Gardner Environmental Services, Inc.

P.O. Box 273~Monrovia, Maryland 21770-0273
Ph. (301) 865-2111~Fax (301) 865-2112
GESI@copper.net

February 19, 2013

Mr. Robert Hill, Inspector
Maryland Department of the Environment
Oil Control Program
1800 Washington Blvd., Suite 620
Baltimore, Maryland 21230-1719

Re: Quarterly Groundwater Monitoring at
Classic Fuels
11719 Old National Pike
New Market, Maryland 21774
Case No. 2012-0005-FR
Facility I.D. No. 1223

Dear Mr. Hill:

Gardner Environmental Services, Inc. (GESI) has completed the fourth round of quarterly groundwater monitoring at the above-referenced facility. The following summarizes the work performed, and the results obtained:

Determination of Direction of Groundwater Flow

Prior to the first round of quarterly sampling performed in March 2012, a laser level was used to survey the elevations of the top of each of three (3) monitoring well casings. An arbitrary baseline elevation of one-hundred feet (100') above mean sea level (AMSL) was established as a reference for each top of casing (TOC) elevation. A water level tape is then used to measure the depth to groundwater from the respective TOC in each monitoring well prior to each quarterly round of sampling.

The depth to groundwater in each of the wells was as follows for this monitoring event: MW-1 @ 25.63 ft. below TOC; MW-2 @ 26.50 ft. below TOC; and MW-3 @ 27.54 ft. below TOC. Correspondingly, the groundwater elevation for each well was calculated to be; 74.17, 74.27, and 74.49 AMSL, respectively.

Based on the data obtained from the above procedures, a current groundwater elevation contour map has been prepared for this fourth round of sampling. The map indicates that the general direction of shallow groundwater flow is to the north, northwest.

Figure 1 depicts the layout of the site. Figure 2 depicts the current direction of groundwater flow at the site, and both are found following the text.

Groundwater Sampling

GESI performed groundwater sampling on February 10, 2013. A purge bailer was used to remove approximately three (3) volumes of water from each well. The bailer was decontaminated between each well.

Dedicated disposable bailers were used to sample each well. The samples were collected in laboratory supplied and preserved sample bottles and vials, as appropriate for the intended analyses. Each sample was logged-on to the chain-of-custody form based on the well from which it was collected, i.e. MW-1, MW-2, and MW-3.

All samples were delivered to Maryland Spectral Services, Inc. of Baltimore, Maryland for analyses.

Groundwater Analytical Results

The samples were analyzed for volatile organic compounds (VOCs) by US EPA analysis method 8260B, and for diesel and gasoline range organics (DRO/GRO) by US EPA analysis method 8015B.

The analytical results for samples MW-1 and MW-3 indicate that the concentrations of all analytes remain below their respective reporting limits (commonly referred to as "not detected", or ND). The analytical results for sample MW-2 indicated quantifiable concentrations of a few of the target analytes in the 8260 VOC suite, as well as DRO/GRO. The following table summarizes the analyses results for MW-2 for the October 2012 monitoring event as well as this current event:

Analyte	Result*		Analyte	Result*	
	10/2012	2/2013		10/2012	2/2013
TAA	431	269	DIPE	12.8	5.8
TAME	13.5	4.7	MTBE	549	203
benzene	82.3	28.4	GRO	694	260
TBA	1080	315	DRO	540	450

*All results are presented in parts per billion (ug/L)

All other target analytes in the MW-2 sample were found to be ND. The analytical results are also summarized on Figure 2, and copies of the analytical results sheets follow Figures 1 and 2.

Findings and Recommendations

The most recent determination of the direction of shallow groundwater flow is largely consistent with the finding obtained for the first and third monitoring events. Based on the data collected thus far, and the general observations of topographical elevations and slope of the site and surrounding vicinity, the long-term prevailing trend of direction of shallow groundwater flow would be expected to be to the north, northwest.

