1299 HARRISBURG PIKE | PO BOX 4425 | LANCASTER, PA 17604
PHONE: 717-397-9968 | FAX: 717-397-9973
www.lcswma.org

March 1, 2016

Ms. Charlene Sauls; Regional Hydrogeologist
Pennsylvania Department of Environmental Protection
Bureau of Land Recycling and Waste Management
909 Elmerton Avenue
Harrisburg, PA 17110-8200

REF: Creswell Landfill (BWM Permit #100008)
Groundwater Monitoring; 1st Quarter 2016

Dear Ms. Sauls:

Enclosed, as a PDF file, are the Form 19 reports for the sampling period completed at the above referenced facility. The laboratory results were reviewed to evaluate the quality of the data and historic trends.

- This sampling event was for the "Annual" Form 19 parameters, all of the thirteen (13) GWMP locations were sampled.
- Enclosed, on CD, is a csv file that should be in the format compatible with your LandLinks software. Additionally, the CD includes a PDF file of all the Forms 19, PDF files of the laboratory reports, MCL and SMCL exceedance reports as you have requested.
- Up gradient wells 1 & 5 samples where bellow MCL and SMCL with the exception of Iron, Manganese and Nitrate-Nitrogen.
- Down gradient wells had similar results with wells 17 &18 (surface Mann's Run) showing highest concentration of Iron, Manganese, Chlorides and Nitrate-Nitrogen. Wells 9 and 10 had elevated TDS and chlorides which shows surface influence of Mann's Run.

In summary, we observed no unusual trends, and the values reported are generally consistent with historic or seasonal results.

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Please do not hesitate in contacting me if you have any questions or concerns at mreider@lcswma.org.

Respectfully Submitted,

Mark D Reider
Environmental Manager

Enclosures

cc: Bob Zorbaugh; Dan Brown; Bob Eshbach
Randy Weiss (PA DEP)

2540-PM-LRWM0041 Rev. 3/2006

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised
02/26/2016
DEP USE ONLY
Date Received

FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 19, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General Reference: Section 273.284
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP007W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor Township

Sampling Point — Latitude: 39 ° 57 ' 24.53 " — Longitude: 76 ° 26 ' 33.28 "

Depth to Water Level: 6.15 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.50 ft — Elevation of Water Level: 447.25 ft./MSL

Sampling Depth: 33 ft — Volume of Water Column: 44.57 gal

Total Well Depth: 36.5 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 3.7

Sample Field Filtered (must be 0.45 micron)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 1/18/2016 — Sample Collection Time: 10:24

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS Environmental

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?: ___ Yes X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2119111001 — Final Lab Analysis CompletionDate: 2/2/2016

Name/Affiliation of Person who Filled Out Form: Mark D. Reider

Comments:

I.D. No	100008
Monitoring Point No.	CWMP007W
Sample Date	1/18/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

ANALYTES

1-Q. Inorganics (Enter all data in mg/l except as noted

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	ASTM D6919-09
BICARBONATE	11	SM20 2321
CALCIUM, TOTAL	18.8	SW846 6010C
CALCIUM, DISSOLVED	18.7	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	63.9	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	9.2	SW846 6010C
MAGNESIUM, DISSOLVED	9.2	SW846 6010C
MANGANESE, TOTAL (ug/l)	5.9	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	5.6	SW846 6010C
NITRATE-NITROGEN	10.9	EPA 300
pH-FIELD (SU)	4.71	FIELD
pH-LAB (SU)	5.97	SM4500B
POTASSIUM, TOTAL	2.1	SW846 6010C
POTASSIUM, DISSOLVED	2.1	6SW846 010C
SODIUM, TOTAL	30.8	SW846 6010C
SODIUM, DISSOLVED	30.2	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	397	FIELD
SPEC. COND., LAB (umhos/cm)	342	EPA 120.1
SULFATE	14.7	EPA 300
ALKALINITY	11	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	191	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.1 ND	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.
T Please indicate detection limit if analyte is not detected.
** Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4). Remaining quarterly samples only require total metals analysis.

