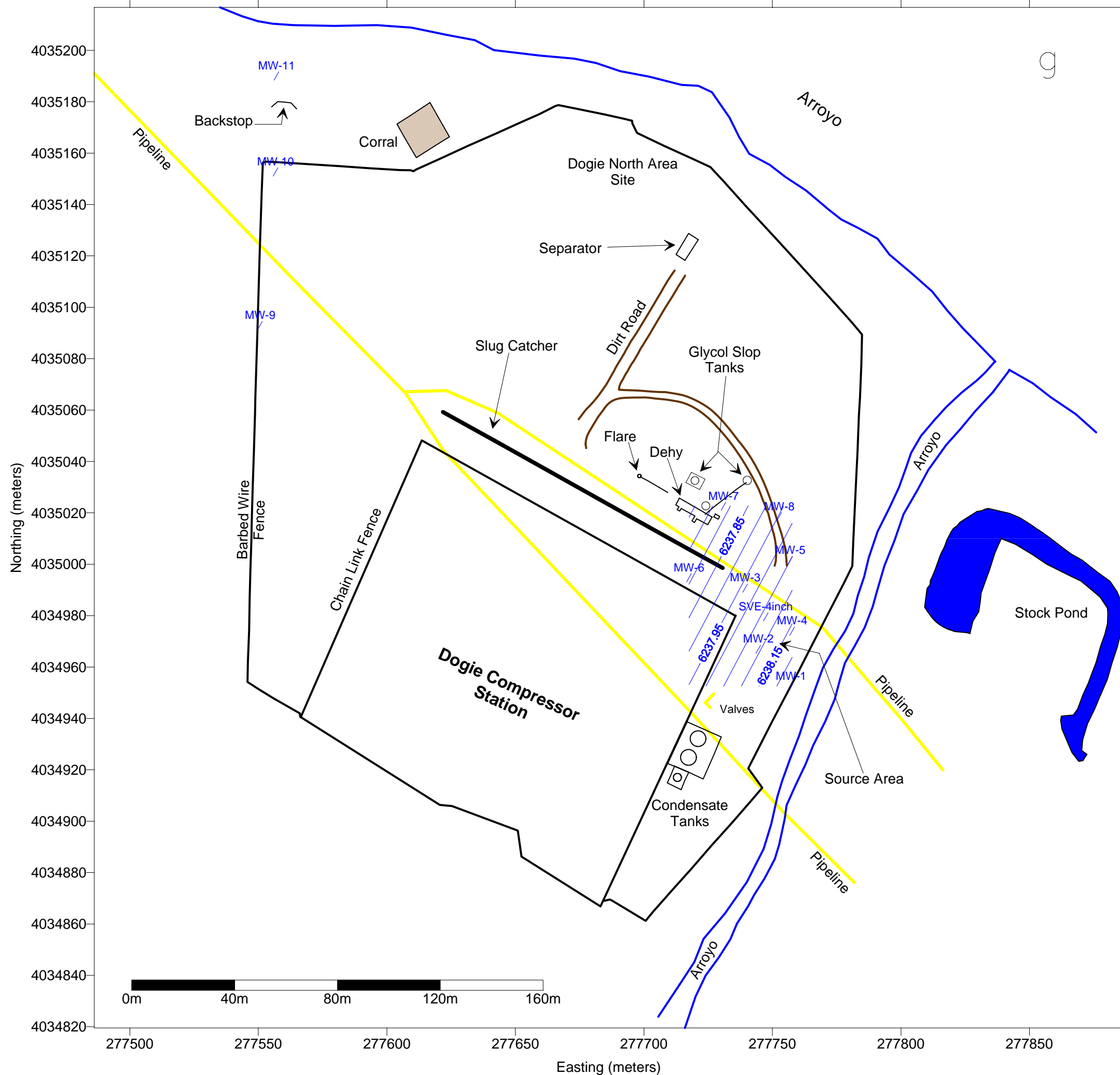
This site has nine monitoring wells installed in the original project area located at the northeast corner of the compressor station. To date, forty-one quarters of ground water monitoring have been completed. Source area well MW-2 has demonstrated twenty-five consecutive quarters of BTEX concentrations below NMWQCC standards. In addition, the 4-inch SVE pilot well, which is also located within the source area, has not exceeded the BTEX standards during the last twenty-six quarters and no measureable BTEX in 2007 and 2008.