The concentrations of all quantified analytes in water collected from MW-2 are lower than the concentrations found in October, 2012. The relatively low permeability characteristics of the clayey soil in this area, combined with the very subtle groundwater elevation gradient, and the fact that target analytes have not been quantified in MW-1 and MW-3 to date, indicate a localized zone of contamination that appears to be migrating slowly, if at all.

GESI recommends that the next quarterly monitoring event be performed in May 2013, at which time the three (3) monitoring wells will again be sampled and analyzed for VOCs by US EPA analysis method 8260, and DRO/GRO by US EPA analysis method 8015. Concurrently, the potable water should also be sampled and analyzed for VOCs by US EPA analysis method 524.2

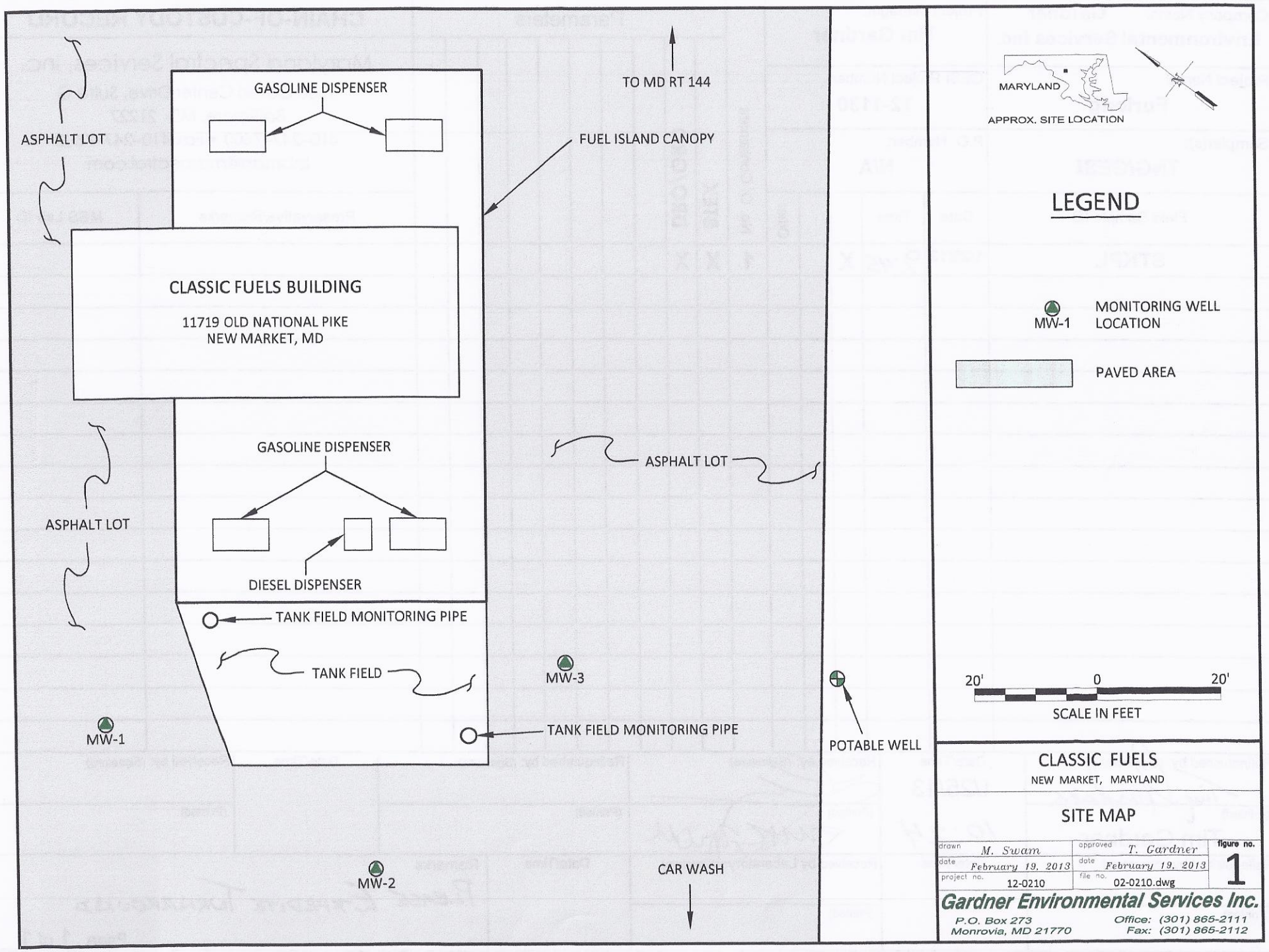
The three (3) monitoring well lids and frames are badly damaged by traffic and probably by snow removal activities. Each cover has only one (1) bolt securing each. The well lids and frames should be replaced to properly protect the well risers.

