



# pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
SOUTHWEST REGIONAL OFFICE

October 19, 2011

*Via Certified Mail*

*No. 7006 0810 0005 4565 4838*

Mrs. Beth Voyles  
1085 McAdams Rd  
Washington, PA 15301

Re: Water Supply Complaint

Dear Mrs. Voyles:

Since November, 2010, the Department has been investigating your complaint that Range Resources-Appalachia LLC's ("Range") activities have contaminated your water supply, specifically from Range's well drilling and construction activities at the Yeager well site, including the associated frac water impoundment ("Impoundment"). We have concluded our investigation and have determined that there is no evidence to substantiate the complaint.

Your water supply consists of a spring and a water well. The Department understands that Range provided funds to you for drilling the water well in response to allegations that it had reduced the flow in the spring following construction activities at the Yeager site. For some time, Range has arranged for deliveries to a holding tank to supply you with water, although the company has not acknowledged any responsibility for any contamination of your spring or well.

Both water supply sources are located topographically down-gradient from the drill pad and between 700-800 feet from the Impoundment. Based on the Department's geologic assessment of the area, spills and leaks at the Yeager site would more likely impact shallow aquifers and springs than water wells drawing from deeper aquifers.

Your water supply has been sampled several times, including samples taken by the Department (November 23, 2010 and February 16, 2011) and Range (November 10, 2010, November 19, 2010, November 23, 2010, April 12, 2011, and July 27, 2011). These analyses have included testing for various inorganics, organics, and semi-volatile organics, as well as for combustible gas. Similar results were obtained from each of the tests. For each

sample analysis, all of the parameters analyzed that have established Primary and Secondary Maximum Contaminant Levels (“MCLs” and “SMCLs”) were found to be within the MCLs and SMCLs. Aside from two exceptions discussed below, no organic contamination was observed, and no combustible gas (e.g., methane and ethane) was detected. I have attached copies of the sample analysis sheets.

In addition to the above analyses, EPA also took a sample of your water supply on July 27, 2011. As of the date of this letter, those results were not available to the Department. There is no reason to believe the EPA test results will be different. But the Department will re-open the investigation if the results, when received, warrant it.

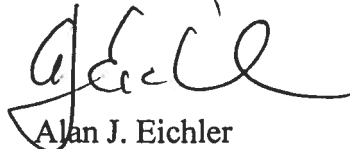
The Department’s analysis of the February 16, 2011 sample showed a small amount of acetone. However, the sample blank also showed a similar acetone concentration, indicating that the water well result was an artifact of laboratory procedures and not indicative of any contamination in your supply. Acetone is a common reagent in laboratories and is used in cleaning and drying glassware.

The test results from one of the above samples (Range’s November 10, 2010 sample) initially reported the presence of 1,4-butanediol. This was an error. Butanediol is a control constituent or surrogate that is added by the lab to samples at the beginning of the testing process. It is not a component of the water supply and was not analyzed as such, but was erroneously included on the first iteration of the report. This report was later re-issued, eliminating butanediol as a parameter.

Finally, you raised concerns that your water supply might be contaminated by glycols. There is no credible evidence of the contamination of your water supply by ethylene, di-ethylene or tri-ethylene glycol. The concerns regarding di-ethylene and tri-ethylene glycol arose from a sample analysis performed by Geo Resource Group of another nearby water well that reported the presence of these substances. However, neither the sample analyses performed by Summit Environmental Technologies Inc. of Range’s April 12, 2011 samples of your water supply nor Test America’s analyses of Range’s July 27, 2011 samples of your water supply showed any evidence of glycol in your water supply. It should be noted, however, that none of the labs performing these analyses is certified for di-ethylene and tri-ethylene analysis. Furthermore, although the detection limits might have differed among the glycol analyses, as stated earlier, your water supply does not evince gas well-related contamination in any of the other parameters tested. There is no reason to believe that only glycols would have been detected. If the Yeager site had impacted your water supply, glycols would not be the only parameter affected.

In summary, DEP has determined that Range has not contaminated your water supply. If you wish to discuss these results further, you may contact me at 412-442-4006 or via email at [aeichler@pa.gov](mailto:aeichler@pa.gov).

Sincerely,



Alan J. Eichler  
Program Manager  
Oil and Gas Management

Enclosures

c (w/enclosures):

John Smith, Esquire  
Kendra Smith, Esquire  
Jeremy Mercer, Esquire  
Megan Smith Miller, Esquire  
Oil and Gas File  
Jack Crook  
Vince Yantko  
John Carson  
Bryon Miller  
Gail Myers, OCC  
Mike Heilman, OCC  
Rick Watling, OCC

## INDEX TO ATTACHMENTS

1. Range's test results of November 10, 19, 23 sampling of Voyles well and spring
2. DEP's test results of November 23, 2010 and February 16, 2011 sampling of Voyles well and spring:  

Sample ID Nos. 1611 175, 1611-184, 1611-185, 1611-186, 1611-187, 1611-188
3. Range's test results of April 12, 2011 of Voyles well and spring:  

Client ID #1113884 Voyles well

Client ID #111385 Voyles spring
4. Range's test results of July 27, 2011 sampling of Voyles well #07272011367902 and spring #07272011367903

# **ATTACHMENT 1**

# Microbac Laboratories, Inc.

## Pittsburgh Division

0 Marshall Drive Warrendale, PA 15086 Phone:724-772-0610 Fax:724-772-1686  
www.microbac.com

### CERTIFICATE OF ANALYSIS

Work Order Number:  
0110863

RANGE RESOURCES  
LAURA RUSMISEL  
380 SOUTHPOINTE BOULEVARD  
CANONSBURG PA, 15317

Date Reported 3/29/2011  
Date Received 11/10/2010  
Date Sampled 11/10/2010  
Customer # AR661

Customer P.O.

Marcellus Shale

Sample#: 0110863-01  
Description: John Voyles Well (155)  
Date and Time Sampled: 11/10/2010 12:00:00AM

<u>Analysis</u>	<u>Method</u>	<u>Qualifier</u>	<u>Result</u>	<u>Units</u>	<u>RL</u>	<u>DF</u>	<u>Analyzed Date/Time</u>	<u>Analyst</u>
Alkalinity (as CaCO3)	SM 2320 B		282	mg/L	1	1	11/23/10 16:31	SFS
Chloride	SM 4500 Cl- E		22.40	mg/L	2.000	1	11/16/10 13:07	LAM
Kjeldahl Nitrogen, Total	SM 4500 NorgB NH3 D		0.868	mg/L	0.200	1	11/17/10 15:00	LAM
Nitrate - Nitrogen	CALC		1.12	mg/L	0.12	1	11/11/10 13:56	LAM
Sulfate	ASTM D516		18.0	mg/L	2.00	1	11/30/10 16:39	LLS
Barium	EPA 200.7		0.146	mg/L	0.010	1	11/13/10 16:08	CMG
Calcium	EPA 200.7		50.7	mg/L	5.00	10	11/13/10 16:08	CMG
Hardness, Total (as CaCO3)	SM 2340 B		198.0	mg CaCO3/	3.310	1	11/13/10 16:08	CMG
Iron	EPA 200.7		<0.100	mg/L	0.100	1	11/13/10 16:08	CMG
Magnesium	EPA 200.7		17.3	mg/L	0.500	1	11/13/10 16:08	CMG
Manganese	EPA 200.7		0.0215	mg/L	0.0100	1	11/13/10 16:08	CMG
Potassium	EPA 200.7		4.57	mg/L	1.00	1	11/13/10 16:08	CMG
Sodium	EPA 200.7		86.2	mg/L	10.0	10	11/13/10 16:08	CMG
Strontium	EPA 200.7		1.22	mg/L	0.0100	1	11/11/10 17:19	CMG
E. coli	SM 20th 9222B		< 1	per mL	1.00	1	11/11/10 11:15	LMZ
Fecal Coliform	SM 20th 9222 B/G		< 1	per mL	1.00	1	11/11/10 11:15	LMZ
Coliform	SM 9222 B		< 1	per 100 mL	1	1	11/11/10 11:15	LMZ
Surfactant	SM 5540 C		<0.025	mg/L	0.025	1	11/11/10 11:21	RDB
Ethylene Glycol	SW8015B_		<10.0	mg/L	10.0	1	11/30/10 14:32	HAV
Methane	RSK175	J	<5.00	ug/L	5.00	1	11/16/10 15:37	FJB
Methanol	SW8015B		<1.00	mg/L	1.00	1	11/29/10 13:14	HAV
Oil and Grease	EPA 1664A		<5	mg/L	5	1	11/19/10 16:36	TEB
pH	SM 4500 H+B		7.7	su	1.0	1	11/10/10 18:00	SH
Specific Conductance	SM 2510 B		659	µmhos/cm	1.00	1	11/22/10 16:10	LLS
Total Dissolved Solids	SM 2540 C		385	mg/L	10.0	1	11/16/10 17:12	ADS
Total Suspended Solids	SM 2540 D		<5	mg/L	5	1	11/17/10 9:42	ADS
Turbidity	SM 2130 B		0.89	NTU	0.1	1	11/11/10 15:53	LLS
Ethanol	SW8015B		<1.00	mg/L	1.00	1	11/29/10 13:14	HAV
Ethane	RSK175		<5.00	ug/L	5.00	1	11/16/10 15:37	FJB
Propanol	SW8015B		<1.00	mg/L	1.00	1	11/29/10 13:14	HAV
Isobutyl Alcohol	SW8015B		<1.00	mg/L	1.00	1	11/29/10 13:14	HAV
Isopropyl Alcohol	SW8015B	J	<1.00	mg/L	1.00	1	11/29/10 13:14	HAV
Butanol	SW8015B		<1.00	mg/L	1.00	1	11/29/10 13:14	HAV

# Microbac Laboratories, Inc.

Pittsburgh Division

10 Marshall Drive Warrendale, PA 15086 Phone:724-772-0610 Fax:724-772-1686

www.microbac.com

## CERTIFICATE OF ANALYSIS

Work Order Number:

0110863

RANGE RESOURCES  
LAURA RUSMISEL  
Marcellus Shale

Date Reported 3/29/2011  
Date Received 11/10/2010  
Date Sampled 11/10/2010

Sample#: 0110863-02

Description: John Voyles Spring (156)

