

**Drinking Water Well Impact
Green Valley Garage
11602 Fingerboard Road, Monrovia
Frederick County, Maryland
Case No. 2000-1301 FR**

The Maryland Department of the Environment (MDE) continues to evaluate the methyl tertiary-butyl ether (MTBE) contamination of drinking water supply wells near the gasoline retail service station located at 11602 Fingerboard Road (MD Route 80) in Frederick County. The Oil Control Program (OCP) has coordinated the investigation with the MDE's Water Management Administration and the Frederick County Health Department (FCHD).

Gasoline retail activities have been ongoing for over twenty years at the Green Valley Garage. This active gas station currently operates underground storage tanks (USTs) installed in October 1998. The two (2) 12,000-gallon gasoline tanks have Stage I and II vapor recovery systems. One of the tanks is compartmentalized to store 6,000 gallons of diesel. The UST systems are composite steel, fiberglass double walled tanks comprising double walled, flexible plastic piping with secondary containment. Currently seven (7) on-site monitoring wells and one (1) off-site well have been installed to monitor groundwater conditions. A granular activated carbon (GAC) treatment system is currently in place on the facility's non-community supply well. Bottled water is also supplied to the facility for consumptive use.

In January 2000, the MDE-OCP received a complaint from a neighboring resident of petroleum odor in their private drinking water well. Subsequent sampling of this well confirmed petroleum impacts. The MDE widened the sampling area in an effort to ascertain drinking water wells at risk. The Department considers Green Valley Garage the potential source of petroleum contamination impacting nearby private drinking water wells in the area.

Since February 2000, the MDE-OCP has sampled thirty-five (35) drinking water wells in the Monrovia community including three (3) non-community supply wells (i.e. Green Valley Garage supply well; Green Valley Elementary School; and a day-care facility called Children Center for Discovery). The only non-community supply well impacted is the Green Valley Garage well. Since 2000, bottled water has been used at the facility. In February 2007, a new on-site supply well was drilled upgradient from the old and new tank field areas. Unfortunately, when this new deep well was sampled, petroleum contaminants were also detected (MTBE at 376 ppb).

Historically MDE maintained GAC systems on five (5) homes. Due to petroleum concentrations decreasing below regulatory levels in two of these homes, the Department currently maintains GAC systems on three (3) homes at no cost to the residents,

■ GAC systems currently being maintained by MDE:

- 3936 Shakespeare Rd. - MTBE up to 7200 ppb (*action level 20 ppb*);
benzene up to 390 ppb (*MCL at 5 ppb*)
- 4002 Tranquility Ct. - MTBE up to 32ppb (*action level 20 ppb*)
- 4004 Tranquility Ct. - MTBE up to 100 ppb (*action level 20 ppb*)

■ GAC systems previously maintained by MDE. Future sampling to continue for these homes:

- 4006 Tranquility Ct. MTBE up to 57 ppb (*action level 20 ppb*);
Last sampling event 08/24/06 – non detect for MTBE
- 11508C Fingerboard Rd - MTBE up to 18 ppb (*action level 20 ppb*);
Last sampling event 08/24/06 – non detect for MTBE

- GAC system installed by Owner/Operator. Bottled water is currently being provided at this facility:
 - Green Valley Garage (11602 Fingerboard Rd) - MTBE at 376 ppb (*action level 20 ppb*)

Site History:

- August 5, 1996. MDE-OCP conducted a routine site inspection of the (3) 1000-gallon gasoline steel USTs at the facility. These first generation tanks were installed in October 1964. No monitoring pipes were present nor did the facility have a vapor recovery system. The operator notified the Department of plans to upgrade the facility.
- October 5, 1998. MDE-OCP oversaw the removal of three (3) 1000-gallon gasoline steel USTs at the facility. No perforations observed and field screening of soils did not detect any petroleum contamination. MDE-OCP opened and closed Case No. *1999-0857FR*.
- January 24, 2000. MDE-OCP received report of petroleum odor in water at the Welch residence at 3936 Shakespeare Way. The problem became apparent to the homeowner in the summer of 1999.
- January 28, 2000. Drinking water sample collected from 3936 Shakespeare Way. MDE-OCP opened *Case No. 2000-1253FR* which was subsequently combined with *Case No. 2000-1301FR*.
 - DHMH result: MTBE - 260 ppb, Benzene - 153 ppb.
 - FrederickTowne Labs result: MTBE - 380 ppb, Benzene - 280 ppb.
- February 8, 2000. MDE conducted a routine site inspection which required the owner to sample the non-community supply well located near the tank field.
- February 9, 2000. MDE's contractor collected eleven (11) water samples from homes and elementary school. Three (3) additional wells reported contamination.
 - Green Valley Garage: MTBE - 756 ppb, Benzene - 672 ppb.
 - 11508C Fingerboard Road: MTBE - 13 ppb.
 - 4002 Tranquility Ct.: MTBE - 23 ppb.
- February 11, 2000. MDE installed a GAC system at 3936 Shakespeare Way. Seven (7) additional private drinking water wells sampled, of which two (2) showed positive results.
 - 4006 Tranquility Ct.: MTBE - 21 ppb.
 - 4004 Tranquility Ct.: MTBE - 4.8 ppb.
- February 16, 2000. MDE-OCP received a faxed copy of the tank insurance for the period 02/15/2000 to 02/15/2001.
- February 17, 2000. MDE-OCP site visit at 3936 Shakespeare Way.
- March 3, 2000. MDE issued a *Notice of Violation (NV-2000-079)* to Green Valley Garage based on the lack of tank insurance and the drinking water well contamination on neighboring private properties. MDE-OCP required the following:
 - Provide proof of financial responsibility for the UST system .
 - Install and sample three (3) monitoring wells.
 - Complete a hydrogeologic study to delineate the extent of the contamination.
- March 21, 2000. Memorandum to file. In a telephone conversation, MDE was informed that the owner/operator had been without tank insurance prior to February 2000.
- April 3, 2000. MDE-OCP site visit to Green Valley Garage delivered copy of private drinking water sampling results.
- April 12, 2000. MDE received notification letter dated 04/10/2000 from Green Valley Garage's attorney regarding their involvement in the case.
- May 5-8, 2000. MDE-OCP site visits to observe the installation of three (3) monitoring wells.