If you have any questions regarding this report, please don't hesitate to call the undersigned.

Sincerely,

Timothy N. Gardner

cc: Dwayne Lippy
Robert Goodwin


TO MD RT 144
GASOLINE DISPENSER
ASPHALT LOT
FUEL ISLAND CANOPY
CLASSIC FUELS BUILDING
11719 OLD NATIONAL PIKE
NEW MARKET, MD
GASOLINE DISPENSER
ASPHALT LOT
ASPHALT LOT
DIESEL DISPENSER
TANK FIELD MONITORING PIPE
TANK FIELD
MW-3
MW-1
TANK FIELD MONITORING PIPE
POTABLE WELL
MW-2
CAR WASH
MARYLAND
APPROX. SITE LOCATION
LEGEND
MW-1
MONITORING WELL LOCATION
PAVED AREA
20'
0
20'
SCALE IN FEET
CLASSIC FUELS
NEW MARKET, MARYLAND
SITE MAP
drawn M. Swam
approved T. Gardner
figure no. 1
date February 19, 2013
date February 19, 2013
project no. 12-0210
file no. 02-0210.dwg
Gardner Environmental Services Inc.
P.O. Box 273
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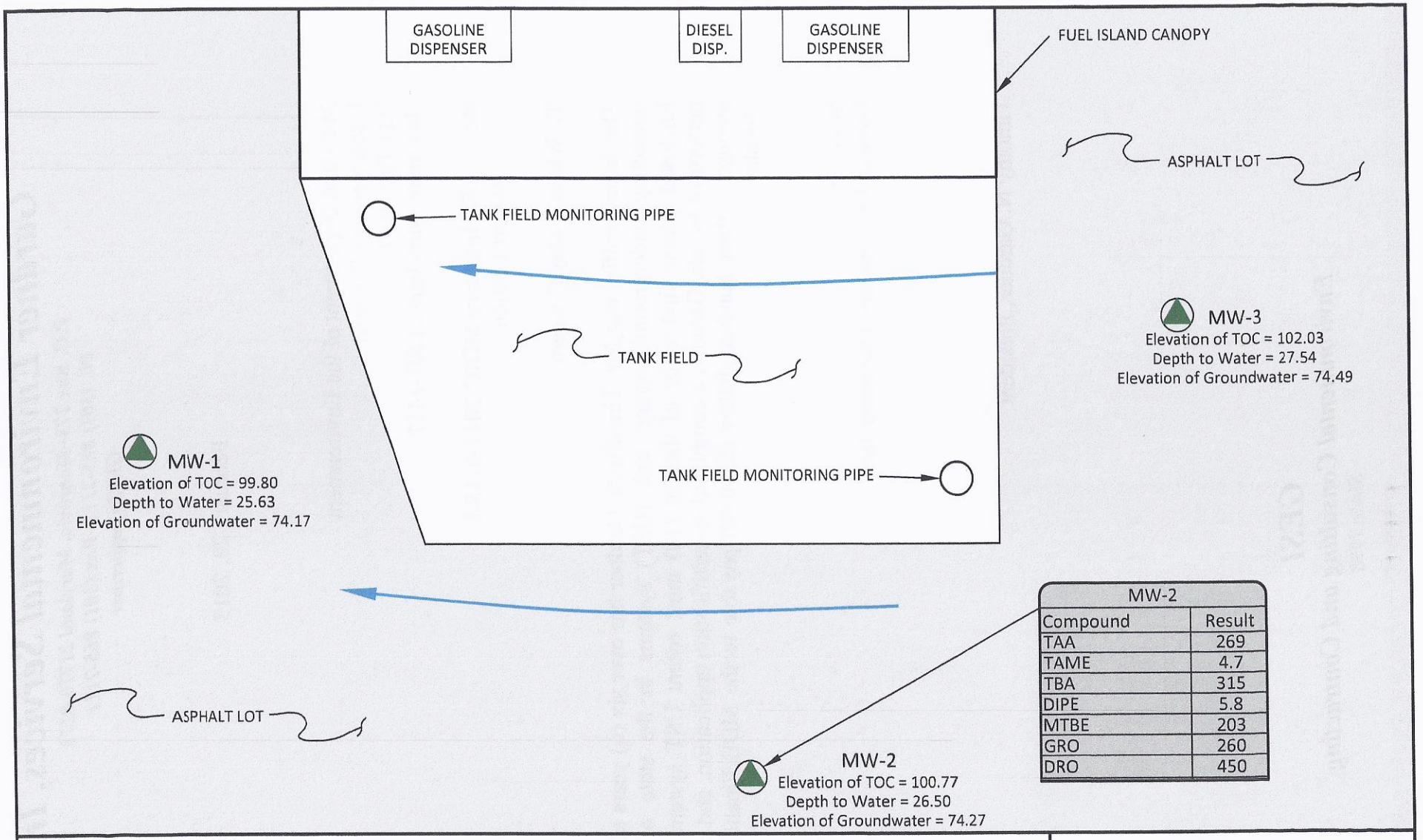