Date and Time Sampled: 11/10/2010 12:30:00PM

<u>Analysis</u>	<u>Method</u>	<u>Qualifier</u>	<u>Result</u>	<u>Units</u>	<u>RL</u>	<u>DF</u>	<u>Analyzed Date/Time</u>	<u>Analyst</u>
Alkalinity (as CaCO3)	SM 2320 B		192	mg/L	1	1	11/23/10 16:31	SFS
Chloride	SM 4500 Cl- E		19.62	mg/L	2.000	1	11/16/10 13:07	LAM
Kjeldahl Nitrogen, Total	SM 4500 NorgB NH3 D		0.247	mg/L	0.200	1	11/17/10 15:00	LAM
Nitrate - Nitrogen	CALC		0.81	mg/L	0.12	1	11/11/10 13:56	LAM
Sulfate	ASTM D516		97.0	mg/L	2.00	1	11/30/10 16:39	LLS
Barium	EPA 200.7		0.049	mg/L	0.010	1	11/13/10 16:08	CMG
Calcium	EPA 200.7		68.9	mg/L	5.00	10	11/13/10 16:08	CMG
Hardness, Total (as CaCO3)	SM 2340 B		233.0	mg CaCO3/	3.310	1	11/13/10 16:08	CMG
Iron	EPA 200.7		0.189	mg/L	0.100	1	11/13/10 16:08	CMG
Magnesium	EPA 200.7		15.0	mg/L	0.500	1	11/13/10 16:08	CMG
Manganese	EPA 200.7		<0.0100	mg/L	0.0100	1	11/13/10 16:08	CMG
Potassium	EPA 200.7		5.27	mg/L	1.00	1	11/13/10 16:08	CMG
Sodium	EPA 200.7		38.1	mg/L	1.00	1	11/13/10 16:08	CMG
Strontium	EPA 200.7		0.450	mg/L	0.0100	1	11/11/10 17:19	CMG
E. coli	SM 20th 9222B		< 1	per mL	1.00	1	11/11/10 11:15	LMZ
Fecal Coliform	SM 20th 9222 B/G		< 1	per mL	1.00	1	11/11/10 11:15	LMZ
Coliform	SM 9222 B		< 1	per 100 mL	1	1	11/11/10 11:15	LMZ
Surfactant	SM 5540 C		<0.025	mg/L	0.025	1	11/11/10 11:21	RDB
Ethylene Glycol	SW8015B_		<10.0	mg/L	10.0	1	11/30/10 14:42	HAV
Methane	RSK175	J	<5.00	ug/L	5.00	1	11/16/10 15:49	FJB
Methanol	SW8015B		<1.00	mg/L	1.00	1	11/29/10 13:26	HAV
Oil and Grease	EPA 1664A		<5	mg/L	5	1	11/19/10 16:36	TEB
pH, Field	SM 4500 H+B		7.9	su	1.0	1	11/10/10 12:35	ZZZ
pH	SM 4500 H+B		7.7	su	1.0	1	11/10/10 18:00	SH
Specific Conductance	SM 2510 B		612	µmhos/cm	1.00	1	11/22/10 16:10	LLS
Total Dissolved Solids	SM 2540 C		377	mg/L	10.0	1	11/16/10 17:12	ADS
Total Suspended Solids	SM 2540 D		<5	mg/L	5	1	11/17/10 9:42	ADS
Turbidity	SM 2130 B		1.99	NTU	0.1	1	11/11/10 15:53	LLS
Ethanol	SW8015B		<1.00	mg/L	1.00	1	11/29/10 13:26	HAV
Ethane	RSK175		<5.00	ug/L	5.00	1	11/16/10 15:49	FJB
Propanol	SW8015B		<1.00	mg/L	1.00	1	11/29/10 13:26	HAV
Isobutyl Alcohol	SW8015B		<1.00	mg/L	1.00	1	11/29/10 13:26	HAV
Isopropyl Alcohol	SW8015B		<1.00	mg/L	1.00	1	11/29/10 13:26	HAV
Butanol	SW8015B		<1.00	mg/L	1.00	1	11/29/10 13:26	HAV

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## CERTIFICATE OF ANALYSIS

Work Order Number:

0111547

RANGE RESOURCES  
LAURA RUSMISEL  
Yeager Impoundment

Date Reported 3/28/2011  
Date Received 11/19/2010  
Date Sampled 11/19/2010

Sample#: 0111547-04

Description: John Voyles Basement Faucet Spring (47)

Date and Time Sampled: 11/19/2010 12:45:00PM

Analysis	Method	Qualifier	Result	Units	RL	DF	Analyzed Date/Time	Analyst
Alkalinity (as CaCO3)	SM 2320 B		260	mg/L	1	1	12/03/10 13:00	SFS
Arsenic	SM19-3113B		<0.0050	mg/L	0.0050	5	12/01/10 11:33	LLS
Cadmium	EPA 200.7		<0.001	mg/L	0.001	1	11/24/10 12:04	CMG
Copper	EPA 200.7		0.016	mg/L	0.010	1	11/24/10 12:04	CMG
Lead	SM19-3113B		<0.001	mg/L	0.001	1	11/23/10 12:43	LLS
Mercury	EPA 245.1		<0.0002	mg/L	0.0002	1	11/23/10 14:25	LLS
Chloride	SM 4500 Cl- E		8.270	mg/L	2.000	1	11/22/10 10:44	LAM
Kjeldahl Nitrogen, Total	SM 4500 NorgB NH3 D		0.202	mg/L	0.500	1	12/02/10 21:29	LAM
Nitrate - Nitrite, Nitrogen	SM 4500 NO3 F		0.25	mg/L	0.10	1	11/23/10 15:53	LAM
Nitrate - Nitrogen	CALC		0.25	mg/L	0.12	1	11/23/10 15:53	LAM
Nitrite Nitrogen	SM 4500 NO3 F		<0.02	mg/L	0.02	1	11/19/10 17:46	LAM
Sulfate	ASTM D516		50.1	mg/L	2.00	1	12/13/10 15:22	LLS
Barium	EPA 200.7		0.052	mg/L	0.010	1	11/24/10 12:04	CMG
Calcium	EPA 200.7		107	mg/L	5.00	10	11/24/10 12:04	CMG
Hardness, Total (as CaCO3)	SM 2340 B		351.0	mg CaCO3/	3.310	1	11/24/10 12:04	CMG
Benzene	EPA 524.2		<0.500	ug/L	0.500	1	11/29/10 17:17	RWS
Iron	EPA 200.7		0.120	mg/L	0.100	1	11/24/10 12:04	CMG
Magnesium	EPA 200.7		20.7	mg/L	0.500	1	11/24/10 12:04	CMG
Manganese	EPA 200.7		<0.0100	mg/L	0.0100	1	11/24/10 12:04	CMG
Potassium	EPA 200.7		1.43	mg/L	1.00	1	11/24/10 12:04	CMG
Ethylbenzene	EPA 524.2		<0.500	ug/L	0.500	1	11/29/10 17:17	RWS
Sodium	EPA 200.7		10.1	mg/L	1.00	1	11/24/10 12:04	CMG
Strontium	EPA 200.7		0.468	mg/L	0.0100	1	11/22/10 18:18	CMG
E. coli	SM 20th 9222B		> 200	per mL	1.00	1	11/19/10 16:20	LMZ
Fecal Coliform	SM 20th 9222 B/G		> 200	per mL	1.00	1	11/19/10 16:20	LMZ
Coliform	SM 9222 B		> 200	per 100 mL	1	1	11/19/10 16:20	LMZ
Surfactant	SM 5540 C		<0.025	mg/L	0.025	1	11/20/10 19:36	RDB
Toluene	EPA 524.2		<0.500	ug/L	0.500	1	11/29/10 17:17	RWS
Total Xylenes	EPA 524.2		<0.500	ug/L	0.500	1	11/29/10 17:17	RWS
Ethylene Glycol	SW8015B_		<10.0	mg/L	10.0	1	11/30/10 16:22	HAV
Methane	RSK175	J	<5.00	ug/L	5.00	1	11/30/10 20:07	FJB
Methanol	SW8015B		<1.00	mg/L	1.00	1	11/29/10 15:08	HAV
Oil and Grease	EPA 1664A		<5	mg/L	5	1	12/02/10 16:29	ADS
pH, Field	SM 4500 H+B		7.7	su	1.0	1	11/19/10 12:46	MHS
pH	SM 4500 H+B		8.2	su	1.0	1	11/23/10 17:45	RWH
Specific Conductance	SM 2510 B		550	µmhos/cm	1.00	1	12/07/10 16:19	LLS



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## CERTIFICATE OF ANALYSIS

Work Order Number:

0111547

RANGE RESOURCES

LAURA RUSMISEL

Yeager Impoundment

Date Reported

3/28/2011

Date Received

11/19/2010

Date Sampled

11/19/2010

Sample#: 0111547-04

Description: John Voyles Basement Faucet Spring (47)

Date and Time Sampled: 11/19/2010 12:45:00PM

<u>Analysis</u>	<u>Method</u>	<u>Qualifier</u>	<u>Result</u>	<u>Units</u>	<u>RL</u>	<u>DF</u>	<u>Analyzed Date/Time</u>		<u>Analyst</u>
Total Dissolved Solids	SM 2540 C		383	mg/L	10.0	1	11/24/10	17:00	ADS
Total Suspended Solids	SM 2540 D		11	mg/L	5	1	11/24/10	9:46	ADS
Turbidity	SM 2130 B		4.7	NTU	0.1	1	11/20/10	16:00	KAB
Ethanol	SW8015B		<1.00	mg/L	1.00	1	11/29/10	15:08	HAV
Ethane	RSK175		<5.00	ug/L	5.00	1	11/30/10	20:07	FJB
Propanol	SW8015B		<1.00	mg/L	1.00	1	11/29/10	15:08	HAV
Isobutyl Alcohol	SW8015B		<1.00	mg/L	1.00	1	11/29/10	15:08	HAV
Isopropyl Alcohol	SW8015B		<1.00	mg/L	1.00	1	11/29/10	15:08	HAV
Butanol	SW8015B		<1.00	mg/L	1.00	1	11/29/10	15:08	HAV

# Microbac Laboratories, Inc.

Pittsburgh Division

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## CERTIFICATE OF ANALYSIS

Work Order Number:

0111737

RANGE RESOURCES  
LAURA RUSMISEL  
380 SOUTHPOINTE BOULEVARD  
CANONSBURG PA, 15317

Date Reported 3/25/2011  
Date Received 11/23/2010  
Date Sampled 11/23/2010  
Customer # AR661

Customer P.O.