- MDE has issued a Notice of Violation to Green Valley Garage the responsible party.
- January 25, 2001. MDE approved the *Corrective Action Plan* in response to the *NV 2000-079A* with modification that well be completed as proper monitoring well, not open borehole.
- February 12, 2001. MDE received copy of Petro Supply Report regarding the UST systems at Green Valley Garage.
 - Green Valley Garage passed precision tightness tests on 10/15/00.
- February 14, 2001. MDE letter required Green Valley Garage to include tertiary butyl alcohol (TBA) in future groundwater analyses.
- February 22, 2001. MDE letter to Senator Ferguson regarding the drinking water contamination at 3936 Shakespeare Way.
- March 6, 2001. MDE-OCP on-site to witness installation of additional monitoring well (MW-4).
- April 19, 2001. MDE site visit to follow-up on complaint that dispenser nozzle periodically shut-off. Owner/operator acknowledged some problems with the nozzle and that they were to be upgraded.
- April 26, 2001. *Final Draft of Implementation of Corrective Action Plan Report*. The report concluded:
 - Shallow groundwater flow is east north-easterly from the old tank field area towards the new tank field.
 - Deeper groundwater flow from the impacted non-community supply well is south-southwesterly
 - Soil and groundwater sampling limited to BTEX and MTBE. (See table 1.)
 - Finger print analyses of free product in the station supply well indicate a fresh source.
 - The second generation USTs unlikely to be the source of the release.
 - No free product in MW4 located in the old tankfield area nor in any of the other 3 monitoring wells (MW1 – 3).
 - No downward migration of free product was observed.
 - GAC system for the on-site supply well was taken out of service in February 2001.
 - Recommended that the casing of the drinking water well be scrubbed with a biodegradable surfactant
- May 29, 2001. MDE in a telephone conversation with the owner/operator gathered the following information;
 - The pump in the on-site community supply well was removed in February 2001.
 - No GAC in place on the on-site supply well. Water is brought to the facility in container for drinking water purposes.
- July 23, 2001. MDE received copy of downhole well camera video for the station's supply well.
- February 28, 2002. MDE notified Green Valley Garage of the results of its review of the evidence presented on the videotape.
 - At some time prior to November 1, 2000, a petroleum product was introduced into the drinking water well. The exact time of the incident cannot be established
 - Dissolved contamination may have migrated into fractures connecting in the well.
 - Based on the inconclusiveness of the information, *NOV-2000-079A* remains in effect.
- March 15, 2002. MDE letter to property owner regarding sample collected on 02/26/02.
- September 25, 2002. MDE received the results of off-site groundwater sampling completed in August 2002.
- October 17, 2002. MDE notified residents concerning private drinking water sampling results collected by MDE on 08/28 and 09/13/2002.
- February 27, March 10 & 14, 2003. MDE notified residents concerning private drinking water sampling results collected by MDE on 02/11–23 /03.

- June 12, 13 & 26, 2003. MDE notified residents concerning private drinking water sampling results collected by MDE on 05/23/03 and 06/17/03.
- August 27, 2003. MDE notified residents concerning private drinking water sampling results collected by MDE on 08/15-22/03.
- September 5, October 6, November 5 & 7, December 9 & 10, 2003. MDE notified residents concerning private drinking water sampling results collected by MDE on 08/15-08/22/03, 09/25/03, 10/30/03 and 11/19/03.
- January 9 & 16, 2004. MDE notified residents concerning private drinking water sampling results collected by MDE on 12/30/03 and 01/16/04.
- September 9, 2004. MDE site visit to 3936 Shakespeare Rd. Four (4) carbon tanks in place, change-out was required by MDE's contractor.
- October 14, 2004. MDE-OCP conducted a compliance inspection at the facility. Several violations cited and
 - Immediately begin daily and monthly reconciliation records for the diesel and gasoline UST systems.
 - Pump out and remove the above-ground waste oil tank.
 - Pump out and remove the two above-ground petroleum tank
 - Monitor and test the gasoline and diesel USTs and submit proof of test results for Aug-October 2004.
 - Excavate oil contaminated gravel and soils from surface spillage area and properly dispose.
- December 13, 2004. MDE conducted a field reconnaissance of the area to determine the proximity of the Green Valley Garage facility to the Green Valley Shopping Center, which houses the Citgo station.
- April 1, 2005. MDE-OCP received a map from the WMA showing the location of public water systems in the Monrovia area.
- April 1, 2005. MDE-OCP reiterated that Green Valley Garage has not been ruled out as the responsible party. MDE did not concur with the conclusions of the *Corrective Action Plan Report- April 26, 2001*.
 - Irrespective of the presumption that gasoline was dumped in the potable well, as the owner/operator of the commercial property Green Valley Garage is responsible for securing all wells on-site.
 - Facility is in a high-risk groundwater use area with private wells. Therefore, Green Valley Garage must comply with the new emergency regulations which took effect 01/26/2005.
 - Other outstanding environmental issues to be addressed in a *Work Plan*.
 - Conduct quarterly gauging of the four (4) monitoring wells
 - Sample groundwater and soils for full suite VOCs and TPH-DRO, TPH-GRO.
 - Other UST compliance issues to be addressed based on the 10/14/2005 compliance assistance inspection.
 - Pump out and remove the used oil and two other ASTs.
 - Remove oil-contaminated gravel and soils resulting from surface spillages around these tanks.
 - Submit latest tightness testing results.
 - Submit monthly release detection records for December 2004 through February 2005.
 - Test spill containment sumps and basins.
 - Test all primary piping using helium pressure.
- May 9, 2005. MDE received letter from the consultant – 05/05/2005 requesting an opportunity to review the case file to meet the Department's deadline.
- May 12, 2005. MDE notified residents concerning private drinking water sampling results collected by MDE on 04/26/05.
- May 31, 2005. MDE received a request from consultant, for Green Valley Garage, requesting an extension to submit a *Corrective Action Plan* as condition to receive reimbursement from the State's commercial cleanup fund.