MW-2	
Compound	Result
TAA	269
TAME	4.7
TBA	315
DIPE	5.8
MTBE	203
GRO	260
DRO	450

NOTES:

1. All results presented in parts per billion ($\mu g/\ell$).
2. Sampling was conducted on February 10, 2013.

LEGEND

MW-1 — MONITORING WELL LOCATION

PAVED AREA

GENERAL GROUNDWATER FLOW DIRECTION

APPROX. SITE LOCATION

10' 0 10'

SCALE IN FEET

CLASSIC FUELS

NEW MARKET, MARYLAND

ENLARGED TANK FIELD AREA

drawn	M. Swam	approved	T. Gardner	figure no.
date	February 19, 2013	date	February 19, 2013	2
project no.	12-0210	file no.	02-0210.dwg	

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Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: **CLASSIC FUELS**

Project Number: 12-0210

Project Manager: Tim Gardner

Report Issued: 02/19/13 09:25

Gardner Environmental Services, Inc.

P.O. Box 273

Monrovia MD, 21770

CLIENT SAMPLE ID:		MW-1	MW-2	MW-3
LAB SAMPLE ID:		3021106-01	3021106-02	3021106-03
SAMPLE DATE:		02/10/13	02/10/13	02/10/13
RECEIVED DATE:		02/11/13	02/11/13	02/11/13
MATRIX	Units	Water	Water	Water

VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (Water)