Marcellus Shale

Sample#: 0111737-01

Description: John Voyles - Set #10 - BasementSink

Date and Time Sampled: 11/23/2010 9:00:00AM

Analysis	Method	Qualifier	Result	Units	RL	DF	Analyzed Date/Time	Analyst
Alkalinity (as CaCO3)	SM 2320 B		302	mg/L	1	1	12/06/10 17:31	SFS
Arsenic	SM19-3113B		<0.0050	mg/L	0.0050	5	12/01/10 11:33	LLS
Cadmium	EPA 200.7		<0.001	mg/L	0.001	1	11/24/10 12:04	CMG
Copper	EPA 200.7		<0.010	mg/L	0.010	1	11/24/10 12:04	CMG
Hardness, Total (as CaCO3)	SM 2340 B		214.0	mg CaCO3/	3.310	1	11/24/10 12:04	CMG
Lead	SW846-7421		<0.005	mg/L	0.005	5	11/29/10 17:20	LLS
Mercury	EPA 245.1		<0.000200	mg/L	0.000200	1	12/03/10 16:55	LLS
Oil & Grease	EPA 1664A		<5.0	mg/L	5.0	1	12/07/10 9:30	MAB
Chloride	SM 4500 Cl- E		22.66	mg/L	2.000	1	12/01/10 20:13	LAM
Kjeldahl Nitrogen, Total	SM 4500 NorgB NH3 D		0.247	mg/L	0.200	1	12/14/10 9:53	LAM
Nitrate - Nitrite, Nitrogen	SM 4500 NO3 F		1.06	mg/L	0.10	1	11/24/10 8:31	LAM
Nitrate - Nitrogen	CALC		1.02	mg/L	0.12	1	11/24/10 8:31	LAM
Nitrite Nitrogen	SM 4500 NO3 F		0.04	mg/L	0.02	1	11/24/10 7:52	LAM
Sulfate	ASTM D516-02		24.5	mg/L	2.00	1	12/18/10 19:12	SFS
Barium	EPA 200.7		0.149	mg/L	0.010	1	11/24/10 12:04	CMG
Calcium	EPA 200.7		56.4	mg/L	5.00	10	11/24/10 12:04	CMG
Iron	EPA 200.7		<0.100	mg/L	0.100	1	11/24/10 12:04	CMG
Magnesium	EPA 200.7		17.7	mg/L	0.500	1	11/24/10 12:04	CMG
Manganese	EPA 200.7		0.0285	mg/L	0.0100	1	11/24/10 12:04	CMG
Potassium	EPA 200.7		2.89	mg/L	1.00	1	11/24/10 12:04	CMG
Sodium	EPA 200.7		79.8	mg/L	10.0	10	11/24/10 12:04	CMG
Strontium	EPA 200.7		1.10	mg/L	0.0100	1	11/23/10 18:45	CMG
E. coli	SM 20th 9222B		< 1	per mL	1.00	1	11/23/10 17:15	MDG
Fecal Coliform	SM 20th 9222 B/G		< 1	per mL	1.00	1	11/23/10 17:15	MDG
Coliform	SM 9222 B		< 1	per 100 mL	1	1	11/23/10 17:15	MDG
Surfactant	SM 5540 C		<0.025	mg/L	0.025	1	11/24/10 15:30	RDB
Ethylene Glycol	SW8015B_		<5.00	mg/L	10.0	1	12/01/10 12:03	HAV
Methane	RSK175		10.7	ug/L	5.00	1	12/01/10 15:55	FJB
Methanol	SW8015B		<0.500	mg/L	1.00	1	12/06/10 16:32	HAV
pH, Field	SM 4500 H+B		7.6	su	1.0	1	11/23/10 9:00	MHS
H	SM 4500 H+B		7.7	su	1.0	1	11/23/10 17:45	RWH
Specific Conductance	SM 2510 B		653	µmhos/cm	1.00	1	12/07/10 16:19	LLS
Total Dissolved Solids	SM 2540 C		402	mg/L	10.0	1	11/30/10 16:32	ADS
Total Suspended Solids	SM 2540 D		<5	mg/L	5	1	11/29/10 10:30	ADS

The data and other information contained in this report, as well as any accompanying documents, represent only the sample(s) analyzed. They are reported upon the condition that they are not to be reproduced wholly or in part for advertising or other purposes without the written approval from the laboratory.

Member

# Microbac Laboratories, Inc.

Pittsburgh Division

70 Marshall Drive Warrendale, PA 15086 Phone:724-772-0610 Fax:724-772-1686

www.microbac.com

## CERTIFICATE OF ANALYSIS

Work Order Number:

0111737

RANGE RESOURCES  
LAURA RUSMISEL  
Marcellus Shale

Date Reported 3/25/2011  
Date Received 11/23/2010  
Date Sampled 11/23/2010

Sample#: 0111737-01

Description: John Voyles - Set #10 - BasementSink

Date and Time Sampled: 11/23/2010 9:00:00AM

<u>Analysis</u>	<u>Method</u>	<u>Qualifier</u>	<u>Result</u>	<u>Units</u>	<u>RL</u>	<u>DF</u>	<u>Analyzed Date/Time</u>	<u>Analyst</u>
Turbidity	SM 2130 B		1.34	NTU	0.1	1	11/23/10 16:00	LLS
Benzene	EPA 524.2		<0.500	ug/L	0.500	1	12/02/10 17:13	MRL
Ethanol	SW8015B		<0.500	mg/L	1.00	1	12/06/10 16:32	HAV
Ethane	RSK175		<1.00	ug/L	5.00	1	12/01/10 15:55	FJB
Propanol	SW8015B		<0.500	mg/L	1.00	1	12/06/10 16:32	HAV
Ethylbenzene	EPA 524.2		<0.500	ug/L	0.500	1	12/02/10 17:13	MRL
Toluene	EPA 524.2		<0.500	ug/L	0.500	1	12/02/10 17:13	MRL
Total Xylenes	EPA 524.2		<0.500	ug/L	0.500	1	12/02/10 17:13	MRL
Isobutyl Alcohol	SW8015B		<0.500	mg/L	1.00	1	12/06/10 16:32	HAV
Isopropyl Alcohol	SW8015B		<0.500	mg/L	1.00	1	12/06/10 16:32	HAV
Butanol	SW8015B		<0.500	mg/L	1.00	1	12/06/10 16:32	HAV

# **ATTACHMENT 2**

Date of Issue: 08/09/2011 12:08:30  
PAGE 1 of 2  
DEP Bureau Of Laboratories - Harrisburg  
P.O. Box 1467  
2575 Interstate Drive  
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 175

Status: Completed

Name of Sample Collector: Bryon A Miller  
Date Sample was Collected: 11/23/2010 08:30:00 AM

County: Washington State: PA  
Municipality: Amwell Twp

-----  
BETH VOYLES  
1085  
MCADAMS ROAD  
WASHINGTON, PA. 15301  
-----

-----  
Sample Medium : Water  
Sample Medium Type: Water

Location: Spring water taken at utility sink in basement  
Reason: Complaint  
Project: NOT INDICATED  
Appearance: clear no odor

Laboratory Sample ID: I2010036417 Date Received: 11/23/2010 Completed  
Standard Analysis: 942

And Time				Date
Test Codes/CAS# - Description	Analyst	Test Method	Reported Results	
Analyzed				
00403 pH			8.1 pH units	
11/24/2010 12:25 PM	GDELONG	SM 4500H-B		
** Comment **	Time Limit For Test Exceeded			
00095 SPC @ 25.0 C			615.00 umhos/cm	
12/06/2010 03:12 PM	GDELONG	SM 2510B		
00410 ALKALINITY			285.8 MG/L	
11/24/2010 12:25 PM	GDELONG	SM 2320B		
01082A STRONTIUM T			401.000 UG/L	
12/01/2010 11:02 AM	MOBERCASH	EPA 200.7		

01002H ARSENIC T <3.0 UG/L  
 11/30/2010 01:56 PM DSOLENBERGEPA 200.8  
 70300U TDS180 -USGS 390 MG/L  
 11/24/2010 12:00 AM LWILKINSONUSGS I-1750  
 00927A MAGNESIUM T 20.800 MG/L  
 12/01/2010 11:02 AM MOBERCASH EPA 200.7

PAGE 2 of 2

Analytical Report FOR  
 Land Recycling & Waste Management

Sample ID: 1611 175

Status: Completed

And Time				Date
Test Codes/CAS# - Description	Analyst	Test Method	Reported Results	
01055A MANGANESE T			<10.00 UG/L	
12/01/2010 11:02 AM	MOBERCASH	EPA 200.7		
01007A BARIUM T			56.000 UG/L	
12/01/2010 11:02 AM	MOBERCASH	EPA 200.7		
00916A CALCIUM T			107.000 MG/L	
12/01/2010 11:02 AM	MOBERCASH	EPA 200.7		
01045A IRON T			42.000 UG/L	
12/01/2010 11:02 AM	MOBERCASH	EPA 200.7		
00937A POTASSIUM T			1.344 MG/L	
12/01/2010 11:02 AM	MOBERCASH	EPA 200.7		
00929A SODIUM T			9.730 MG/L	
12/01/2010 11:02 AM	MOBERCASH	EPA 200.7		
00940A CHLORIDE			6.6 MG/L	
12/08/2010 08:00 AM	CRADEK	SM 4500-CL		
00900 Hardness T			353 MG/L	
12/01/2010 11:02 AM	MOBERCASH	SM 2340 B		

\*\*\*\*\*  
 \*\*\*\*\*

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Taru Upadhyay, Technical Director, Bureau of Laboratories

Date of Issue: 08/09/2011 01:08:26  
PAGE 1 of 2  
DEP Bureau Of Laboratories - Harrisburg  
P.O. Box 1467  
2575 Interstate Drive  
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 187

Status: Completed

Name of Sample Collector: Bryon A Miller  
Date Sample was Collected: 02/16/2011 10:45:00 AM

County: Washington State: PA  
Municipality: Amwell Twp

-----  
BETH VOYLE  
1085 MCADAMS ROAD  
WASHINGTON, PA. 15301  
-----

-----  
Sample Medium : Water  
Sample Medium Type: Water

Location: Spring vault  
Reason: Complaint  
Project: NOT INDICATED  
Spring water

Appearance: clear no odor

Laboratory Sample ID: I2011003903 Date Received: 02/16/2011 Completed  
Standard Analysis: 942

Legal Seal: H020009 Intact: YES  
Legal Seal: H020011 Intact: YES

And Time				Date }
Test Codes/CAS# - Description			Reported Results	
Analyzed	Analyst	Test Method		
00095 SPC @ 25.0 C			585.00 umhos/cm	
02/18/2011 04:08 PM	GDELONG	SM 2510B		
00410 ALKALINITY			237.8 MG/L	
02/17/2011 11:42 AM	GDELONG	SM 2320B		
01082A STRONTIUM T			346.000 UG/L	
02/18/2011 10:26 AM	MOBERCASH	EPA 200.7		

01002H ARSENIC T <3.0 UG/L  
 02/22/2011 08:20 AM DSOLENBERGEPA 200.8  
 70300U TDS180 -USGS 364 MG/L  
 02/17/2011 12:00 AM LWILKINSONUSGS I-1750