- June 9, 2005. MDE notified residents concerning private drinking water sampling results collected by MDE on 05/16/05.
- June 29, 2005. MDE-OCP received *Updated Hydrogeologic Assessment and Work Plan- June 25, 2005*.
 - May 10, 2005 Sampling event at Green Valley Garage. (See table 1.)
 - Bottled water is currently being provided to the facility.
 - No LPH detected in any of the wells.
 - Proposal to install 3 additional wells (MW5, MW6 and MW7).
 - Proposed to relocate the station's supply well northwest of the building improvements.
 - An 8-hour step-drawdown test recommended.
- July 1, 2005. MDE-OCP received June 30, 2005 letter from Green Valley Garage's attorney asserting that MDE has no factual basis for asserting that the facility is in violation of any regulations and laws.
 - The approved *Work Plan* requires significant expenditure and funding is limited.
 - Existing monitoring wells already satisfy the emergency regulations (note these monitoring wells are in the old tank field area). However Green Valley Garage fully intend to comply with the new emergency regulations.
 - If Green Valley Garage implements the *Work Plan* they would be doing so on a voluntary basis with no admission of actual or implied violations of the regulations/law.
 - Requested a meeting to discuss the current status of the case.
- July 12-14, 2005. MDE notified residents concerning private drinking water sampling results collected on 06/24/05.
- July 21, 2005. MDE-OCP received letter report dated 01/19/2005 in response to compliance issues at the site. The report included the last line and tank tightness testing results, daily inventory, and monthly release detection records for December 2004 through February 2005.
- August 10, 18 & September 19 2005. MDE notified residents concerning private drinking water sampling results collected by MDE on 07/16 & 18/05 and 08/26/05.
- October 5, 2005. MDE internal memorandum outlining that the facility is in compliance based on the submittal on the UST and line precision test results; ATG electronic leak detection tests; and inventory records for the period December 2004 to February 2005.
- October 13 & November 10-14, 2005 MDE notified residents concerning private drinking water sampling results collected by MDE on 09/29/05 and 10/24-26/05.
- November 29, 2005. MDE-OCP approved the *Hydrogeologic Assessment and Work Plan- June 25, 2005*. The Department clarified the factual basis for asserting that the Green Valley Garage is the responsible party. Approval granted contingent upon the following modifications;
 - Test the UST system for vapor leaks
 - Test all spill catchment basins and containment sumps.
 - Conduct a self-audit.
 - Conduct a receptor survey
 - Sample all on-site monitoring wells and tank field monitoring pipes.
 - Properly maintain a GAC system on the on-site non-community supply well.
- December 5, 2005. MDE received letter from property owner's attorney requesting a meeting to discuss the requirements of the *Hydrogeologic Assessment and Work Plan* approved by the Department.
- December 16, 2005 and January 10, 2006. MDE notified residents concerning private drinking water sampling results collected on 11/28/05 and 12/20/05.
- January 24, 2006. Meeting between MDE and representatives of Green Valley Garage to discuss future course of action and the Department's expectations.