I.D. No	100008
Monitoring Point No.	CWMP007W
Sample Date	1/18/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-Q. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP007W
Sample Date	1/18/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	49	SW846 6010C
BARIUM, DISSOLVED	48	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP007W
Sample Date	1/18/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP007W
Sample Date	1/18/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On LIst - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP007W
Sample Date	1/18/2016

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

2540-PM-LRWM0041 Rev. 3/2006

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised
02/26/2016
DEP USE ONLY
Date Received

FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 19, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General Reference: Section 273.284
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP001W — X Well ___ Spring ___ Stream ___ Other

X Upgradient/Upstream ___ Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor Township

Sampling Point — Latitude: 39 ° 57 ' 27.43 " — Longitude: 76 ° 26 ' 14.4 "

Depth to Water Level: 29.97 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.23 ft — Elevation of Water Level: 485.16 ft./MSL

Sampling Depth: 57 ft — Volume of Water Column: 53.36 gal

Total Well Depth: 66.3 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 2.3

Sample Field Filtered (must be 0.45 micron)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 1/18/2016 — Sample Collection Time: 12:00

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS Environmental

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?: ___ Yes X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2119111002 — Final Lab Analysis CompletionDate: 1/29/2016

Name/Affiliation of Person who Filled Out Form: Mark D. Reider

Comments:

I.D. No	100008
Monitoring Point No.	CWMP001W
Sample Date	1/18/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

ANALYTES

1-Q. Inorganics (Enter all data in mg/l except as noted

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	ASTM D6919-09
BICARBONATE	6	SM20 2321
CALCIUM, TOTAL	18.3	SW846 6010C
CALCIUM, DISSOLVED	16.9	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	29.9	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	3200	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	11.8	SW846 6010C
MAGNESIUM, DISSOLVED	10.9	SW846 6010C
MANGANESE, TOTAL (ug/l)	100	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	64	SW846 6010C
NITRATE-NITROGEN	22.4	EPA 300
pH-FIELD (SU)	4.89	FIELD
pH-LAB (SU)	5.77	SM4500B
POTASSIUM, TOTAL	2.4	SW846 6010C
POTASSIUM, DISSOLVED	2.3	6SW846 010C
SODIUM, TOTAL	13.5	SW846 6010C
SODIUM, DISSOLVED	13.4	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	312	FIELD
SPEC. COND., LAB (umhos/cm)	268	EPA 120.1
SULFATE	2 ND	EPA 300
ALKALINITY	6	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	182	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	1.1	SM20 5310B
TOTAL PHENOLICS (ug/l)	10	SW846 9066
TURBIDITY (N.T.U.)	103	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.
T Please indicate detection limit if analyte is not detected.
** Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4). Remaining quarterly samples only require total metals analysis.

I.D. No	100008
Monitoring Point No.	CWMP001W
Sample Date	1/18/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-Q. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP001W
Sample Date	1/18/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	94	SW846 6010C
BARIUM, DISSOLVED	80	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	12	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	32	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP001W
Sample Date	1/18/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP001W
Sample Date	1/18/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On LIst - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP001W
Sample Date	1/18/2016

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised
02/26/2016
DEP USE ONLY
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FORM 19
MUNICIPAL WASTE LANDFILL
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General Reference: Section 273.284
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP005W — X Well ___ Spring ___ Stream ___ Other

X Upgradient/Upstream ___ Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor Township

Sampling Point — Latitude: 39 ° 57 ' 11.17 " — Longitude: 76 ° 26 ' 7.08 "

Depth to Water Level: 42.93 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: -0.37 ft — Elevation of Water Level: 470.5 ft./MSL

Sampling Depth: 130 ft — Volume of Water Column: 142.56 gal

Total Well Depth: 140 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 3.0

Sample Field Filtered (must be 0.45 micron)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 1/19/2016 — Sample Collection Time: 9:48

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS Environmental

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?: ___ Yes X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2119254001 — Final Lab Analysis CompletionDate: 2/2/2016

Name/Affiliation of Person who Filled Out Form: Mark D. Reider

Comments:

I.D. No	100008
Monitoring Point No.	CWMP005W
Sample Date	1/19/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

ANALYTES

1-Q. Inorganics (Enter all data in mg/l except as noted

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	ASTM D6919-09
BICARBONATE	20	SM20 2321
CALCIUM, TOTAL	17.7	SW846 6010C
CALCIUM, DISSOLVED	17.5	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	75.6	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	9.4	SW846 6010C
MAGNESIUM, DISSOLVED	9.3	SW846 6010C
MANGANESE, TOTAL (ug/l)	61	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	58	SW846 6010C
NITRATE-NITROGEN	11.3	EPA 300
pH-FIELD (SU)	5.04	FIELD
pH-LAB (SU)	5.88	SM4500B
POTASSIUM, TOTAL	2.3	SW846 6010C
POTASSIUM, DISSOLVED	2.3	6SW846 010C
SODIUM, TOTAL	32.1	SW846 6010C
SODIUM, DISSOLVED	31.8	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	401	FIELD
SPEC. COND., LAB (umhos/cm)	352	EPA 120.1
SULFATE	2 ND	EPA 300
ALKALINITY	20	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	208	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.23	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.
T Please indicate detection limit if analyte is not detected.
** Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4). Remaining quarterly samples only require total metals analysis.

