CORRECTIVE ACTION PLAN
WALLY'S CITGO
19200 MIDDLETOWN ROAD
PARKTON, MARYLAND

February 26, 2009

Prepared for:
Maryland Department of the Environment
Oil Control Program
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Baltimore, Maryland 21230

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ENVIRONMENTAL ALLIANCE

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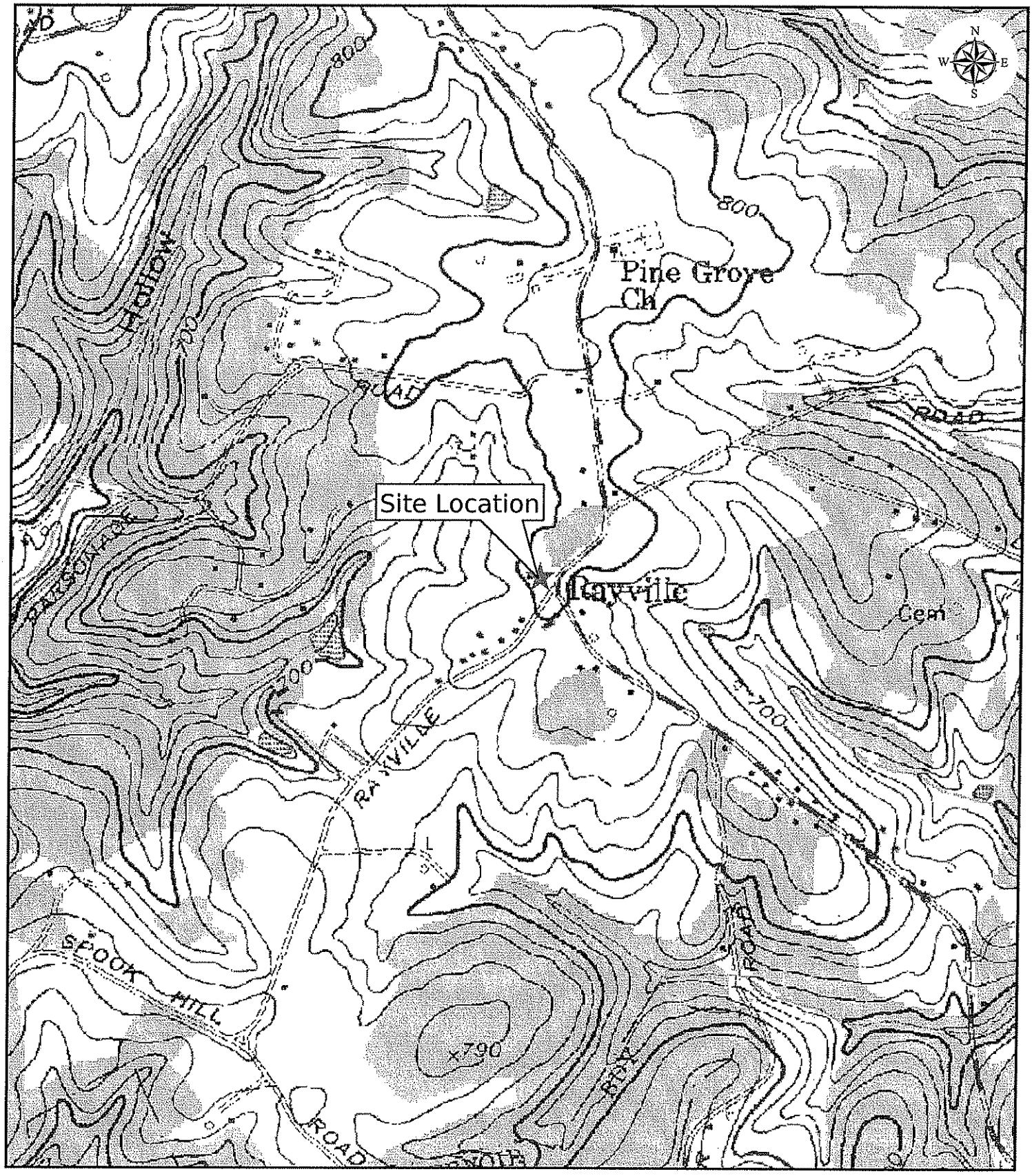
1.0 INTRODUCTION

Environmental Alliance, Inc. (Alliance) of Hockessin, DE, on behalf of Carroll Independent Fuel Company (CIFC), has prepared this Corrective Action Plan (CAP) for the Wally's Citgo (Site) located at 19200 Middletown Road in Parkton, Maryland. On January 9, 2009, the Maryland Department of the Environment (MDE) Oil Control Program (OCP) issued a letter to CIFC requesting that a CAP for the Site be submitted by February 27, 2009. The purpose of the CAP is to evaluate and ultimately remediate the presence of dissolved phase petroleum constituents, primarily methyl-tertiary butyl ether (MtBE) identified in groundwater.

The Site is a gasoline service station located at the intersection of Middletown Road and Rayville Road. Ongoing Site investigation and characterization activities have been conducted with oversight by the MDE OCP under emergency regulations concerning the underground storage tank (UST) system within high-risk groundwater use areas in Maryland and the Code of Maryland Regulations (COMAR) Title 26 Department of the Environment, Subtitle 10 Oil Pollution and Tank Management. This CAP primarily discusses the conceptual design and implementation of a groundwater pumping a treatment system to remediate identified above standard gasoline hydrocarbon constituents. In addition to the groundwater pump and treat system description, this CAP includes proposed pilot testing activities that are intended to provide additional technical data on corrective action applications that may be ultimately implemented at the Site. These field activities will be completed following approval of this CAP by MDE OCP. Depending on the results of the work associated with the proposed pilot tests, remedial actions in addition to those described herein may be proposed for implementation in a final design CAP (will include pilot testing results) to be presented to MDE OCP for approval.

A Site Location Map (topographic map) is depicted on Figure 1-1 and Figure 1-2 depicts a Site Base Map. Section 2.0 of this report presents a brief Site history, including historical remedial actions and investigations, and describes the physical Site characteristics. Section 3.0 evaluates the Seven Risk Factors per MDE guidance. Section 4.0 evaluates remedial alternatives for the

Site. Section 5.0 presents the known elements of the CAP and discusses the proposed pilot test activities. Section 6.0 discusses scheduling details.



★ Site Location

0 1,000 Feet

SOURCE:
USGS Topographic Map
New Freedom Quadrangle

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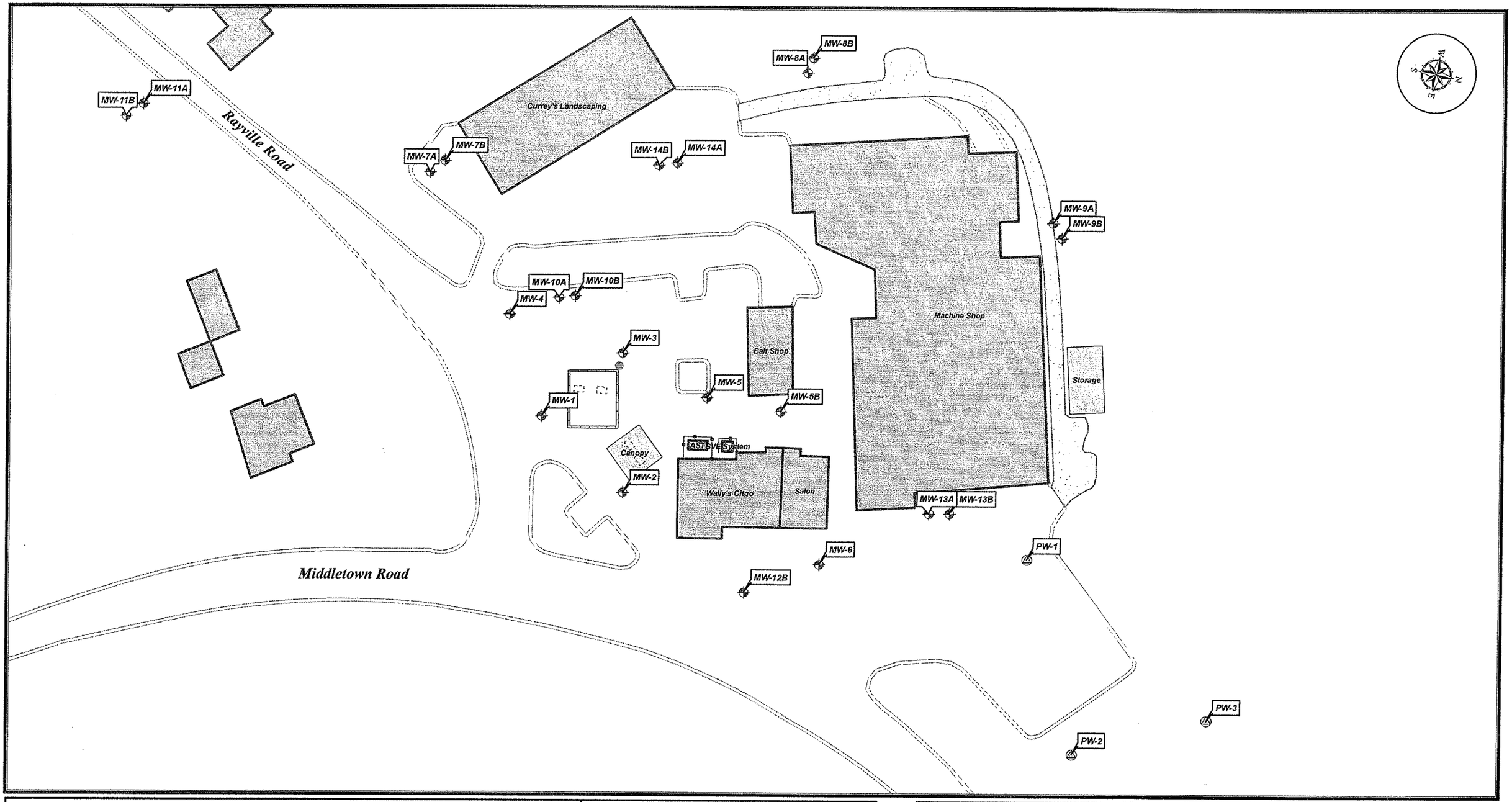
Wally's Citgo Station
19200 Middletown Road
Parkton, MD

Site Location Map

DRAWN BY: SKJ	FILE NAME: 1952-Topo Map	SCALE: SEE DRAWING	FIGURE NO: 1-1
APPROVED BY:	PROJECT NO.: 2083	DATE: 02/17/2009	



Legend

- Monitoring Well
- Potable Well
- Abandoned Well
- Edge of Pavement
- Fence
- Tank Field
- Building
- Canopy
- Dispenser
- Gravel

0 75 150 Feet

Source:
-Site features based on Baltimore County GIS data.

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Wally's Citgo Station
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SITE BASE MAP

DRAWN BY: AGG	FILE NAME: 1962-Base Map	SCALE: SEE DRAWING	FIGURE NO: 1-2
APPROVED BY: ATP	PROJECT NO: 1962	DATE: 02/05/09	

2.0 SITE BACKGROUND

2.1 Site Description

Site features include a one-story station building with a convenience market and delicatessen. Attached to the rear of the station building is a beauty salon and west of the station building in the same lot is a gunsmith shop/apartment. To the north of the station building is an industrial manufacturing complex that produces precision-machined components for military defense and commercial applications (machine shop). To the west of the station building is a large pole building that is used for storage by the machine shop and a construction/landscaping company (Curry's Landscaping). Residential properties are located to the southeast and southwest along Rayville Road.

The UST system for the station consists of a 12,000-gallon regular unleaded gasoline UST, a 10,000-gallon super unleaded gasoline UST, an 8,000-gallon / 2,000 gallon split tank containing premium unleaded gasoline and off-road diesel gasoline respectively. A 2,000-gallon diesel aboveground storage tank (AST) is located at the southwest corner of the station building.

The majority of the Site and adjacent area (roadways and parking lots) surface is paved. Most precipitation becomes overland flow that follows local topography to drainage swales or a storm sewer system along Middletown Road (runoff from the northeast portion of the Site only).

2.2 Historical Summary of Previous Investigations and Site Activities

Initial investigation activities were completed at the Site in August 2005 and were reported in October 2005 to comply with MDE OCP emergency regulations concerning UST systems within high risk groundwater use areas in Maryland. The UST system was replaced in January 2008 with a new UST system with over-excavation of underlying soil followed by off-Site disposal.

Refer to the "UST System Closure Letter" dated March 7, 2008 for further details. A general chronology of Site activities is as follows:

- August 9-10, 2005 – Three monitoring wells, MW-1, MW-2, and MW-3, were installed at the Site to comply with the MDE emergency regulations.
- September 12, 2005 – Monitoring wells gauged and sampled.
- September 15, 2005 – On-Site potable well sampled.
- October 4, 2005 – Alliance submits report of results to MDE. Monitoring well MW-3 reported above MDE "level of concern" for benzene (110 µg/L) and MtBE (17,000 µg/L).
- October 18, 2005 – MDE submits letter to CIFC requesting, UST system testing and well receptor survey, and notifies local health department of above standard levels in groundwater monitoring wells.
- November 2-15, 2005 – CIFC samples and/or obtains records of sampling for select potable wells within ½ mile radius of the Site.
- November 9-10, 2005 – Alliance installs three additional monitoring wells, MW-4, MW-5, and MW-6, on-Site for further horizontal delineation.
- November 10, 2005 – Meeting at MDE office in Baltimore to discuss Site conditions and current results.
- November 29, 2005 – Alliance submits results of the well receptor survey and results of the UST system testing.
- September – December 2005 – A total of 35 potable wells were sampled in the area including the station supply well (PW-1); 25 by Alliance and 10 by others. Off-Site potable well sampling continued on a monthly or quarterly basis at select wells.
- November 2005 – CIFC installed point of entry treatment (POET) systems on two private, residential wells (1606 and 1608 Rayville Road) in November 2005.
- December 1, 2005 – On-Site monitoring wells sampled.
- January 20, 2006 – On-Site monitoring wells sampled. On-Site wells sampled quarterly thereafter.

- January 30, 2006 – Alliance conducts soil vapor extraction remedial feasibility testing on the UST field observation wells. A short-term groundwater pump test is also conducted on MW-3.
- March 14, 2006 –"Environmental Assessment Report" submitted by Alliance to MDE.
- March 30, 2006 – Alliance conducted on-Site soil borings SB-1 through SB-11 and SB-11A.
- March-April 2006 – Alliance installs SVE piping at Site to tank field monitoring wells.
- June 1, 2006 – Alliance submitted a letter report to MDE in response to MDE letter dated May 2, 2006.
- June 20, 2006 – Alliance submits a "Work Plan Additions and Changes" letter to MDE as a notice of additions/changes to the proposed monitoring well locations and other future work that was presented in the June 1, 2006 letter report.
- August 8, 2006 – SVE system startup occurs with monthly monitoring to follow.
- August 10, 2006 – Alliance submitted a letter report to MDE in response to MDE letter dated July 7, 2006.
- August 24-31, 2006 – Alliance installs seven additional monitoring wells, MW-3S, MW-10A, and MW-10B on-Site, and MW-7A, MW-7B, MW-8A, MW-8B, MW-9A, and MW-9B off-Site for further horizontal delineation.
- September 18, 19 and October 13, 2006 – Alliance oversees down-hole geophysical survey on select on-Site wells.
- February 6, 2007 – Alliance submitted a "Hydrogeological Investigation Update Report and Work Plan" to MDE.
- May 8, 2007 – Alliance installs two additional monitoring wells, MW-10A and MW-10B, on-Site for further horizontal delineation.
- May 23 through June 4, 2007 – Alliance conducted an aquifer test at the Site (on-Site well MW-10A).
- June 15, 2007 – Alliance submitted a "Hydrogeologic Investigation Update Report, Groundwater Delineation Work Plan, and Soil Alternative Corrective Action Plan" to MDE.
- July 30, 2007 – Alliance submitted a "Pump Testing Report" to MDE.

- December 4-6, 2007 – Alliance conducted on-Site soil borings SB-12 through SB-22.
- December 28, 2007 – Alliance submitted "December 2007 Soil Boring Investigation Results" letter to MDE.
- January 23, 2008 – Alliance abandoned monitoring well MW-3S.
- January 24-29, 2008 – Alliance oversaw closure of existing UST system with corresponding soil excavation and installation of new UST system.
- March 7, 2008 – Alliance submitted "UST System Closure Letter" to MDE.
- May 2008 – Point of entry treatment (POET) system installed on additional private, residential well (1612 Rayville Road).
- June 26-July 3, 2008 – Alliance installs six additional monitoring wells, MW-11A, MW-11B, MW-12B, MW-13A, MW-13B, MW-14A, and MW-14B, off-Site for further horizontal delineation.
- January 9, 2009 – MDE requested in a directive letter that a CAP be prepared as well as additional investigation requirements for the Site.

2.2.1 Remedial Actions Implemented to Date

Historical remedial actions conducted at the Site have focused on shallow overburden soils in the vicinity of the former UST system. An SVE system consisting of two extraction points (OW-1 and OW-2 in the tank field) operated from August 2006 to January 2008, with an estimated 1,772 pounds of gasoline hydrocarbons removed as shown on Figure 2-1. The SVE system was shut down after mass recovery levels had reached an asymptotic level and the former UST system was removed.

During UST system closure (and installation of the current UST system) in January 2008, soil excavation and off-Site disposal was implemented at locations where Site soil identified to exceed applicable remediation standards (Maryland Protection of Groundwater or Non-Residential Cleanup standards). The excavation activities included removing a total of approximately 99.25 tons of impacted soil in the areas around historical soil borings SB-7 and

SB-11A, located northeast of the UST system. Refer to Figure 2-2 for soil boring locations. Refer to Section 2.4 for additional details.

2.3 Geology and Hydrogeology Summary

The Site is located within the Upland Section of the Maryland Piedmont Plateau Province (Piedmont) between the Lowland Section of the Piedmont Plateau Province to the west and Coastal Plain Province to the east. The Piedmont consists of valleys and low rolling hills that rise gradually westward. The Piedmont Plateau Province consists of hard, crystalline igneous and metamorphic bedrock extending from the inner edge of the Coastal Plain westward to eastern boundary of the Blue Ridge Province (west of the Lowland Section). Bedrock in the Piedmont consists of schist, gneiss, gabbro, and other highly metamorphosed sedimentary and igneous rocks (probable volcanic origin) as these rocks have been intruded by granitic plutons and pegmatites in several areas.

The Site is underlain by the Upper Cambrian/Lower Ordovician (Period uncertain) Prettyboy Schist Formation of the Wissahickon Group that was previously identified as the Upper Peltic Schist Formation. The Prettyboy Schist Formation consists of uniform, fine grained plagioclase chlorite-muscovite-quartz schist. Commonly, magnetite and albite porphyroblasts ranging from 1 to 10 mm in diameter occur. Locally, sparse limonitized pyrite cubes may occur (William P. Crowley, et. al., 1976, A Brief Description of the Geology of Maryland; Maryland Geologic Survey, Geologic Map of Baltimore County and City).

Site geology characterized by Alliance field activities conducted through July 2008 shows the unconsolidated sediment to consist of silt, clayey silt, and fine sand with increased mica with depth and have a thickness ranging from three (MW-5B) to 29 feet (MW-10A). The underlying saprolite (weathered rock with drill cuttings having a micaceous silt consistency) has a thickness ranging from four (MW-5) to 32 feet (MW-13B). The unconsolidated sediment and saprolite comprising the regolith at the Site are underlain by fractured metamorphic bedrock identified as the Prettyboy Schist Formation of the Wissahickon Group. The subsurface geology encountered

by Alliance during the well installation activities was consistent with published information for the Site area.

Groundwater beneath the Site occurs under semi-confined to confined conditions in the green micaceous schist bedrock (Prettyboy Schist described in Section 2.3) and was observed at water-bearing zones ranging in depth from 33.5 (MW-5) to 60 feet (MW-10A) below ground surface (bgs). No groundwater has been observed in the soil or saprolite overlying bedrock during implementation of the subsurface investigation activities conducted to date by Alliance as confirmed by well MW-3S installed/screened in the regolith to the top of bedrock showing no accumulation of groundwater until the well was abandoned in January 2008 in preparation of UST system upgrade activities.

Groundwater flow through the schist bedrock beneath the Site is thought to be predominantly determined by structural features (i.e., strike and dip of foliation and fractures), which creates a secondary permeability with a negligible flow component attributed to primary permeability within the rock matrix (movement of water through material comprising the local bedrock). The strike of the fractures (two sets) and foliation (one dominant direction) identified by the geophysical logs in both shallow and deep bedrock wells ranged from 210° to 201°. This narrow range in strike of the structural features may provide a preferential pathway for groundwater flow through the bedrock. Flow of groundwater through the bedrock aquifer system may be influenced by the use of residential and commercial potable water supply wells installed into the bedrock around the Site.