- February 6, 2006. MDE received a letter from Green Valley Garage's attorney regarding the meeting held on 01/24/06. Property owner will:
 - Provide MDE with helium test results and analytical results for monitoring wells and the on-site potable well,
 - Convert existing potable well to a monitoring well and install a new potable well,
 - Install up to three additional groundwater monitoring wells, and
 - Implement approved *Work Plan*.
- March 6, 8, & 16, 2006. MDE notified residents of private drinking water sampling results collected in February 2006.
 - 11530 Fingerboard Road – sampling terminated based on analytical results
- March 7, 2006. MDE letters to property owners regarding samples collected in February 2006:
 - MDE sampling terminated based on analytical results for 6 off-site properties
- March 28, 2006. MDE letter to property owner regarding samples collected in March 2006:
- May 8, 2006. MDE letter to property owner at 3936 Shakespeare Way regarding samples collected in April 2006:
- July 21, 2006. MDE letter to 7 off-site property owners regarding samples collected in June 2006:
- August 24-25, 2006. MDE personnel on-site to observe the installation of new potable well and additional ground water monitoring wells.
- October 6, 2006. MDE letter to property owners regarding samples collected in August 2006:
 - 3936 Shakespeare Way – MDE delivery of bottled water terminated – MDE sampling to continue
 - MDE sampling terminated based on analytical results for 7 off-site properties
- October 11, 2006. MDE notified residents regarding samples collected in August 2006:
 - 11508C Fingerboard Road – MDE sampling and maintenance of GAC system terminated.
- November 14, 16, 17 & 29, 2006. MDE notified residents regarding samples collected in October 2006:
 - 3934 Shakespeare Way – MDE sampling terminated based on analytical results
- November 29, 2006. MDE notified residents regarding samples collected in October 2006:
 - 4006 Tranquility Court – MDE maintenance of GAC system terminated – MDE sampling will continue.
- December 19, 2006. MDE received correspondence from property owner at 4006 Tranquility Court requesting removal of the GAC filtration system.
- January 9 and 22, 2007. MDE notified residents regarding samples collected in December 2006:
- January 18, 2007. MDE-OCP contacted the facility owner and requested the collection of groundwater samples from all monitoring wells and the supply well.
- February 28, 2007. MDE-OCP received groundwater sampling results for all monitoring wells and the supply well.
- March 21, 2007. MDE notified residents regarding samples collected in February 2007:
- May 7, 2007, MDE-OCP directive letter to Green Valley Garage based on the recent sampling data and requiring the following tasks to be completed.
 - Submit a *Corrective Action Plan* no later than July 30, 2007, to control, contain and mitigate the dissolved phase groundwater petroleum plume.
 - Install additional monitoring well clusters, on- site and off-site

- Conduct pilot test to evaluate the viability of a soil vapor extraction system
- Submit a proposal for pilot tests to determine the feasibility of groundwater extraction as remedial option.
- Conduct geophysical studies and evaluate subsurface flow regimes
- Evaluate all remedial options, especially groundwater extraction and treatment
- Continue to conduct quarterly sampling of all existing monitoring wells, monitoring pipes and drinking water wells on-site.
- As previously directed in the Department's 11/29/05 letter
 - Conduct helium tests on the gasoline UST system
 - Test all spill catchment basins and containment sumps.
 - Perform a self-audit of the UST systems

Future Updates:

- Future updates on this case investigation will be posted at www.mde.state.md.us [at the MDE home page, (select) Land, (select) Program, (select) Oil Control, (select) Remediation Sites].

Contacts:

- Maryland Department of the Environment Oil Control Program 410-537-3443
- Frederick County Health Department 301-600-1715

Other related cases:

- Case No. 1999-0857FR (closed); 2000-1253FR (3936 Shakespeare Way)

Disclaimer

The intent of this fact sheet is to provide the reader a summary of site events as they are contained within documents available to MDE. To fully understand the site and surrounding environmental conditions, MDE recommends that the reader review the case file that is available at MDE through the Public Information Act. The inclusion of a person or company's name within this fact sheet is for informational purposes only and should not be considered a conclusion by MDE on guilt, involvement in a wrongful act or contribution to environmental damage.

Table 1. Monitoring Well Network at Green Valley Garage

Well Information	Sampling events	Depth to groundwater	Petroleum constituents of concern						TPH-GRO	Other Petroleum Constituents <i>Tertiary butyl alcohol (TBA) is an unregulated comp Tertiary amyl methyl ether (TAME) is an unregulated comp Di-isopropyl ether (DIPE) is an unregulated comp</i>
			Benzene <i>MCL at 5 ppb</i>	Toluene <i>MCL at 1000 ppb</i>	Ethylbenzene <i>MCL at 700 ppb</i>	Xylene <i>MCL at 10,000 ppb</i>	MTBE <i>Action level at 20 ppb</i>			
Formerly MW-1 70 ft, 4 in. diameter On-site well Installed 5/5/00, redesignated MW-5	5/23/00	69.2	ND	ND	ND	ND	2920	ND	--	
	5/10/05	--	190	---	ND	---	65,000	--	TBA-43,000 TAME-14,000	
	2/6/07	57.69	119	ND	ND	---	36,160	--	TBA-9280, DIPE-67.6, TAME-12,000	
Formerly MW-2 67 ft, 4 in. diameter On-site well Installed 5/8/00, redesignated MW-6	5/23/00	67.1	246	---	---	---	772	1210	--	
	5/10/05	--	--	--	--	--	--	--	--	
	2/6/07	55.64	11.9	ND	ND	ND	6440	--	TBA - 362; DIPE - 12.17; TAME - 1364	
Formerly MW-3 73 ft, 4 in. diameter Off-site well Installed 5/9/00, on south side of MD-80, redesignated MW-7	5/23/00	72.6	1290	---	---	---	1820	4750	--	
	5/10/05	--	37	ND	ND	---	5000	--	TBA - 3100, TAME - 1200(e)	
	2/6/07	54.72	ND	ND	ND	ND	82.6	--	TAME-13.3	
MW-1 84 ft, 4 in diameter On-site well Installed 8/25/06	2/6/07	70.84	ND	ND	ND	ND	106	--	ND	
MW-2 84 ft, 4" diameter On-site well Installed 8/25/06	2/6/07	69.76	ND	ND	ND	ND	ND	--	ND	
MW-3 104 ft, 4 in. diameter On-site well Installed 8/25/06	2/6/07	69.97	ND	ND	ND	ND	ND	--	ND	
MW-4 82 ft, 4 in diameter on-site monitoring well installed 3/6/01	3/6/01	72.6	ND	1200	7100	31,000	1300	1,600,000	--	
	5/10/05	--	270	---	---	---	8500	--	TBA - 5500; TAME - 1900	
	2/6/07	62.69	154	ND	ND	---	12,560	--	TBA - 524; DIPE - 42.2; TAME - 2640	