I.D. No	100008
Monitoring Point No.	CWMP005W
Sample Date	1/19/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-Q. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP005W
Sample Date	1/19/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	56	SW846 6010C
BARIUM, DISSOLVED	54	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP005W
Sample Date	1/19/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP005W
Sample Date	1/19/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On LIst - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP005W
Sample Date	1/19/2016

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

2540-PM-LRWM0041 Rev. 3/2006

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised
02/26/2016
DEP USE ONLY
Date Received

FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 19, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General Reference: Section 273.284
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP016W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor Township

Sampling Point — Latitude: 39 ° 56 ' 55.57 " — Longitude: 76 ° 26 ' 50.59 "

Depth to Water Level: 8.88 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.53 ft — Elevation of Water Level: 303.09 ft./MSL

Sampling Depth: 71 ft — Volume of Water Column: ___ gal

Total Well Depth: 78.03 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.8

Sample Field Filtered (must be 0.45 micron)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 1/20/2016 — Sample Collection Time: 10:01

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS Environmental

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?: ___ Yes X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2119528001 — Final Lab Analysis CompletionDate: 1/29/2016

Name/Affiliation of Person who Filled Out Form: Mark D. Reider

Comments:

I.D. No	100008
Monitoring Point No.	CWMP016W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

ANALYTES

1-Q. Inorganics (Enter all data in mg/l except as noted

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	ASTM D6919-09
BICARBONATE	7	SM20 2321
CALCIUM, TOTAL	5.1	SW846 6010C
CALCIUM, DISSOLVED	5.1	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	3	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	150	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	1.2	SW846 6010C
MAGNESIUM, DISSOLVED	1.2	SW846 6010C
MANGANESE, TOTAL (ug/l)	8.1	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	6.7	SW846 6010C
NITRATE-NITROGEN	0.72	EPA 300
pH-FIELD (SU)	4.85	FIELD
pH-LAB (SU)	6.25	SM4500B
POTASSIUM, TOTAL	0.56 ND	SW846 6010C
POTASSIUM, DISSOLVED	0.5 ND	6SW846 010C
SODIUM, TOTAL	3.1	SW846 6010C
SODIUM, DISSOLVED	3	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	62	FIELD
SPEC. COND., LAB (umhos/cm)	52	EPA 120.1
SULFATE	12	EPA 300
ALKALINITY	7	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	36	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	1.22	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.
T Please indicate detection limit if analyte is not detected.
** Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4). Remaining quarterly samples only require total metals analysis.

I.D. No	100008
Monitoring Point No.	CWMP016W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-Q. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP016W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	11 ND	SW846 6010C
BARIUM, DISSOLVED	10 ND	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP016W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP016W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On LIst - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP016W
Sample Date	1/20/2016

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised
02/26/2016
DEP USE ONLY
Date Received

FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 19, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General Reference: Section 273.284
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP010W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor Township

Sampling Point — Latitude: 39 ° 57 ' 2.38 " — Longitude: 76 ° 26 ' 57.92 "

Depth to Water Level: 8.88 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.10 ft — Elevation of Water Level: 352.02 ft./MSL

Sampling Depth: 17 ft — Volume of Water Column: 7.00 gal

Total Well Depth: 19.6 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.7

Sample Field Filtered (must be 0.45 micron)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 1/20/2016 — Sample Collection Time: 11:58

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS Environmental

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?: ___ Yes X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2119528002 — Final Lab Analysis CompletionDate: 1/29/2016

Name/Affiliation of Person who Filled Out Form: Mark D. Reider

Comments:

I.D. No	100008
Monitoring Point No.	CWMP010W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