The Site is situated on a ridge that is generally flat at an elevation of approximately 800 feet, with the surrounding land dipping to the west, south, and east away from the Site (refer to Figure 1-1 showing area topography). The Site surface is mostly paved, with storm drains located along Middletown Road to the east. Precipitation at the Site becomes overland flow that runs down topographic slope toward the west, south, and east, with a portion of the flow collected in the storm water system along Middletown Road. The closest surface water body to the Site is a tributary of Frog Hollow, approximately 1,300 feet to the west. The closest point of Frog Hollow

Cove, off of the Prettyboy Reservoir, is approximately one mile to the west-southwest of the Site. The Prettyboy Reservoir is located approximately two miles southwest of the Site. A tributary of Owl Branch is located approximately 1,800 feet east of the Site.

The Site and neighboring properties are supplied by private potable wells.

2.4 Soil Quality Data Summary

Two distinct soil boring investigations were conducted at the Site in March 2006 and December 2007. Soil borings SB-1 through SB-11 and SB-11A were installed during the March 2006 soil investigation activities. Soil borings SB-12 through SB-22 were installed during the December 2007 soil investigation activities.

The March 2006 soil boring event procedures and results were discussed in detail in the June 1, 2006 letter report to MDE. Based on the shallow depth to refusal and review of the field screening data, only soil samples SB-1, SB-3, SB-5, SB-7, SB-11 and SB-11A were chosen for laboratory analyses of total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) via EPA method 8015B and volatile organic compounds (VOCs) including benzene, toluene, ethylbenzene, and xylenes (BTEX) and fuel oxygenates via EPA method 8260. TPH-diesel range organics (DRO) analysis via EPA method 8015B was also selected for samples SB-7, SB-11 and SB-11A due to their proximity to the diesel product line. Soil sample analyses indicated ethylbenzene, TPH-GRO and TPH-DRO were present at concentrations above respective MDE Protection of Groundwater or Non-Residential Cleanup screening values at boring SB-7 from the interval 10-11 feet bgs. Soil sample SB-11A from zero to one feet bgs reported TPH-DRO above its applicable screening value. All other soil samples reported analytes as either non-detect or below their applicable screening values. Refer to Table 2-1 for a summary of historical soil sampling results and Figure 2-2 for soil boring locations.

The December 2007 soil boring event procedures and results were discussed in detail in the "December 2007 Soil Boring Investigation Results" letter to MDE. The rationale for the soil

boring locations was to confirm field screening data previously collected during soil boring and well installation activities as well as define soil sample data showing the presence of petroleum above MDE action levels. All soil samples were submitted for full VOCs analysis including BTEX and fuel oxygenates via EPA Method 8260, TPH-GRO analysis via EPA Method 8015 and TPH-DRO analysis via EPA Method 8015. Soil sample analyses reported all analytes as either non-detect or below their respective screening values. Refer to Table 2-1 for a summary of historical soil sampling results and Figure 2-2 for soil boring locations.

In January 2008, the existing UST system was closed as detailed in the "UST System Closure Letter" dated March 7, 2008. As part of this closure, the former UST field was over-excavated for the installation / construction of a new UST system. In addition, areas around the former dispensers beneath the canopy were over-excavated to make room for the new product dispensing system. Concurrent to these UST closure activities, the areas around soil borings SB-7 and SB-11A were excavated to address the soil impact above MDE standards discussed above. All post-excavation sampling results were below respective screening values. Refer to the "UST System Closure Letter" for complete details of these excavations. This excavation removed all soils identified to contain constituents above a respective Protection of Groundwater or Non-Residential Cleanup standard. Note that during excavation activities, on January 30, 2008, two additional remedial injection/SVE points were installed within the new UST field for any potential remedial action that might be implemented at the Site. Refer to the "UST System Closure Letter" for injection/SVE point construction and installation details.

2.5 Groundwater Elevation and Quality Data Summary

The most recent Site groundwater monitoring event for which elevation and analytical results have been obtained occurred in November 2008. The groundwater-gauging results collected during the groundwater-sampling event ranged from an elevation of 746.86 feet (monitoring well MW-11A) to 760.02 feet (monitoring well MW-5). Site monitoring wells MW-1 through MW-6, MW-7A, MW-8A, MW-9A, MW-10A, MW-11A, MW-13A, and MW-14A are constructed to intercept similar depths and monitor groundwater in the upper bedrock encountered at the Site.

The groundwater elevations of the upper bedrock monitoring wells indicate a primary groundwater flow direction to the west-southwest with a secondary flow component to the north. Wells MW-5B, MW-7B, MW-8B, MW-9B, MW-10B, MW-11B, MW-12B, MW-13B, and MW-14B, are constructed to monitor groundwater in the lower bedrock. Based on the configuration of Site monitoring wells, the groundwater elevation at the lower bedrock monitoring wells indicates a primary flow direction to the west-southwest with a secondary component of flow to the east. Figure 2-3 presents the upper bedrock groundwater contours and Figure 2-4 depicts the lower bedrock groundwater contours.

Groundwater samples were collected from all on-Site monitoring wells in November 2008. Sampling procedures are summarized in the "Quarterly Update Report" dated December 22, 2008. The collected groundwater samples were containerized within laboratory-supplied bottleware and placed within an iced cooler. The groundwater samples were shipped to Lancaster Laboratories, Inc. (Lancaster Labs) under proper chain of custody, where they were analyzed for TPH-GRO and TPH-DRO in accordance with EPA Method 8015B and for VOCs including fuel oxygenates in accordance with EPA Method 8260.

Analytical results indicated that the groundwater samples collected from monitoring wells were above MDE Generic Numeric Cleanup Standards (GNCS) for benzene, MtBE, TPH-GRO and/or TPH-DRO. Analytical data from the monitoring well network is summarized in Table 2-2. A review of this data indicates an overall trend of decreasing constituent concentrations in Site wells from maximum values reported in 2007 sampling results. November 2008 groundwater analytical results are depicted on Figure 2-5.

Impacts to off-Site potable wells were identified in 2005. Potable well sampling of area residences has been on-going ever since. Historically, MtBE and benzene are the only two constituents identified to exceed their respective GNCS. Benzene has been found at concentrations slightly about its GNCS in the potable wells at 1606 and 1608 Rayville Road. MtBE has been found at concentrations above its GNCS in the potable wells at 1606, 1608, and 1612 Rayville Road. Monthly and quarterly potable well sampling activities occurring during the

period of September through November, 2008 are described in detail the "Quarterly Update Report" dated December 22, 2008. Refer to Table 2-3 for a summary of potable well groundwater data. Figure 2-6 depicts an MtBE and benzene concentration map within a half-mile and quarter-mile radii showing potable well data.

TABLE 2-1
SOIL ANALYTICAL DATA
WALLY'S CITGO
19200 MIDDLETON ROAD
PARKTON, MARYLAND

Location ID	Sample Date	Sample Depth (feet)	Constituents of Concern (ug/kg)										
			BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MTBE	TBA	TAME	ETBE	DIPE	TPH-DRO	TPH-GRO
MDE Generic Numeric Cleanup Standards for Soil-Non-Residential			**100,000**	**41,000,000**	**20,000,000**	**410,000,000**	**2,700,000**	**NG**	**NG**	**NG**	**NG**	**620,000**	**620,000**
MDE Generic Numeric Cleanup Standards for the Protection of Groundwater			5	8,800	15,000	170,000	NG	NG	28,000	NG	NG	NG	NG
SB-1	03/30/06	11' - 12'	< 0.6	< 1	< 1	< 1	18	--	--	--	--	--	--
SB-3	03/30/06	14' - 15'	< 0.6	< 1	< 1	< 1	360	--	--	--	--	--	--
SB-5	03/30/06	12' - 13'	< 0.6	< 1	< 1	< 1	420	--	--	--	--	--	--
SB-7	03/30/06	10' - 11'	< 68	7,200	**21,000**	160,000	< 68	--	--	--	--	**1,700**	**4,900**
SB-8	03/30/06	9' - 10'	< 0.6	< 1	< 1	< 1	< 0.6	--	--	--	--	--	--
SB-11	03/30/06	11' - 12'	< 0.6	< 1	< 1	< 1	< 0.6	--	--	--	--	94	11
SB-11A	03/30/06	1' - 2'	< 75	< 150	< 150	< 150	< 75	--	--	--	--	**3,500**	210
SB-12	12/04/07	22' - 23'	< 0.6	< 1	< 1	< 1	< 1	6	< 1	< 1	< 24	< 4,500	< 200
SB-13	12/05/07	17' - 20'	< 0.5	< 1	< 1	< 1	< 1	7	< 1	< 1	1,300	< 4,300	< 200
SB-14	12/04/07	21' - 22'	< 0.6	< 1	< 1	< 1	8	470	< 1	< 1	2,200	< 4,400	300 J
SB-15	12/06/07	15' - 16'	< 0.5	< 1	< 1	< 1	< 1	59	< 1	< 1	37	< 4,300	< 200
SB-15	12/06/07	18' - 19'	< 0.5	< 1	< 1	< 1	< 1	0.7	< 1	< 1	< 21	< 4,100	< 200
SB-16	12/04/07	15' - 17'	< 0.5	< 1	< 1	< 1	< 1	3	< 1	< 1	< 20	< 4,300	< 200
SB-17	12/05/07	17' - 19'	< 0.5	< 1	< 1	< 1	< 1	7	< 1	< 1	< 22	< 4,600	< 200
SB-18	12/06/07	8' - 10'	< 0.5	< 1	< 1	< 1	< 1	1	< 1	< 1	< 21	< 4,300	< 200
SB-19	12/06/07	19' - 20'	< 0.6	< 1	< 1	< 1	< 1	2	< 1	< 1	< 24	< 4,500	< 200
SB-20	12/05/07	11' - 14'	< 0.6	< 1	< 1	< 1	< 1	6	< 1	< 1	33	< 4,600	< 200
SB-21	12/05/07	16' - 17'	< 0.6	< 1	< 1	< 1	2	300	< 1	< 1	670	< 4,400	< 200
SB-21	12/05/07	19' - 21'	< 0.5	< 1	< 1	< 1	< 1	61	< 1	< 1	510	< 4,600	< 200
SB-22	12/06/07	13' - 16'	< 0.5	< 1	< 1	< 1	< 1	< 0.5	< 1	< 1	< 21	< 4,200	< 200

ND = Not Detected
NG = No Guideline
--- = Not Applicable / Not Available
J = Estimated Value
ft = feet
ug/kg = micrograms per kilogram
< = analyte not detected at or above the specified laboratory detection limit
Concentrations formatted in **bold** are in exceedance of the applicable MDE guidelines
TPH analysis conducted in accordance with SW8015B.
Volatile organic compound (VOC) analysis conducted in accordance with SW8260B; only BTEX and oxygenates are summarized
MDE GWPROT = Maryland Department of the Environment, Protection of Groundwater, August 2001

MTBE = Methyl-tertiary butyl-ether
TPH = Total petroleum hydrocarbons
GRO = gasoline-range organics
DRO = diesel-range organics
TAME = tert-amyl methyl-ether
DIPE = di-isopropyl ether or isopropyl ether
ETBE = Ethyl T-Butyl Ether
TBA = tert-butyl alcohol

TABLE 2-2
GROUNDWATER MONITORING DATA
WALLY'S CITGO
19200 MIDDLETOWN RD
PARKTON, MARYLAND

Location ID	Top of Casing (ft)	Sample Date	Sample Interval	Depth to Water (ft)	Water Elevation (ft)	Constituents of Concern (ug/l)											
						BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MtBE	TBA	DIPE	ETBE	TAME	1,2-DCA	TPH-DRO	TPH-GRO
MDE GNCS, Type I and II Aquifers						5	1,000	700	10,000	20	NG	NG	NG	NG	5	47	47
MW-1	802.09	09/12/05		41.25	760.84	3 J	ND	ND	14	7	--	--	--	--	--	--	--
		12/01/05		41.50	760.59	3 J	1 J	ND	17	13	--	--	--	--	--	--	--
		01/20/06		39.02	763.07	2 J	ND	ND	10	3 J	--	--	--	--	--	--	--
		05/12/06		41.52	760.57	3 J	ND	ND	11	3 J	--	--	--	--	--	--	--
		09/20/06		42.71	759.38	3 J	ND	ND	12	4 J	48 J	ND	ND	ND	ND	**360**	**900**
		11/02/06		42.04	760.05	2 J	ND	ND	6	6	35 J	ND	ND	ND	ND	**280**	**360**
		04/24/07		36.33	765.76	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**220**	ND
		08/08/07		42.46	759.63	ND	ND	ND	ND	0.9 J	ND	ND	ND	ND	ND	**270**	**110**
		11/07/07		45.06	757.03	1 J	ND	ND	4 J	**22**	26 J	ND	ND	0.8 J	ND	**12,000**	**300**
		02/21/08		40.77	761.32	ND	ND	ND	1 J	**61**	33 J	ND	ND	1 J	ND	**260**	**120**
		05/14/08		36.32	765.77	ND	ND	ND	ND	6	ND	ND	ND	ND	ND	**360**	ND
		08/13/08		40.88	761.21	ND	ND	ND	ND	4 J	ND	ND	ND	ND	ND	**180**	ND
		11/19/08		43.45	758.64	ND	ND	ND	ND	8	ND	ND	ND	ND	ND	**140**	ND
MW-2	801.83	09/12/05		42.66	759.17	4 J	ND	ND	29	7	--	--	--	--	--	--	--
		12/01/05		40.62	761.21	3 J	ND	ND	26	5 J	--	--	--	--	--	--	--
		01/20/06		38.97	762.86	1 J	ND	ND	10	3 J	--	--	--	--	--	--	--
		05/12/06		40.68	761.15	1 J	ND	ND	5	2 J	--	--	--	--	--	--	--
		09/20/06		41.63	760.20	1 J	ND	ND	6	3 J	41 J	ND	ND	ND	ND	**240**	**800**
		11/02/06		40.82	761.01	0.9 J	ND	ND	4	2 J	26 J	ND	ND	ND	ND	**290**	**580**
		04/24/07		36.45	765.38	ND	ND	ND	ND	0.7 J	17 J	ND	ND	ND	ND	**1,700**	36 J
		08/08/07		41.35	760.48	ND	ND	ND	ND	1 J	ND	ND	ND	ND	ND	ND	**120**
		11/07/07		43.38	758.45	ND	ND	ND	2 J	2 J	11 J	ND	ND	ND	ND	ND	**130**
		02/21/08		40.77	761.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**190**	ND
		05/14/08		36.95	764.88	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**370**	ND
		08/13/08		39.89	761.94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**190**	ND
		11/19/08		42.13	759.70	ND	ND	ND	ND	0.6 J	ND	ND	ND	ND	ND	**89 J**	ND

TABLE 2-2
GROUNDWATER MONITORING DATA
WALLY'S CITGO
19200 MIDDLETOWN RD
PARKTON, MARYLAND

Location ID	Top of Casing (ft)	Sample Date	Sample Interval	Depth to Water (ft)	Water Elevation (ft)	Constituents of Concern (ug/l)											
						BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MtBE	TBA	DIPE	ETBE	TAME	1,2-DCA	TPH-DRO	TPH-GRO
MDE GNCS, Type I and II Aquifers						5	1,000	700	10,000	20	NG	NG	NG	NG	5	47	47
MW-3	801.45	09/12/05		41.35	760.10	**110**	120	34	380	**17,000**	--	--	--	--	--	--	--
		12/01/05		40.58	760.87	**20**	3 J	6	210	**630**	--	--	--	--	--	--	--
		01/20/06		38.85	762.60	**18**	53	21	300	**190**	--	--	--	--	--	--	--
		05/12/06		40.58	760.87	**100**	110	40	350	**15,000**	--	--	--	--	--	--	--
		09/20/06		41.44	760.01	**17**	12	7	170	**270**	140	3 J	ND	12	ND	**990**	**3,400**
		11/02/06		40.95	760.50	**16 J**	8 J	ND	130	**6,500**	2,900	31 J	ND	230	ND	**1,300**	**12,000**
		04/24/07		36.51	764.94	ND	ND	ND	28	**29,000**	13,000	120	ND	1,000	ND	**2,400**	**36,000**
		08/08/07		41.12	760.33	3 J	ND	ND	29	**26,000**	12,000	91	ND	940	ND	**1,300**	**34,000**
		11/07/07		42.80	758.65	ND	ND	ND	ND	**81,000**	28,000	300 J	ND	1,900	ND	**1,700**	**87,000**
		02/21/08		40.68	760.77	ND	ND	ND	ND	**69,000**	26,000	190 J	ND	1,700	ND	**2,500**	**89,000**
		05/14/08		37.17	764.28	3 J	ND	ND	26	**1,800**	1,200	10 J	ND	46	ND	**600**	**1,600**
		08/13/08		39.90	761.55	ND	ND	ND	29 J	**8,600**	5,100	29 J	ND	230	ND	**940**	**3,400**
		11/19/08		42.18	759.27	ND	ND	ND	21 J	**8,600**	5,100	21 J	ND	150	ND	**880**	**8,100**
MW-3S	--	09/20/06				**Well Dry**											
		11/02/06				**Well Dry**											
		04/24/07				**Well Dry**											
		08/08/07				**Well Dry**											
		11/07/07				**Well Dry**											
		01/23/08				**Well Abandoned**											
MW-4	801.35	12/01/05		40.79	760.56	**46**	5 J	2 J	67	**1,400**	--	--	--	--	--	--	--
		01/20/06		37.04	764.31	3 J	0.9 J	ND	6	**150**	--	--	--	--	--	--	--
		05/12/06		40.80	760.55	**53**	2 J	ND	26	390	--	--	--	--	--	--	--
		09/20/06		40.98	760.37	**76**	15	3 J	85	**2,700**	1,000	24	ND	76	ND	**670**	**5,500**
		11/02/06		41.30	760.05	**55**	8 J	ND	62	**5,800**	2,300	34 J	ND	140	ND	**1,200**	**10,000**
		04/24/07		36.75	764.60	4 J	ND	ND	4 J	**780**	360	5 J	ND	18	ND	**340**	**1,400**
		08/08/07		41.40	759.95	ND	ND	ND	ND	**230**	ND	1 J	ND	4 J	ND	ND	**380**
		11/07/07		43.40	757.95	ND	ND	ND	ND	**970**	210	6 J	ND	20	ND	**180**	**1,300**
		02/21/08		40.90	760.45	2 J	ND	ND	7 J	**2,600**	1,300	9 J	ND	47	ND	**430**	**3,700**
		05/14/08		37.30	764.05	ND	ND	ND	ND	**140**	ND	ND	ND	2 J	ND	**64 J**	**85**
		08/13/08		39.95	761.40	ND	ND	ND	ND	**180**	ND	1 J	ND	3 J	ND	**70 J**	**75**
		11/19/08		42.39	758.96	ND	ND	1 J	4 J	**460**	66 J	2 J	ND	8	ND	**200**	**460**