Table 2: Drinking Water Sampling Results in the Monrovia Area

GAC Systems ✓ MDE installed	Sample location	Sample date	Petroleum Constituents of Concern			
			Benzene MCL at 5 ppb	MTBE Action level at 20 ppb	Other petroleum constituents	
Green Valley Garage 11602 Fingerboard Rd Bottled water supplied to the facility by the operator	Former domestic supply well	02/09/00	672	756	ND	
		03/01/00	1330	1190	ND	
		04/03/00	1100	1210	ND	
		05/04/00	774	1790	ND	
		06/15/00	1270	1800	ND	
		07/20/00	1070	1650	ND	
		09/12/00	1160	1890	DIPE-16, TAME-530	
		08/28/02	ND	31	TBA-111	
		02/11/03	ND	160	TBA-310(e)	
		05/23/03	ND	900	TBA-1300	
		08/15/03	ND	1600	TBA-2100, TAME-13	
		11/19/03	ND	950	TBA-590, TAME-17	
		5/10/05	200	10,000	TBA-6900, TAME-2300 (e)	
		05/16/05	216	8300	TBA-5100, DIPE-36, TAME-1800	
		10/24/05	ND	2300	ND	
		02/15/06	ND	510	TBA-42, TAME-23	
		06/29/06	ND	13000 (e)	TBA-9200 (e), TAME-120 (e)	
10/19/06	ND	390	DIPE-4 (e), TAME-58			
02/06/07	346	12,760	TBA-1275, DIPE-55.9, TAME-2840			
	Newly drilled deep well	02/06/07	ND	376	DIPE-5.12, TAME-42.8	
Cleary/Welch Property 3936 Shakespeare Way ✓ GAC system installed and maintained by MDE- OCP		01/28/00	260	380	ND	
		02/09/00	130	191	ND	
	(pre-filter)	02/15/00	186	254	ND	
	(midfilter)		ND	ND	ND	
	(postfilter)		ND	ND	ND	
	(pre-filter)	03/01/00	180	254	ND	
	(midfilter)		ND	ND	ND	
	(postfilter)		ND	ND	ND	
			04/04/00	348	507	ND
			05/08/00	455	1040	ND
			06/15/00	114	1350	ND
			07/27/00	339	1090	ND
			09/12/00	ND	894	TAME-289
			11/08/00	81	750	TAME-173
			01/12/01	249	755	ND
			03/30/01	ND	580	DIPE-5, TAME-200
	(samples probably mislabelled)	(pre-filter)	08/28/02	ND	ND	ND
		(mid-filter)		ND	ND	ND
		(post-filter)		8	1100	TBA-800, DIPE-7, TAME-410
	(resampling post-filter)		09/16/02	ND	ND	ND
		(pre-filter)	02/11/03	ND	5800	DIPE-38, TAME-2000
		(mid-filter)		ND	320	TAME-25
		(post-filter)		ND	ND	ND
		(pre-filter)	05/22/03	390	7500	TBA-8400, DIPE-26, TAME-1800
		(Mid-filter)		ND	2900	TBA-3300
		(post-filter)		ND	35	TBA-32
		(pre-filter)	08/15/03	60	7200	TBA-9600, DIPE-25, TAME-17(e)
		(midfilter)		ND	ND	ND
		(post-filter)		ND	ND	ND
		(pre-filter)	09/25/03	120	6900	TBA-11000, DIPE-21
		(Midfilter)		ND	110	TBA-95
		(post-filter)		ND	8	TBA-7
		(pre-filter)	10/22/03	62	5200	TBA-4100, DIPE-19, TAME-990
	(midfilter)	ND		ND	ND	
	(post-filter)	ND		ND	ND	
	(pre-filter)	11/19/03	65	5500	TBA-3000, DIPE-16, TAME-1400	
	(Midfilter)		ND	120	TBA-80	
	(post-filter)		ND	ND	TBA-8	