Acetone	ug/L	<10.0	<10.0	<10.0
tert-Amyl alcohol (TAA)	ug/L	<20.0	**269**	<20.0
tert-Amyl methyl ether (TAME)	ug/L	<5.0	**4.7 [2]**	<5.0
Benzene	ug/L	<5.0	**28.4**	<5.0
Bromobenzene	ug/L	<5.0	<5.0	<5.0
Bromochloromethane	ug/L	<5.0	<5.0	<5.0
Bromodichloromethane	ug/L	<5.0	<5.0	<5.0
Bromoform	ug/L	<5.0	<5.0	<5.0
Bromomethane	ug/L	<5.0	<5.0	<5.0
tert-Butanol (TBA)	ug/L	<15.0	**315**	<15.0
2-Butanone (MEK)	ug/L	<10.0	<10.0	<10.0
n-Butylbenzene	ug/L	<5.0	<5.0	<5.0
sec-Butylbenzene	ug/L	<5.0	<5.0	<5.0
tert-Butylbenzene	ug/L	<5.0	<5.0	<5.0
Carbon disulfide	ug/L	<5.0	<5.0	<5.0
Carbon tetrachloride	ug/L	<5.0	<5.0	<5.0
Chlorobenzene	ug/L	<5.0	<5.0	<5.0
Chloroethane	ug/L	<5.0	<5.0	<5.0
Chloroform	ug/L	<5.0	<5.0	<5.0
Chloromethane	ug/L	<5.0	<5.0	<5.0
2-Chlorotoluene	ug/L	<5.0	<5.0	<5.0
4-Chlorotoluene	ug/L	<5.0	<5.0	<5.0
Dibromochloromethane	ug/L	<5.0	<5.0	<5.0
1,2-Dibromo-3-chloropropane	ug/L	<5.0	<5.0	<5.0
1,2-Dibromoethane (EDB)	ug/L	<5.0	<5.0	<5.0
Dibromomethane	ug/L	<5.0	<5.0	<5.0
1,2-Dichlorobenzene	ug/L	<5.0	<5.0	<5.0
1,3-Dichlorobenzene	ug/L	<5.0	<5.0	<5.0
1,4-Dichlorobenzene	ug/L	<5.0	<5.0	<5.0
Dichlorodifluoromethane	ug/L	<5.0	<5.0	<5.0
1,1-Dichloroethane	ug/L	<5.0	<5.0	<5.0
1,2-Dichloroethane	ug/L	<5.0	<5.0	<5.0
1,1-Dichloroethene	ug/L	<5.0	<5.0	<5.0
cis-1,2-Dichloroethene	ug/L	<5.0	<5.0	<5.0
trans-1,2-Dichloroethene	ug/L	<5.0	<5.0	<5.0
Dichlorofluoromethane	ug/L	<5.0	<5.0	<5.0

1 = The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).

2 = Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).

As a NELAP accredited laboratory, MSS certifies that all applicable test results meet NELAC requirements.

Analytical Results

1500 Caton Center Dr Suite G
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410-247-7600
www.mdspectral.com
VELAP ID 460040

Project: **CLASSIC FUELS**

Project Number: 12-0210

Project Manager: Tim Gardner

Report Issued: 02/19/13 09:25

Gardner Environmental Services, Inc.