Downgradient monitoring well MW-3 continues to contain elevated levels of total BTEX which fluctuated during the monitoring period but remains significantly less than in the periods before 2005. In cross-gradient well MW-5, benzene levels were again measured below cleanup standards. Well MW-7, located downgradient of well MW-5, showed benzene concentrations dropping from a high of 211 ppb to 14.8 ppb in the fourth quarter.

MW-6 which previously was found with LNAPL, continues to show a significant drop in overall BTEX. Sentinel well MW-9 again had no detectable levels of BTEX. A summary of the analytical results is attached with all laboratory analytical reports retained for later submittal upon request for closure.

Ground water generally flowed north-northwest at an average hydraulic gradient of 0.002. Figure 2 shows the potentiometric surface for two of the quarterly sampling events. The attached hydrograph shows the seasonal variation in water-table elevations. Monitored natural attenuation appears effective at this site, but unknown historical impacts from facility operations may influence the site closure schedule.



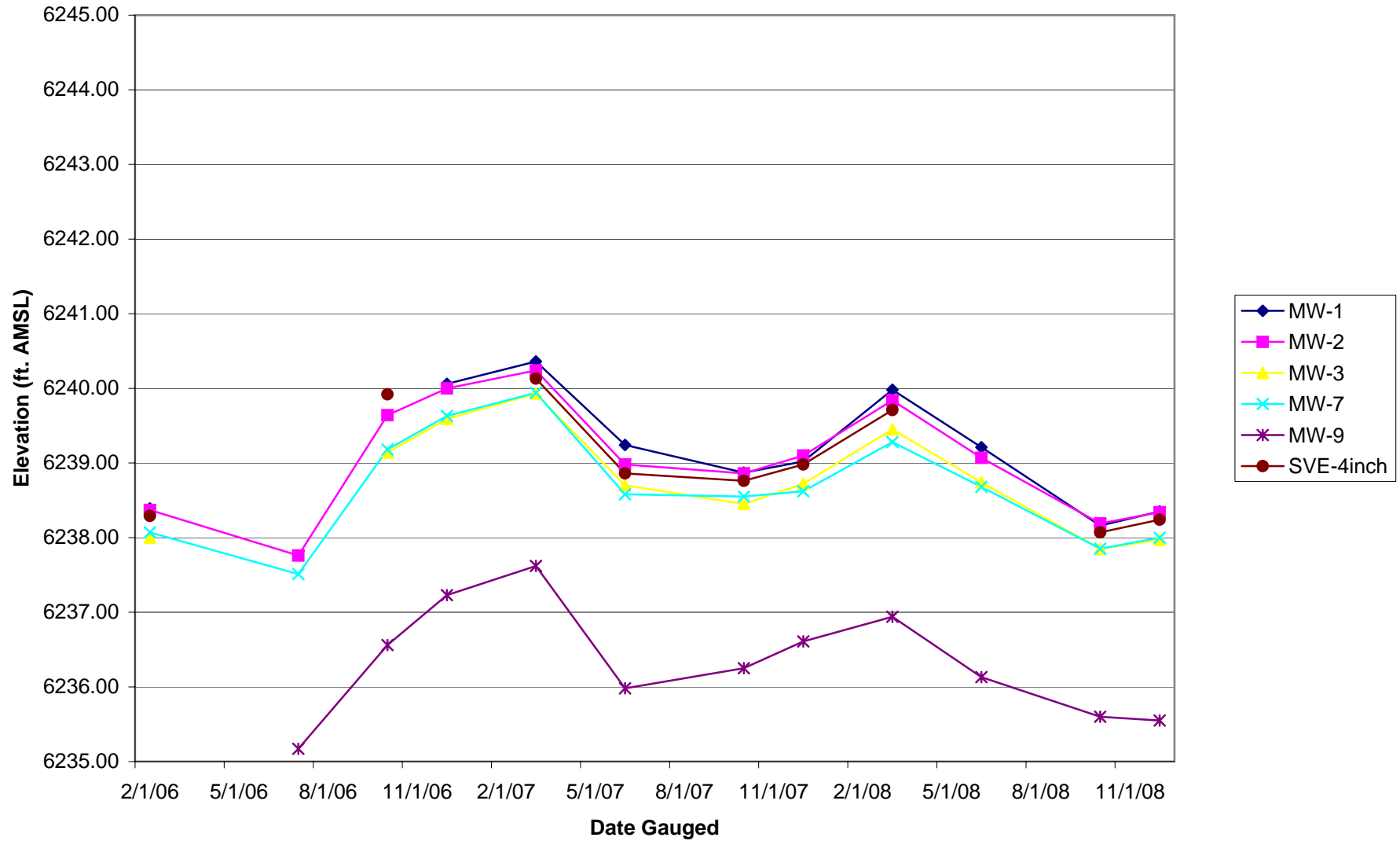


**Figure 2**  
**Potentiometric**  
**Surface Map**  
**Dogie Compressor Station (East Site)**  
**(December 2008)**

**LEGEND**

- |             |   |                                   |
|-------------|---|-----------------------------------|
| MW-2        | / | Monitoring Well                   |
| — 5585.20 — |   | Ground Water Elevation (ft. AMSL) |

Dogie East 2008 Hydrograph