Table 2 (continued): Drinking Water Sampling Results in the Monrovia Area

GAC Systems ✓ MDE installed ◆ Private Maintenance	Sample location	Sample date	Petroleum Constituents of Concern		
			Benzene MCL at 5 ppb	MTBE Action level at 20 ppb	Other petroleum constituents
Cleary / Welch Property (cont.) 3936 Shakespeare Way	(pre-filter)	12/03/03	20.6	4538.2	TBA-2526.6, DIPE-13, TAME-1115
	(Midfilter)		ND	ND	ND
	(post-filter)		ND	ND	ND
	(pre-filter)	01/16/04	80	6000	TBA-3400(e) DIPE-17, TAME-1500
	(Midfilter)		ND	40.4	TBA-45.3, TAME-60
	(post-filter)		ND	ND	TBA-9.6
	(pre-filter)	04/16/05	7	2600	TBA-1500(e), DIPE-10, TAME-530
	(Midfilter 1)		ND	360	TBA-260, DIPE-60
	(Midfilter-2)		ND	ND	ND
	(post-filter)	05/16/05	ND	ND	ND
	(pre-filter)		24	2900	TBA-2200(e), DIPE-12, TAME-790
	(Midfilter 1)		ND	520	TBA-390, DIPE-100
	(Midfilter 2)	06/24/05	ND	0.6	TBA-7
	(post-filter)		ND	ND	ND
	(pre-filter)		25	3200	TBA-1700(e), DIPE-11, TAME-800
	(Midfilter 1)	07/18/05	ND	200	TBA-120, TAME-34
	(Midfilter 2)		ND	0.5	ND
	(post-filter)		ND	2	ND
	(pre-filter)	09/29/05	23	3900	TBA-3500(e), DIPE_22, TAME-870
	(Midfilter 1)		ND	450	TBA-340, TAME-55
	(Midfilter 2)		ND	9	ND
	(post-filter)	10/24/05	ND	0.5	ND
	(pre-filter)		5	2700	TBA-1100, TAME-610
	(Midfilter 1)		ND	130	TBA-67
	(Midfilter 2)	12/20/05	ND	7	ND
	(post-filter)		ND	0.5	ND
	(pre-filter)		ND	3000	TAME-570
	(Midfilter 1)	02/15/06	ND	110	TAME-15
	(Midfilter 2)		ND	ND	ND
	(post-filter)		ND	ND	ND
	(pre-filter)	04/19/06	4	2100	DIPE-6, TAME-390
	(Midfilter 1)		ND	120	TBA-9, TAME-21
	(Midfilter 2)		ND	ND	ND
	(post-filter)	06/29/06	ND	ND	ND
	(pre-filter)		ND	110	ND
	(mid-filter)		ND	ND	ND
	(post-filter)	08/24/06	ND	ND	ND
	(pre-stripper)		3 (e)	2500	TBA-570, DIPE-6(e), TAME-520
	(pre-filter)		ND	120	TBA-74, TAME-17(e)
	(mid-filter)	12/22/06	ND	ND	ND
	(post-filter)		ND	ND	ND
	(pre-stripper)		ND	3100	TBA-1200, TAME-680, Naphthalene-32(e)
(pre-filter)	08/24/06	ND	120	TBA-84, TAME-18(e)	
(mid-filter)		ND	ND	ND	
(post-filter)		ND	ND	ND	
(pre-stripper)	12/22/06	2 (e)	1700	TBA-1300 (e), TAME-370(e)	
(pre-filter)		ND	170	TAME-30	
(mid-filter)		ND	ND	ND	
(post-filter)	12/22/06	ND	ND	ND	
(pre-stripper)		ND	1600(e)	TBA-160, TAME-420 (e)	
(pre-filter)		ND	170	TAME-27, TBA-7	
(mid-filter)	12/22/06	ND	ND	ND	
(post-filter)		ND	ND	ND	
(pre-stripper)	12/22/06	1.0	4400	TBA-29, TAME-460, DIPE-8	

MDE - OCP letter to homeowner dated 10/06/06 terminating bottled water delivery.

Table 2 (continued): Drinking Water Sampling Results in the Monrovia Area

GAC Systems ✓ MDE installed	DRINKING WATER WELLS SAMPLED	MTBE Action level at 20 ppb	Other Petroleum Constituents
Wilcom Property- 11508C Fingerboard Rd (cont.) MDE - OCP letter to homeowner dated 10/11/06 terminating future sampling events and GAC maintenance.	05/16/05	ND (pre-filter)	
		2 (Mid-filter)	
		3.1 (Post-filter)	
	10/24/05	ND (pre-filter)	
		1 (Mid-filter)	
		3 (Post-filter)	
	03/06/06	ND (pre-filter)	
		0.8 (mid-filter)	
		2 (post-filter)	
	08/24/06	ND (pre-filter)	
		0.7 (pre-filter)	
		2 (post-filter)	
11526 Fingerboard Rd. MDE - OCP letter to homeowner dated 03/07/06 terminating future sampling events.	02/11/00	ND	
	03/01/00	ND	
	08/28/02	ND	
	02/11/03	ND	
	06/17/03	ND	
	10/22/03	ND	
	08/17/05	ND	
	02/15/06	ND	
11529 Fingerboard Rd. MDE - OCP letter to homeowner dated 03/07/06 terminating future sampling events.	02/11/00	ND	
	03/01/00	ND	
	04/03/00	ND	
	05/04/00	ND	
	06/15/00	ND	
	08/28/02	ND	
	02/11/03	ND	
	06/17/03	ND	
	10/22/03	ND	
	08/17/05	ND	
11530 Fingerboard Rd. MDE - OCP letter to homeowner dated 03/08/06 terminating future sampling events.	02/11/00	ND	
	03/01/00	ND	
	04/03/00	ND	
	05/04/00	ND	
	06/15/00	ND	
	08/28/02	ND	
	02/11/03	ND	
	06/17/03	ND	
	10/22/03	ND	
	08/17/05	ND	
11532 Fingerboard Rd. MDE - OCP letter to homeowner dated 10/06/2006 terminating future sampling events.	03/08/06	ND	
	08/28/02	ND	
	02/11/03	ND	
	06/17/03	ND	
	10/22/03	ND	
	08/17/05	ND	
	10/24/05	ND	
02/15/06	ND		
08/24/06	ND		