ANALYTES

1-Q. Inorganics (Enter all data in mg/l except as noted

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	ASTM D6919-09
BICARBONATE	164	SM20 2321
CALCIUM, TOTAL	49.5	SW846 6010C
CALCIUM, DISSOLVED	47.9	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	23	EPA 410.4
CHLORIDE	266	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	350	SW846 6010C
IRON, DISSOLVED (ug/l)	81	SW846 6010C
MAGNESIUM, TOTAL	32.4	SW846 6010C
MAGNESIUM, DISSOLVED	31.7	SW846 6010C
MANGANESE, TOTAL (ug/l)	240	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	110	SW846 6010C
NITRATE-NITROGEN	5.4	EPA 300
pH-FIELD (SU)	5.9	FIELD
pH-LAB (SU)	7.02	SM4500B
POTASSIUM, TOTAL	11.7	SW846 6010C
POTASSIUM, DISSOLVED	11.5	6SW846 010C
SODIUM, TOTAL	161	SW846 6010C
SODIUM, DISSOLVED	159	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	1469	FIELD
SPEC. COND., LAB (umhos/cm)	1430	EPA 120.1
SULFATE	27	EPA 300
ALKALINITY	164	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	731	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	8.3	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	1.38	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.
T Please indicate detection limit if analyte is not detected.
** Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4). Remaining quarterly samples only require total metals analysis.

I.D. No	100008
Monitoring Point No.	CWMP010W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-Q. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP010W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	63	SW846 6010C
BARIUM, DISSOLVED	59	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	13	SW846 6010C
CHROMIUM, DISSOLVED	9.9	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP010W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP010W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On LIst - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP010W
Sample Date	1/20/2016

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

2540-PM-LRWM0041 Rev. 3/2006

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised
02/26/2016
DEP USE ONLY
Date Received

FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 19, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General Reference: Section 273.284
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP009W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor Township

Sampling Point — Latitude: 39 ° 57 ' 10.82 " — Longitude: 76 ° 26 ' 55.8 "

Depth to Water Level: 9.23 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.70 ft — Elevation of Water Level: 394.97 ft./MSL

Sampling Depth: 16 ft — Volume of Water Column: 6.83 gal

Total Well Depth: 19.7 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 3.8

Sample Field Filtered (must be 0.45 micron)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 1/20/2016 — Sample Collection Time: 12:21

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS Environmental

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?: ___ Yes X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2119528003 — Final Lab Analysis CompletionDate: 2/2/2016

Name/Affiliation of Person who Filled Out Form: Mark D. Reider

Comments:

I.D. No 100008
Monitoring Point No. CWMP009W
Sample Date 1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

ANALYTES

1-Q. Inorganics (Enter all data in mg/l except as noted

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	38.6	ASTM D6919-09
BICARBONATE	553	SM20 2321
CALCIUM, TOTAL	152	SW846 6010C
CALCIUM, DISSOLVED	146	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	100	EPA 410.4
CHLORIDE	447	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	35300	SW846 6010C
IRON, DISSOLVED (ug/l)	34100	SW846 6010C
MAGNESIUM, TOTAL	74.4	SW846 6010C
MAGNESIUM, DISSOLVED	71.8	SW846 6010C
MANGANESE, TOTAL (ug/l)	12000	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	11700	SW846 6010C
NITRATE-NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	5.9	FIELD
pH-LAB (SU)	6.54	SM4500B
POTASSIUM, TOTAL	33	SW846 6010C
POTASSIUM, DISSOLVED	32.6	6SW846 010C
SODIUM, TOTAL	143	SW846 6010C
SODIUM, DISSOLVED	139	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	2691	FIELD
SPEC. COND., LAB (umhos/cm)	2550	EPA 120.1
SULFATE	3.6	EPA 300
ALKALINITY	553	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	1280	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	37.9	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	4.18	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.
T Please indicate detection limit if analyte is not detected.
** Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4). Remaining quarterly samples only require total metals analysis.