P.O. Box 273

Monrovia MD, 21770

CLIENT SAMPLE ID:		MW-1	MW-2	MW-3
LAB SAMPLE ID:		3021106-01	3021106-02	3021106-03
SAMPLE DATE:		02/10/13	02/10/13	02/10/13
RECEIVED DATE:		02/11/13	02/11/13	02/11/13
MATRIX	Units	Water	Water	Water
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)				
1,2-Dichloropropane	ug/L	<5.0	<5.0	<5.0
1,3-Dichloropropane	ug/L	<5.0	<5.0	<5.0
2,2-Dichloropropane	ug/L	<5.0	<5.0	<5.0
1,1-Dichloropropene	ug/L	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene	ug/L	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene	ug/L	<5.0	<5.0	<5.0
Diisopropyl ether (DIPE)	ug/L	<5.0	**5.8**	<5.0
Ethyl tert-butyl ether (ETBE)	ug/L	<5.0	<5.0	<5.0
Ethylbenzene	ug/L	<5.0	<5.0	<5.0
Hexachlorobutadiene	ug/L	<5.0	<5.0	<5.0
2-Hexanone	ug/L	<10.0	<10.0	<10.0
Isopropylbenzene (Cumene)	ug/L	<5.0	<5.0	<5.0
4-Isopropyltoluene	ug/L	<5.0	<5.0	<5.0
Methyl tert-butyl ether (MTBE)	ug/L	<5.0	**203 [1]**	<5.0
4-Methyl-2-pentanone	ug/L	<10.0	<10.0	<10.0
Methylene chloride	ug/L	<10.0	<10.0	<10.0
Naphthalene	ug/L	<5.0	<5.0	<5.0
n-Propylbenzene	ug/L	<5.0	<5.0	<5.0
Styrene	ug/L	<5.0	<5.0	<5.0
1,1,1,2-Tetrachloroethane	ug/L	<5.0	<5.0	<5.0
1,1,2,2-Tetrachloroethane	ug/L	<5.0	<5.0	<5.0
Tetrachloroethene	ug/L	<5.0	<5.0	<5.0
Toluene	ug/L	<5.0	<5.0	<5.0
1,2,3-Trichlorobenzene	ug/L	<5.0	<5.0	<5.0
1,2,4-Trichlorobenzene	ug/L	<5.0	<5.0	<5.0
1,1,1-Trichloroethane	ug/L	<5.0	<5.0	<5.0
1,1,2-Trichloroethane	ug/L	<5.0	<5.0	<5.0
Trichloroethene	ug/L	<5.0	<5.0	<5.0
Trichlorofluoromethane (Freon 11)	ug/L	<5.0	<5.0	<5.0
1,2,3-Trichloropropane	ug/L	<5.0	<5.0	<5.0
1,2,4-Trimethylbenzene	ug/L	<5.0	<5.0	<5.0
1,3,5-Trimethylbenzene	ug/L	<5.0	<5.0	<5.0
Vinyl chloride	ug/L	<5.0	<5.0	<5.0
o-Xylene	ug/L	<5.0	<5.0	<5.0
m- & p-Xylenes	ug/L	<5.0	<5.0	<5.0

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Maryland spectral Services

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Analytical Results

Project: **CLASSIC FUELS**

Project Number: 12-0210

Project Manager: Tim Gardner

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CLIENT SAMPLE ID:		MW-1	MW-2	MW-3
LAB SAMPLE ID:		3021106-01	3021106-02	3021106-03
SAMPLE DATE:		02/10/13	02/10/13	02/10/13
RECEIVED DATE:		02/11/13	02/11/13	02/11/13
MATRIX	Units	Water	Water	Water
GASOLINE RANGE ORGANICS BY EPA 8015B (Water)				
Gasoline-Range Organics	ug/L	<100	**260**	<100
DIESEL RANGE ORGANICS BY EPA 3510/8015B (Water)				
Diesel-Range Organics	mg/L	<0.22	**0.45**	<0.30

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Company Name: Gardner Environmental Services Inc.	Project Manager: Tim Gardner
Project Name: Classic Fuels	GESI Project Number: 12-0210
Sampler(s): Tim Gardner	P.O. Number: N/A

CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410-247-7600 • Fax 410-247-7602
labman@mdspectral.com

Field Sample ID	Date	Time	No. Of Containers	VOCs by 8260	DRO/GRO by 8015	Preservative/Remarks	MSS Lab ID
MW-1	2/10/13	10:30	3	X	X		3021106-01
MW-2	2/10/13	10:45	3	X	X		-02
MW-3	2/10/13	10:38	3	X	X		-03

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Tim Gardner	2/11/13 1:55				
(Printed) Tim Gardner		(Printed)	(Printed)		(Printed)

Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Remarks
(Printed)		(Printed)		

Page 1 of 1

1/04

* 10.5°C