PAGE 2 of 2

Analytical Report FOR  
 Land Recycling & Waste Management

Sample ID: 1611 187

Status: Completed

And Time	Date
Test Codes/CAS# - Description	Reported Results
Analyzed Analyst Test Method	
00927A MAGNESIUM T	19.700 MG/L
02/18/2011 10:26 AM MOBERCASH EPA 200.7	
01055A MANGANESE T	<10.00 UG/L
02/18/2011 10:26 AM MOBERCASH EPA 200.7	
01007A BARIUM T	38.00 UG/L
02/18/2011 10:26 AM MOBERCASH EPA 200.7	
00916A CALCIUM T	96.600 MG/L
02/18/2011 10:26 AM MOBERCASH EPA 200.7	
01045A IRON T	<20.0 UG/L
02/18/2011 10:26 AM MOBERCASH EPA 200.7	
00937A POTASSIUM T	1.150 MG/L
02/18/2011 10:26 AM MOBERCASH EPA 200.7	
00929A SODIUM T	8.107 MG/L
02/18/2011 10:26 AM MOBERCASH EPA 200.7	
00940A CHLORIDE	12.0 MG/L
03/12/2011 08:00 AM CRADEK SM 4500-CL	
00900 Hardness T	323 MG/L
02/18/2011 10:26 AM MOBERCASH SM 2340 B	
00403 pH	7.3 pH units
02/17/2011 11:42 AM GDELONG SM 4500H-B	
** Comment **	Time Limit For Test Exceeded

\*\*\*\*\*  
 \*\*\*\*\*

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Date of Issue: 08/09/2011 01:08:19  
PAGE 1 of 2  
DEP Bureau Of Laboratories - Harrisburg  
P.O. Box 1467  
2575 Interstate Drive  
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 184

Status: Completed

Name of Sample Collector: Bryon A Miller  
Date Sample was Collected: 02/16/2011 10:30:00 AM

County: Washington State: PA  
Municipality: Amwell Twp

-----  
BETH VOYLE  
1085 MCADAMS ROAD  
WASHINGTON, PA. 15301  
-----

-----  
Sample Medium : Water  
Sample Medium Type: Water

Location: Basement utility sink  
Reason: Complaint  
Project: NOT INDICATED  
Appearance: clear no odor

Laboratory Sample ID: I2011003902 Date Received: 02/16/2011 Completed  
Standard Analysis: 942

Legal Seal: E030520 Intact: YES  
Legal Seal: H020013 Intact: YES

And Time				Date
Test Codes/CAS# - Description			Reported Results	
Analyzed	Analyst	Test Method		
-----				
00929A SODIUM T			57.300 MG/L	
02/18/2011 10:14 AM	MOBERCASH	EPA 200.7		
00940A CHLORIDE			22.9 MG/L	
03/10/2011 08:00 AM	CRADK	SM 4500-CL		
00900 Hardness T			274 MG/L	
02/18/2011 10:14 AM	MOBERCASH	SM 2340 B		
00403 pH			7.8 pH units	
02/17/2011 11:35 AM	GDELONG	SM 4500H-B		

\*\* Comment \*\* Time Limit For Test Exceeded

00095 SPC @ 25.0 C 680.00 umhos/cm  
02/18/2011 04:06 PM GDELONG SM 2510B

PAGE 2 of 2

Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 184

Status: Completed

And Time				Date
Test Codes/CAS# - Description	Analyst	Test Method	Reported Results	
00410 ALKALINITY			297.8 MG/L	
02/17/2011 11:35 AM	GDELONG	SM 2320B		
01082A STRONTIUM T			1255.000 UG/L	
02/18/2011 10:14 AM	MOBERCASH	EPA 200.7		
01002H ARSENIC T			<3.0 UG/L	
02/22/2011 08:20 AM	DSOLENBERGE	EPA 200.8		
70300U TDS180 -USGS			406 MG/L	
02/17/2011 12:00 AM	LWILKINSON	USGS I-1750		
00927A MAGNESIUM T			22.000 MG/L	
02/18/2011 10:14 AM	MOBERCASH	EPA 200.7		
01055A MANGANESE T			27.000 UG/L	
02/18/2011 10:14 AM	MOBERCASH	EPA 200.7		
01007A BARIUM T			132.00 UG/L	
02/18/2011 10:14 AM	MOBERCASH	EPA 200.7		
00916A CALCIUM T			73.300 MG/L	
02/18/2011 10:14 AM	MOBERCASH	EPA 200.7		
01045A IRON T			64.000 UG/L	
02/18/2011 10:14 AM	MOBERCASH	EPA 200.7		
00937A POTASSIUM T			2.753 MG/L	
02/18/2011 10:14 AM	MOBERCASH	EPA 200.7		

\*\*\*\*\*  
\*\*\*\*\*

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Date of Issue: 08/09/2011 01:08:55  
PAGE 1 of 5  
DEP Bureau Of Laboratories - Harrisburg  
P.O. Box 1467  
2575 Interstate Drive  
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 185

Status: Completed

Name of Sample Collector: Bryon A Miller  
Date Sample was Collected: 02/16/2011 10:35:00 AM

County: Washington State: PA  
Municipality: Amwell Twp

-----  
BETH VOYLE  
1085 MCADAMS ROAD  
WASHINGTON, PA. 15301  
-----

-----  
Sample Medium : Water  
Sample Medium Type: Water

Location: Basement utility sink/ well water  
Reason: Complaint  
Project: NOT INDICATED  
Appearance: clear no odor

Laboratory Sample ID: O2011000721 Date Received: 02/16/2011 Completed  
Suite: VOADW

Legal Seal: H020143 Intact: YES  
Legal Seal: H020144 Intact: YES

Sample Comment: One of the associated QC tests failed. The data are not affected.

And Time				Date
Test Codes/CAS# - Description	Reported Results			
Analyzed	Analyst	Test Method		
-----				
156605	trans-1,2-Dichloroethene		0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
74839	Bromomethane		1.00 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		

74873	Chloromethane			0.250 UG/L (U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
75003	Chloroethane			0.250 UG/L (U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
75092	Methylene Chloride			0.250 UG/L (U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		

PAGE 2 of 5

Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 185

Status: Completed

And Time				Date
Test Codes/CAS# - Description				Reported Results
Analyzed	Analyst	Test Method		
-----				
75343	1,1-Dichloroethane		0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
78875	1,2-Dichloropropane		0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
78933	MEK		1.25 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
79016	Trichloroethene		0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
98066	Tert-Butylbenzene		0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
98828	Isopropylbenzene		0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
107062	1,2-Dichloroethane		0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
75650	t-Butyl alcohol		2.50 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
106934	1,2-Dibromoethane		0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
95636	1,2,4-Trimethylbenzene		0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
96128	1,2-Dibromo-3-chloropropa		0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
100414	Ethylbenzene		0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
106434	p-Chlorotoluene		0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
108101	MIBK		1.25 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
108383	m/p-Xylene		0.500 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		

127184	Tetrachloroethene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
135988	Sec-Butylbenzene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
142289	1,3-Dichloropropane			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
563586	1,1-Dichloropropene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
71556	1,1,1-Trichloroethane			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
75354	1,1-Dichloroethene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
75718	Dichlorodifluoromethane			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
156592	cis-1,2-Dichloroethene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
108678	1,3,5-Trimethylbenzene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
594207	2,2-Dichloropropane			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
67641	Acetone			2.42 UG/L	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
75274	Bromodichloromethane			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
79345	1,1,2,2-Tetrachloroethane			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
96184	1,2,3-Trichloropropane			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
99876	4-Isopropyltoluene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
95498	o-Chlorotoluene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
541731	1,3-Dichlorobenzene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
56235	Carbon Tetrachloride			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
1634044	Methyl Tert-Butyl Ether			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			

PAGE 3 of 5

Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 185

Status: Completed

And Time

Date

Test Codes/CAS# - Description

Reported Results

Analyzed

Analyst

Test Method

100425	Styrene			0.500 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
10061026	trans-1,3-Dichloropropene			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
104518	n-Butylbenzene			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
108861	Bromobenzene			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
108907	Chlorobenzene			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
591786	2-Hexanone			1.25 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
630206	1,1,1,2-Tetrachloroethane			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
67663	Chloroform			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
74953	Dibromomethane			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
75252	Bromoform			0.500 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
108883	Toluene			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
120821	1,2,4-Trichlorobenzene			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
74975	Bromochloromethane			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
75694	Trichlorofluoromethane			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
79005	1,1,2-Trichloroethane			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
124481	Dibromochloromethane			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
87683	Hexachlorobutadiene			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
91203	Naphthalene			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
95476	o-Xylene			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
87616	1,2,3-Trichlorobenzene			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
95501	1,2-Dichlorobenzene			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
71432	Benzene			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
75014	Chloroethene (vinyl chlor			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
10061015	cis-1,3-Dichloropropene			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
103651	n-Propylbenzene			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	
106467	1,4-Dichlorobenzene			0.250 UG/L (U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2	

Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 185

Status: Completed

\*\*\*\*\*  
\*\*\*\*\*

The results of the analyses provided in this laboratory report relate only to the sample(s) identified in the report. Unless otherwise noted, the results presented on this laboratory report meet all the requirements of The NELAC Institute (TNI). Sample was in acceptable condition when received by the Laboratory. Any exceptions are noted in the report. Tests noted with an "\*" are not included in our NJ NELAP Annual Certified Parameter List.

Taru Upadhyay, Technical Director, Bureau of Laboratories

\*\*\*\*\*  
\*\*\*\*\*

Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 185

Status: Completed

ORGANICS LABORATORY QUALIFIERS  
-----

U - Indicates analysis was performed for the compound but it was not detected.

The sample quantitation limit is reported.

J - Indicates an estimated value, below the quantification limit, but above the method detection limit.

N - Indicates presumptive evidence of a compound.

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.

P - This flag is used with a target analyte when there is greater than a 25%

confirmation difference between the results obtained from the primary and

confirmation columns for dual column analysis methods (i.e. pesticides, triazines, PCBs, etc). The reported value is the average of the two results.

Q - This flag identifies the average of multiple results from multiple analyses, or the average of the averages of dual column analysis methods.

   - (Underline) - The compound is present at the amount reported. No flag.

X - Non-target analytes co-elute with compound. Identification unable to be confirmed.



Date of Issue: 08/09/2011 01:08:08  
PAGE 1 of 5  
DEP Bureau Of Laboratories - Harrisburg  
P.O. Box 1467  
2575 Interstate Drive  
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 186

Status: Completed

Name of Sample Collector: Bryon A Miller  
Date Sample was Collected: 02/16/2011 10:40:00 AM

County: Washington State: PA  
Municipality: Amwell Twp

-----  
BETH VOYLE  
1085 MCADAMS ROAD  
WASHINGTON, PA. 15301  
-----

-----  
Sample Medium : Water  
Sample Medium Type: Water

Location: Basement utility sink  
Reason: Complaint  
Project: NOT INDICATED  
Blank sample

Appearance: clear no odor

Laboratory Sample ID: O2011000722 Date Received: 02/16/2011 Completed  
Suite: VOADW

Legal Seal: E030518 Intact: YES  
Legal Seal: E030519 Intact: YES

Sample Comment: One of the associated QC tests failed. The data are not affected.