TABLE 2-2
GROUNDWATER MONITORING DATA
WALLY'S CITGO
19200 MIDDLETOWN RD
PARKTON, MARYLAND

Location ID	Top of Casing (ft)	Sample Date	Sample Interval	Depth to Water (ft)	Water Elevation (ft)	Constituents of Concern (ug/l)											
						BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MtBE	TBA	DIPE	ETBE	TAME	1,2-DCA	TPH-DRO	TPH-GRO
MDE GNCS, Type I and II Aquifers						5	1,000	700	10,000	20	NG	NG	NG	NG	5	47	47
MW-5	802.18	12/01/05		40.75	761.43	**210**	**4,000**	**1,100**	7,100	**2,800**	--	--	--	--	--	--	--
		01/20/06		39.55	762.63	**210**	**4,700**	**950**	7,600	**3,300**	--	--	--	--	--	--	--
		05/12/06		40.80	761.38	**150**	960	240	2,300	**900**	--	--	--	--	--	--	--
		09/20/06		40.97	761.21	**170**	1900	570	3,600	**1,800**	48,000	110	ND	110	**59**	**49,000**	**31,000**
		11/02/06		41.00	761.18	**34**	130	55	690	**1,000**	18,000	53	ND	63	ND	**19,000**	**5,900**
		04/24/07		36.94	765.24	**6**	7	15	180	**37**	320	1 J	ND	3 J	ND	**1,300**	**1,500**
		08/08/07		41.33	760.85	**6**	4 J	39	160	**63**	1,400	2 J	ND	3 J	2 J	**4,600**	**1,500**
		11/07/07		43.04	759.14	**6**	3 J	10	32	**100**	700	3 J	ND	6	2 J	**3,300**	**540**
		02/21/08		40.83	761.35	3 J	4 J	21	170	**31**	250	ND	ND	2 J	ND	**3,700**	**1,200**
		05/15/08		37.63	764.55	2 J	11	23	120	12	1,000	ND	ND	0.9 J	ND	**3,800**	**710**
		08/13/08		40.11	762.07	3 J	6	49	100	16	4,200	ND	ND	1 J	ND	**4,300**	**660**
		11/19/08		42.16	760.02	**10**	25	180	80	**42**	9,400	2 J	ND	2 J	6	**8,900**	**1,700**
MW-5B	802.64	08/14/08		41.05	761.59	3 J	ND	ND	3 J	0.8 J	17 J	ND	ND	ND	ND	**670**	38 J
		11/20/08		43.02	759.62	2 J	ND	ND	2 J	0.6 J	24 J	ND	ND	ND	ND	**720**	**61**
MW-6	801.08	01/20/06		43.74	757.34	ND	ND	ND	ND	ND	--	--	--	--	--	--	--
		05/12/06		43.72	757.36	ND	ND	ND	ND	0.5 J	--	--	--	--	--	--	--
		09/20/06		42.53	758.55	0.7 J	30	13	110	1 J	12 J	ND	ND	ND	ND	**100**	**440**
		11/02/06		45.14	755.94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	41 J	ND
		04/23/07		38.21	762.87	ND	ND	ND	ND	0.8 J	ND	ND	ND	ND	ND	**430**	ND
		08/08/07		42.04	759.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
		11/07/07		45.90	755.18	ND	ND	ND	ND	0.5 J	ND	ND	ND	ND	ND	**49 J**	ND
		02/21/08		46.84	754.24	ND	ND	ND	ND	0.7 J	ND	ND	ND	ND	ND	**89 J**	ND
		05/14/08		40.72	760.36	ND	ND	ND	ND	0.8 J	ND	ND	ND	ND	ND	**55 J**	ND
		08/13/08		41.44	759.64	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**110**	ND
		11/19/08		44.72	756.36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	45 J	ND
MW-7A	796.66	09/20/06		44.58	752.08	9 J	ND	ND	ND	**9,500**	3,200	61	ND	290	ND	**650**	**16,000**
		11/02/06		44.59	752.07	**33 J**	ND	ND	11 J	**15,000**	4,100	78	ND	440	ND	**690**	**21,000**
		04/24/07		40.55	756.11	3 J	ND	ND	ND	**6,900**	1600	44	ND	210	ND	**510**	**8,900**
		08/09/07		43.40	753.26	**8 J**	ND	ND	ND	**8,500**	1,800	35	ND	220	ND	**260**	**11,000**
		11/08/07		45.56	751.10	**15 J**	ND	ND	ND	**15,000**	4,100	87 J	ND	400	ND	**760**	**19,000**
		02/22/08		45.51	751.15	**18 J**	ND	ND	ND	**18,000**	5,800	85	ND	490	ND	**850**	**23,000**
		05/15/08		41.94	754.72	**5 J**	ND	ND	ND	**10,000**	3,000	61	ND	290	ND	**460**	**7,400**
		08/14/08		42.65	754.01	**5 J**	ND	ND	ND	**7,800**	1,600	42	ND	200	ND	**420**	**1,600**
		11/21/08		45.03	751.63	ND	ND	ND	ND	**13,000**	3,100	47 J	ND	290	ND	**480**	**10,000**

TABLE 2-2
GROUNDWATER MONITORING DATA
WALLY'S CITGO
19200 MIDDLETOWN RD
PARKTON, MARYLAND

Location ID	Top of Casing (ft)	Sample Date		Sample Interval	Depth to Water (ft)	Water Elevation (ft)	Constituents of Concern (ug/l)											
							BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MtBE	TBA	DIPE	ETBE	TAME	1,2-DCA	TPH-DRO	TPH-GRO
MDE GNCS, Type I and II Aquifers							5	1,000	700	10,000	20	NG	NG	NG	NG	5	47	47
MW-7B	796.64	09/20/06			>100	--	--	--	--	--	--	--	--	--	--	--	--	--
		11/02/06			84.88	711.76	--	--	--	--	--	--	--	--	--	--	--	--
		04/23/07			40.29	756.35	--	--	--	--	--	--	--	--	--	--	--	--
		05/01/07	†	94'-114'	--	--	1 J	ND	ND	ND	**3,400**	200	18	ND	78	ND	**300**	**5,300**
		05/01/07	‡	94'-114'	--	--	ND	ND	ND	ND	**3,500**	210	18	ND	78	ND	**270**	**5,200**
		05/02/07	†	206'-266'	--	--	ND	ND	ND	ND	**3,400**	220	16	ND	73	ND	**190**	**5,300**
		05/02/07	‡	206'-266'	--	--	ND	ND	ND	ND	**2,700**	170	12	ND	56	ND	**430**	**3,700**
		08/09/07			42.20	754.44	2 J	3 J	ND	1 J	**2,200**	230	11	ND	60	ND	**480**	**3,000**
		11/08/07			45.48	751.16	1 J	ND	ND	ND	**1,400**	150 J	8 J	ND	36	ND	**550**	**1,900**
		02/22/08			45.88	750.76	1 J	0.7 J	ND	3 J	**1,100**	230	5	ND	29	ND	**500**	**1,700**
		05/15/08			41.32	755.32	1 J	ND	ND	2 J	**1,100**	200	7 J	ND	28	ND	**390**	**890**
		08/14/08			51.83	744.81	**5 J**	ND	ND	ND	**3,700**	1,400	19 J	ND	92	ND	**490**	**870**
		11/21/08			44.89	751.75	ND	6 J	7 J	30	**2,300**	990	9 J	ND	53	ND	**800**	**2,300**
MW-8A	793.10	09/20/06			42.01	751.09	ND	ND	ND	ND	7	ND	ND	ND	0.9 J	ND	**380**	ND
		11/02/06			42.13	750.97	ND	ND	ND	ND	5 J	ND	ND	ND	ND	ND	**330**	ND
		04/24/07			38.51	754.59	ND	ND	ND	ND	4 J	ND	ND	ND	ND	ND	**210**	ND
		08/09/07			41.33	751.77	ND	ND	ND	ND	0.9 J	ND	ND	ND	ND	ND	**1,800**	ND
		11/08/07			42.98	750.12	ND	ND	ND	ND	4 J	ND	ND	ND	ND	ND	**340**	ND
		02/21/08			42.25	750.85	ND	ND	ND	ND	3 J	ND	ND	ND	ND	ND	**330**	ND
		05/14/08			39.50	753.60	ND	ND	ND	ND	3 J	ND	ND	ND	ND	ND	**280**	ND
		08/13/08			40.29	752.81	ND	ND	ND	ND	3 J	ND	ND	ND	ND	ND	**240**	ND
		11/20/08			42.14	750.96	ND	ND	ND	ND	2 J	ND	ND	ND	ND	ND	**500**	ND
MW-8B	792.69	09/20/06			64.39	728.30	--	--	--	--	--	--	--	--	--	--	--	--
		11/02/06			47.58	745.11	--	--	--	--	--	--	--	--	--	--	--	--
		04/23/07			38.90	753.79	--	--	--	--	--	--	--	--	--	--	--	--
		05/03/07	†	83'-93'	--	--	ND	ND	ND	ND	3 J	ND	ND	ND	ND	ND	**96 J**	ND
		05/03/07	‡	83'-93'	--	--	0.8 J	ND	ND	ND	3 J	ND	ND	ND	ND	ND	**190**	ND
		08/09/07			40.76	751.93	0.7 J	ND	ND	1 J	1 J	ND	ND	ND	ND	ND	**630**	26 J
		11/08/07			42.00	750.69	ND	ND	ND	1 J	2 J	ND	ND	ND	ND	ND	**200**	21 J
		02/21/08			41.99	750.70	ND	ND	ND	ND	1 J	ND	ND	ND	ND	ND	**460**	21 J
		05/14/08			40.76	751.93	ND	ND	ND	ND	1 J	ND	ND	ND	ND	ND	**380**	ND
		08/14/08			39.72	752.97	ND	ND	ND	ND	1 J	ND	ND	ND	ND	ND	**550**	ND
		11/20/08			41.24	751.45	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	**570**	ND

TABLE 2-2
GROUNDWATER MONITORING DATA
WALLY'S CITGO
19200 MIDDLETOWN RD
PARKTON, MARYLAND

Location ID	Top of Casing (ft)	Sample Date	Sample Interval	Depth to Water (ft)	Water Elevation (ft)	Constituents of Concern (ug/l)											
						BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MtBE	TBA	DIPE	ETBE	TAME	1,2-DCA	TPH-DRO	TPH-GRO
MDE GNCS, Type I and II Aquifers						5	1,000	700	10,000	20	NG	NG	NG	NG	5	47	47
MW-9A	798.18	09/20/06		41.40	756.78	ND	ND	ND	ND	1 J	ND	ND	ND	ND	ND	**1,100**	ND
		11/02/06		41.70	756.48	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**620**	ND
		05/01/07		37.20	760.98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**380**	ND
		08/09/07		39.93	758.25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**970**	ND
		11/08/07		43.80	754.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**520**	ND
		02/21/08		41.37	756.81	ND	ND	ND	ND	**51**	24 J	ND	ND	0.9 J	ND	**120**	**56**
		05/15/08		36.55	761.63	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**130**	ND
		08/14/08		39.72	758.46	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	44 J	ND
		11/20/08		40.52	757.66	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**880**	ND
MW-9B	798.04	09/20/06		41.21	756.83	--	--	--	--	--	--	--	--	--	--	--	--
		11/02/06		41.58	756.46	--	--	--	--	--	--	--	--	--	--	--	--
		04/23/07		37.23	760.81	--	--	--	--	--	--	--	--	--	--	--	--
	‡	04/26/07	92'-109'	--	--	0.9 J	0.8 J	ND	ND	ND	ND	ND	ND	ND	ND	**370**	ND
	†	04/30/07	212'-228'	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**280**	ND
	‡	04/30/07	212'-228'	--	--	0.5 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	**570**	ND
		08/09/07		39.44	758.60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**940**	ND
		11/08/07		42.42	755.62	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**670**	ND
		02/21/08		41.21	756.83	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1,500**	ND
		0515/08		36.53	761.51	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1,600**	ND
		08/14/08		38.36	759.68	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**410**	ND
		11/20/08		40.15	757.89	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5,900**	ND
MW-10A	800.69	05/23/07		37.11	763.58	**10**	2 J	ND	66	**1,000**	320	6	ND	25	ND	**1,300**	**3,000**
		08/09/07		40.39	760.30	2 J	ND	ND	31	**150**	61 J	1 J	ND	4 J	ND	**1,300**	**900**
		11/08/07		42.72	757.97	15	11 J	10 J	150	**1,600**	2,200	16	ND	53	ND	**3,400**	**4,600**
		02/22/08		39.95	760.74	**9 J**	ND	ND	94	**3,400**	2,800	17	ND	90	ND	**2,800**	**5,700**
		05/15/08		36.42	764.27	ND	ND	ND	4 J	**32**	26 J	ND	ND	0.9 J	ND	**860**	**130**
		08/14/08		39.15	761.54	3 J	ND	ND	43	**140**	92	1 J	ND	4 J	ND	**780**	**1,400**
		11/20/08		41.87	758.82	3 J	ND	ND	50	**200**	82	2 J	ND	5 J	ND	**1,500**	**1,800**
MW-10B	800.75	† 05/23/07		36.69	764.06	**18**	2 J	ND	50	**560**	330	5 J	ND	22	2 J	**5,100**	**1,300**
		‡ 05/23/07		--	--	**20**	2 J	0.9 J	67	**540**	320	5 J	ND	22	2 J	**1,700**	**1,400**
		08/09/07		40.93	759.82	**9**	ND	ND	27	**230**	150	1 J	ND	8	1 J	**850**	**780**
		11/08/07		42.72	758.03	1 J	ND	ND	2 J	**30**	27 J	ND	ND	1 J	ND	**7,100**	**120**
		02/22/08		40.70	760.05	1 J	ND	ND	3 J	**34**	31 J	ND	ND	1 J	ND	**3,200**	**120**
		05/15/08		36.91	763.84	ND	ND	ND	ND	8	10 J	ND	ND	ND	ND	**650**	ND
		08/14/08		39.60	761.15	ND	ND	ND	ND	4 J	ND	ND	ND	ND	ND	**1,300**	ND
		11/20/08		41.44	759.31	ND	ND	ND	ND	5	ND	ND	ND	ND	ND	**2,200**	29 J

TABLE 2-2
GROUNDWATER MONITORING DATA
WALLY'S CITGO
19200 MIDDLETOWN RD
PARKTON, MARYLAND

Location ID	Top of Casing (ft)	Sample Date	Sample Interval	Depth to Water (ft)	Water Elevation (ft)	Constituents of Concern (ug/l)											
						BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MtBE	TBA	DIPE	ETBE	TAME	1,2-DCA	TPH-DRO	TPH-GRO
MDE GNCS, Type I and II Aquifers						5	1,000	700	10,000	20	NG	NG	NG	NG	5	47	47
MW-11A	795.52	08/14/08		46.39	749.13	ND	ND	ND	ND	**580**	ND	1 J	ND	9	ND	ND	**150**
		11/21/08		48.66	746.86	ND	ND	ND	ND	**180**	ND	ND	ND	1 J	ND	ND	**160**
MW-11B	795.22	08/14/08		43.58	751.64	ND	ND	ND	ND	12	ND	ND	ND	ND	ND	**420**	ND
		11/21/08		46.23	748.99	ND	ND	ND	ND	10	14 J	ND	ND	ND	ND	**490**	ND
MW-12B	800.28	08/14/08		56.45	743.83	ND	ND	ND	ND	ND	16 J	ND	ND	ND	ND	**1,100**	ND
		11/20/08		46.12	754.16	ND	ND	ND	ND	ND	20 J	ND	ND	ND	ND	**3,300**	22 J
MW-13A	801.74	08/14/08		41.85	759.89	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**150**	ND
		11/20/08		46.01	755.73	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**84 J**	ND
MW-13B	801.78	08/14/08		42.36	759.42	ND	ND	ND	ND	ND	20 J	ND	ND	ND	ND	**590**	ND
		11/20/08		45.50	756.28	ND	ND	ND	ND	ND	20 J	ND	ND	ND	ND	**1,500**	ND
MW-14A	797.53	08/13/08		42.96	754.57	ND	ND	ND	ND	2 J	ND	ND	ND	ND	ND	**220**	ND
		11/21/08		45.11	752.42	ND	ND	ND	ND	2 J	ND	ND	ND	ND	ND	**58 J**	ND
MW-14B	797.33	08/13/08		44.37	752.96	**40**	ND	ND	28	**480**	980	12	ND	29	7	**1,900**	**380**
		11/21/08		42.96	754.37	**24**	ND	ND	20	**400**	810	8	ND	21	5	**2,100**	**610**

MtBE = methyl tertiary butyl ether
TBA = t-Butyl alcohol
DIPE = di-Isopropyl ether
ETBE = Ethyl t-butyl ether
TAME = t-Amyl methyl ether
1,2 DCA = 1,2 Dichloroethane
TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics
TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics
MDE GNS = Maryland Department of Environment, Generic Cleanup Standards

J = Estimated Value
ND = Not Detected
NG = No Guidance
Values exceeding the specified MDE criteria are **bolded.**
ug/l = micrograms per liter
†= sample was collected prior to purge
‡= sample collected after purge

Note: Top of Casing elevations were surveyed to mean sea level (NAVD 88) on October 1 & 2, 2008.

TABLE 2-3
POTABLE WELL ANALYTICAL DATA SUMMARY
WALLY'S CITGO
19200 MIDDLETOWN ROAD
PARKTON, MARYLAND

Location ID	Sample Date	Constituents of Concern (ug/l)								
		BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MTBE	TBA	TAME	ETBE	DIPE
MDE GNCS, Type I and II Aquifers		5	1,000	700	10,000	20	NG	NG	NG	NG
1500 Rayville Road	11/03/05	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	--	<0.5
1506 Rayville Road	11/03/05	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	--	<0.5
1510 Rayville Road	11/03/05	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	--	<0.5
1523 Rayville Road	11/04/05	<0.5	<0.5	<0.5	<0.5	0.6	<10	<0.5	<0.5	<0.5
1606 Rayville Road Pre-Treatment	11/03/05	< 100	< 100	< 100	< 100	**2,670**	< 2,000	< 100	--	< 100
	11/14/05	< 100	< 100	< 100	< 100	**2,250**	< 2,000	< 100	--	< 100
	03/13/06*	< 0.5	< 0.7	< 0.8	< 0.8	**160**	--	--	--	--
	04/20/06	< 50	< 50	<50	< 50	**2,860**	< 1,000	57	--	< 50
	05/12/06	**6.4 J**	< 2	< 2	6.2 J	**3,800**	740	95	< 2	15
	06/14/06	**7.8 J**	< 5	< 5	6.3 J	**3,200**	740 J	77	< 5	13 J
	07/18/06	**13**	0.1 J	< 0.1	14.3	**3,700**	1,300	98	< 0.1	20
	08/10/06	**17**	0.1 J	< 0.1	18.9	**5,600**	1,200 J	150	0.2 J	22
	09/14/06	**14**	0.1 J	< 0.1	17.6	**5,100**	1,000	140 J	0.2 J	25
	10/19/06	**16**	0.2 J	< 0.1	18.1	**5,900**	1,500	160	0.2 J	22
	11/27/06	**13**	< 0.5	< 0.5	14	**6,000**	1,600	160	< 0.5	< 0.5
	12/21/06	**9**	< 0.5	< 0.5	10	**4,900**	1,400	120 J	< 0.5	21
	01/18/07	< 0.5	< 0.5	< 0.5	<1.0	**390**	58 J	9.3	< 0.5	2 J
	02/27/07	< 0.1	< 0.1	< 0.1	<0.2	**570**	56	16	< 0.1	7.9
	03/21/07	< 1	< 1	< 1	<2.0	**1,800**	89 J	34	< 1	9.9
	04/23/07	< 5	< 5	< 5	<10	**2,200**	< 250	41	< 5	10 J
	05/24/07	< 2.5	< 2.5	< 2.5	<5	**3,100**	< 130	48	< 2.5	10 J
	06/19/07	< 0.3	< 0.3	< 0.3	<0.5	**5,100**	130	120	< 0.3	21
	07/18/07	1.2 J	5.3	< 0.3	0.8 J	**6,300**	440	120 J	< 0.3	24
	08/07/07	2.4	< 0.3	< 0.3	2.5	**5,800**	650	140 J	< 0.3	23
	09/10/07	2.9	< 0.5	< 0.5	2.7	**6,700**	1,100	150 J	< 0.5	26
	10/10/07	4.3	< 0.5	< 0.5	3.5	**7,400**	1,300	160 J	< 0.5	31
	11/05/07	4.0	< 0.5	< 0.5	3.1	**10,000**	1,200	150	< 0.5	31
	12/05/07	**5.4**	< 0.5	< 0.5	4.3	**7,900**	1,500	180 J	< 0.5	34
	01/17/08	**6.4**	< 0.5	< 0.5	6.1	**7,600**	1,000	240 J	< 0.5	30
	02/20/08	**6.8**	< 0.5	< 0.5	5.8	**9,900**	1,800	190 J	< 0.5	34
	03/20/08	**5.6**	< 0.5	< 0.5	4.2	**8,100**	1,700	220	< 0.5	37
	04/22/08	< 0.1	< 0.1	< 0.1	< 0.1	**680**	15 J	19	< 0.1	3.8
	05/13/08	< 0.1	< 0.1	< 0.1	< 0.1	**110**	< 5	1.5	< 0.1	0.8
	06/19/08	< 0.1	< 0.1	< 0.1	< 0.2	**100**	< 5	0.6	< 0.1	1.7
	07/22/08	< 2	< 2	< 2	< 4	**5,900**	210 J	110	< 2	17
	08/13/08	< 0.5	< 0.5	< 0.5	< 1.0	**7,200**	430	130 J	< 0.5	21
	09/24/08	< 5	< 5	< 5	< 10	**8,500**	1,100 J	170	< 5	29
	10/16/08	< 5	< 5	< 5	< 10	**9,500**	1,300	190	< 5	30
	11/18/08	< 5	< 5	< 5	< 10	**9,800**	1,600	190	< 5	34