I.D. No	100008
Monitoring Point No.	CWMP009W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-Q. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BENZENE	1.7	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	3.2	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP009W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	9 ND	SW846 6010C
BARIUM, TOTAL	700	SW846 6010C
BARIUM, DISSOLVED	690	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	30	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP009W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	18.2	SW846 8260B
CHLOROETHANE	18.8	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	2.3	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	10.6	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP009W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On LIst - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10.7	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP009W
Sample Date	1/20/2016

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

2540-PM-LRWM0041 Rev. 3/2006

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised
02/26/2016
DEP USE ONLY
Date Received

FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 19, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General Reference: Section 273.284
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP008W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor Township

Sampling Point — Latitude: 39 ° 57 ' 16.97 " — Longitude: 76 ° 26 ' 47.58 "

Depth to Water Level: 2.41 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.80 ft — Elevation of Water Level: 419.89 ft./MSL

Sampling Depth: 19 ft — Volume of Water Column: 3.33 gal

Total Well Depth: 22.8 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 11.3

Sample Field Filtered (must be 0.45 micron)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 1/20/2016 — Sample Collection Time: 12:55

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS Environmental

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?: ___ Yes X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2119528004 — Final Lab Analysis CompletionDate: 2/1/2016

Name/Affiliation of Person who Filled Out Form: Mark D. Reider

Comments:

I.D. No	100008
Monitoring Point No.	CWMP008W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

ANALYTES

1-Q. Inorganics (Enter all data in mg/l except as noted

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	4.87	ASTM D6919-09
BICARBONATE	387	SM20 2321
CALCIUM, TOTAL	65.8	SW846 6010C
CALCIUM, DISSOLVED	63.3	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	26	EPA 410.4
CHLORIDE	23.3	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	25000	SW846 6010C
IRON, DISSOLVED (ug/l)	24400	SW846 6010C
MAGNESIUM, TOTAL	28.2	SW846 6010C
MAGNESIUM, DISSOLVED	27.3	SW846 6010C
MANGANESE, TOTAL (ug/l)	15100	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	14900	SW846 6010C
NITRATE-NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	5.77	FIELD
pH-LAB (SU)	6.43	SM4500B
POTASSIUM, TOTAL	7.4	SW846 6010C
POTASSIUM, DISSOLVED	7.3	6SW846 010C
SODIUM, TOTAL	32.7	SW846 6010C
SODIUM, DISSOLVED	32.1	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	854	FIELD
SPEC. COND., LAB (umhos/cm)	810	EPA 120.1
SULFATE	4.7	EPA 300
ALKALINITY	387	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	422	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	11.1	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	8.9	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.
T Please indicate detection limit if analyte is not detected.
** Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4). Remaining quarterly samples only require total metals analysis.

I.D. No	100008
Monitoring Point No.	CWMP008W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-Q. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BENZENE	1.2	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	4.3	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP008W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	9 ND	SW846 6010C
BARIUM, TOTAL	120	SW846 6010C
BARIUM, DISSOLVED	120	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	22	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP008W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	8.9	SW846 8260B
CHLOROETHANE	12.3	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1.7	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	12.8	SW846 8260B
DICHLORODIFLUOROMETHANE	1.2	SW846 8260B
1,2-DICHLOROPROPANE	1.1	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP008W
Sample Date	1/20/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On LIst - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	14.3	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP008W
Sample Date	1/20/2016

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

2540-PM-LRWM0041 Rev. 3/2006

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised
02/26/2016
DEP USE ONLY
Date Received

FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 19, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General Reference: Section 273.284
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP018S — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor

Sampling Point — Latitude: 39 ° 56 ' 55.11 " — Longitude: 76 ° 26 ' 51.66 "

Depth to Water Level: ___ ft — Measured from: ___ Land Surface X TOC

Casing Stickup: ___ ft — Elevation of Water Level: #Error ft./MSL

Sampling Depth: 0 ft — Volume of Water Column: #Error gal

Total Well Depth: ___ ft — Sampling Method: ___ Pumped ___ Bailed X Grab

Well Purged: ___ Yes X No — Well Volumes Purged: ___

Sample Field Filtered (must be 0.45 micron)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 1/21/2016 — Sample Collection Time: 10:18

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS Environmental

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?: ___ Yes X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2119794001 — Final Lab Analysis CompletionDate: 2/1/2016

Name/Affiliation of Person who Filled Out Form: Mark D. Reider

Comments:

I.D. No 100008
Monitoring Point No. CWMP018S
Sample Date 1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