And Time		Date
Test Codes/CAS# - Description	Reported Results	
Analyzed	Analyst	Test Method

-----

Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 186

Status: Completed

And Time	Test Codes/CAS# - Description			Reported Results	Date
Analyzed	Analyst	Test Method			
98066	Tert-Butylbenzene		0.250 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
98828	Isopropylbenzene		0.250 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
107062	1,2-Dichloroethane		0.250 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
75650	t-Butyl alcohol		2.50 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
156605	trans-1,2-Dichloroethene		0.250 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
127184	Tetrachloroethene		0.250 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
135988	Sec-Butylbenzene		0.250 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
142289	1,3-Dichloropropane		0.250 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
563586	1,1-Dichloropropene		0.250 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
71556	1,1,1-Trichloroethane		0.250 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
74839	Bromomethane		1.00 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
74873	Chloromethane		0.250 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
75003	Chloroethane		0.250 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
75092	Methylene Chloride		0.250 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
75343	1,1-Dichloroethane		0.250 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
78875	1,2-Dichloropropane		0.250 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
78933	MEK		1.25 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
79016	Trichloroethene		0.250 UG/L (U)		
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			

75274	Bromodichloromethane			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
79345	1,1,2,2-Tetrachloroethane			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
96184	1,2,3-Trichloropropane			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
99876	4-Isopropyltoluene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
95498	o-Chlorotoluene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
541731	1,3-Dichlorobenzene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
106934	1,2-Dibromoethane			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
95636	1,2,4-Trimethylbenzene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
96128	1,2-Dibromo-3-chloropropa			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
100414	Ethylbenzene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
106434	p-Chlorotoluene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
108101	MIBK			1.25 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
108383	m/p-Xylene			0.500 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
108861	Bromobenzene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
108907	Chlorobenzene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
591786	2-Hexanone			1.25 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			

PAGE 3 of 5

Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 186

Status: Completed

And Time					Date
Test Codes/CAS# - Description	Reported Results				
Analyzed	Analyst	Test Method			
-----	-----	-----	-----	-----	-----
630206	1,1,1,2-Tetrachloroethane			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
67663	Chloroform			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			

74953	Dibromomethane			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
75252	Bromoform			0.500 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
75354	1,1-Dichloroethene			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
75718	Dichlorodifluoromethane			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
156592	cis-1,2-Dichloroethene			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
108678	1,3,5-Trimethylbenzene			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
594207	2,2-Dichloropropane			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
67641	Acetone			2.56 UG/L	
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
79005	1,1,2-Trichloroethane			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
124481	Dibromochloromethane			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
87683	Hexachlorobutadiene			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
91203	Naphthalene			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
95476	o-Xylene			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
87616	1,2,3-Trichlorobenzene			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
95501	1,2-Dichlorobenzene			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
71432	Benzene			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
56235	Carbon Tetrachloride			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
1634044	Methyl Tert-Butyl Ether			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
100425	Styrene			0.500 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
10061026	trans-1,3-Dichloropropene			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
104518	n-Butylbenzene			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
75014	Chloroethene (vinyl chlor			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
10061015	cis-1,3-Dichloropropene			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
103651	n-Propylbenzene			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
106467	1,4-Dichlorobenzene			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
108883	Toluene			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		
120821	1,2,4-Trichlorobenzene			0.250 UG/L	(U)
02/17/2011	12:00 AM	AMOLNAR	EPA 524.2		

74975	Bromochloromethane	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
75694	Trichlorofluoromethane	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		

PAGE 4 of 5

Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 186

Status: Completed

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\*\*\*\*\*

The results of the analyses provided in this laboratory report relate only to the sample(s) identified in the report. Unless otherwise noted, the results presented on this laboratory report meet all the requirements of The NELAC Institute (TNI). Sample was in acceptable condition when received by the Laboratory. Any exceptions are noted in the report. Tests noted with an "\*" are not included in our NJ NELAP Annual Certified Parameter List.

Taru Upadhyay, Technical Director, Bureau of Laboratories

\*\*\*\*\*  
\*\*\*\*\*

Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 186

Status: Completed

ORGANICS LABORATORY QUALIFIERS  
-----

U - Indicates analysis was performed for the compound but it was not detected.

The sample quantitation limit is reported.

J - Indicates an estimated value, below the quantification limit, but above the method detection limit.

N - Indicates presumptive evidence of a compound.

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.

P - This flag is used with a target analyte when there is greater than a 25%

confirmation difference between the results obtained from the primary and columns for dual column analysis methods (i.e. pesticides, triazines, PCBs, etc). The reported value is the average of the two results.

---

Q - This flag identifies the average of multiple results from multiple analyses, or the average of the averages of dual column analysis methods.

       - (Underline) - The compound is present at the amount reported. No flag.

X - Non-target analytes co-elute with compound. Identification unable to be confirmed.

Date of Issue: 08/09/2011 01:08:06  
PAGE 1 of 5  
DEP Bureau Of Laboratories - Harrisburg  
P.O. Box 1467  
2575 Interstate Drive  
Harrisburg, PA 17105-1467

Contact Phone Number: (717) 346-7200

Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 188

Status: Completed

Name of Sample Collector: Bryon A Miller  
Date Sample was Collected: 02/16/2011 10:50:00 AM

County: Washington State: PA  
Municipality: Amwell Twp

-----  
BETH VOYLE  
1085 MCADAMS ROAD  
WASHINGTON, PA. 15301  
-----

-----  
Sample Medium : Water  
Sample Medium Type: Water

Location: Spring vault  
Reason: Complaint  
Project: NOT INDICATED  
Spring water sample

Appearance: clear no odor

Laboratory Sample ID: O2011000723 Date Received: 02/16/2011 Completed  
Suite: VOADW

Legal Seal: H020012 Intact: YES  
Legal Seal: H020014 Intact: YES

-----  
Date

And Time	Test Codes/CAS# - Description	Analyst	Test Method	Reported Results
74839	Bromomethane			1.00 UG/L (U)
02/17/2011 12:00 AM	AMOLNAR		EPA 524.2	
74873	Chloromethane			0.250 UG/L (U)
02/17/2011 12:00 AM	AMOLNAR		EPA 524.2	
75003	Chloroethane			0.250 UG/L (U)
02/17/2011 12:00 AM	AMOLNAR		EPA 524.2	

75092	Methylene Chloride			0.250 UG/L (U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		
75343	1,1-Dichloroethane			0.250 UG/L (U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2		

PAGE 2 of 5

Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 188

Status: Completed

And Time	Test Codes/CAS# - Description			Reported Results	Date
Analyzed	Analyst	Test Method			
78875	1,2-Dichloropropane			0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
78933	MEK			1.25 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
79016	Trichloroethene			0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
98066	Tert-Butylbenzene			0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
98828	Isopropylbenzene			0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
107062	1,2-Dichloroethane			0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
75650	t-Butyl alcohol			2.50 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
71556	1,1,1-Trichloroethane			0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
156605	trans-1,2-Dichloroethene			0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
99876	4-Isopropyltoluene			0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
95498	o-Chlorotoluene			0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
541731	1,3-Dichlorobenzene			0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
106934	1,2-Dibromoethane			0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
95636	1,2,4-Trimethylbenzene			0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
96128	1,2-Dibromo-3-chloropropa			0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
100414	Ethylbenzene			0.250 UG/L (U)	
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			



106434	p-Chlorotoluene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
108101	MIBK			1.25 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
108383	m/p-Xylene			0.500 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
127184	Tetrachloroethene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
135988	Sec-Butylbenzene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
142289	1,3-Dichloropropane			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
563586	1,1-Dichloropropene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
591786	2-Hexanone			1.25 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
630206	1,1,1,2-Tetrachloroethane			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
67663	Chloroform			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
74953	Dibromomethane			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
75252	Bromoform			0.500 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
75354	1,1-Dichloroethene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
75718	Dichlorodifluoromethane			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
156592	cis-1,2-Dichloroethene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
108678	1,3,5-Trimethylbenzene			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
594207	2,2-Dichloropropane			0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			
67641	Acetone			1.25 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR	EPA 524.2			

PAGE 3 of 5

Analytical Report FOR  
Land Recycling & Waste Management

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Sample ID: 1611 188

Status: Completed

And Time	Test Codes/CAS# - Description	Analyst	Test Method	Reported Results	Date
-----	-----	-----	-----	-----	-----
-----	-----	-----	-----	-----	-----

75274	Bromodichloromethane	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
79345	1,1,2,2-Tetrachloroethane	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
96184	1,2,3-Trichloropropane	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
124481	Dibromochloromethane	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
87683	Hexachlorobutadiene	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
91203	Naphthalene	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
95476	o-Xylene	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
87616	1,2,3-Trichlorobenzene	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
95501	1,2-Dichlorobenzene	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
71432	Benzene	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
56235	Carbon Tetrachloride	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
1634044	Methyl Tert-Butyl Ether	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
100425	Styrene	0.500 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
10061026	trans-1,3-Dichloropropene	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
104518	n-Butylbenzene	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
108861	Bromobenzene	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
108907	Chlorobenzene	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
75014	Chloroethene (vinyl chlor	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
10061015	cis-1,3-Dichloropropene	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
103651	n-Propylbenzene	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
106467	1,4-Dichlorobenzene	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
108883	Toluene	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
120821	1,2,4-Trichlorobenzene	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
74975	Bromochloromethane	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
75694	Trichlorofluoromethane	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		
79005	1,1,2-Trichloroethane	0.250 UG/L	(U)
02/17/2011 12:00 AM	AMOLNAR EPA 524.2		

Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 188

Status: Completed

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The results of the analyses provided in this laboratory report relate only to the sample(s) identified in the report. Unless otherwise noted, the results presented on this laboratory report meet all the requirements of The NELAC Institute (TNI). Sample was in acceptable condition when received by the Laboratory. Any exceptions are noted in the report. Tests noted with an "\*" are not included in our NJ NELAP Annual Certified Parameter List.

Taru Upadhyay, Technical Director, Bureau of Laboratories

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Analytical Report FOR  
Land Recycling & Waste Management

Sample ID: 1611 188

Status: Completed

ORGANICS LABORATORY QUALIFIERS  
-----

- U - Indicates analysis was performed for the compound but it was not detected.  
The sample quantitation limit is reported.
- J - Indicates an estimated value, below the quantification limit, but above the method detection limit.
- N - Indicates presumptive evidence of a compound.
- B - This flag is used when the analyte is found in the associated blank as well as in the sample.
- E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
- P - This flag is used with a target analyte when there is greater than a 25% difference between the results obtained from the primary and confirmation columns for dual column analysis methods (i.e. pesticides, triazines, PCBs, etc). The reported value is the average of the two results.
- 
- Q - This flag identifies the average of multiple results from multiple analyses, or the average of the averages of dual column analysis methods.
- (Underline) - The compound is present at the amount reported. No flag.
- X - Non-target analytes co-elute with compound. Identification unable to be confirmed.