TABLE 2-3
POTABLE WELL ANALYTICAL DATA SUMMARY
WALLY'S CITGO
19200 MIDDLETOWN ROAD
PARKTON, MARYLAND

Location ID	Sample Date	Constituents of Concern (ug/l)								
		BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MTBE	TBA	TAME	ETBE	DIPE
MDE GNCS, Type I and II Aquifers		5	1,000	700	10,000	20	NG	NG	NG	NG
1606 Rayville Road Midpoint	03/13/06[+]	< 0.5	< 0.7	< 0.8	<0.8	< 0.5	--	--	--	--
	04/11/06	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	91	< 0.5	--	< 0.5
	04/20/06	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	125	< 0.5	--	< 0.5
	05/12/06	< 0.1	0.4 J	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	06/14/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	41	< 0.1	< 0.1	< 0.1
	07/18/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	210	< 0.1	< 0.1	< 0.1
	08/10/06	< 0.1	< 0.1	0.1 J	< 0.2	< 0.1	620	< 0.1	< 0.1	< 0.1
	09/14/06	< 0.1	< 0.1	< 0.1	< 0.2	0.1 J	10 J	< 0.1	< 0.1	< 0.1
	10/19/06	< 0.1	< 0.1	< 0.1	< 0.2	0.1 J	120	< 0.1	< 0.1	< 0.1
	11/27/06	< 0.1	0.3 J	< 0.1	< 0.2	< 0.1	510	< 0.1	< 0.1	< 0.1
	12/21/06	< 0.1	< 0.1	< 0.1	< 0.2	0.1 J	< 5	< 0.1	< 0.1	< 0.1
	01/18/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	11 J	< 0.1	< 0.1	< 0.1
	02/27/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	61	< 0.1	< 0.1	< 0.1
	03/21/07	< 0.1	< 0.1	0.4 J	< 0.2	< 0.1	82	< 0.1	< 0.1	< 0.1
	04/23/07	< 0.1	1.5	< 0.1	< 0.2	< 0.1	110	< 0.1	< 0.1	< 0.1
	05/24/07	< 0.1	< 0.1	0.1 J	< 0.2	0.2 J	< 5	< 0.1	< 0.1	< 0.1
	06/19/07	< 0.1	0.2 J	0.2 J	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	07/18/07	< 0.1	5.6	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	08/07/07	< 0.1	< 0.1	< 0.1	< 0.2	0.2 J	< 5	< 0.1	< 0.1	< 0.1
	09/10/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	10/10/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5.0	< 0.1	< 0.1	< 0.1
	11/05/07	< 0.1	0.2 J	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	12/05/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	01/17/08	< 0.1	< 0.1	< 0.1	< 0.1	0.1 J	21 J	< 0.1	< 0.1	< 0.1
	02/20/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	110	< 0.1	< 0.1	< 0.1
	03/20/08	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	310	< 0.1	< 0.1	< 0.1
	04/22/08	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	800	< 0.1	< 0.1	< 0.1
	05/13/08	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	06/19/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	07/22/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	08/13/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5.0	< 0.1	< 0.1	< 0.1
	09/24/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	10/16/08	< 0.1	0.1 J	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	11/18/08	< 0.1	< 0.1	< 0.1	<0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1

TABLE 2-3
POTABLE WELL ANALYTICAL DATA SUMMARY
WALLY'S CITGO
19200 MIDDLETOWN ROAD
PARKTON, MARYLAND

Location ID	Sample Date	Constituents of Concern (ug/l)								
		BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MTBE	TBA	TAME	ETBE	DIPE
MDE GNCS, Type I and II Aquifers		5	1,000	700	10,000	20	NG	NG	NG	NG
1606 Rayville Road Post Treatment	11/21/05	< 0.5	< 0.5	--	< 0.5	< 0.5	< 10	< 0.5	--	< 0.5
	01/03/06	< 0.5	< 0.5	--	< 0.5	< 0.5	< 10	< 0.5	--	< 0.5
	03/13/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	03/14/06	< 0.5	< 0.5	--	< 0.5	< 0.5	10	< 0.5	--	< 0.5
	04/20/06	< 0.5	< 0.5	--	< 0.5	< 0.5	< 10	< 0.5	--	< 0.5
	05/11/06	< 0.5	< 0.5	--	< 0.5	< 0.5	< 10	< 0.5	--	< 0.5
	05/12/06	< 0.1	0.2 J	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	06/14/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	07/18/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	08/10/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	7.5 J	< 0.1	< 0.1	< 0.1
	09/14/06	< 0.1	< 0.1	< 0.1	0.3 J	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	10/19/06	< 0.1	< 0.1	< 0.1	< 0.2	0.3 J	< 5	< 0.1	< 0.1	< 0.1
	11/27/06	< 0.1	0.2 J	< 0.1	< 0.2	< 0.1	7.9 J	< 0.1	< 0.1	< 0.1
	12/21/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	01/18/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	02/27/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	03/21/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	04/23/07	< 0.1	0.8	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	05/24/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	06/19/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	07/18/07	< 0.1	3.4	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	08/07/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	09/10/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	10/10/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5.0	< 0.1	< 0.1	< 0.1
	11/05/07	< 0.1	0.1 J	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	12/05/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	01/17/08	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	02/20/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	03/20/08	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	04/22/08	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	05/13/08	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	06/19/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	07/22/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	08/13/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5.0	< 0.1	< 0.1	< 0.1
	09/24/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	10/16/08	< 0.1	0.1 J	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	11/18/08	< 0.1	< 0.1	< 0.1	<0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1

TABLE 2-3
POTABLE WELL ANALYTICAL DATA SUMMARY
WALLY'S CITGO
19200 MIDDLETOWN ROAD
PARKTON, MARYLAND

Location ID	Sample Date	Constituents of Concern (ug/l)								
		BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MTBE	TBA	TAME	ETBE	DIPE
MDE GNCS, Type I and II Aquifers		5	1,000	700	10,000	20	NG	NG	NG	NG
1608 Rayville Road Pre-Treatment	11/03/05	< 0.5	< 0.5	< 0.5	< 0.5	**851**	18	22	--	4.4
	11/14/05	< 25	< 25	< 25	< 25	**900**	< 500	< 25	--	< 25
	03/13/06+	3 J	< 0.7	< 0.8	2 J	**1,400**	--	--	--	--
	04/20/06	< 25	< 25	< 25	< 25	**1,500**	< 500	35	--	< 25
	05/12/06	< 1	< 1	< 1	< 2	**1,600**	120 J	44	< 1	6.2
	06/14/06	2.6 J	< 2.5	< 2.5	< 5	**1,400**	200 J	38	< 2.5	6 J
	07/18/06	5	< 0.1	< 0.1	4.2	**1,500**	340	47	< 0.1	8.7
	08/10/06	**7.4**	< 0.1	< 0.1	7.2	**2,300**	370	65	< 0.1	9.2
	09/14/06	**6.1**	< 0.1	< 0.1	6.3	**2,100**	390	63	< 0.1	10
	10/19/06	**8.8**	< 0.1	< 0.1	8.6	**2,500**	390	67	< 0.1	12
	11/27/06	**8.9**	< 0.5	< 0.5	8.9	**2,300**	540	69	< 0.5	10
	12/21/06	4.7	< 0.3	< 0.3	5	**2,300**	520	64 J	< 0.3	11
	01/18/07	**10**	< 0.5	< 0.5	9.4	**2,800**	640	79	< 0.5	12
	02/27/07	**13**	< 0.5	< 0.5	9.7	**3,300**	930	110	< 0.5	19
	03/21/07	**10 J**	< 2.5	< 2.5	6.4 J	**4,800**	1,000	95	< 2.5	16
	04/23/07	**11 J**	< 5	< 5	6.9 J	**3,700**	1,300	97	< 5	16 J
	05/24/07	**9.5 J**	< 5	< 5	5.3 J	**4,300**	1,100 J	91	< 5	16 J
	06/19/07	**12**	< 0.3	< 0.3	9.3	**5,200**	1,000	130	< 0.3	22
	07/18/07	**12**	< 0.3	< 0.3	8.3	**6,600**	1,100	150 J	< 0.3	22
	08/07/07	**9.9**	< 0.3	< 0.3	8.6	**4,600**	940	130 J	< 0.3	19
	09/10/07	**14**	< 0.5	< 0.5	10	**4,800**	1,300	120 J	< 0.5	24
	10/10/07	**11**	< 0.5	< 0.5	7.5	**5,200**	1,100	130 J	< 0.5	24
	11/05/07	**9.9**	< 0.5	< 0.5	6.9	**5,100**	900	120	< 0.5	23
	12/05/07	**12**	< 0.5	< 0.5	7.8	**5,300**	1,400	110 J	< 0.5	27
	01/17/08	**8.3**	< 0.5	< 0.5	6.9	**6,600**	740	230 J	< 0.5	20
	02/20/08	**9.4**	< 0.5	< 0.5	6.6	**6,100**	1,200	130 J	< 0.5	22
	03/20/08	**11**	< 0.5	< 0.5	6.6	**5,200**	1,200	120	< 0.5	26
	04/22/08	**14**	< 0.5	< 0.5	10	**6,000**	1,400	140 J	< 0.5	29
	05/13/08	**17 J**	< 5	< 5	11 J	**6,900**	1,200 J	200	< 0.5	26
	06/19/08	**11 J**	< 10	< 10	< 20	**6,900**	1,700 J	150	< 10	23 J
	07/22/08	**14 J**	< 5	< 5	7.0 J	**7,600**	1,500	200	< 5	33
	08/13/08	**12**	< 0.5	< 0.5	9.3	**7,500**	1,400	170 J	< 0.5	27
	09/24/08	**14 J**	< 5	< 5	8.7 J	**8,000**	1,700	200	< 5	34
	10/16/08	**15 J**	< 5	< 5	11 J	**9,100**	1,600	220	< 5	33
	11/18/08	**13 J**	< 5	< 5	6.6 J	**8,500**	1,700	200	< 5	37

TABLE 2-3
POTABLE WELL ANALYTICAL DATA SUMMARY
WALLY'S CITGO
19200 MIDDLETOWN ROAD
PARKTON, MARYLAND

Location ID	Sample Date	Constituents of Concern (ug/l)								
		BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MTBE	TBA	TAME	ETBE	DIPE
MDE GNCS, Type I and II Aquifers		5	1,000	700	10,000	20	NG	NG	NG	NG
1608 Rayville Road Midpoint	03/13/06+	< 0.5	< 0.7	< 0.8	< 0.8	< 0.5	--	--	--	--
	04/11/06	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	33	< 0.5	--	< 0.5
	04/20/06	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	--	< 0.5
	05/12/06	< 0.1	< 0.1	< 0.1	< 0.2	0.1 J	< 5	< 0.1	< 0.1	< 0.1
	06/14/06	< 0.1	< 0.1	0.1 J	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	07/18/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	08/10/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	9.2 J	< 0.1	< 0.1	< 0.1
	09/14/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	43	< 0.1	< 0.1	< 0.1
	10/19/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	130	< 0.1	< 0.1	< 0.1
	11/27/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	200	< 0.1	< 0.1	< 0.1
	12/21/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	01/18/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	02/27/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	16 J	< 0.1	< 0.1	< 0.1
	03/21/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	47	< 0.1	< 0.1	< 0.1
	04/23/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	05/24/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	06/19/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	07/18/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	08/07/07	< 0.1	< 0.1	0.1 J	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	09/10/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	10/10/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5.0	< 0.1	< 0.1	< 0.1
	11/05/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	12/05/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	5.3 J	< 0.1	< 0.1	< 0.1
	01/17/08	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	110	< 0.1	< 0.1	< 0.1
	02/20/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	400	< 0.1	< 0.1	< 0.1
	03/20/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	730	< 0.1	< 0.1	< 0.1
	04/22/08	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1,000	< 0.1	< 0.1	< 0.1
	05/13/08	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	8.5 J	< 0.1	< 0.1	< 0.1
	06/19/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	07/22/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	08/13/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5.0	< 0.1	< 0.1	< 0.1
	09/24/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	10/16/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	7.8 J	< 0.1	< 0.1	< 0.1
	11/18/08	< 0.1	< 0.1	< 0.1	<0.2	< 0.1	31	< 0.1	< 0.1	< 0.1

TABLE 2-3
POTABLE WELL ANALYTICAL DATA SUMMARY
WALLY'S CITGO
19200 MIDDLETOWN ROAD
PARKTON, MARYLAND

Location ID	Sample Date	Constituents of Concern (ug/l)								
		BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MTBE	TBA	TAME	ETBE	DIPE
MDE GNCS, Type I and II Aquifers		5	1,000	700	10,000	20	NG	NG	NG	NG
1608 Rayville Road Post Treatment	11/21/05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	--	< 0.5
	01/03/06	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	--	< 0.5
	03/13/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	03/14/06	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	--	< 0.5
	04/20/06	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	--	< 0.5
	05/11/06	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	--	< 0.5
	05/12/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	06/14/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	07/18/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	08/10/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	09/14/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	10/19/06	< 0.1	< 0.1	< 0.1	< 0.2	0.1 J	< 5	< 0.1	< 0.1	< 0.1
	11/27/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	12/21/06	< 0.1	< 0.1	0.2 J	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	01/18/07	< 0.1	< 0.1	0.2 J	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	02/27/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	03/21/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	04/23/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	05/24/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	06/19/07	< 0.1	< 0.1	0.1 J	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	07/18/07	< 0.1	< 0.1	0.1 J	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	08/07/07	< 0.1	< 0.1	0.3 J	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	09/10/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	10/10/07	< 0.1	< 0.1	0.2 J	< 0.2	< 0.1	< 5.0	< 0.1	< 0.1	< 0.1
	11/05/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	12/05/07	< 0.1	< 0.1	0.2 J	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	01/17/08	< 0.1	< 0.1	0.3 J	< 0.1	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	02/20/08	< 0.1	< 0.1	0.1 J	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	03/20/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	04/22/08	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	12 J	< 0.1	< 0.1	< 0.1
	05/13/08	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	06/19/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	07/22/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	08/13/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5.0	< 0.1	< 0.1	< 0.1
	09/24/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	10/16/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	11/18/08	< 0.1	< 0.1	< 0.1	<0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1

TABLE 2-3
POTABLE WELL ANALYTICAL DATA SUMMARY
WALLY'S CITGO
19200 MIDDLETOWN ROAD
PARKTON, MARYLAND

Location ID	Sample Date	Constituents of Concern (ug/l)								
		BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MTBE	TBA	TAME	ETBE	DIPE
MDE GNCS, Type I and II Aquifers		5	1,000	700	10,000	20	NG	NG	NG	NG
1612 Rayville Road Pre-Treatment	11/03/05	< 0.5	--	< 0.5	< 0.5	3.8	< 10	< 0.5	--	< 0.5
	03/30/06	< 0.1	< 0.1	< 0.1	< 0.2	3.7	< 5	< 0.1	< 0.1	< 0.1
	05/12/06	< 0.1	< 0.1	< 0.1	< 0.2	4.4	< 5	< 0.1	< 0.1	< 0.1
	06/14/06	< 0.1	< 0.1	< 0.1	< 0.2	3.8	< 5	< 0.1	< 0.1	< 0.1
	07/18/06	0.2 J	< 0.1	< 0.1	< 0.2	4.7	< 5	0.1 J	< 0.1	< 0.1
	08/10/06	< 0.1	< 0.1	< 0.1	< 0.2	6.2	< 5	0.1 J	< 0.1	< 0.1
	09/14/06	< 0.1	< 0.1	< 0.1	< 0.2	5.9	< 5	0.1 J	< 0.1	< 0.1
	10/19/06	< 0.1	< 0.1	< 0.1	< 0.2	5.9	< 5	0.1 J	< 0.1	< 0.1
	11/27/06	< 0.1	< 0.1	< 0.1	< 0.2	5.7	< 5	0.1 J	< 0.1	< 0.1
	12/21/06	< 0.1	< 0.1	< 0.1	< 0.2	5.6	< 5	0.1 J	< 0.1	< 0.1
	01/18/07	< 0.1	< 0.1	< 0.1	< 0.2	7.5	< 5	0.2 J	< 0.1	< 0.1
	02/27/07	0.1 J	< 0.1	< 0.1	< 0.2	7.4	< 5	0.2 J	< 0.1	< 0.1
	03/21/07	< 0.1	< 0.1	< 0.1	< 0.2	8.1	< 5	0.2 J	< 0.1	< 0.1
	04/23/07	< 0.1	< 0.1	< 0.1	< 0.2	11	< 5	0.3 J	< 0.1	0.1 J
	05/24/07	< 0.1	< 0.1	< 0.1	< 0.2	9.4	< 5	0.2 J	< 0.1	< 0.1
	06/19/07	< 0.1	< 0.1	< 0.1	< 0.2	9.3	< 5	0.2 J	< 0.1	< 0.1
	07/18/07	< 0.1	< 0.1	< 0.1	< 0.2	10	< 5	0.2 J	< 0.1	< 0.1
	08/07/07	< 0.1	< 0.1	< 0.1	< 0.2	8.8	< 5	0.2 J	< 0.1	< 0.1
	09/10/07	< 0.1	< 0.1	< 0.1	< 0.2	11	< 5	0.3 J	< 0.1	0.1 J
	10/10/07	< 0.1	< 0.1	< 0.1	< 0.2	13	< 5	0.3 J	< 0.1	0.1 J
	11/05/07	< 0.1	< 0.1	< 0.1	< 0.2	13	< 5	0.4 J	< 0.1	0.1 J
	12/05/07	< 0.1	< 0.1	< 0.1	< 0.2	16	< 5	0.4	< 0.1	0.2
	01/17/08	< 0.1	< 0.1	< 0.1	< 0.1	13	< 5	0.5 J	< 0.1	0.2 J
	02/20/08	0.1 J	< 0.1	< 0.1	< 0.2	16	6.2 J	0.5 J	< 0.1	0.2 J
	03/20/08	< 0.1	< 0.1	< 0.1	< 0.2	15	< 5	0.4 J	< 0.1	0.2 J
	04/22/08	< 0.1	< 0.1	< 0.1	< 0.1	16	9.5 J	0.5	< 0.1	0.2 J
	05/13/08	0.4 J	< 0.1	< 0.1	0.1 J	**26**	7.7 J	1.1	< 0.1	0.3 J
	06/19/08	0.1 J	< 0.1	< 0.1	< 0.2	13	< 5	0.4 J	< 0.1	0.2 J
	07/22/08	< 0.1	< 0.1	< 0.1	< 0.2	15	< 5	0.4 J	< 0.1	0.2 J
	08/13/08	< 0.1	< 0.1	< 0.1	< 0.2	13	< 5.0	0.3 J	< 0.1	0.1 J
	09/24/08	< 0.1	< 0.1	< 0.1	< 0.2	19	< 5	0.6	< 0.1	0.2 J
	10/16/08	< 0.1	< 0.1	< 0.1	< 0.2	19	< 5	0.7	< 0.1	0.2 J
	11/18/08	< 0.1	< 0.1	< 0.1	< 0.2	**21**	< 5	0.6	< 0.1	0.3 J

TABLE 2-3
POTABLE WELL ANALYTICAL DATA SUMMARY
WALLY'S CITGO
19200 MIDDLETOWN ROAD
PARKTON, MARYLAND

Location ID	Sample Date	Constituents of Concern (ug/l)								
		BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MTBE	TBA	TAME	ETBE	DIPE
MDE GNCS, Type I and II Aquifers		5	1,000	700	10,000	20	NG	NG	NG	NG
1612 Rayville Road Mid-Point	06/19/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	07/22/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	08/13/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5.0	< 0.1	< 0.1	< 0.1
	09/24/08	< 0.1	< 0.1	0.2 J	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	10/16/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	11/18/08	< 0.1	< 0.1	0.2 J	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
1612 Rayville Road Post-Treatment	06/19/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	07/22/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	08/13/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5.0	< 0.1	< 0.1	< 0.1
	09/24/08	< 0.1	< 0.1	0.8	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	10/16/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	11/18/08	< 0.1	< 0.1	0.2 J	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
1614 Rayville Road	03/13/06	0.1 J	< 0.1	< 0.1	0.1 J	3.8	< 5	0.2 J	< 0.1	< 0.1
	05/12/06	0.1 J	< 0.1	< 0.1	0.2 J	4.1	< 5	0.3 J	< 0.1	< 0.1
	08/10/06	< 0.1	< 0.1	< 0.1	0.1 J	4.1	< 5	0.2 J	< 0.1	< 0.1
	02/27/07	< 0.1	< 0.1	< 0.1	< 0.2	2.6	< 5	0.2 J	< 0.1	< 0.1
	05/24/07	< 0.1	< 0.1	< 0.1	< 0.2	3	< 5	0.1 J	< 0.1	< 0.1
	08/08/07	< 0.5	< 0.5	< 0.5	< 0.5	2.6	< 25	< 0.5	< 0.5	< 0.5
	11/07/07	< 0.1	< 0.1	< 0.1	< 0.2	2.3	< 5	0.1 J	< 0.1	< 0.1
	02/20/08	< 0.1	< 0.1	< 0.1	< 0.2	2.2	< 5	0.1 J	< 0.1	< 0.1
	05/14/08	< 0.1	< 0.1	< 0.1	< 0.1	2	< 5	0.1 J	< 0.1	< 0.1
	08/13/08	< 0.1	< 0.1	< 0.1	< 0.2	1.5	< 5.0	< 0.1	< 0.1	< 0.1
	11/21/08	< 0.1	< 0.1	< 0.1	< 0.2	2.0	< 5	< 0.1	< 0.1	< 0.1