ANALYTES

1-Q. Inorganics (Enter all data in mg/l except as noted

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.486	ASTM D6919-09
BICARBONATE	221	SM20 2321
CALCIUM, TOTAL	68	SW846 6010C
CALCIUM, DISSOLVED	66.7	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	24	EPA 410.4
CHLORIDE	516	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	100	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	48.2	SW846 6010C
MAGNESIUM, DISSOLVED	47.1	SW846 6010C
MANGANESE, TOTAL (ug/l)	170	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	160	SW846 6010C
NITRATE-NITROGEN	19.6	EPA 300
pH-FIELD (SU)	7.03	FIELD
pH-LAB (SU)	8.24	SM4500B
POTASSIUM, TOTAL	16.2	SW846 6010C
POTASSIUM, DISSOLVED	16	6SW846 010C
SODIUM, TOTAL	259	SW846 6010C
SODIUM, DISSOLVED	251	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	2330	FIELD
SPEC. COND., LAB (umhos/cm)	2170	EPA 120.1
SULFATE	33.4	EPA 300
ALKALINITY	221	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	1120	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	7.5	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	1.02	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.
T Please indicate detection limit if analyte is not detected.
** Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4). Remaining quarterly samples only require total metals analysis.

I.D. No	100008
Monitoring Point No.	CWMP018S
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-Q. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP018S
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	35	SW846 6010C
BARIUM, DISSOLVED	35	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP018S
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP018S
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On LIst - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP018S
Sample Date	1/21/2016

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised
02/26/2016
DEP USE ONLY
Date Received

FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 19, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General Reference: Section 273.284
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP017S — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor Township

Sampling Point — Latitude: 39 ° 57 ' 20.41 " — Longitude: 76 ° 26 ' 45.1 "

Depth to Water Level: ___ ft — Measured from: ___ Land Surface X TOC

Casing Stickup: ___ ft — Elevation of Water Level: #Error ft./MSL

Sampling Depth: 0 ft — Volume of Water Column: #Error gal

Total Well Depth: ___ ft — Sampling Method: ___ Pumped ___ Bailed X Grab

Well Purged: ___ Yes X No — Well Volumes Purged: ___

Sample Field Filtered (must be 0.45 micron)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 1/21/2016 — Sample Collection Time: 10:42

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS Environmental

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?: ___ Yes X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2119794002 — Final Lab Analysis CompletionDate: 2/1/2016

Name/Affiliation of Person who Filled Out Form: Mark D. Reider

Comments:

I.D. No 100008
Monitoring Point No. CWMP017S
Sample Date 1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

ANALYTES

1-Q. Inorganics (Enter all data in mg/l except as noted

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.126	ASTM D6919-09
BICARBONATE	307	SM20 2321
CALCIUM, TOTAL	73.3	SW846 6010C
CALCIUM, DISSOLVED	73.2	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	11	EPA 410.4
CHLORIDE	756	EPA 300
FLUORIDE	0.5 ND	EPA 300
IRON, TOTAL (ug/l)	110	SW846 6010C
IRON, DISSOLVED (ug/l)	66	SW846 6010C
MAGNESIUM, TOTAL	62.7	SW846 6010C
MAGNESIUM, DISSOLVED	64.1	SW846 6010C
MANGANESE, TOTAL (ug/l)	140	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	140	SW846 6010C
NITRATE-NITROGEN	25.4	EPA 300
pH-FIELD (SU)	7.99	FIELD
pH-LAB (SU)	7.88	SM4500B
POTASSIUM, TOTAL	17.8	SW846 6010C
POTASSIUM, DISSOLVED	18.1	6SW846 010C
SODIUM, TOTAL	406	SW846 6010C
SODIUM, DISSOLVED	404	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	3346	FIELD
SPEC. COND., LAB (umhos/cm)	3070	EPA 120.1
SULFATE	41.7	EPA 300
ALKALINITY	307	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	1550	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	4.5	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.76	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.
T Please indicate detection limit if analyte is not detected.
** Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4). Remaining quarterly samples only require total metals analysis.

I.D. No	100008
Monitoring Point No.	CWMP017S
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-Q. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP017S
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	32	SW846 6010C
BARIUM, DISSOLVED	31	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	47	SW846 6010C
ZINC, DISSOLVED	44	SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP017S
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP017S
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On LIst - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP017S
Sample Date	1/21/2016

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised
02/26/2016
DEP USE ONLY
Date Received

FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 19, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General Reference: Section 273.284
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP002W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor Township

Sampling Point — Latitude: 39 ° 57 ' 19.97 " — Longitude: 76 ° 26 ' 12.3 "

Depth to Water Level: 90.32 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: -1.19 ft — Elevation of Water Level: 435.49 ft./MSL