Table 2 (continued): Drinking Water Sampling Results in the Monrovia Area

GAC Systems ✓ MDE installed	DRINKING WATER WELLS SAMPLED	MTBE <i>Action level at 20 ppb</i>	Other Petroleum Constituents
Children Center for Discovery at 3917 Chaucer Court MDE - OCP letter to homeowner dated 03/07/06 terminating future sampling events.	08/28/02	ND	
	02/11/03	ND	
	06/17/03	ND	
	10/30/03	ND	
	03/07/06	ND	
3921 Chaucer Court MDE - OCP letter to homeowner dated 10/06/2006 terminating future sampling events.	03/01/00	ND	
	04/04/00	ND	
	05/04/00	ND	
	06/15/00	ND	
	07/20/00	ND	
	09/12/00	ND	
	11/08/00	ND	
	01/12/01	ND	
	03/29/01	ND	
	05/25/01	ND	
	07/11/01	ND	
	10/26/01	ND	
	02/26/02	ND	
	05/29/02	ND	
	08/28/02	ND	
	11/20/02	ND	
	02/11/03	ND	
	06/17/03	ND	
	10/22/03	ND	
	02/18/04	1.1	
	06/24/04	1.3	
	10/27/04	1.0	
	02/10/05	0.9	
06/24/05	0.5		
10/24/05	ND		
02/15/06	ND		
08/24/06	ND		
02/16/07	ND		
3940 Chaucer Ct	02/22/00	ND	
	03/01/00	ND	
	04/03/00	ND	
	08/28/02	1(e)	
	02/11/03	ND	
	05/23/03	ND	
	08/15/03	0.7	
	11/19/03	ND	
	05/16/05	ND	
	08/17/05	0.8	
	11/28/05	ND	
02/15/06	ND		
06/29/06	ND		
10/19/06	0.7	DIPE at 1 ppb (e)	
3930 Shakespeare Way MDE - OCP letter to homeowner dated 03/07/06 terminating future sampling events.	02/09/00	ND	
	03/01/00	ND	
	04/03/00	ND	
	05/04/00	ND	
	06/15/00	ND	
	08/28/02	ND	
	02/11/03	ND	
	06/17/03	ND	
	10/22/03	ND	
	06/24/05	ND	
	10/26/05	ND	
02/15/06	ND		

Table 2 (continued): Drinking Water Sampling Results in the Monrovia Area

GAC Systems ✓ MDE installed	DRINKING WATER WELLS SAMPLED	MTBE Action level at 20 ppb	Other Petroleum Constituents
3934 Shakespeare Way (cont.) MDE - OCP letter to homeowner dated 11/16/06 terminating future sampling events.	02/09/00	ND	
	03/01/00	2.4	
	04/03/00	ND	
	05/04/00	ND	
	06/15/00	ND	
	08/28/02	ND	
	02/11/03	ND	
	05/23/03	ND	
	08/22/03	ND	
	11/19/03	ND	
	05/16/05	ND	
	06/29/06	ND	
	10/19/06	ND	
4000 Tranquility Court	02/11/00	ND	
	04/05/00	ND	
	05/15/00	ND	
	06/15/00	ND	
	08/28/02	ND	
	02/11/03	ND	
	05/23/03	ND	
	08/15/03	5	
	05/16/05	0.9	
	08/17/05	0.9	
12/29/06	0.7		
4001 Tranquility Ct			
	02/09/00	ND	
	03/01/00	ND	
	04/03/00	ND	
	05/04/00	ND	
	06/15/00	ND	
	08/28/02	ND	
	02/21/03	ND	
	06/18/03	ND	
	10/22/03	ND	
	08/17/05	ND	
	02/21/06	ND	
	12/22/06	ND	
	4002 Tranquility Ct. ✓ GAC system installed and maintained by MDE- OCP	02/09/00	23
02/17/00		25	
		31	
03/01/00		ND (Mid-filter)	
		ND (Post-filter)	
		32	
04/03/00		ND (Mid-filter)	
		ND (Post-filter)	
07/27/00		15	
09/12/00		13	
11/08/00		4.1	
01/16/01		20	
03/30/01		6.1	
		10 (pre-filter)	
02/11/03		ND (Mid-filter)	
		ND (Post-filter)	
		ND (pre-filter)	
05/23/03	ND (Mid-filter)		
	ND (Post-filter)		