TABLE 2-3
POTABLE WELL ANALYTICAL DATA SUMMARY
WALLY'S CITGO
19200 MIDDLETOWN ROAD
PARKTON, MARYLAND

Location ID	Sample Date	Constituents of Concern (ug/l)								
		BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MTBE	TBA	TAME	ETBE	DIPE
MDE GNCS, Type I and II Aquifers		5	1,000	700	10,000	20	NG	NG	NG	NG
1616 Rayville Road	11/03/05	< 0.5	< 0.5	< 0.5	< 0.5	1.8	< 10	< 0.5	--	< 0.5
	03/13/06	< 0.1	< 0.1	< 0.1	< 0.2	2.3	< 5	< 0.1	< 0.1	< 0.1
	08/10/06	< 0.1	< 0.1	< 0.1	< 0.2	1.9	< 5	< 0.1	< 0.1	< 0.1
	11/29/06	< 0.1	< 0.1	< 0.1	< 0.2	1.4	< 5	< 0.1	< 0.1	< 0.1
	02/27/07	< 0.1	< 0.1	< 0.1	< 0.2	1.8	< 5	< 0.1	< 0.1	< 0.1
	05/24/07	< 0.1	< 0.1	< 0.1	< 0.2	2	< 5	< 0.1	< 0.1	< 0.1
	08/07/07	< 0.1	< 0.1	< 0.1	< 0.2	1.3	< 5	< 0.1	< 0.1	< 0.1
	11/05/07	< 0.1	< 0.1	< 0.1	< 0.2	1.3	< 5	< 0.1	< 0.1	< 0.1
	02/20/08	< 0.1	< 0.1	< 0.1	< 0.2	1.3	< 5	< 0.1	< 0.1	< 0.1
	05/13/08	< 0.1	< 0.1	< 0.1	< 0.1	2	< 5	< 0.1	< 0.1	< 0.1
	08/13/08	< 0.1	< 0.1	< 0.1	< 0.2	1.6	< 5.0	< 0.1	< 0.1	< 0.1
	11/18/08	< 0.1	< 0.1	< 0.1	< 0.2	1.7	< 5	< 0.1	< 0.1	< 0.1
1620 Rayville Road	11/03/05	< 0.5	< 0.5	< 0.5	< 0.5	2.3	< 10	< 0.5	--	< 0.5
	03/13/06	< 0.1	< 0.1	< 0.1	< 0.2	1.1	< 5	< 0.1	< 0.1	< 0.1
	08/10/06	< 0.1	< 0.1	< 0.1	< 0.2	2.3	< 5	< 0.1	< 0.1	< 0.1
	11/29/06	< 0.1	< 0.1	< 0.1	< 0.2	1.6	< 5	< 0.1	< 0.1	< 0.1
	02/27/07	< 0.1	< 0.1	< 0.1	< 0.2	0.9	< 5	< 0.1	< 0.1	< 0.1
	05/24/07	< 0.1	< 0.1	< 0.1	< 0.2	1.2	< 5	< 0.1	< 0.1	< 0.1
	08/07/07	< 0.1	< 0.1	< 0.1	< 0.2	1.2	< 5	< 0.1	< 0.1	< 0.1
	11/05/07	< 0.1	< 0.1	< 0.1	< 0.2	1.4	< 5	< 0.1	< 0.1	< 0.1
	02/20/08	< 0.1	< 0.1	< 0.1	< 0.2	1.6	< 5	< 0.1	< 0.1	< 0.1
	05/13/08	< 0.1	< 0.1	< 0.1	< 0.1	1.4	< 5	< 0.1	< 0.1	< 0.1
	08/13/08	< 0.1	< 0.1	< 0.1	< 0.2	1.0	< 5.0	< 0.1	< 0.1	< 0.1
	11/18/08	< 0.1	< 0.1	< 0.1	< 0.2	1.1	< 5	< 0.1	< 0.1	< 0.1
1624 Rayville Road	11/03/05	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 10	< 0.5	--	< 0.5
	03/13/06	< 0.1	< 0.1	< 0.1	< 0.2	0.6	< 5	< 0.1	< 0.1	< 0.1
	08/24/06	< 0.1	< 0.1	< 0.1	< 0.2	0.7	< 5	< 0.1	< 0.1	< 0.1
	11/29/06	< 0.1	< 0.1	< 0.1	< 0.2	0.8	< 5	< 0.1	< 0.1	< 0.1
	05/24/07	< 0.1	< 0.1	< 0.1	< 0.2	0.7	< 5	< 0.1	< 0.1	< 0.1
	08/07/07	< 0.1	< 0.1	< 0.1	< 0.2	0.7	< 5	< 0.1	< 0.1	< 0.1
	11/05/07	< 0.1	< 0.1	< 0.1	< 0.2	0.9	< 5	< 0.1	< 0.1	< 0.1
	02/20/08	< 0.1	3.6	< 0.1	< 0.2	1.7	< 5	0.1 J	< 0.1	< 0.1
	05/13/08	< 0.1	< 0.1	< 0.1	< 0.1	1.8	< 5	0.2 J	< 0.1	< 0.1
	08/13/08	< 0.1	< 0.1	< 0.1	< 0.2	0.8	< 5	< 0.1	< 0.1	< 0.1
	11/18/08	< 0.1	< 0.1	< 0.1	< 0.2	1.1	< 5	< 0.1	< 0.1	< 0.1

TABLE 2-3
POTABLE WELL ANALYTICAL DATA SUMMARY
WALLY'S CITGO
19200 MIDDLETOWN ROAD
PARKTON, MARYLAND

Location ID	Sample Date	Constituents of Concern (ug/l)								
		BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MTBE	TBA	TAME	ETBE	DIPE
MDE GNCS, Type I and II Aquifers		5	1,000	700	10,000	20	NG	NG	NG	NG
1801 Laurel Ridge Drive	11/03/05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	--	< 0.5
19119 Middletown Road	11/17/05	< 0.5	< 0.5	< 0.5	< 0.5	1.9	< 10	< 0.5	--	< 0.5
19124 Middletown Road	03/13/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	12/20/07	< 0.1	< 0.1	< 0.1	< 0.2	0.9	< 5	< 0.1	< 0.1	< 0.1
19201 Middletown Road	11/03/05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	--	< 0.5
	01/28/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
19205 Middletown Road	11/02/05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5
	12/20/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
19222 Middletown Road	11/29/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
19223 Middletown Road	12/01/05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5
19229 Middletown Road	11/03/05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	--	< 0.5
19235 Middletown Road	11/03/05	< 0.5	< 0.5	< 0.5	< 0.5	0.8	< 10	< 0.5	--	< 0.5
19239 Middletown Road	11/15/05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	--	< 0.5
19303 Middletown Road	11/15/05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	--	< 0.5

TABLE 2-3
POTABLE WELL ANALYTICAL DATA SUMMARY
WALLY'S CITGO
19200 MIDDLETOWN ROAD
PARKTON, MARYLAND

Location ID	Sample Date	Constituents of Concern (ug/l)								
		BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MTBE	TBA	TAME	ETBE	DIPE
MDE GNCS, Type I and II Aquifers		5	1,000	700	10,000	20	NG	NG	NG	NG
1614 Parsonage Road	11/03/05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	--	< 0.5
	08/24/06	< 0.1	< 0.1	< 0.1	< 0.2	0.3 J	< 5	< 0.1	< 0.1	< 0.1
19328 Rich Roy Court	11/03/05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5
19200 Shandall Court	10/19/06	< 0.1	< 0.1	< 0.1	< 0.2	0.1 J	< 5	< 0.1	< 0.1	< 0.1
19201 Shandall Court	08/10/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	12/20/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
19203 Shandall Court	09/13/06	< 0.1	< 0.1	< 0.1	< 0.2	0.1 J	< 5	< 0.1	< 0.1	< 0.1
	12/20/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
19205 Shandall Court	11/15/05	< 0.5	< 0.5	< 0.5	< 0.5	1.4	< 10	< 0.5	--	< 0.5
	12/20/07	< 0.1	< 0.1	< 0.1	< 0.2	0.7	< 5	< 0.1	< 0.1	< 0.1
19207 Shandall Court	11/02/05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	< 0.5	< 0.5
	12/05/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
19208 Shandall Court	08/29/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
19209 Shandall Court	11/15/05	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 10	< 0.5	--	< 0.5
	12/20/07	< 0.1	< 0.1	< 0.1	< 0.2	0.2 J	< 5	< 0.1	< 0.1	< 0.1

TABLE 2-3
POTABLE WELL ANALYTICAL DATA SUMMARY
WALLY'S CITGO
19200 MIDDLETOWN ROAD
PARKTON, MARYLAND

Location ID	Sample Date	Constituents of Concern (ug/l)								
		BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MTBE	TBA	TAME	ETBE	DIPE
MDE GNCS, Type I and II Aquifers		5	1,000	700	10,000	20	NG	NG	NG	NG
19211 Shandall Court	11/08/05	< 0.5	< 0.5	< 0.5	< 0.5	0.8	< 10	< 0.5	--	< 0.5
	12/20/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
19213 Shandall Court	08/29/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	12/05/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
19214 Shandall Court	08/10/06	< 0.1	< 0.1	< 0.1	< 0.2	7.5	< 5	0.2 J	< 0.1	< 0.1
	11/27/06	< 0.1	< 0.1	< 0.1	< 0.2	5	< 5	0.2 J	< 0.1	< 0.1
19215 Shandall Court	11/02/05	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 10	< 0.5	< 0.5	< 0.5
	01/25/08	< 0.1	< 0.1	< 0.1	< 0.2	0.2 J	< 5	< 0.1	< 0.1	< 0.1
19200 Middletown Road (Site)**	09/15/05	< 0.1	< 0.1	< 0.1	< 0.2	0.5 J	--	--	--	--
	03/31/06	< 0.1	< 0.1	< 0.1	< 0.2	0.4 J	< 5	< 0.1	< 0.1	< 0.1
	05/12/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	08/10/06	< 0.1	< 0.1	< 0.1	< 0.2	0.2 J	< 5	< 0.1	< 0.1	< 0.1
PW-1 (19200 Middletown Road Site)**	08/29/06	< 0.1	< 0.1	< 0.1	< 0.2	0.3 J	< 5	< 0.1	< 0.1	< 0.1
	11/29/06	< 0.1	< 0.1	< 0.1	< 0.2	0.3 J	< 5	< 0.1	< 0.1	< 0.1
	02/27/07	< 0.1	< 0.1	< 0.1	< 0.2	0.3 J	< 5	< 0.1	< 0.1	< 0.1
	05/24/07	< 0.1	< 0.1	< 0.1	< 0.2	0.8	< 5	< 0.1	< 0.1	< 0.1
	08/07/07	< 0.1	< 0.1	< 0.1	< 0.2	0.9	< 5	< 0.1	< 0.1	< 0.1
	11/05/07	< 0.1	< 0.1	< 0.1	< 0.2	0.6	< 5	< 0.1	< 0.1	< 0.1
	02/20/08	< 0.1	< 0.1	< 0.1	< 0.2	0.5 J	< 5	< 0.1	< 0.1	< 0.1
	05/13/08	< 0.1	< 0.1	< 0.1	< 0.1	0.3 J	< 5	< 0.1	< 0.1	< 0.1
	08/13/08	< 0.1	< 0.1	< 0.1	< 0.2	0.5	< 5.0	< 0.1	< 0.1	< 0.1
	11/20/08	< 0.1	< 0.1	< 0.1	< 0.2	0.9	< 5	< 0.1	< 0.1	< 0.1

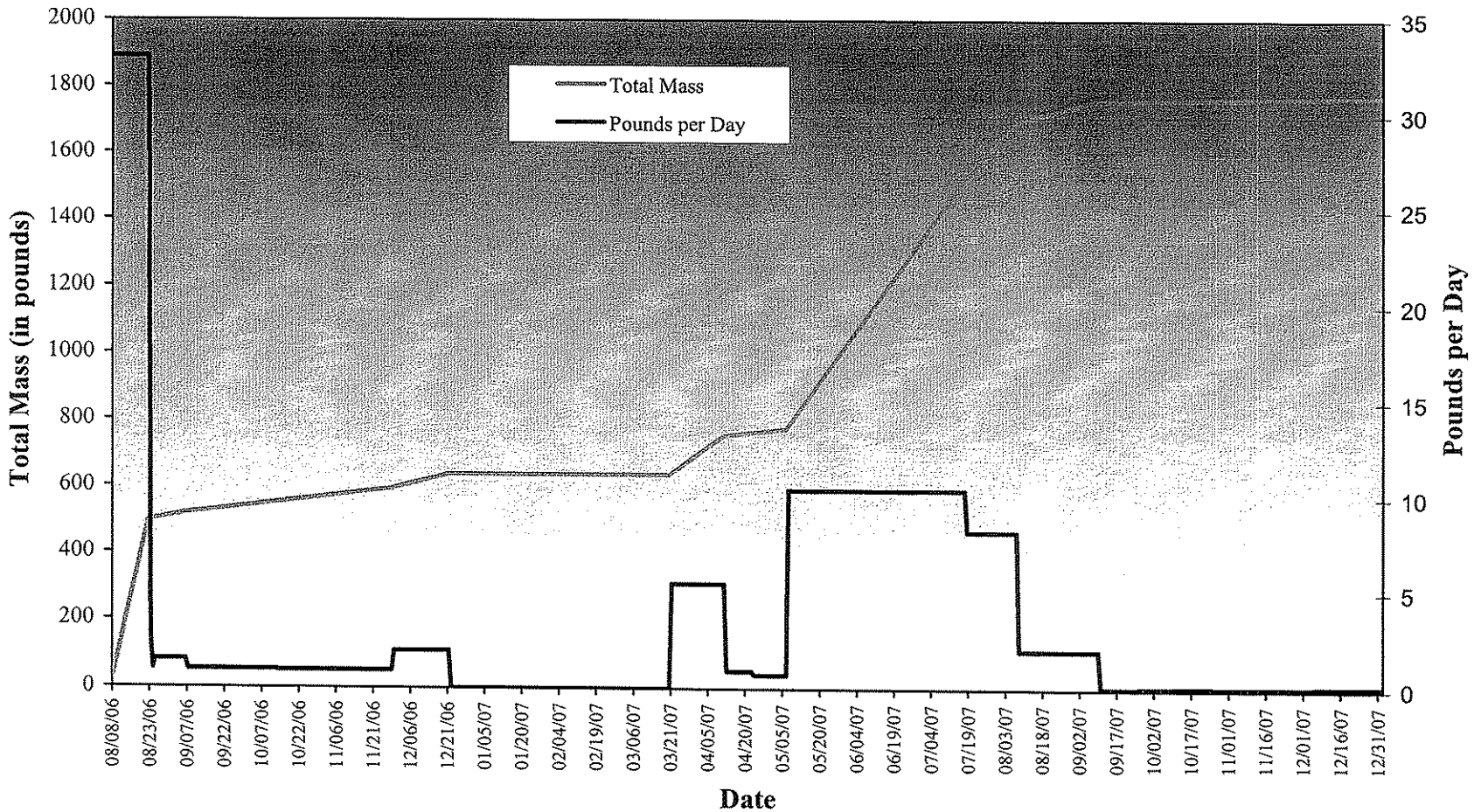
TABLE 2-3
POTABLE WELL ANALYTICAL DATA SUMMARY
WALLY'S CITGO
19200 MIDDLETOWN ROAD
PARKTON, MARYLAND

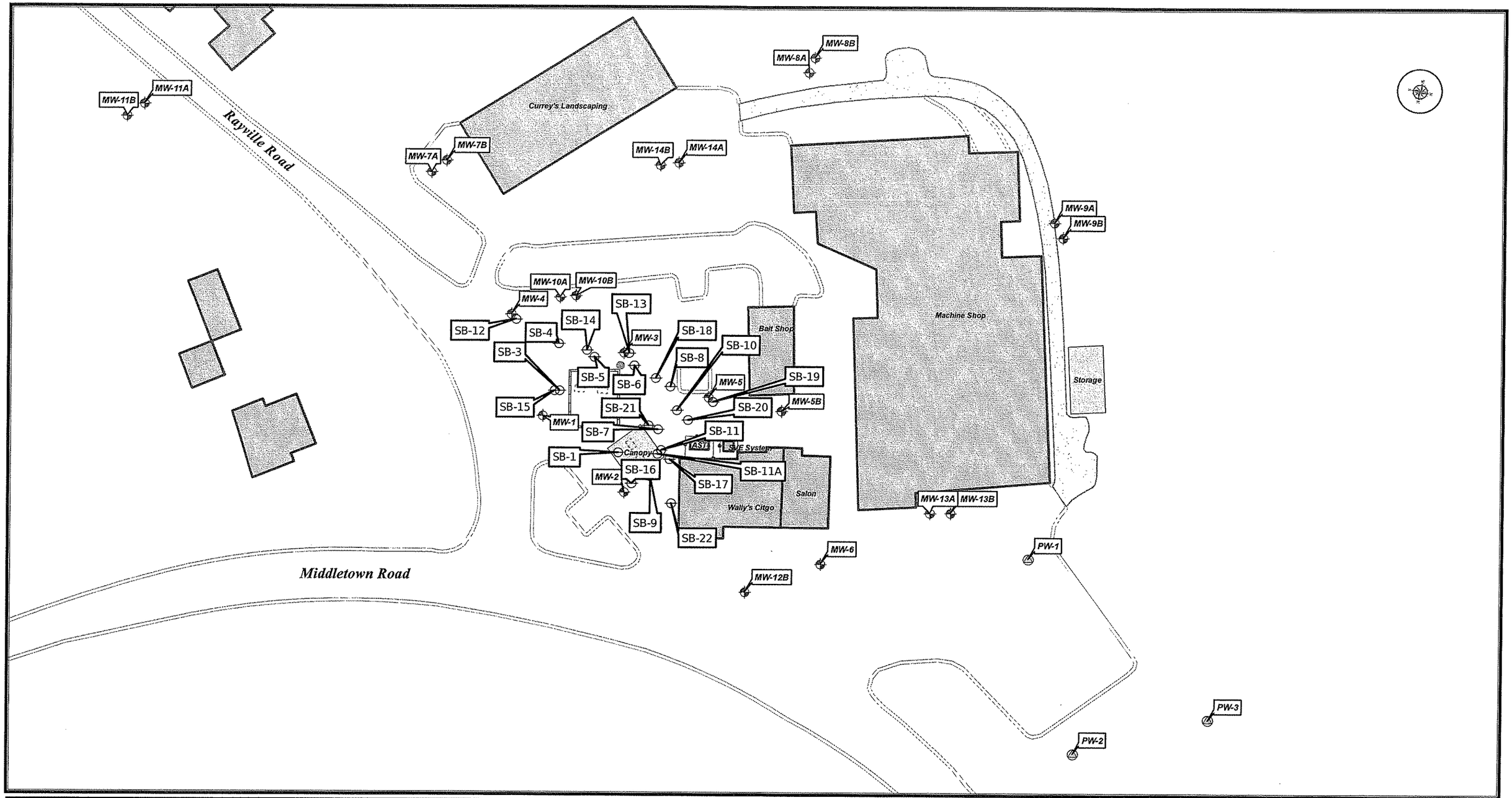
Location ID	Sample Date	Constituents of Concern (ug/l)								
		BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES (TOTAL)	MTBE	TBA	TAME	ETBE	DIPE
MDE GNCS, Type I and II Aquifers		5	1,000	700	10,000	20	NG	NG	NG	NG
PW-2 (19200 Middletown Road Site)**	08/29/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	11/29/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	02/27/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	05/24/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	08/07/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	11/05/07	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	02/20/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	05/13/08	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	08/13/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5.0	< 0.1	< 0.1	< 0.1
	11/20/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
PW-3 (19200 Middletown Road Site)**	08/29/06	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	05/13/08	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 5	< 0.1	< 0.1	< 0.1
	08/14/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5.0	< 0.1	< 0.1	< 0.1
	11/21/08	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	< 5	< 0.1	< 0.1	< 0.1

ND = Not Detected
-- = Not Applicable / Not Available
NG = No Guideline
J = Estimated Value
ug/l = micrograms per liter
Values exceeding the specified MDE criteria are **bolded.**
Analysis conducted by 524.2; only BTEX and oxygenates are summarized
+ = Samples analyzed via EPA Method 8260
MDE GNCS = Maryland Department of the Environment Generic Numeric Cleanup Standards, August 2001
Total xylenes represents sum of m,p-xylene and o-xylene.
** = combined sample of site wells PW-1 and PW-2

MTBE = Methyl-tertiary butyl-ether
TAME = tert-amyl methyl-ether
DIPE = di-isopropyl ether or isopropyl ether
ETBE = tert-butyl ethyl-ether
TBA = tert-butyl alcohol

Figure 2-1
Total Vapor-Phase Hydrocarbon Mass Removal Estimate
Wally's Citgo Service Station, Parkton, MD





Legend

- Soil Boring Location
- Monitoring Well
- Potable Well
- Abandoned Well
- Edge of Pavement
- Fence
- Tank Field
- Building
- Canopy
- Dispenser
- Gravel

0 75 150 Feet

Source:
-Site features based on Baltimore County GIS data.