# **ATTACHMENT 3**



### Report of Analysis

<b>Name:</b>	Range Resources - Appalachia, LLC. Attn: Ms. Jonna Ference 380 Southpointe Blvd, Suite 300 Canonsburg, PA 15317	<b>Sample ID#:</b>	11 13884
<b>Sample Start Date:</b>	4/12/2011 2:30 PM	<b>Sample Type:</b>	Water
<b>Receipt Date:</b>	4/13/2011 11:38 AM	<b>Sample Source:</b>	Bailed From Well
<b>Report Date:</b>	5/9/2011	<b>Sampler:</b>	ROBERT SMITH (Lab employee)
<b>Sample Site:</b>	Yeager Unit	<b>Client Sample ID:</b>	John & Bev Voyles Well
		<b>Well Depth:</b>	150'
		<b>Purveyor:</b>	John & Bev Voyles
		<b>Address:</b>	1085 McAdams Rd.
		<b>City/State/Zip:</b>	Washington, PA 15301

Analyte	Analyst	Analysis Date	Analysis Time	Sample Result	Units	Data Qualifier	Method	RPL
Combustible Gas Index	RS	04/12	n/a	ND	% of LEL	n/a	Field	0.00

**Comments:** Glycols subcontracted to Summit Environmental Technologies, Inc.; see attached report.  
SUBCONTRACTOR REPORT REVISED 5/9/2011 - incorrect LOQs listed on original report. MJM  
5/9/2011

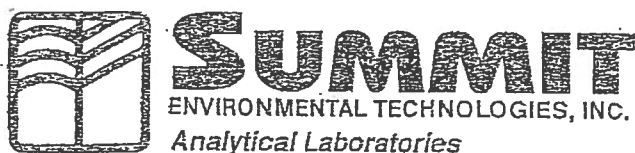
ND=Not Detected

**Note:** DEP Certification #s 32-00382

Approved By: \_\_\_\_\_

Laboratory Supervisor





May 09, 2011

Client: Environmental Service Laboratories Inc  
Address: 1803 Philadelphia Street  
Indiana, PA 15701

Received: 4/15/2011

Project #: N/A

<u>Client ID#</u>	<u>Lab ID#</u>	<u>Collected</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Matrix</u>	<u>Method</u>	<u>DF</u>	<u>LOQ</u>	<u>Run</u>	<u>Analyst</u>
1113850	1107266-01	12-Apr-11	Ethylene glycol	ND	mg/L	L	8015	1	1	18-Apr-11	JBN
1113856	1107266-02	12-Apr-11	Ethylene glycol	ND	mg/L	L	8015	1	1	18-Apr-11	JBN
1113858	1107266-03	12-Apr-11	Ethylene glycol	ND	mg/L	L	8015	1	1	18-Apr-11	JBN
1113860	1107266-04	12-Apr-11	Ethylene glycol	ND	mg/L	L	8015	1	1	18-Apr-11	JBN
1113862	1107266-05	12-Apr-11	Ethylene glycol	ND	mg/L	L	8015	1	1	18-Apr-11	JBN
1113864	1107266-06	12-Apr-11	Ethylene glycol	ND	mg/L	L	8015	1	1	18-Apr-11	JBN
1113866	1107266-07	12-Apr-11	Ethylene glycol	ND	mg/L	L	8015	1	1	18-Apr-11	JBN
1113868	1107266-08	12-Apr-11	Ethylene glycol	ND	mg/L	L	8015	1	1	18-Apr-11	JBN
1113884	1107266-09	12-Apr-11	Diethylene glycol	ND	mg/l	L	8015	1	1	18-Apr-11	JBN
1113884	1107266-09	12-Apr-11	Ethylene glycol	ND	mg/L	L	8015	1	1	18-Apr-11	JBN
1113884	1107266-09	12-Apr-11	Triethylene glycol	ND	mg/L	L	8015	1	10	18-Apr-11	JBN





May 09, 2011

Client: Environmental Service Laboratories Inc  
Address: 1803 Philadelphia Street  
Indiana, PA 15701

Received: 4/15/2011

Project #: N/A

<u>Client ID#</u>	<u>Lab ID#</u>	<u>Collected</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>Matrix</u>	<u>Method</u>	<u>DF</u>	<u>LOQ</u>	<u>Run</u>	<u>Analyst</u>
1113885	1107266-10	12-Apr-11	Diethylene glycol	ND	mg/l	L	8015	1	1	18-Apr-11	JBN
1113885	1107266-10	12-Apr-11	Ethylene glycol	ND	mg/L	L	8015	1	1	18-Apr-11	JBN
1113885	1107266-10	12-Apr-11	Triethylene glycol	ND	mg/L	L	8015	1	10	18-Apr-11	JBN
1113886	1107266-11	12-Apr-11	Diethylene glycol	ND	mg/l	L	8015	1	1	18-Apr-11	JBN
1113886	1107266-11	12-Apr-11	Ethylene glycol	ND	mg/L	L	8015	1	1	18-Apr-11	JBN
1113886	1107266-11	12-Apr-11	Triethylene glycol	ND	mg/L	L	8015	1	10	18-Apr-11	JBN

# **ATTACHMENT 4**



# Total Access

Work Order Quick Link

Type first part of Work order / Job Description / Project

WORK ORDERS   PREFERENCES   SEARCH   DOWNLOADS   PROJECT INFO   ANALYTE TRENDS   BUDGET   HELP   LOGOUT

Results

User: Carla Suszkowski

EPA Retro Study  
NUG4153

Range Resources 380 Southpointe Blvd, Suite 300 Canonsburg, PA 15317	Project: EPA Retro Study Project Number: [none] Project Manager: Range Resources
--	--

07272011367902 (Water)

<< 07272011367902 >>

SW846 8015B

Analyte	Result	Qualifiers	RL	Units	Dilution	Batch	Prepared	Analyzed	Analysis
Diethylene glycol	ND		10	mg/L	1	11G6465	8/1/2011 3:43 PM	8/3/2011 5:22 PM	8015 - Diethylene Glycol
2-Butoxyethanol	ND		10	mg/L	1>	11G6462	8/1/2011 2:42 PM	8/2/2011 7:50 PM	8015B 2-Butoxyethanol
2-Ethoxyethanol	ND		10	mg/L	1	11G6465	8/1/2011 3:43 PM	8/3/2011 5:22 PM	8015B 2-Ethoxyethanol
Ethylene Glycol	ND		10	mg/L	1>	11H0710	8/3/2011 3:00 PM	8/3/2011 7:45 PM	8015B Ethylene Glycol
1,2-Propylene Glycol	ND		10	mg/L	1	11G6462	8/1/2011 2:42 PM	8/2/2011 7:50 PM	8015B Propylene Glycol

SW846 8081A

Analyte	Result	Qualifiers	RL	Units	Dilution	Batch	Prepared	Analyzed	Analysis
Aldrin	ND		0.0476	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
delta-BHC	ND		0.0476	ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
alpha-BHC	ND		0.0476	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
beta-BHC	ND		0.0476	ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
gamma-BHC (Lindane)	ND		0.0476	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
alpha-Chlordane	ND		0.0476	ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
gamma-Chlordane	ND		0.0476	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
Chlordane	ND		2.86	ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
4,4'-DDD	ND		0.0476	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
4,4'-DDE	ND		0.0476	ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
4,4'-DDT	ND		0.0476	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
Dieldrin	ND		0.0476	ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
Endosulfan I	ND		0.0476	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
Endosulfan II	ND		0.0476	ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
Endosulfan sulfate	ND		0.0476	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
Endrin	ND		0.0476	ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
Endrin aldehyde	ND		0.0476	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides

Endrin ketone	ND	0.0476 ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
Heptachlor	ND	0.0476 ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
Heptachlor epoxide	ND	0.0476 ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
Methoxychlor	ND	0.0476 ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides
Toxaphene	ND	1.9 ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:22 PM	8081A Pesticides

**SW846 8260B**

Analyte	Result	Qualifiers	RL	Units	Dilution	Batch	Prepared	Analyzed	Analysis
Tert-Amyl Methyl Ether	ND		1	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Oxygenates (Low) (7)
Ethyl tert-Butyl Ether	ND		1	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Oxygenates (Low) (7)
Tertiary Butyl Alcohol	ND		10	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Oxygenates (Low) (7)
Acrylonitrile	ND		10	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Single - Acrylonitrile
Ethanol	ND		100	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Single - Ethanol low
Isopropyl alcohol	ND		20	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Single - Isopropyl Alcohol (IPA)
Acetone	ND		10	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
Benzene	ND		0.5	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
Carbon disulfide	ND		0.5	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
Carbon Tetrachloride	ND		0.5	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
Chlorobenzene	ND		0.5	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
Chloroform	ND		0.5	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
1,4-Dichlorobenzene	ND		0.5	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
1,3-Dichlorobenzene	ND		0.5	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
1,2-Oichlorobenzene	ND		0.5	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
1,2-Dichloroethane	ND		0.5	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
1,1-Dichloroethane	ND		0.5	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
cis-1,2-Dichloroethene	ND		0.5	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
1,1-Dichloroethene	ND		0.5	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
trans-1,2-Dichloroethene	ND		0.5	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
Ethylbenzene	ND		0.5	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
Isopropylbenzene	ND		0.5	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
Diisopropyl Ether	ND		0.5	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
Methyl tert-Butyl Ether	ND		1	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)

Methylene Chloride	ND	2 ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
Styrene	ND	0.5 ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
Tetrachloroethene	ND	0.5 ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
Toluene	ND	0.5 ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
1,1,2-Trichloroethane	ND	0.5 ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
1,1,1-Trichloroethane	ND	0.5 ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
Trichloroethene	ND	0.5 ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
1,3,5-Trimethylbenzene	ND	0.5 ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
Vinyl chloride	ND	0.5 ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
o-Xylene	ND	0.5 ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
m,p-Xylene	ND	1 ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
1,2,4-Trimethylbenzene	ND	0.5 ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)
Naphthalene	ND	2 ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 6:04 AM	8260B Volatile Organics (Low)

SW846 6010C

Analyte	Result	Qualifiers	RL	Units	Dilution	Batch	Prepared	Analyzed	Analysis
Aluminum	ND		0.1	mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Aluminum Dissolved SW 6010C
Aluminum	ND		0.1	mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Aluminum Total EPA 6010C
Antimony	ND		0.01	mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Antimony Dissolved SW 6010C
Antimony	ND		0.01	mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Antimony Total EPA 6010C
Arsenic	ND		0.01	mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Arsenic Dissolved SW 6010C
Arsenic	ND		0.01	mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Arsenic Total EPA 6010C
Barium	0.106		0.01	mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Barium Dissolved SW 6010C
Barium	0.107		0.01	mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Barium Total EPA 6010C
Beryllium	ND		0.004	mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Beryllium Dissolved SW 6010C
Beryllium	ND		0.004	mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Beryllium Total EPA 6010C
Boron	ND		0.05	mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Boron Dissolved SW 6010C
Boron	ND		0.05	mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Boron Total EPA 6010C
Cadmium	ND		0.001	mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Cadmium Dissolved SW 6010C
Cadmium	ND		0.001	mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Cadmium Total EPA 6010C
Calcium	136		1	mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Calcium Dissolved SW 6010C
Calcium	129		1	mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Calcium Total EPA 6010C