# Analytical Data Summary

Site Name:

Dogie East Pit

Reporting Period:

1/1/2006 To 12/31/2008

Well ID	Sample Date	Sample ID	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	Xylene (Total) ug/l
MW-1						
	12/5/2008	112805DEC08	<1.0	<1.0	<1.0	<3.0
MW-2						
	2/27/2006	111927FEB06	ND	ND	ND	ND
	7/14/2006	130414JUL06	<1.0	<1.0	<1.0	<3.0
	10/6/2006	143506OCT06	1.7	<1.0	<1.0	<3.0
	12/12/2006	130512DEC06	<1.0	<1.0	<1.0	<3.0
	3/26/2007	124326MAR07	<1.0	<1.0	<1.0	<3.0
	6/27/2007	124627JUN07	3.7	<1.0	<1.0	<3.0
	10/9/2007	130709OCT07	2.2	<1.0	<1.0	<3.0
	12/18/2007	144818DEC07	<1.0	<1.0	<1.0	<3.0
	3/27/2008	124127MAR08	<1.0	<1.0	<1.0	<3.0
	6/5/2008	150705JUN08	<1.0	<1.0	<1.0	<3.0
	10/1/2008	165801OCT08	<1.0	<1.0	<1.0	<3.0
	12/5/2008	113605DEC08	<1.0	<1.0	<1.0	<3.0
MW-3						
	2/27/2006	124027FEB06	36.3	21.1	234	1010
	10/6/2006	164306OCT06	1.5	<1.0	10.7	36.3
	12/12/2006	131912DEC06	14.2	43.3	230	725
	3/26/2007	125626MAR07	25.0	134	148	425
	6/27/2007	131127JUN07	105	103	77.4	485
	10/9/2007	131909OCT07	68.8	14.0	28.9	79.3
	12/18/2007	151718DEC07	29.8	115	337	975
	3/27/2008	131027MAR08	14.2	197	278	990
	6/5/2008	151505JUN08	32.6	34.4	131	429
	10/1/2008	171901OCT08	71.7	20.9	53.9	228
	12/5/2008	120105DEC08	34.3	214	167	682
MW-4						
	2/27/2006	125227FEB06	16.7	11.2	5.1	70.3
MW-5						
	2/27/2006	115627FEB06	ND	22.9	78.1	346
	7/14/2006	135414JUL06	<5.0	52.3	110	403
	12/12/2006	133112DEC06	<1.0	<1.0	11.4	79.3
	3/26/2007	131126MAR07	<1.0	1.1	26.6	139
	12/18/2007	152918DEC07	<1.0	<1.0	2.5	7.9
	6/5/2008	152505JUN08	<5.0	<5.0	171	441