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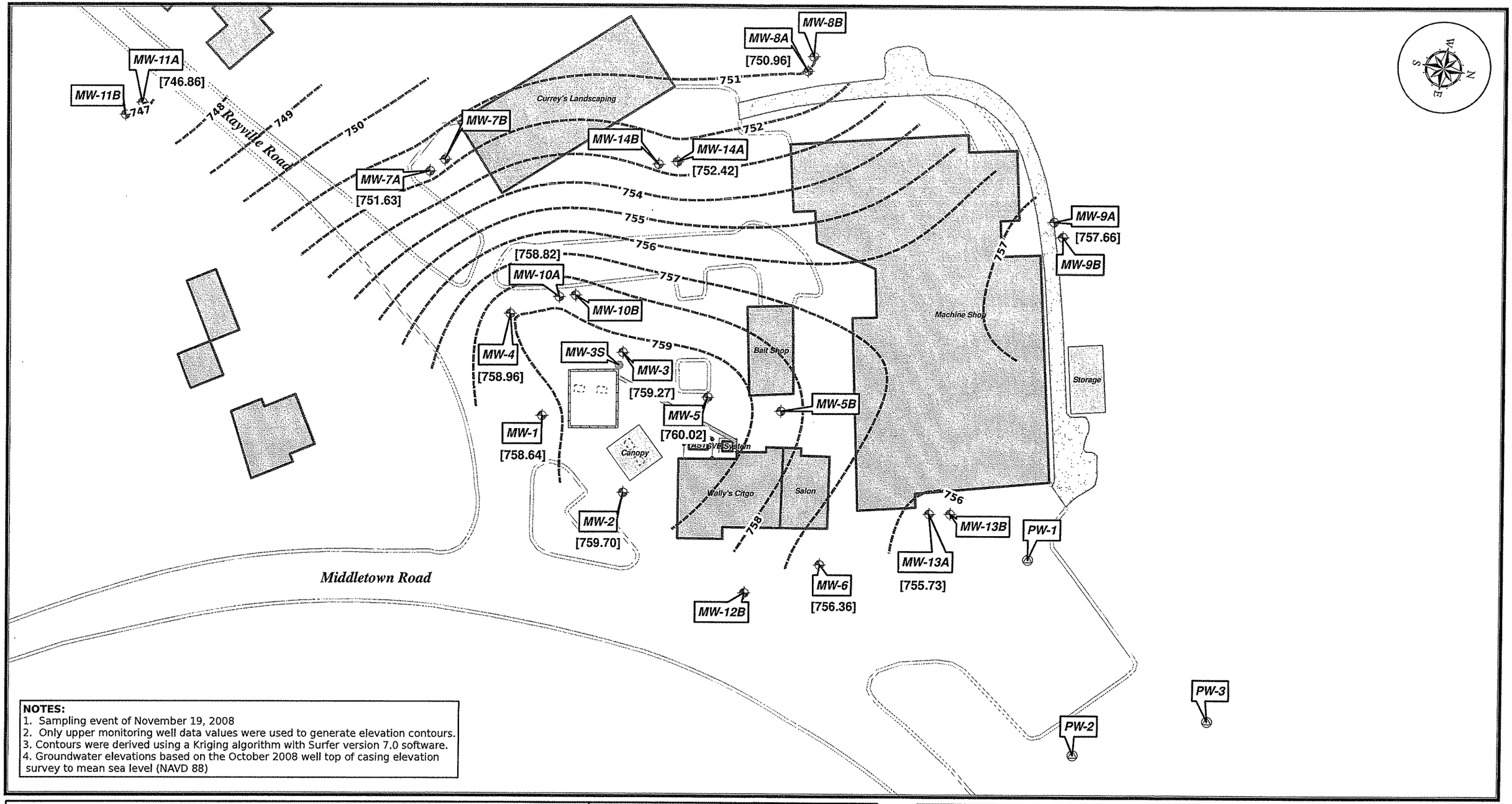
Wally's Citgo Station
19200 Middletown Road
Parkton, MD

Soil Boring Location Map

DRAWN BY:	FILE NAME:	SCALE:	FIGURE NO:
SKJ	1962-SB_Location Map	SEE DRAWING	2-2
APPROVED BY: AJA	PROJECT NO: 1962	DATE: 02/25/09	



NOTES:
1. Sampling event of November 19, 2008
2. Only upper monitoring well data values were used to generate elevation contours.
3. Contours were derived using a Kriging algorithm with Surfer version 7.0 software.
4. Groundwater elevations based on the October 2008 well top of casing elevation survey to mean sea level (NAVD 88)

Legend

- Monitoring Well
- Potable Well
- Abandoned Well
- Groundwater Contour (ft)
- Edge of Pavement
- Fence
- SVE Trench
- Tank Field
- Building
- Canopy
- Dispenser
- Gravel

0 75 150 Feet

Source:
-Site features based on Baltimore County GIS data.

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Wally's Citgo Station
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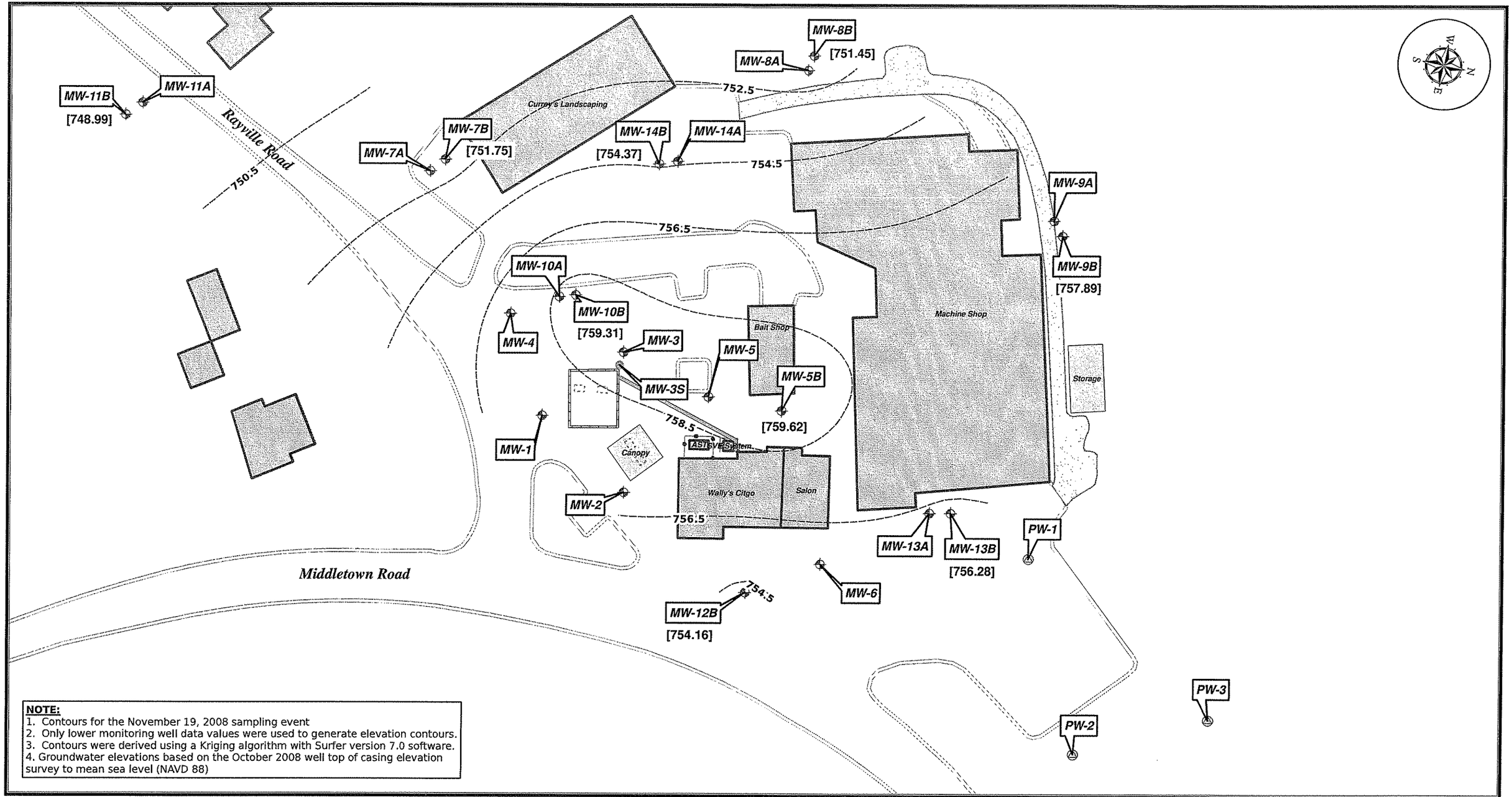
Parkton, MD

Upper Bedrock Groundwater Potentiometric Surface Map: November 2008 Data

DRAWN BY:	FILE NAME:	SCALE:	FIGURE NO:
SKJ	1962-Ubedrock_11-08	SEE DRAWING	2-3
APPROVED BY: AJA	PROJECT NO: 1962	DATE: 11/04/08	



NOTE:
1. Contours for the November 19, 2008 sampling event
2. Only lower monitoring well data values were used to generate elevation contours.
3. Contours were derived using a Kriging algorithm with Surfer version 7.0 software.
4. Groundwater elevations based on the October 2008 well top of casing elevation survey to mean sea level (NAVD 88)

Legend

- Monitoring Well
- Potable Well
- Abandoned Well
- Groundwater Contour (ft)
- Edge of Pavement
- Fence
- SVE Trench
- Tank Field
- Building
- Canopy
- Dispenser
- Gravel

0 75 150 Feet

Source:
-Site features based on Baltimore County GIS data.

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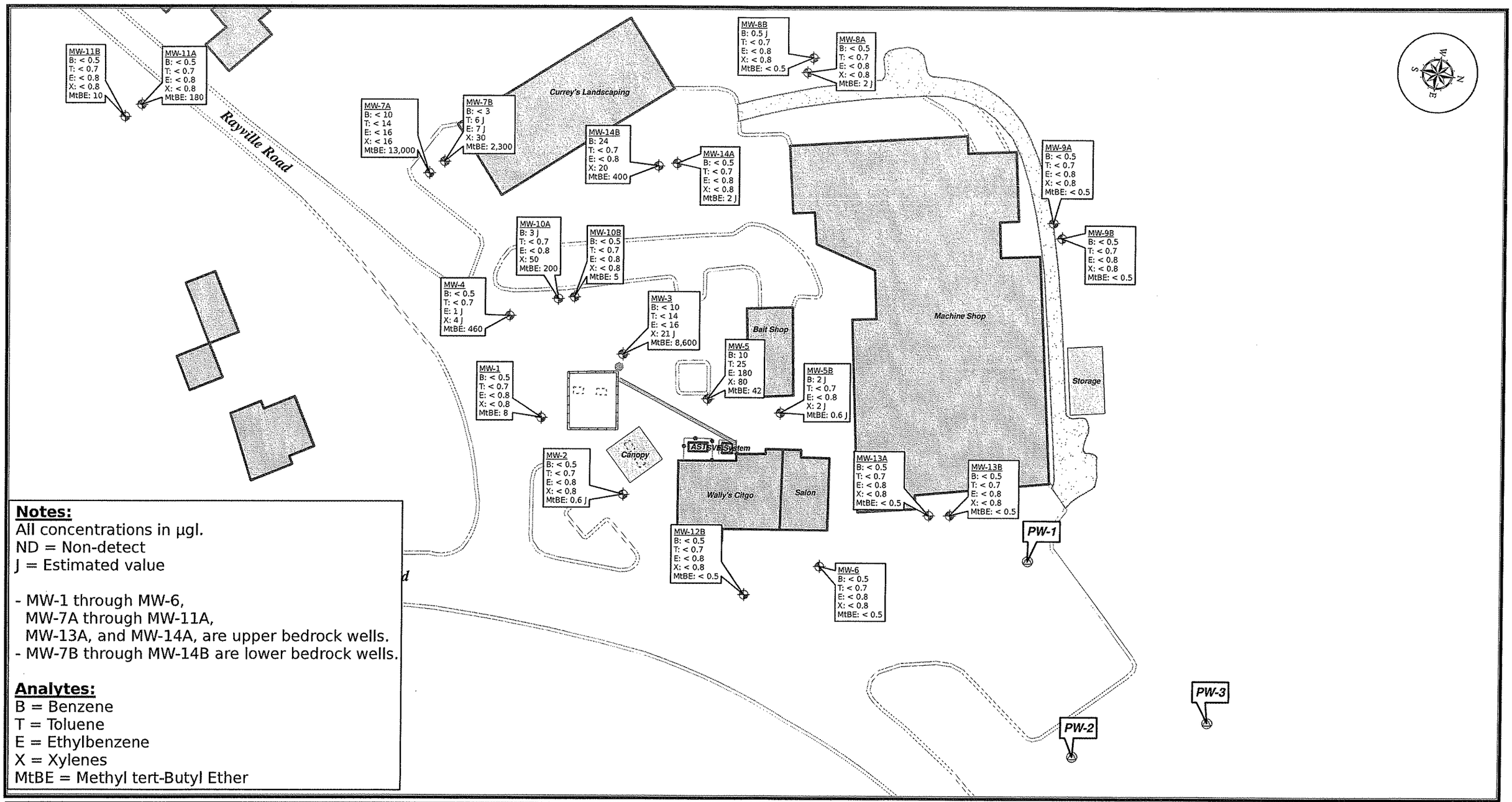
Wally's Citgo Station
19200 Middletown Road
Parkton, MD

Lower Bedrock Groundwater Potentiometric Surface Map: November 2008 Data

DRAWN BY:	FILE NAME:	SCALE:	FIGURE NO:
SKJ	1962-Lbedrock_11-08	SEE DRAWING	2-4
APPROVED BY: AJA	PROJECT NO: 1962	DATE: 12/12/08	



Notes:
All concentrations in µgl.
ND = Non-detect
J = Estimated value

- MW-1 through MW-6,
  MW-7A through MW-11A,
  MW-13A, and MW-14A, are upper bedrock wells.
- MW-7B through MW-14B are lower bedrock wells.

Analytes:
B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes
MtBE = Methyl tert-Butyl Ether

Legend

- Monitoring Well
- Potable Well
- Abandoned Well
- Edge of Pavement
- Fence
- SVE Trench
- Tank Field
- Building
- Canopy
- Dispenser
- Gravel

0 75 150 Feet

Source:
-Site features based on Baltimore County GIS data.

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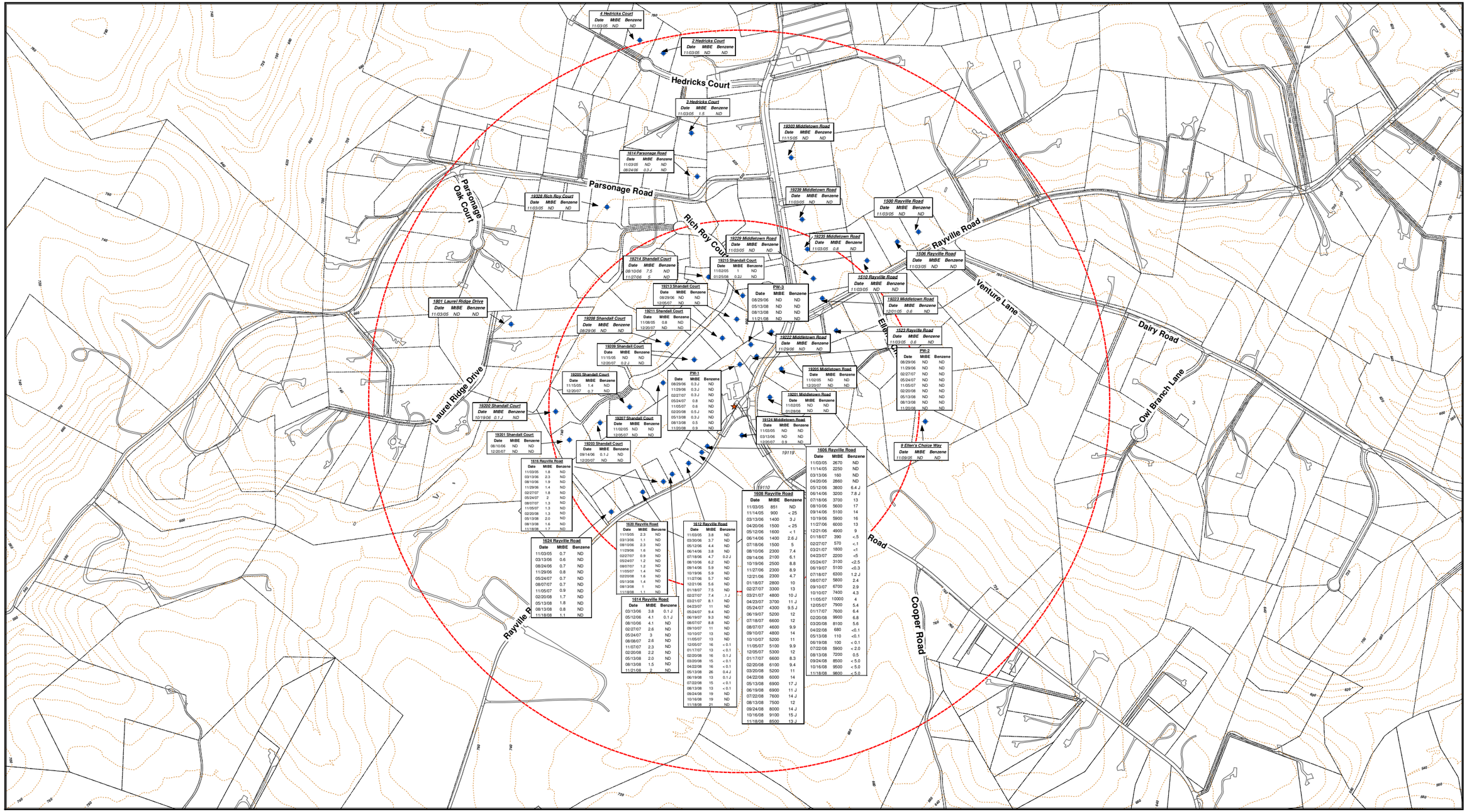
Wally's Citgo Station
19200 Middletown Road
Parkton, MD

Upper and Lower Bedrock Groundwater Concentration Map - November 2008 Data

DRAWN BY:	FILE NAME:	SCALE:	FIGURE NO:
SKJ	1962-GW-Ana_11-08	SEE DRAWING	2-5
APPROVED BY: ASA	PROJECT NO: 1962	DATE: 12/12/08	



Legend

- Approximate Potable Well
- Site Location
- Topographic Contour (20 ft)
- Edge of Pavement
- Site Radius
- Parcel Outline

0 750 1,500 Feet

Source:
Baltimore County GIS data

Notes:
All concentrations in µg/L.
J = Estimated value
ND = Non-detect
Locations of potable wells on parcels are approximate.

N W E S

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Wally's Citgo Station
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Parkton, MD

MtBE and Benzene Concentration Map
Half-mile and Quarter-mile Radii

DRAWN BY:	FILE NAME:	SCALE:	FIGURE NO:
SKJ	1962-MtBE and Benzene-(2008-8)	SEE DRAWING	2-6
APPROVED BY:	PROJECT NO: 1962	DATE: 12/12/2008	

3.0 RISK ASSESSMENT

As discussed in Section 2.4 above, all overburden soils identified to contain constituents above their respective Protection of Groundwater or Non-Residential Cleanup standard have been removed from the Site. A layer of saprolite exists between the overburden soil and underlying schist bedrock (first groundwater encountered within bedrock) in the area of the UST system that is suspected to potentially contain residual petroleum constituent hydrocarbon mass that could act as a continuing source of impact to the bedrock groundwater aquifer. Addressing this potential area of impact is discussed further in Section 5.2.3. The remaining known impacted Site media is limited to groundwater, found in the underlying bedrock and also shown to have migrated off-Site. A discussion of groundwater conditions can be found in Section 2.5 above. Figure 3-1 depicts the current Site conceptual model of water recharge and movement through the aquifer, derived through historical Site investigation activities and discussed in numerous reports submitted to date.

3.1 Potential Sensitive Receptors

The Site is located in a rural area of Parkton, Maryland surrounded by a mix of residential and commercial properties. All surrounding properties within a ½ mile radius obtain potable water by private on-Site supply well(s). A well receptor survey conducted by Alliance in November 2005 included a scaled aerial map of the Site with a ½ mile radius circle, a 1,000-feet radius circle, and a 500-feet radius circle, plotted on the map displaying which properties fall within each of the search radii. A potable well construction survey table was created by Alliance from Baltimore County Department of Health and MDE well databases to provide a summary of the well specifications for the potable wells within ½ mile of the Site. The closest surface water body to the Site is a tributary of Frog Hollow located approximately 1,300 feet to the west.

The following information addresses the seven risk-factors outlined in the Maryland Environmental Assessment Technology (MEAT) guidelines.

(1) Liquid Phase Hydrocarbons (LPH):

Liquid phase hydrocarbons (LPH) have not been detected on-Site.

(2) Current and Future Use of Impacted Groundwater:

Groundwater was identified as being used within ½ mile of the Site. On-Site potable wells, PW-1, PW-2, and PW-3, have not shown impacts to date above MDE GNCSs. Potential off-Site impacts to potable wells have been studied rigorously and reported throughout the investigation work conducted (since inception in 2005). The investigations did show potential use of impacted groundwater (above MDE GNCSs) at residences located to the southwest of the Site. The residences where impact to potable water has been shown to occur have been connected to point of entry treatment (POET) systems. Results of off-Site potable well sampling are presented in Table 2-3. The residents to the southwest of the Site are expected to continue using potable wells as the area is without a source of public water.

(3) Impacts Migration:

Based on analytical data, impacted groundwater is present in the bedrock aquifer in the southwestern portion of the Site and follows west-southwest groundwater flow direction. The flow of impacted groundwater through bedrock along Rayville Road to the southwest of the Site is consistent with the secondary porosity features (fracture and foliations) of the Prettyboy schist encountered beneath the Site area. Refer to Section 2.3 for geological and hydrogeological details and Section 2.5 for groundwater quality details.