Chromium	ND	0.005 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Chromium Dissolved SW 6010C
Chromium	ND	0.005 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Chromium Total EPA 6010C
Cobalt	ND	0.02 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Cobalt Dissolved SW 6010C
Cobalt	ND	0.02 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Cobalt Total SW 6010C
Copper	ND	0.01 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Copper Dissolved SW 6010C
Copper	ND	0.01 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Copper Total EPA 6010C
Iron	ND	0.05 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Iron Dissolved SW 6010C
Iron	ND	0.05 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Iron Total EPA 6010C
Lead	ND	0.005 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Lead Dissolved SW 6010C
Lead	ND	0.005 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Lead Total EPA 6010C
Magnesium	22.5	1 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Magnesium Dissolved SW 6010C
Magnesium	21.4	1 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Magnesium Total EPA 6010C
Manganese	0.0193	0.015 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Manganese Dissolved SW 6010C
Manganese	0.0293	0.015 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Manganese Total EPA 6010C
Molybdenum	ND	0.05 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Molybdenum Dissolved EPA 6010C
Molybdenum	ND	0.05 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Molybdenum Total SW 6010C
Nickel	ND	0.01 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Nickel Dissolved SW 6010C
Nickel	ND	0.01 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Nickel Total EPA 6010C
Potassium	1.65	1 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Potassium Dissolved SW 6010C
Potassium	1.58	1 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Potassium Total EPA 6010C
Selenium	ND	0.01 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Selenium Dissolved SW 6010C
Selenium	ND	0.01 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Selenium Total EPA 6010C
Silver	ND	0.005 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Silver Dissolved SW 6010C
Silver	ND	0.005 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Silver Total EPA 6010C
Sodium	26.1	1 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Sodium Dissolved SW 6010C
Sodium	23	1 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Sodium Total EPA 6010C
Strontium	0.677	0.05 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Strontium Dissolved SW 6010C
Strontium	0.647	0.05 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Strontium Total EPA 6010C
Sulfur	24	0.5 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Sulfur Dissolved SW 6010C
Sulfur	23.8	0.5 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Sulfur Total EPA 6010C
Thallium	ND	0.01 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Thallium Dissolved SW 6010C
Thallium	ND	0.01 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Thallium Total EPA 6010C
Titanium	ND	0.05 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Titanium Dissolved SW 6010C
Titanium	ND	0.05 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Titanium Total EPA 6010C
Vanadium	ND	0.02 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Vanadium Dissolved SW 6010C
Vanadium	ND	0.02 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Vanadium Total SW 6010C

Zinc	ND		0.05 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:21 PM	Zinc Dissolved SW 6010C
Zinc	ND		0.05 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 1:05 AM	Zinc Total EPA 6010C

**EPA 350.1M**

Analyte	Result	Qualifiers	RL Units	Dilution	Batch	Prepared	Analyzed	Analysis
Ammonia as N	1.33		0.1 mg/L	1	11H0634	8/5/2011 10:26 PM	8/6/2011 8:44 AM	Ammonia 350.1

**SW846 6020A**

Analyte	Result	Qualifiers	RL Units	Dilution	Batch	Prepared	Analyzed	Analysis
Arsenic	ND		2 ug/L	1	11H1790	8/10/2011 3:16 PM	8/11/2011 12:59 AM	Arsenic Dissolved SW6020A
Arsenic	ND		2 ug/L	1>	11H1781	8/10/2011 3:16 PM	8/10/2011 11:53 PM	Arsenic Total SW6020A
Cadmium	ND		1 ug/L	1	11H1790	8/10/2011 3:16 PM	8/11/2011 12:59 AM	Cadmium Dissolved SW6020A
Chromium	ND		2 ug/L	1>	11H1790	8/10/2011 3:16 PM	8/11/2011 12:59 AM	Chromium Dissolved SW6020A
Chromium	ND		2 ug/L	1	11H1781	8/10/2011 3:16 PM	8/10/2011 11:53 PM	Chromium Total SW6020A
Copper	ND		5 ug/L	1>	11H1790	8/10/2011 3:16 PM	8/11/2011 12:59 AM	Copper Dissolved SW 6020A
Copper	ND		5 ug/L	1	11H1781	8/10/2011 3:16 PM	8/10/2011 11:53 PM	Copper Total SW 6020A
Lead	ND		2 ug/L	1>	11H1790	8/10/2011 3:16 PM	8/11/2011 12:59 AM	Lead Dissolved SW 6020A
Lead	ND		2 ug/L	1	11H1781	8/10/2011 3:16 PM	8/10/2011 11:53 PM	Lead Total SW6020A
Nickel	ND		5 ug/L	1>	11H1790	8/10/2011 3:16 PM	8/11/2011 12:59 AM	Nickel Dissolved SW6020A
Nickel	ND		5 ug/L	1	11H1781	8/10/2011 3:16 PM	8/10/2011 11:53 PM	Nickel Total SW 6020A
Selenium	ND		2 ug/L	1>	11H1790	8/10/2011 3:16 PM	8/11/2011 12:59 AM	Selenium Dissolved SW6020A
Selenium	ND		2 ug/L	1	11H1781	8/10/2011 3:16 PM	8/10/2011 11:53 PM	Selenium Total SW6020A
Thallium	ND		2 ug/L	1>	11H1790	8/10/2011 3:16 PM	8/11/2011 12:59 AM	Thallium Dissolved SW6020A
Thallium	ND		2 ug/L	1	11H1781	8/10/2011 3:16 PM	8/10/2011 11:53 PM	Thallium Total SW6020A

**RSK 175**

Analyte	Result	Qualifiers	RL Units	Dilution	Batch	Prepared	Analyzed	Analysis
Methane	ND		26 ug/L	1	11G7130	7/30/2011 7:11 PM	8/2/2011 1:28 PM	Dissolved Gases RSK175
Ethene	ND		26 ug/L	1>	11G7130	7/30/2011 7:11 PM	8/2/2011 1:28 PM	Dissolved Gases RSK175
Ethane	ND		26 ug/L	1	11G7130	7/30/2011 7:11 PM	8/2/2011 1:28 PM	Dissolved Gases RSK175
Propane	ND		34 ug/L	1>	11G7130	7/30/2011 7:11 PM	8/2/2011 1:28 PM	Dissolved Gases RSK175

**SW846 7470A**

Analyte	Result	Qualifiers	RL Units	Dilution	Batch	Prepared	Analyzed	Analysis
Mercury	ND		0.0002 mg/L	1	11H0036	8/1/2011 11:20 AM	8/1/2011 5:34 PM	Mercury Dissolved 7470A

Mercury ND 0.0002 mg/L 1> 11H0024 8/1/2011 1:00 PM 8/1/2011 7:56 PM Mercury Total 7470A

SM 5310 B

Analyte	Result	Qualifiers	RL Units	Dilution	Batch	Prepared	Analyzed	Analysis
Total Organic Carbon	ND		1 mg/L	1	11H3125	8/12/2011 2:17 PM	8/13/2011 6:49 AM	TOC Dissolved SM 5310B

SM 5310 C

Analyte	Result	Qualifiers	RL Units	Dilution	Batch	Prepared	Analyzed	Analysis
Total Organic Carbon	ND		1 mg/L	1	11H0732	8/3/2011 2:43 PM	8/4/2011 4:32 PM	TOC Dissolved SM 5310C

SW846 8015C

Analyte	Result	Qualifiers	RL Units	Dilution	Batch	Prepared	Analyzed	Analysis
Diesel	ND		96.2 ug/L	1	11G7043	8/1/2011 11:20 AM	8/1/2011 6:33 PM	TPH - Diesel Range SW846 8015C
GRO as Gasoline	ND		100 ug/L	1>	11G7176	7/27/2011 12:40 PM	7/30/2011 6:20 PM	TPH-Gasoline Range SW8015C





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**Results**

User: Carla Suszkowski

EPA Retro Study  
NUG4148

Range Resources  
380 Southpointe Blvd, Suite 300  
Canonsburg, PA 15317

Project: EPA Retro Study  
Project Number: [none]  
Project Manager: Range Resources

07272011367903 (Water)

<< 07272011367903 >>

**SW846 8015B**

Analyte	Result	Qualifiers	RL	Units	Dilution	Batch	Prepared	Analyzed	Analysis
Diethylene glycol	ND		10	mg/L	1	11G6465	8/1/2011 3:43 PM	8/3/2011 5:14 PM	8015 - Diethylene Glycol
2-Butoxyethanol	ND		10	mg/L	1>	11G6462	8/1/2011 2:42 PM	8/2/2011 7:42 PM	8015B 2-Butoxyethanol
2-Ethoxyethanol	ND		10	mg/L	1	11G6465	8/1/2011 3:43 PM	8/3/2011 5:14 PM	8015B 2-Ethoxyethanol
Ethylene Glycol	ND		10	mg/L	1>	11H0710	8/3/2011 3:00 PM	8/3/2011 7:37 PM	8015B Ethylene Glycol
1,2-Propylene Glycol	ND		10	mg/L	1	11G6462	8/1/2011 2:42 PM	8/2/2011 7:42 PM	8015B Propylene Glycol

**SW846 8081A**

Analyte	Result	Qualifiers	RL	Units	Dilution	Batch	Prepared	Analyzed	Analysis
Aldrin	ND		0.0481	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
delta-BHC	ND		0.0481	ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
alpha-BHC	ND		0.0481	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
beta-BHC	ND		0.0481	ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
gamma-BHC (Lindane)	ND		0.0481	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
alpha-Chlordane	ND		0.0481	ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
gamma-Chlordane	ND		0.0481	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
Chlordane	ND		2.88	ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
4,4'-DDD	ND		0.0481	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
4,4'-DDE	ND		0.0481	ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
4,4'-DDT	ND		0.0481	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
Dieldrin	ND		0.0481	ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
Endosulfan I	ND		0.0481	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
Endosulfan II	ND		0.0481	ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
Endosulfan sulfate	ND		0.0481	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
Endrin	ND		0.0481	ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
Endrin aldehyde	ND		0.0481	ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides

Endrin ketone	ND	0.0481 ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
Heptachlor	ND	0.0481 ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
Heptachlor epoxide	ND	0.0481 ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
Methoxychlor	ND	0.0481 ug/L	1	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides
Toxaphene	ND	1.92 ug/L	1>	11G7056	7/30/2011 1:10 PM	8/2/2011 3:08 PM	8081A Pesticides