Table 2 (continued): Drinking Water Sampling Results in the Monrovia Area

GAC Systems ✓ MDE installed	DRINKING WATER WELLS SAMPLED	MTBE Action level at 20 ppb	Other Petroleum Constituents
4002 Tranquility Ct. (cont.) GAC system installed and maintained by MDE- OCP	11/19/03	2 (pre-filter)	
		0.9 (Mid-filter)	
		ND (Post-filter)	
	05/16/05	6 (pre-filter)	
		5.5 (Mid-filter)	
		ND (Post-filter)	
	08/17/05	2J (pre-filter)	
		6 (Mid-filter)	
		ND (Post-filter)	
	11/28/05	8 (pre-filter)	
		16 (Mid-filter)	
		ND (Post-filter)	
	02/28/06	12 (pre-filter)	
		7.8 (mid-filter)	
0.5 (post-filter)			
06/29/06	12 (pre-filter)		
	13 (mid-filter)	TBA at 11 ppb	
	2 (post-filter)		
10/19/06	1(e) (pre-filter)		
	ND		
	ND		
4004 Tranquility Ct ✓ GAC system installed and maintained by MDE- OCP	02/11/00	4.8	
	02/17/00	4.4	
	02/22/00	11	
	03/01/00	6	
	04/03/00	22	
	05/15/00	22	
	06/20/00	14	
	07/20/00	9.7	
	09/12/00	7.3	
	11/08/00	3.8	
	01/12/01	3.4	
	03/29/01	ND	
	08/28/02	2e (pre-filter)	
		ND (Mid-filter)	
		ND (Post-filter)	
	02/11/03	100 (pre-filter)	TAME at 28 ppb
		ND (Mid-filter)	
		ND (Post-filter)	
	05/23/03	98 (pre-filter)	TBA at 61 ppb
		ND (Mid-filter)	
		ND (Post-filter)	
	08/15/03	5 (pre-filter)	
		2 (Mid-filter)	
		ND (Post-filter)	
	11/19/03	5 (pre-filter)	
		1 (Mid-filter)	
		3 (Post-filter)	
	05/16/05	7 (pre-filter)	
		0.6 (Mid-filter)	
		0.9 (Post-filter)	
08/17/05	ND (pre-filter)		
	ND (Mid-filter)		
	ND (Post-filter)		
11/28/05	13 (pre-filter)		
	0.6 (Midfilter)		
	ND (post-filter)		
02/15/06	ND (pre-filter)		
	ND (pre-filter)		
	0.6 (post-filter)		
06/29/06	26 (pre-filter)		
10/25/06	ND		
	ND		
	ND		

Table 2 (continued): Drinking Water Sampling Results in the Monrovia Area

GAC Systems ✓ MDE installed	DRINKING WATER WELLS SAMPLED	MTBE Action level at 20 ppb	Other Petroleum Constituents
4007 Tranquility Court (cont) MDE - OCP letter to homeowner dated 10/06/2006 terminating future sampling events.	02/22/05	ND	
	03/01/00	ND	
	04/03/00	ND	
	05/04/00	ND	
	06/15/00	ND	
	08/28/02	ND	
	02/11/03	ND	
	06/18/03	ND	
	10/22/03	0.6	
	06/24/05	0.5	
	10/24/05	ND	
	02/15/06	ND	
	08/24/06	ND	
4008 Tranquility Court MDE - OCP letter to homeowner dated 10/06/2006 terminating future sampling events.	02/22/00	ND	
	03/01/00	2.7	
	04/03/00	3.4	
	05/08/00	3.3	
	06/15/00	2.1	
	07/20/00	ND	
	09/12/00	ND	
	11/08/00	ND	
	01/12/01	ND	
	03/29/01	ND	
	08/28/02	1e	
	02/11/03	ND	
	05/23/03	0.6	
	08/15/03	0.6	
	11/19/03	ND	
	05/16/05	ND	
	10/24/05	ND	
02/15/06	ND		
08/24/06	ND		
4009 Tranquility Court MDE - OCP letter to homeowner dated 10/06/2006 terminating future sampling events.	02/22/00	ND	
	04/03/00	ND	
	05/08/00	ND	
	06/15/00	ND	
	08/28/02	ND	
	02/11/03	ND	
	06/18/03	ND	
	10/22/03	0.9	
	06/24/05	0.5	
	02/15/06	ND	
08/24/06	ND		
4010 Tranquility Court MDE - OCP letter to homeowner dated 10/06/2006 terminating future sampling events.	02/22/00	6.8	
	03/01/00	10	
	04/03/00	6.1	
	05/08/00	8.6	
	06/15/00	8	
	07/20/00	9.7	
	09/12/00	5.9	
	11/08/00	ND	
	01/12/01	ND	
	03/29/01	ND	
	08/28/02	ND	
	02/25/03	ND	
	05/23/03	ND	
	08/15/03	2	
	11/19/03	ND	
	05/16/05	0.7	
	10/26/05	ND	
02/28/06	ND		
08/24/06	ND		

Table 2 (continued): Drinking Water Sampling Results in the Monrovia Area

GAC Systems ✓ MDE installed	DRINKING WATER WELLS SAMPLED	MTBE	Other Petroleum Constituents
4011 Tranquility Court	03/01/00	ND	
	04/04/00	ND	
	05/08/00	ND	
	06/15/00	ND	
	08/28/02	ND	
	02/11/03	ND	
	06/18/03	ND	
	10/30/03	ND	
	08/26/05	ND	
	02/21/06	ND	
4013 Tranquility Court	02/22/00	ND	
	04/03/00	ND	
	05/08/00	ND	
	06/15/00	ND	
	08/28/02	ND	
	02/11/03	ND	
4014 Tranquility Court	03/01/00	ND	
	04/03/00	ND	
	05/08/00	ND	
	06/15/00	ND	
	08/28/02	ND	
	02/11/03	ND	
4015 Tranquility Court	03/01/00	ND	
	04/03/00	ND	
	05/08/00	ND	
	06/15/00	ND	
	08/28/02	ND	
	02/11/03	ND	
4016 Tranquility Court	03/01/00	ND	
	04/03/00	ND	
	05/08/00	ND	
	06/15/00	ND	
	08/28/02	ND	
	02/11/03	ND	
4017 Tranquility Ct	03/07/00	ND	
	04/04/00	ND	
4018 Tranquility Ct	03/07/00	ND	
	04/04/00	ND	
4019 Tranquility Ct	03/07/00	ND	
	04/04/00	ND	