(4) Human Exposure:

On-Site risk of human exposure to impacts through dermal contact and ingestion is low since impacts are below grade, capped by asphalt, and groundwater used for potable consumption at the Site is monitored. Off-Site risks occur to local residents using potable wells impacted by contaminant migration. These risks have been minimized through a potable well monitoring program and POET systems installed on potable wells above MDE GNCS per MDE direction. The buildings on the Site do not have basements. Given the depth at which first groundwater is encountered within bedrock (approximately 33 to 60 feet bgs) and the subsurface soil material (micaceous silt-fine sand and saprolite)

overlying the bedrock in the area, the potential for groundwater volatilization to ambient outdoor air or vapor intrusion in off-Site houses and buildings appears to be minimal.

(5) Environmental Ecological Exposure:

No exposure to animal and plant life from Site impacts has been identified.

(6) Impact to Utilities and Other Buried Structures:

No hydrocarbon impacts have been reported in subsurface utilities located on-Site or along Rayville Road. In addition, the depth to groundwater (greater than twenty feet) indicates a minimal potential for utilities to intersect potentially impacted groundwater.

(7) Other Sensitive Receptors:

The closest surface water body to the Site is a tributary of Frog Hollow, located approximately 1,300 feet to the west. No impacts to this receptor have been identified.

SOUTHWEST

NORTHEAST

Land Surface

Potable Well

1608

Potable Well

Residential Area

1606

Recovery Well

Monitoring Well

UST SYSTEM

Excavated Source Soil

Wally's Citgo

Production Well

Regolith

Contaminant Pathway

Residual Gasoline COCs (specifically MtBE)

Regolith/Bedrock Contact

Pump Intake

General Groundwater Flow Direction

Prettyboy Schist Metamorphic Bedrock

LEGEND:

- Evapotranspiration (ET)
- Precipitation
- Infiltration Recharge
- Overland Flow
- Potentiometric Groundwater Elevation
- Open Borehole Well
- PVC Casing
- PVC Screened Interval
- Fractures Predominately Dipping @ 20° and 56° (Decreased Frequency with Increased Depth)

Environmental Alliance
1812 Newport Gap Pike - Wilmington, DE 19808
Phone: (302) 995-7544 -Fax: (302) 995-0941

Wally's Citgo Station
19200 Middletown Road
Parkton, MD

Site Conceptual Model

DRAWN BY:	FILE NAME:	SCALE:	FIGURE NO:
AGG	1962-Conceptual Model-(12-08)	NOT TO SCALE	3-1
APPROVED BY: AJA	PROJECT NO 1962	DATE: 12/05/08	

4.0 PILOT TESTING ACTIVITIES & REMEDIAL ALTERNATIVE ANALYSIS

Two additional pilot tests have been proposed in this CAP as discussed in Section 5.0. Prior to selecting the final remedial technology for the Site, an SVE pilot test will be conducted in the unconsolidated bedrock (saprolite) underlying the overburden soils in the vicinity of the UST field. A groundwater injection pilot test will also be conducted to determine the feasibility of injecting extracted/treated groundwater into the subsurface underlying the UST field. The following sections describe previous pilot test work conducted, an evaluation of other potential remedial alternatives, and the appropriateness of the proposed pilot testing activities towards development of a final CAP for the Site.

4.1 Historical Pilot Testing Activities

An aquifer (groundwater pumping) pilot test and a SVE pilot test were previously completed at the Site. The details of the aquifer test were discussed in the "Hydrogeologic Investigation Update Report and Workplan" dated February 6, 2007. Results of the aquifer test were reported in the "Pump Testing Report" dated June 30, 2007 and are summarized in Section 4.1.1 below. The SVE pilot test focused on the shallow overburden soil in the vicinity of the UST field. The SVE pilot test results are described in the "Environmental Assessment Report" submitted by Alliance to MDE on March 14, 2006. A summary of these activities is provided below.

4.1.1 Aquifer Pilot Pump Test

An aquifer pump test was conducted at the Site from May 24 through June 4, 2007. The purpose of the aquifer pump test was to evaluate the ability to gain hydraulic control of the groundwater plume as well as to enhance the Site conceptual model. The aquifer pilot test, conducted on well MW-10A, consisted of a step step-drawdown test at pump rates of 0.5 gallons per minute (gpm), 2 gpm, 4 gpm, and 8 gpm (approximately one hour test per pumping rate), and a 72-hour pump

test, intended at a constant withdrawal rate. Based on the evaluation of the data obtained during the pump test of MW-10A at the Site, the following conclusions were made:

- Basic analysis of the step test indicated that MW-10A could be pumped at a sustained rate of 7 gpm for the duration of the 72-hour constant rate pump test. However, decline in the extraction rate was observed during the constant rate test, with a pumping rate of 2.36 gpm observed at the end of the test. The long-term, sustained yield of MW-10A, therefore, is likely closer to approximately 2 gpm.
- Allowing for barometric corrections where possible, drawdown was observed in all upper bedrock wells except for MW-7A. With the exception of MW-10B, drawdown was not observed in other lower bedrock wells.
- Pumping from MW-10A at rates similar to the pump test is capable of creating an extensive drawdown radius-of-influence in the upper bedrock system of at least 200 feet. Evaluation of pumping groundwater elevation contours suggests an even larger potential hydraulic capture zone for MW-10A over longer periods of operation.
- Pumping of MW-10A induced drawdown and a reversal of the downward vertical hydraulic gradient in lower bedrock well MW-10B. This suggests that pumping of the upper bedrock system may be capable of capturing groundwater in the lower bedrock system to some extent locally.
- The identification of subtle straight-line changes in the pump test data of the observation wells indicated that a limited amount of groundwater storage is available in this formation. Most groundwater flow in this aquifer occurs in the limited secondary permeability of the fracture system. Consequently, the bulk of dissolved-phase contaminant mass is transported via the bedrock fractures. Therefore, identification of water-bearing fractures and their orientations is important to understanding the fate and transport of these contaminants and determining an appropriate remedy for the Site.

4.1.2 Soil Vapor Extraction Pilot Test

A soil vapor extraction (SVE) pilot test was conducted at the Site in January 2006. Details of the implementation and results of this pilot test are presented in the "Environmental Assessment Report" submitted by Alliance to MDE on March 14, 2006. The data gathered during this pilot test led to the installation of an SVE system to remediate the overburden soils at the Site in the vicinity of the former UST system. Overall operation and performance details of this SVE system are described in Section 2.2.1 above.

4.2 Evaluation of Potential Remedial Technologies

Alliance is presenting in this section an evaluation of several proven remedial technologies that have been used separately or in combination to create a treatment train to address residual gasoline constituents of concern (COCs) impacting vadose zone soil, saturated soil (capillary fringe), and/or groundwater. The remedial technologies that were considered are as follows:

- Monitored Natural Attenuation
- Groundwater Pump and Treat
- Air Sparge
- Soil Vapor Extraction
- Dual Phase Extraction
- In-Situ Chemical Oxidation
- In-Situ Bioremediation

Evaluation of the above remedial technologies presented below provides a summary of each technology and applicability of the technology for: type of environmental media targeted for treatment; type of gasoline COCs targeted for treatment; and treatment of identified impact under the current Site conditions.

4.2.1 Monitored Natural Attenuation (MNA)

MNA relies on the groundwater's natural restorative ability through physical, chemical, and biological processes. Attenuative processes include dilution, dispersion, volatilization, biodegradation, adsorption, and chemical reactions with subsurface materials. The biodegradative and chemical reactions induce electron transfer with consequent molecular transformation to reduce toxicity, while dilution, dispersion and volatilization are physical processes that also help to reduce the toxicity of affected ground water.

This alternative would rely on a MNA approach to address the dissolved-phase contaminants of concern. Because the groundwater plume has already migrated off-Site, MNA is not considered a viable remediation approach at this time.

4.2.2 Well Replacement

Well replacement entails replacing existing impacted water supply wells with wells installed within portions of the aquifer that meet all applicable unrestricted groundwater use criteria (drinking water criteria). This option has been evaluated and was previously offered as a remedial alternative to local residents whose wells were impacted by off-Site migration of the impacted groundwater from the Site. This alternative was rejected by the owners of the affected residences. However, if access is provided, this option would still be considered viable.

4.2.3 Groundwater Pump and Treat

The pump and treat remedial technology is used to intercept contaminated groundwater and prevent further migration to potential down gradient groundwater receptors. The pump and treat remedial technology is a proven straightforward alternative where groundwater is extracted through a pumping well or wells, sent through a specific type of water treatment process to treat the impacted groundwater (e.g., air stripping, activated granular carbon, reactive beds, etc.) and

then discharged to an appropriate permitted surface water location, public owned treatment works (POTW), or underground injection point or points. This remedial technology is applicable and appropriate for addressing all gasoline COCs (including benzene and MtBE) dissolved in groundwater with the appropriate treatment process for specific gasoline COCs. The groundwater pump and treat remedial technology is not applicable to address impacted media above the groundwater table. Use of a groundwater pump and treat remedial system in conjunction with a remedial technology to address residual impacted soil in the vadose zone has been shown to be effective in cleaning up gasoline impacted sites by addressing both the dissolved groundwater impact and the source soil contamination.

Based on the results of the aquifer pump test (refer to Section 4.1.1 above), groundwater pump and treat is considered a viable remedial option for the Site and is retained for inclusion in the final remedial design for the Site. Details of the pump and treat system that will be included as part of the final remedial design can be found in Section 5.0 below.

4.2.4 Soil Vapor Extraction

SVE is intended to promote the transfer of volatile contaminants from the unsaturated vadose zone into a flowing air phase. The contaminant laden air is collected in the unsaturated zone is extracted using vacuum extraction wells. The success of SVE is dependent upon the ability to remove soil gas from the subsurface in the vicinity of source soil contamination. The influence of SVE points is generally restricted to the immediate vicinity of the extraction points. This remedial technology is applicable and appropriate for addressing all gasoline COCs (including benzene and MtBE) in vadose zone media.

As discussed in Section 4.1.1 above, SVE was successfully implemented to treat overburden soil in the vicinity of the former tank field. Further application of SVE would be limited to primarily treating potentially adsorbed hydrocarbon mass within the saprolite between the depth where the UST over-excavation occurred and the water table. This technology is retained for further

investigation as a potential remedial alternative for the Site. In order to determine the feasibility of this alternative, an SVE pilot test is proposed as described in Section 5.2.3.1.

4.2.5 Air Sparge

Air sparging (AS) is a process that strips VOCs that are dissolved in groundwater or adsorbed to saturated soil by injecting ambient air below the water table. The injected air and stripped VOCs migrate to the water table surface where a vapor extraction process captures the vapors. AS also introduces oxygen to the saturated soil and groundwater and increases dissolved oxygen levels in groundwater (increased dissolved oxygen concentrations can also aid in bioremediation). This technology, if utilized, would be combined with SVE (as discussed in the previous section). The effectiveness of this alternative is controlled by the air flow characteristics of the aquifer. In turn, the permeability and hydraulic conductivity of the aquifer material ultimately control the air flow through the aquifer. The applicability of AS remedial technology involving the injection of ambient air and extraction of soil vapor to address VOCs in the target treatment area was not considered a viable remedial alternative based on the geological and hydrogeological setting. In particular, this technology would not be applicable due to the highly variable permeability of the fractured bedrock for injection of air via AS. It would be difficult to predict and control the migration of the injected air in the schist bedrock environment where the impacted groundwater is present.

4.2.6 Dual Phase Extraction

Dual phase extraction (DPE) combines groundwater extraction (with similar effects to the pump and treat alternative described in Section 4.2.3 above) with SVE (described in Section 4.2.4). Both media are extracted from wells under high vacuum and treated through separate processes at a central remediation system. The difference between pump and treat and groundwater extracted through DPE is the depth intervals that groundwater is extracted from. Pump and treat targets the groundwater located in the depth interval of the aquifer where the pump is set. DPE

groundwater is extracted primarily from the upper portions of the aquifer (in this case the overburden and upper portion of shallow bedrock). Given the depth to water at the Site (i.e., greater than 30 feet), DPE is not a viable remedial option.

4.2.7 In-Situ Chemical Oxidation

In-Situ chemical oxidation (ISCO) involves the addition of non-hazardous chemicals into the subsurface where organic constituents would be transformed through an oxidation process into harmless byproducts, generally carbon dioxide and water. Common chemical oxidation compounds include hydrogen peroxide, sodium permanganate, potassium permanganate, Fenton's reagent, ozone, and RegenOx™. The type of oxidant to be used depends on the chemical(s) to be treated and the Site-specific constraints. Application of these ISCO injection compounds has grown in the environmental remediation industry with published studies and professional papers documenting the results of their application. Overall, the ISCO compounds presented show promise with their ongoing application in various geological and hydrological settings and could be applicable to addressing the groundwater impacted by gasoline COCs emanating from the Site.

This alternative would be difficult to implement because of Site-specific conditions where the dissolved constituents of concern exist. The fractured bedrock environment where the residual groundwater contamination is present makes the application of this technique difficult to predict. The effectiveness of chemical oxidation relies on the oxidant physically contacting contaminant molecules for the desired reaction to take place. This must happen before the oxidant reacts with something else, as the oxidant will target other naturally occurring organic compounds, sulfides, and reduced metals in the subsurface (referred to as "natural oxidant demand"). The bedrock media heterogeneity will prevent uniform distribution of the oxidant within the breadth of the dissolved phase plume.

A large number of injection points would need to be installed at considerable cost to attempt to achieve the desired reduction in contaminant levels via this technology. As such, this alternative is not considered a viable remedial approach at this time.

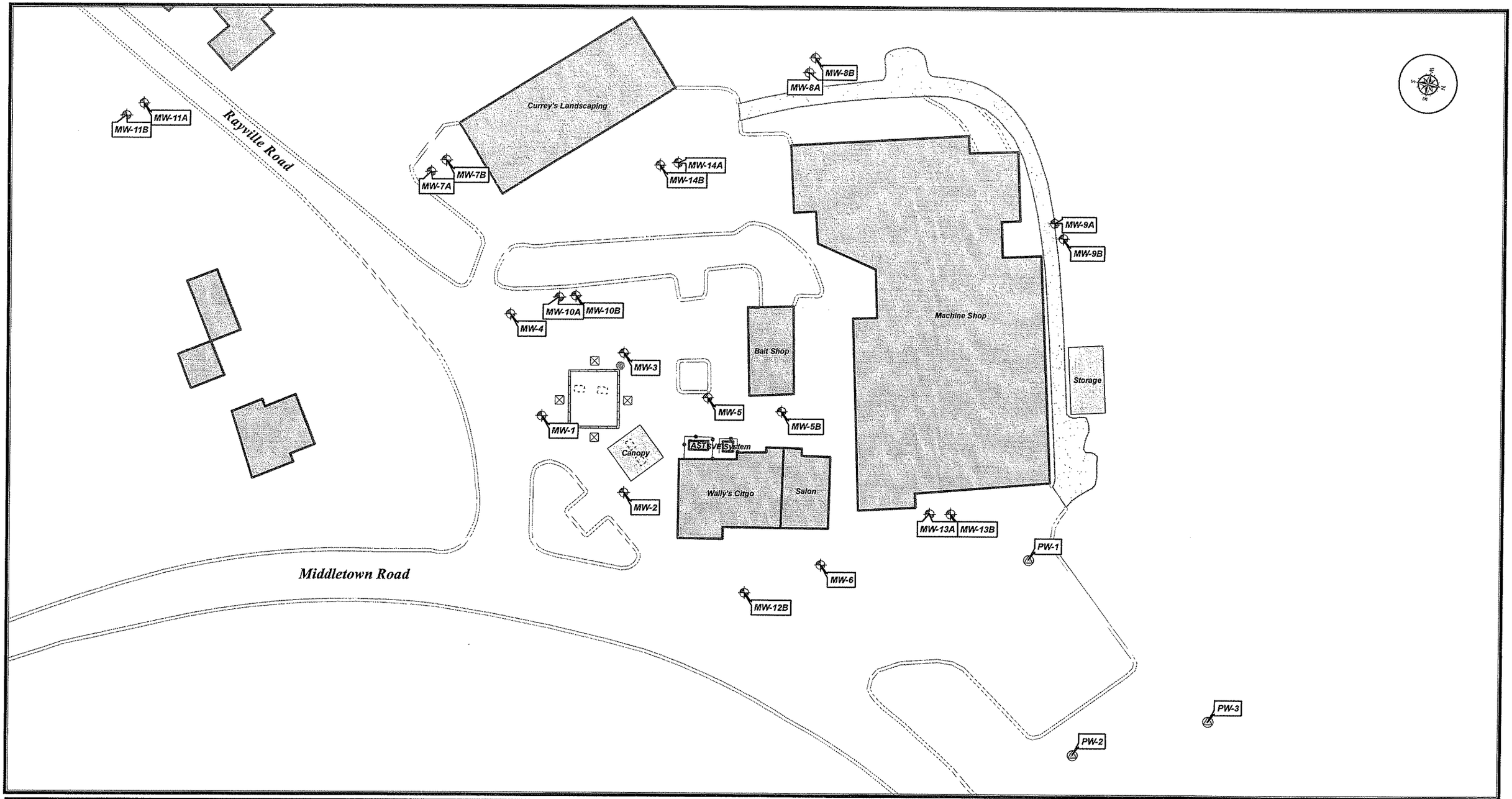
4.2.8 In-Situ Bioremediation

In-situ biodegradation has the potential to degrade certain organic compounds under both aerobic and anaerobic conditions. This technology is generally suited to low concentrations of organics in groundwater and relies on several potentially rate-limiting factors. It has been demonstrated that certain types of microorganisms will, under specific conditions, degrade or transform petroleum-related hydrocarbons to ultimately harmless daughter products.

The ability to implement biodegradation at the Site entails culturing the subsurface environment to create aerobic conditions, and may require additional nutrient amendments to stimulate a healthy bacterial population. The fractured bedrock environment is also a limitation on the effectiveness of this remedial alternative. Because there are already impacts to down gradient receptors posing unacceptable risk to human health, there is a time-sensitive element to the remedial alternative that precludes bioremediation as the preferred remedy at this time. Therefore, this technology is not retained for further evaluation.

4.2.9 Alternative Summary

Based on the above evaluation of remedial technologies, Section 5.0 describes the conceptual design, installation and operation of a pump and treat system for the Site. In addition to the pump and treat system, a pilot test to investigate the potential to re-inject treated groundwater will also be performed. Also, a pilot test to investigate the viability of SVE for the unsaturated zone beneath the former USTs will be performed. The details of each of these actions are presented in Section 5.0.



Legend

- Proposed SVE
- Monitoring Well
- Potable Well
- Abandoned Well
- Edge of Pavement
- Fence
- Tank Field
- Building
- Canopy
- Dispenser
- Gravel

0 75 150 Feet

Source:
-Site features based on Baltimore County GIS data.

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Wally's Citgo Station
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Proposed SVE Point Location Map

DRAWN BY:	FILE NAME:	SCALE:	FIGURE NO:
SKJ	1962-Proposed_SVE_Points_Map.mxd	SEE DRAWING	4-1
APPROVED BY: AJA	PROJECT NO: 1962	DATE: 02/17/2009	

5.0 CORRECTIVE ACTION PLAN

5.1 Introduction

A groundwater pump and treat system is selected as part of the final remedy for this Site. Certain details of the final remedy will be contingent upon further investigation activities at the Site (specifically the pilot testing described in Sections 5.2.3.1 and 5.3.2.1). Therefore, this section presents the conceptual design, rather than a final design, of possible alternatives to be included in the final remedial design for the Site. Following completion of the pilot tests, Alliance will prepare a report that summarizes the results of the pilot tests, the applicability of the technologies to the overall Site remedy, and provides the final remedial design specifications, details, monitoring, and reporting requirements.

5.2 Discussion of Groundwater Pump and Treat and Soil Vapor Extraction

5.2.1 Pump and Treat Technology

Pump ant treat involves the placement of vertical pumping wells, horizontal pumping wells, or pumping trenches within the source area of a contaminant plume to capture contaminated groundwater and prevent further migration to potential down gradient groundwater receptors. Pump and treat is typically considered a reliable means of intercepting contaminated groundwater. The extracted groundwater is then treated ex-situ through one of a variety of methods. Treated groundwater is then either re-injected into the aquifer or discharged to a surface water body or storm drainage feature. The performance of such systems can be monitored in a relatively simple fashion by measuring hydraulic heads and groundwater concentrations.

5.2.2 SVE Technology

SVE is a technique whereby VOCs are extracted from unsaturated soil by inducing a vacuum and extracting soil-gas from the subsurface. This process physically captures volatilized constituents that migrate to the vadose zone. The permeability of the vadose zone material controls the effectiveness of air flow through an SVE system. Higher permeability soils are generally more effective for the application of an SVE system. The primary advantage of this remedial option for this specific Site is that gasoline is a petroleum product that is naturally very volatile. It is composed of individual chemicals that have a relatively low molecular weight and a high vapor pressure. Therefore, gasoline releases are most favorably treated by remedial alternatives that exploit the volatile nature of the gasoline to remove it from the subsurface soil.