SW846 8260B

Analyte	Result	Qualifiers	RL	Units	Dilution	Batch	Prepared	Analyzed	Analysis
Tert-Amyl Methyl Ether	ND		1	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Oxygenates (Low) (7)
Ethyl tert-Butyl Ether	ND		1	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Oxygenates (Low) (7)
Tertiary Butyl Alcohol	ND		10	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Oxygenates (Low) (7)
Acrylonitrile	ND		10	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Single - Acrylonitrile
Ethanol	ND		100	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Single - Ethanol low
Isopropyl alcohol	ND		20	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Single - Isopropyl Alcohol (IPA)
Acetone	ND		10	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
Benzene	ND		0.5	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
Carbon disulfide	ND		0.5	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
Carbon Tetrachloride	ND		0.5	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
Chlorobenzene	ND		0.5	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
Chloroform	ND		0.5	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
1,4-Dichlorobenzene	ND		0.5	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
1,3-Dichlorobenzene	ND		0.5	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
1,2-Dichlorobenzene	ND		0.5	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
1,2-Dichloroethane	ND		0.5	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
1,1-Dichloroethane	ND		0.5	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
cis-1,2-Dichloroethene	ND		0.5	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
1,1-Dichloroethene	ND		0.5	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
trans-1,2-Dichloroethene	ND		0.5	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
Ethylbenzene	ND		0.5	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
Isopropylbenzene	ND		0.5	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
Diisopropyl Ether	ND		0.5	ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
Methyl tert-Butyl Ether	ND		1	ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)

Methylene Chloride	ND	2 ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
Styrene	ND	0.5 ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
Tetrachloroethene	ND	0.5 ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
Toluene	ND	0.5 ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
1,1,2-Trichloroethane	ND	0.5 ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
1,1,1-Trichloroethane	ND	0.5 ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
Trichloroethene	ND	0.5 ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
1,3,5-Trimethylbenzene	ND	0.5 ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
Vinyl chloride	ND	0.5 ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
o-Xylene	ND	0.5 ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
m,p-Xylene	ND	1 ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
1,2,4-Trimethylbenzene	ND	0.5 ug/L	1>	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)
Naphthalene	ND	2 ug/L	1	11G6947	7/31/2011 7:15 PM	8/1/2011 5:36 AM	8260B Volatile Organics (Low)

SW846 6010C

Analyte	Result	Qualifiers	RL	Units	Dilution	Batch	Prepared	Analyzed	Analysis
Aluminum	ND		0.1	mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Aluminum Dissolved SW 6010C
Aluminum	ND		0.1	mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Aluminum Total EPA 6010C
Antimony	ND		0.01	mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Antimony Dissolved SW 6010C
Antimony	ND		0.01	mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Antimony Total EPA 6010C
Arsenic	ND		0.01	mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Arsenic Dissolved SW 6010C
Arsenic	ND		0.01	mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Arsenic Total EPA 6010C
Barium	0.046		0.01	mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Barium Dissolved SW 6010C
Barium	0.0469		0.01	mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Barium Total EPA 6010C
Beryllium	ND		0.004	mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Beryllium Dissolved SW 6010C
Beryllium	ND		0.004	mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Beryllium Total EPA 6010C
Boron	ND		0.05	mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Boron Dissolved SW 6010C
Boron	ND		0.05	mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Boron Total EPA 6010C
Cadmium	ND		0.001	mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Cadmium Dissolved SW 6010C
Cadmium	ND		0.001	mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Cadmium Total EPA 6010C
Calcium	102		1	mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Calcium Dissolved SW 6010C
Calcium	98.9		1	mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Calcium Total EPA 6010C

Chromium	ND	0.005 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Chromium Dissolved SW 6010C
Chromium	ND	0.005 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Chromium Total EPA 6010C
Cobalt	ND	0.02 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Cobalt Dissolved SW 6010C
Cobalt	ND	0.02 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Cobalt Total SW 6010C
Copper	ND	0.01 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Copper Dissolved SW 6010C
Copper	ND	0.01 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Copper Total EPA 6010C
Iron	ND	0.05 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Iron Dissolved SW 6010C
Iron	ND	0.05 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Iron Total EPA 6010C
Lead	ND	0.005 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Lead Dissolved SW 6010C
Lead	ND	0.005 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Lead Total EPA 6010C
Magnesium	19.1	1 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Magnesium Dissolved SW 6010C
Magnesium	18.4	1 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Magnesium Total EPA 6010C
Manganese	ND	0.015 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Manganese Dissolved SW 6010C
Manganese	ND	0.015 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Manganese Total EPA 6010C
Molybdenum	ND	0.05 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Molybdenum Dissolved EPA 6010C
Molybdenum	ND	0.05 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Molybdenum Total SW 6010C
Nickel	ND	0.01 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Nickel Dissolved SW 6010C
Nickel	ND	0.01 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Nickel Total EPA 6010C
Potassium	ND	1 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Potassium Dissolved SW 6010C
Potassium	ND	1 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Potassium Total EPA 6010C
Selenium	ND	0.01 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Selenium Dissolved SW 6010C
Selenium	ND	0.01 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Selenium Total EPA 6010C
Silver	ND	0.005 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Silver Dissolved SW 6010C
Silver	ND	0.005 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Silver Total EPA 6010C
Sodium	8.91	1 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Sodium Dissolved SW 6010C
Sodium	8.69	1 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Sodium Total EPA 6010C
Strontium	0.363	0.05 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Strontium Dissolved SW 6010C
Strontium	0.35	0.05 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Strontium Total EPA 6010C
Sulfur	16.4	0.5 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Sulfur Dissolved SW 6010C
Sulfur	16.3	0.5 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Sulfur Total EPA 6010C
Thallium	ND	0.01 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Thallium Dissolved SW 6010C
Thallium	ND	0.01 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Thallium Total EPA 6010C
Titanium	ND	0.05 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Titanium Dissolved SW 6010C
Titanium	ND	0.05 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Titanium Total EPA 6010C
Vanadium	ND	0.02 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Vanadium Dissolved SW 6010C
Vanadium	ND	0.02 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Vanadium Total SW 6010C

Zinc	ND		0.05 mg/L	1	11H0080	8/4/2011 8:20 AM	8/4/2011 6:05 PM	Zinc Dissolved SW 6010C
Zinc	ND		0.05 mg/L	1>	11G7058	8/3/2011 9:20 AM	8/5/2011 12:46 AM	Zinc Total EPA 6010C

**EPA 350.1M**

Analyte	Result	Qualifiers	RL Units	Dilution	Batch	Prepared	Analyzed	Analysis
Ammonia as N	1.6		0.1 mg/L	1	11H0634	8/5/2011 10:26 PM	8/6/2011 8:43 AM	Ammonia 350.1

**SW846 6020A**

Analyte	Result	Qualifiers	RL Units	Dilution	Batch	Prepared	Analyzed	Analysis
Arsenic	ND		2 ug/L	1	11H1790	8/10/2011 3:16 PM	8/11/2011 12:55 AM	Arsenic Dissolved SW6020A
Arsenic	ND		2 ug/L	1>	11H1781	8/10/2011 3:16 PM	8/10/2011 11:49 PM	Arsenic Total SW6020A
Cadmium	ND		1 ug/L	1	11H1790	8/10/2011 3:16 PM	8/11/2011 12:55 AM	Cadmium Dissolved SW6020A
Chromium	ND		2 ug/L	1>	11H1790	8/10/2011 3:16 PM	8/11/2011 12:55 AM	Chromium Dissolved SW6020A
Chromium	ND		2 ug/L	1	11H1781	8/10/2011 3:16 PM	8/10/2011 11:49 PM	Chromium Total SW6020A
Copper	ND		5 ug/L	1>	11H1790	8/10/2011 3:16 PM	8/11/2011 12:55 AM	Copper Dissolved SW 6020A
Copper	ND		5 ug/L	1	11H1781	8/10/2011 3:16 PM	8/10/2011 11:49 PM	Copper Total SW 6020A
Lead	ND		2 ug/L	1>	11H1790	8/10/2011 3:16 PM	8/11/2011 12:55 AM	Lead Dissolved SW 6020A
Lead	ND		2 ug/L	1	11H1781	8/10/2011 3:16 PM	8/10/2011 11:49 PM	Lead Total SW6020A
Nickel	ND		5 ug/L	1>	11H1790	8/10/2011 3:16 PM	8/11/2011 12:55 AM	Nickel Dissolved SW6020A
Nickel	ND		5 ug/L	1	11H1781	8/10/2011 3:16 PM	8/10/2011 11:49 PM	Nickel Total SW 6020A
Selenium	ND		2 ug/L	1>	11H1790	8/10/2011 3:16 PM	8/11/2011 12:55 AM	Selenium Dissolved SW6020A
Selenium	ND		2 ug/L	1	11H1781	8/10/2011 3:16 PM	8/10/2011 11:49 PM	Selenium Total SW6020A
Thallium	ND		2 ug/L	1>	11H1790	8/10/2011 3:16 PM	8/11/2011 12:55 AM	Thallium Dissolved SW6020A
Thallium	ND		2 ug/L	1	11H1781	8/10/2011 3:16 PM	8/10/2011 11:49 PM	Thallium Total SW6020A

**RSK 175**

Analyte	Result	Qualifiers	RL Units	Dilution	Batch	Prepared	Analyzed	Analysis
Methane	ND		26 ug/L	1	11G7129	7/30/2011 7:40 PM	8/3/2011 5:47 PM	Dissolved Gases RSK175
Ethene	ND		26 ug/L	1>	11G7129	7/30/2011 7:40 PM	8/3/2011 5:47 PM	Dissolved Gases RSK175
Ethane	ND		26 ug/L	1	11G7129	7/30/2011 7:40 PM	8/3/2011 5:47 PM	Dissolved Gases RSK175
Propane	ND		34 ug/L	1>	11G7129	7/30/2011 7:40 PM	8/3/2011 5:47 PM	Dissolved Gases RSK175

**SW846 7470A**

Analyte	Result	Qualifiers	RL Units	Dilution	Batch	Prepared	Analyzed	Analysis
Mercury	ND		0.0002 mg/L	1	11H0036	8/1/2011 11:20 AM	8/1/2011 5:32 PM	Mercury Dissolved 7470A

Mercury ND 0.0002 mg/L 1> 11H0024 8/1/2011 1:00 PM 8/1/2011 7:50 PM Mercury Total 7470A

SM 5310 B

Analyte	Result	Qualifiers	RL	Units	Dilution	Batch	Prepared	Analyzed	Analysis
Total Organic Carbon	ND		1	mg/L	1	11H3125	8/12/2011 2:17 PM	8/13/2011 6:49 AM	TOC Dissolved SM 5310B

SM 5310 C

Analyte	Result	Qualifiers	RL	Units	Dilution	Batch	Prepared	Analyzed	Analysis
Total Organic Carbon	ND		1	mg/L	1	11H0732	8/3/2011 2:43 PM	8/4/2011 4:32 PM	TOC Dissolved SM 5310C

SW846 8015C

Analyte	Result	Qualifiers	RL	Units	Dilution	Batch	Prepared	Analyzed	Analysis
Diesel	ND		98	ug/L	1	11G7043	8/1/2011 11:20 AM	8/1/2011 6:14 PM	TPH - Diesel Range SW846 8015C
GRO as Gasoline	ND		100	ug/L	1>	11G7176	7/27/2011 1:25 PM	7/30/2011 5:46 PM	TPH-Gasoline Range SW8015C