Site Name:  
Dogie East Pit

Reporting Period:  
1/1/2006 To 12/31/2008

Well ID	Sample Date	Sample ID	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	Xylene (Total) ug/l
MW-6						
	12/12/2006	145412DEC06	281	727	152	1350
	3/26/2007	142726MAR07	146	72.3	94.9	465
	10/9/2007	140009OCT07	2000	1720	616	9000
	3/27/2008	141127MAR08	940	410	308	1760
	6/5/2008	160705JUN08	3300	1970	746	5030
	10/1/2008	180001OCT08	3520	833	712	5760
	12/5/2008	131905DEC08	901	26.4	136	478
MW-7						
	2/27/2006	114327FEB06	55.2	ND	ND	ND
	7/14/2006	133314JUL06	<1.0	<1.0	<1.0	<3.0
	10/6/2006	151506OCT06	460	<5.0	8.3	<15.0
	12/12/2006	135312DEC06	202	<1.0	1.3	<3.0
	3/26/2007	132726MAR07	91.8	<1.0	<1.0	<3.0
	6/27/2007	141627JUN07	407	<10.0	<10.0	<30.0
	10/9/2007	133409OCT07	172	<2.0	<2.0	<6.0
	12/18/2007	153518DEC07	89.2	<1.0	<1.0	<3.0
	3/27/2008	133327MAR08	160	<1.0	<1.0	<3.0
	6/5/2008	153605JUN08	211	<5.0	<5.0	<15.0
	10/1/2008	173201OCT08	31.0	<1.0	<1.0	<3.0
	12/5/2008	121205DEC08	14.8	<1.0	<1.0	<3.0
MW-8						
	2/27/2006	113227FEB06	ND	ND	ND	ND
	7/14/2006	131814JUL06	<1.0	<1.0	<1.0	<3.0
MW-9						
	7/14/2006	140714JUL06	<1.0	<1.0	<1.0	<3.0
	12/12/2006	140712DEC06	<1.0	<1.0	<1.0	<3.0
	3/26/2007	134126MAR07	<1.0	<1.0	<1.0	<3.0
	6/27/2007	135727JUN07	<1.0	<1.0	<1.0	<3.0
	10/9/2007	134609OCT07	<1.0	<1.0	<1.0	<3.0
	12/18/2007	155218DEC07	<1.0	<1.0	<1.0	<3.0
	3/27/2008	135127MAR08	<1.0	<1.0	<1.0	<3.0
	6/5/2008	154905JUN08	<1.0	<1.0	<1.0	<3.0
	10/1/2008	174401OCT08	<1.0	<1.0	<1.0	<3.0
	12/5/2008	122805DEC08	<1.0	<1.0	<1.0	<3.0
PZ-1						
	10/6/2006	162506OCT06	923	1890	121	1900
	12/12/2006	142512DEC06	1120	2580	188	3140
	3/26/2007	140526MAR07	1070	2230	246	4050
	6/27/2007	133827JUN07	2510	2750	327	2890

Site Name:  
Dogie East Pit

Reporting Period:  
1/1/2006 To 12/31/2008

Well ID	Sample Date	Sample ID	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	Xylene (Total) ug/l
PZ-2						
	7/14/2006	150614JUL06	155	<1.0	130	36.6
	10/6/2006	160806OCT06	2.9	<1.0	36.6	10.1
	12/12/2006	151312DEC06	52.7	134	39.5	237
	3/26/2007	144926MAR07	<1.0	<1.0	3.3	<3.0
SVE-4inch						
	2/27/2006	120727FEB06	ND	ND	ND	ND
	10/6/2006	144706OCT06	<1.0	<1.0	<1.0	<3.0
	3/26/2007	123126MAR07	<1.0	<1.0	<1.0	<3.0
	6/27/2007	125927JUN07	<1.0	<1.0	<1.0	<3.0
	10/9/2007	141709OCT07	<1.0	<1.0	<1.0	<3.0
	12/18/2007	150718DEC07	<1.0	<1.0	<1.0	<3.0
	3/27/2008	125627MAR08	<1.0	<1.0	<1.0	<3.0
	10/1/2008	170901OCT08	<1.0	<1.0	<1.0	<3.0
	12/5/2008	114905DEC08	<1.0	<1.0	<1.0	<3.0