5.2.3 Applicability to Site

Groundwater pump and treat will be implemented to reduce constituent concentrations in the source area as well as minimize future down gradient migration of impacted groundwater from the Site. Depending on the results of the SVE pilot test, SVE may also be implemented as a means of reducing adsorbed-phase concentrations in the saprolite in the vicinity of the UST field. This/these technologies are intended to be protective of human health and the environment and will reduce the time required to remediate vicinity groundwater to an unrestricted use status. The SVE pilot test is discussed in the section below.

5.2.3.1 Proposed Soil Vapor Extraction Pilot Test

A SVE pilot test will be performed to evaluate the feasibility of removing residual hydrocarbons adsorbed to the unconsolidated bedrock (saprolite) underlying the UST Field, between the depth of the UST over-excavation (approximately 17 feet bgs) and the seasonal groundwater table (approximately 40 feet bgs). The objective of extracting soil vapors in this area is to address potential residual source material trapped in the unsaturated saprolite located below the area of

over-excavation of the former UST Field soils. Any remaining hydrocarbons in this region will act as continuing source material contributing to the contamination identified in the underlying bedrock aquifer. One SVE point will be installed at the approximate midpoint of the perimeter of each side of the UST field (four total SVE points). Proposed SVE Point locations are shown on Figure 4-1. Results of the SVE pilot test will be included in a report to MDE. This report will evaluate the effectiveness, feasibility, and whether SVE will be incorporated into the final remedy selected for the Site.

SVE Point Installation

Prior to installation of these points, appropriate notifications will be provided (MDE OCP, Miss Utility of Maryland (at least 72-hours prior), Site personnel, and other appropriate parties). In addition, soft dig or other comparable procedures will be used to clear the soil borings to a depth of at least five feet to include the entire circumference of the drill-hammer (nominal 8-inch or 6-inch diameter).

Four SVE points will be installed using the air-rotary drilling methodology. Points will be installed to a complete depth of approximately 5' above the local water table. Each SVE point will be completed with 4-inch 0.02-inch slot screen from depths of approximately 20 feet to 35 feet and 4-inch diameter solid PVC riser from depths of 0 to 20 feet. Filter pack sand will be placed in the point annulus from a depth of approximately 20 feet to the total depth with hydrated bentonite chips from 1 to 20 feet. Each SVE point will be completed with a flush mount manhole so that the SVE point can be easily accessed for pilot testing (discussed below) and potentially tie-in into a permanent SVE system (if the pilot test determines this is feasible).

Drilling activities will be conducted by a Maryland licensed driller under the supervision of an Alliance geologist. During drilling activities, soil borings will be logged continuously for grain size, texture, color and for indications of petroleum impact such as odor or staining. Soils will be screened using a photo-ionization detector (PID) to evaluate the presence (if any) of VOCs and provide appropriate health and safety monitoring for personnel on-Site. Indications of petroleum

impact such as PID responses, odors and/or staining, detected during soil boring advancement will be outlined on field soil boring logs.

The soil cuttings from the SVE point installation activities will be containerized in drums for off-Site disposal according to applicable State and Federal Regulations. The soil is anticipated to be a non-hazardous waste (consistent with historical findings) and likely to be disposed under the existing waste profile for the Site.

SVE Pilot Test Activities

It is anticipated that the pilot test will be conducted over a period of two days. The primary pilot test apparatus will consist of a regenerative air blower connected to two-inch PVC piping. During the course of the pilot test, the blower will be operated at varying flow rates and vacuums, with field measurements collected at each individual flow rate and vacuum. It is anticipated that the SVE pilot system will be connected to each of the four SVE points individually and operated for a period of approximately four hours at each point.

While operating the SVE pilot test equipment, the vacuum response will be measured in nearby monitoring points and existing wells surrounding an SVE point. The SVE piping will include necessary valves and access ports to allow for the control and measurement of flow rate and vacuum. The flow rate of gas in the piping will be measured using a Kurz hot wire anemometer and vacuums will be measured using a Magnahelic gauge. Hydrocarbon concentrations will be monitored with a PID. At least one tedlar bag sample of the extracted soil gas will be collected during the test on each point for laboratory analysis of total petroleum hydrocarbons (TPH) for organic fractions (C_1 through C_4 and C_4 through C_{10}) and benzene, toluene, ethylbenzene and total xylenes (BTEX), as well as MtBE. A summary of activities is listed below:

- A vacuum will be applied to the new SVE points described above to extract vapors one at a time.
- Tests will be conducted in steps (changes in applied vacuum) to evaluate the optimal operating conditions for the SVE system and are expected to last for four hours per

location unless concentrations stabilize (or are minimal) during the testing activities.

- Throughout the test, the effluent vapors will be monitored with a PID, and the applied vacuum and air flow will be recorded.
- In addition, air samples will be collected from the blower effluent and submitted for analysis. One air sample will be collected during the test on each of the four points (4 samples total). The data will be used to evaluate the vapor concentrations in the area of influence surrounding a SVE point.
- Vacuum response will be measured in the nearby tank field wells, recently installed SVE points, and nearby monitoring wells.

5.3 Conceptual Design of Pump and Treat System

5.3.1 Pump and Treat System Design

The proposed remediation system for the Site will include a groundwater pump and treat system. This involves the conversion of existing monitoring wells MW-10A and MW-7A into groundwater extraction wells to achieve localized hydraulic control in the area as well as provide active remediation in the source area (area of highest on-Site MtBE groundwater concentrations). Based on data collected from the pump test on MW-10A the target flow rates for each extraction well will be between one and three gallons per minute (gpm).

The groundwater pumped from the extraction wells will be passed through a sediment filter, treated for VOCs via an air stripper followed by a granular activated carbon (GAC) polishing unit. The treated water will be either re-injected into the subsurface on-Site or discharged off-Site to a local surface water body or storm sewer, depending on the results of the pending water injection pilot test and locating a suitable surface water discharge location. Piping from the groundwater extraction pumps in each well will be individually valved to control pumping rates from each well. The extraction well piping will be combined into a single pipe and directed into a sediment filter(s) to remove course material from the water stream. The contaminated

groundwater will be treated via an air stripper. The water effluent of the air stripper will pumped through a liquid phase GAC vessel(s) prior to final discharge from the treatment system (proper permits will be obtained for the treated groundwater discharge, depending on the discharge location). The results of the groundwater injection pilot test will determine whether some or all of the system effluent water may be re-injected into the subsurface in the UST field area or be discharged to a receiving surface water body.

Per MDE requirements, air discharge from the stripper tower will initially be passed through a control device (likely vapor phase GAC) prior to discharging to ambient air. Air stripper discharge emission rate estimates indicate that approximately two pounds of VOCs can be expected to be emitted per day (including approximately 5.0 E-05 pounds of benzene per hour). Permission to remove this control device will be requested in accordance with the MDE Air Quality General Permit to Construct Application Package for Groundwater Air Strippers and Soil Vapor Extraction Systems (Fact Sheet #7). Flow and pressure gauges and sampling ports will be positioned in strategic locations throughout the system piping to monitor overall system performance. Mechanical equipment including pumps and the blower will be equipped with interlock devices causing complete system shutdown in the event of a failure. An overall system pressure interlock will also be installed to shut down the system should system pressures get too high or too low. A control panel will be installed to allow for manual or automated pump control and a telemetry system will be installed to alert the user in the case that a system interlock is triggered.

Figure 5-1 depicts the Pump and Treat System Line Diagram Schematic showing the major components of the pump and treat system. A detailed Process and Instrumentation Diagram (P&ID) will be developed following selection of the final remedy for the Site. This will be included in the report that will be submitted to MDE following pilot testing activities.

Equipment and instrumentation for the groundwater pump and treat system will be housed in a prefabricated shed or a mobile trailer to be positioned in an unobtrusive location on-Site. Proper permits will be obtained for the placement of the shed or trailer.

5.3.2 Groundwater Discharge

A NPDES permit will be obtained for treated groundwater discharge as described in Section 5.5.2 below. In order to determine the ultimate method of discharging this treated groundwater, the water injection pilot test described in the section below will be conducted.

5.3.2.1 Water Injection Pilot Test

A groundwater pump and treat system will be a part of the final remedial design incorporated into the CAP. A water injection pilot test will be performed to evaluate the feasibility of re-injecting treated groundwater into the subsurface underneath the UST Field. The objective of re-injecting treated groundwater in this area is to flush residual contamination from the unsaturated saprolite located below the area of over-excavation of the former UST Field soils. In addition, this alternative may be the most desirable discharge method for treated groundwater. Results of the water injection pilot test will be included in a report to MDE. This report will evaluate the effectiveness, feasibility, and whether treated groundwater re-injection will be incorporated into the final remedy selected for the Site.

This pilot test is likely to include water injection into existing injection points IP-1 and/or IP-2 located along the perimeter of the current UST Field. It is anticipated that an approximate up-to-24-hour (depending on field conditions and pilot test monitoring data) injection test will be conducted at a flow rate of one gallon per minute (gpm) (totaling up to 1,440 gallons) and a second up-to-24-hour injection test (also dependent upon field conditions/monitoring data) will be conducted at a flow rate of five gpm (totaling up to 7,200 gallons). During the pilot testing, the injection flow rates will be adjusted as necessary based on observed field data to evaluate injection flow rate range the UST Field can accept and not flood the UST Field. It is anticipated that a tanker truck will be rented to supply the required volume of water for the injection tests. Ideally, the flow would be split between both injection points. However, due to vehicular traffic, it may be impractical to inject at both locations (IP-1 and IP-2) simultaneously.

A double diaphragm pump run off an air compressor or other comparable equipment will be used to deliver the water to the subsurface. Instantaneous flow rate and injection pressure at IP-1 and/or IP-2 will be monitored throughout the course of injections. Surrounding tank field monitoring points, newly installed SVE points, and existing Site monitoring wells will be gauged for water levels during injection activities. Pressure transducers will likely be placed within select on Site wells (e.g., wells MW-1, MW-2, MW-3, MW-4, MW-10A, and MW-10B) to electronically record the depth to water measurements over time in these wells with the remaining wells and newly installed SVE points (see Section 5.2.3.1 of this document) to be gauged using a water line or interface probe over time. Tank field observation wells TF-1 through TF-4 will also be gauged to determine the presence of water.

5.3.3 Air Emissions Treatment

Air emissions for the pump and treat system (air stripper) and the SVE system (if utilized) will initially be required by the MDE Air and Radiation Management Administration. Refer to the air stripper emission discussion in Section 5.3.1. Groundwater pump and treat (and SVE) systems typically start off with very elevated concentrations of hydrocarbons in the discharge. After a period of extended operation, the discharge concentrations will decrease substantially to a steady state. Concentrations will continue to drop from this point asymptotically approaching zero. Thus, one should consider what the conditions will be over the life cycle of the project, not just those conditions that will be present at start up. In order to conduct a proper analysis of air treatment technologies the following points are considered:

- The mass of hydrocarbons to be treated.
- The duration of the project.

Until the results of the SVE pilot test are known, an evaluation of the need for air treatment for this technology is moot. However, it is likely that vapor phase activated carbon would be the preferred remedy to treat the air stripper off gases.

Proper permits will be obtained prior to system operation (i.e., Air Quality General Permit to Construct: Soil Vapor Extraction & Groundwater Air Stripping.

5.4 System Installation, Start-Up, And Monitoring

This section describes installation and monitoring activities for the anticipated pump and treat system only. Until the results of the pilot tests are evaluated, possible SVE system operation and treated groundwater re-injection activities will not be evaluated.

5.4.1 Construction of Remedial System

Prior to construction, the location of the treatment building/trailer will be selected and any necessary permits obtained for the structure. Electric service availability and connections will also be arranged with the local utility company. The initial and most intensive phase of construction will be to trench plumbing and electric lines from extraction wells MW-7A and MW-10A to the location of the treatment building. Plumbing and electric lines will be installed according to code at an approximate depth of 2 ½ feet below ground. Prior to excavation, a one call to miss utility will be made. Following utility mark-out, a backhoe or equivalent will be used to excavate the plumbing/electric trenches to each well. The trench will be completed by saw cutting the existing Site asphalt and excavating only the length that can be piped and backfilled in one day (i.e., trenches will not be left open when work is not being completed). Soil will be positioned adjacent to the trench during excavation activities. Once piping is placed in the trench it will be covered with six inches of pea gravel. Native soil will be backfilled into the remaining trench and compacted, any soil spoils will remain on-Site. The completed trench will be re-asphalted and compacted/smoothed with a roller unless directed otherwise by the Site owner. Old asphalt will be properly disposed. The two groundwater extraction pipes and electric conduits for pump control will be stubbed-up at grade in the area of the remediation building.

Extraction pumps will be positioned approximately one foot off of the bottom of the well. Plumbing, electric, and a safety tether line will be connected to the pump prior to lowering it down the well. The plumbing line will be connected from the pump to the trench piping through a pitless adapter installed in the steel casing of each extraction well. The down-well electric line will be connected to the electric cable to the remediation shed inside a junction box that will be located adjacent to the well. A 2 feet by 2 feet by 2 feet metal road box will be set atop the well casing and electrical junction box, set in concrete, and finished to grade (replacing the current manhole).

The building (or trailer) will be delivered to the Site and positioned over the plumbing and electric stub-ups. Pump and treat system equipment (e.g., filter, air stripper, blower, transfer pump, carbon vessels, etc.) will then be positioned within the shed. All necessary plumbing and electric connections will be made to enable the functioning of the treatment system. Note that the pump and treat remediation system may come pre-installed in a trailer, in which case the only connections necessary will be to plumbing and electric stub-ups, an electric source from the local utility company, and water discharge piping.

5.4.2 System Start-Up and Shake-Down

For any remedial system, the first several weeks to one month of operation are the most dynamic. Frequent Site visits (minimum weekly visits) will be made during the first month of operation. Immediately following startup, liquid levels will be measured in each extraction well and adjusted to optimize groundwater capture. During each Site visit, the following measurements will likely be taken:

- Depth to water and vacuum pressures at select monitoring wells.
- Groundwater flow rates from each extraction well.
- Total gallons of groundwater extracted.
- System piping and equipment pressures.

- Air stripper influent (from blower) or effluent (through discharge stack) air flow rate (depending on accessibility of measurement location).

Laboratory analytical samples of system performance will also be obtained at a pre-set interval (e.g., during the first week of operation and after a month of operation). Groundwater samples will be collected pre-and post air stripper treatment and post-GAC discharge.

Following the installation and start up of the process, Alliance proposes to submit a brief report to the MDE describing the as-built installation and construction activity at the Site and to inform the MDE of any discrepancies between the finalized design and final installed system.

5.5 Maintenance and Monitoring

5.5.1 Pump and Treat System Monitoring

Once the shakedown of the process equipment has been completed, the pump and treat system will move into a period of routine maintenance and monitoring. System operational parameters will be monitored routinely (e.g., semi-monthly) for the parameters described in the start up and shakedown section. Routine laboratory analytical monitoring will also occur (e.g., on a monthly basis). Groundwater samples will be collected pre-and post air stripper treatment and post-GAC discharge.

5.5.2 NPDES Monitoring

A NPDES permit will be required for the discharge of treated groundwater. The MDE has a general permit for the "discharge of treated groundwater from petroleum contaminated groundwater sources to surface or ground waters of the state". This permit will stipulate bi-monthly monitoring (unless a reduced frequency is granted) of the treatment system effluent.

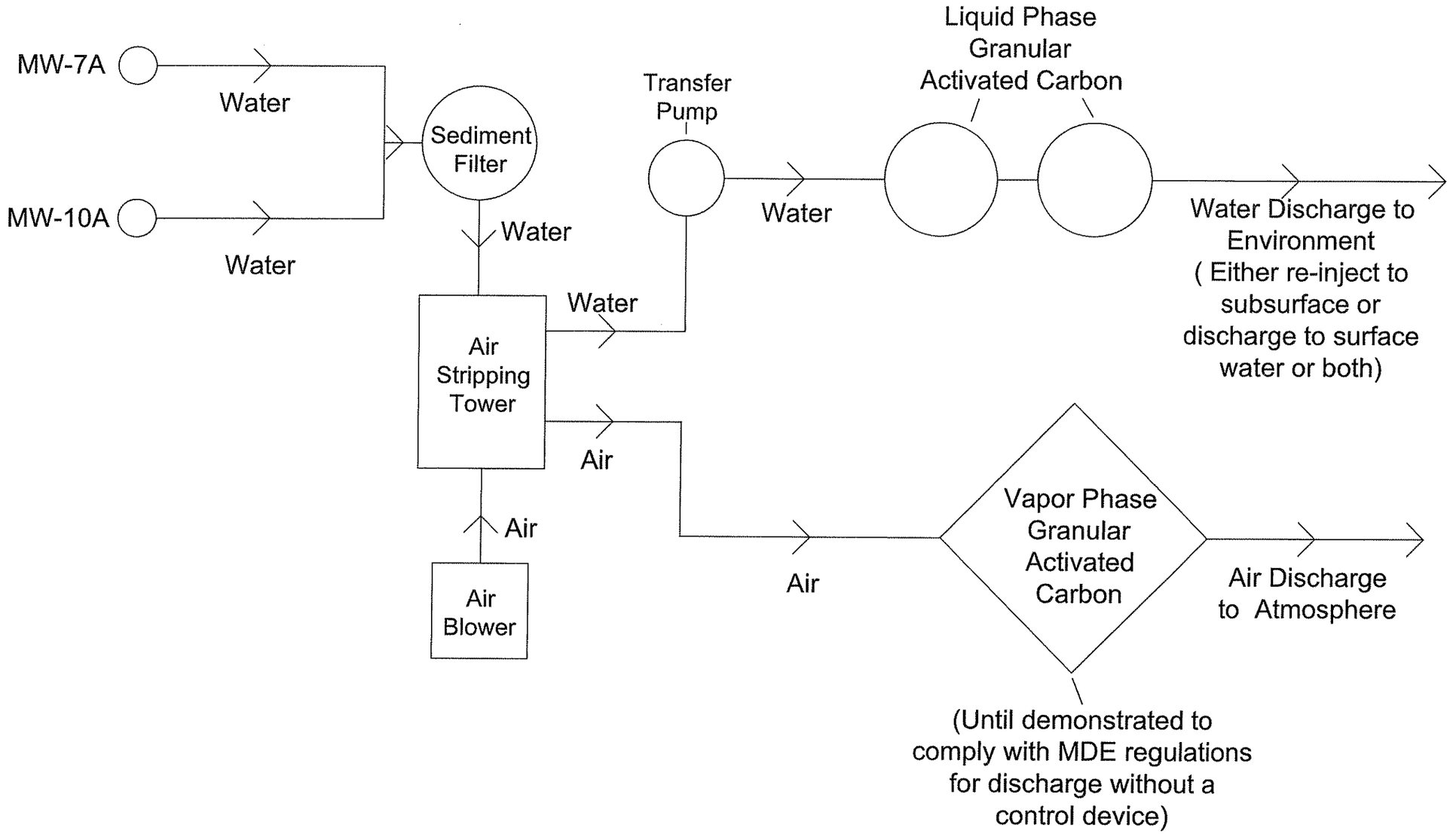
Discharge limits are 100 parts per billion (ppb) for total BTEX, 5 ppb for benzene, and 15 parts per million for TPH. This monitoring will be conducted as post-GAC groundwater sampling.

5.5.3 Quarterly Groundwater Sampling

As required by the MDE, groundwater samples will be collected quarterly from the Site monitoring wells. Purge water generated by the groundwater sampling activity will be managed as it is under the current monitoring program or will be treated via the air stripper once it is in operation. Quarterly sampling will continue according to the schedule established for the Site. Potable well sampling will also continue according to the current schedule established for the Site. Following the first year of sampling after system start-up, a reduction in sampling scope may be requested dependent upon conditions.

5.5.4 Reporting

After the receipt of the analytical results from the quarterly groundwater monitoring, a summary report on a quarterly basis will be prepared for submission to the MDE. The report will include a summary of all field and laboratory data obtained during the quarter and an evaluation of the results of the groundwater sampling event and treatment system performance monitoring. Upon achieving the remediation goals for the project, a closure petition will be prepared for review by the MDE to initiate post remediation monitoring.



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Wally's Citgo Station
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Parkton, Maryland

Pump and Treat System
Line Diagram Schematic

DESIGNED BY:	DRAWN BY:	UPDATED BY:	FIGURE NO:
DM	SKJ	-- --	5-1
APPROVED BY: DLM	PROJECT NO. 1962	DATE: 2/26/2009	

6.0 SCHEDULE OF EVENTS

Environmental Alliance, Inc. anticipates that MDE will review and comment on this document within two months from submittal. The schedule of events is not only contingent upon CAP approval, but also on completion of the pilot test activities described in this document. As such, a concrete schedule of events cannot be accurately made at this time. The following schedule presents an approximate timeline based on milestone decisions rather than actual dates.

- MDE approval of this CAP – approximately 2 months.
- Complete pilot test activities – approximately 2 months following MDE approval of the CAP.
- Submit Pilot Test Report to include final CAP remedial design – approximately 1.5 months following completion of pilot test activities.