Sampling Depth: 85 ft — Volume of Water Column: 14.22 gal

Total Well Depth: 100 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: ___

Sample Field Filtered (must be 0.45 micron)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 1/21/2016 — Sample Collection Time: 12:22

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS Environmental

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?: ___ Yes X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2119794003 — Final Lab Analysis CompletionDate: 2/2/2016

Name/Affiliation of Person who Filled Out Form: Mark D. Reider

Comments:

I.D. No	100008
Monitoring Point No.	CWMP002W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

ANALYTES

1-Q. Inorganics (Enter all data in mg/l except as noted

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	ASTM D6919-09
BICARBONATE	60	SM20 2321
CALCIUM, TOTAL	52.7	SW846 6010C
CALCIUM, DISSOLVED	50.5	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	106	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	15.2	SW846 6010C
MAGNESIUM, DISSOLVED	15	SW846 6010C
MANGANESE, TOTAL (ug/l)	970	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	950	SW846 6010C
NITRATE-NITROGEN	3.8	EPA 300
pH-FIELD (SU)	5.89	FIELD
pH-LAB (SU)	6.07	SM4500B
POTASSIUM, TOTAL	2.6	SW846 6010C
POTASSIUM, DISSOLVED	2.6	6SW846 010C
SODIUM, TOTAL	20.9	SW846 6010C
SODIUM, DISSOLVED	20.3	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	576	FIELD
SPEC. COND., LAB (umhos/cm)	550	EPA 120.1
SULFATE	23.5	EPA 300
ALKALINITY	60	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	316	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	4.1	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.19	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.
T Please indicate detection limit if analyte is not detected.
** Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4). Remaining quarterly samples only require total metals analysis.

I.D. No	100008
Monitoring Point No.	CWMP002W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-Q. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	12.6	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1.8	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP002W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	37	SW846 6010C
BARIUM, DISSOLVED	36	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP002W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	6	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1.1	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP002W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On LIst - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP002W
Sample Date	1/21/2016

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

2540-PM-LRWM0041 Rev. 3/2006

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised
02/26/2016
DEP USE ONLY
Date Received

FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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General Reference: Section 273.284
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP003W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor Township

Sampling Point — Latitude: 39 ° 57 ' 20.17 " — Longitude: 76 ° 26 ' 8.37 "

Depth to Water Level: 99.85 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: -1.29 ft — Elevation of Water Level: 424.36 ft./MSL

Sampling Depth: 100 ft — Volume of Water Column: -36.50 gal

Total Well Depth: 75 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: ___

Sample Field Filtered (must be 0.45 micron)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 1/21/2016 — Sample Collection Time: 12:49

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS Environmental

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?: ___ Yes X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2119794004 — Final Lab Analysis CompletionDate: 2/1/2016

Name/Affiliation of Person who Filled Out Form: Mark D. Reider

Comments:

I.D. No	100008
Monitoring Point No.	CWMP003W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

ANALYTES

1-Q. Inorganics (Enter all data in mg/l except as noted

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	ASTM D6919-09
BICARBONATE	17	SM20 2321
CALCIUM, TOTAL	30.2	SW846 6010C
CALCIUM, DISSOLVED	29.4	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	70.4	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	9.9	SW846 6010C
MAGNESIUM, DISSOLVED	9.7	SW846 6010C
MANGANESE, TOTAL (ug/l)	5.6 ND	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	5 ND	SW846 6010C
NITRATE-NITROGEN	9	EPA 300
pH-FIELD (SU)	5.64	FIELD
pH-LAB (SU)	6.02	SM4500B
POTASSIUM, TOTAL	1.6	SW846 6010C
POTASSIUM, DISSOLVED	1.5	6SW846 010C
SODIUM, TOTAL	17.8	SW846 6010C
SODIUM, DISSOLVED	17.4	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	394	FIELD
SPEC. COND., LAB (umhos/cm)	341	EPA 120.1
SULFATE	4.6	EPA 300
ALKALINITY	17	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	210	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	1.2	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.22	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.
T Please indicate detection limit if analyte is not detected.
** Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4). Remaining quarterly samples only require total metals analysis.

I.D. No	100008
Monitoring Point No.	CWMP003W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-Q. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	2.9	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP003W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	16	SW846 6010C
BARIUM, DISSOLVED	15	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP003W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP003W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On LIst - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP003W
Sample Date	1/21/2016

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised
02/26/2016
DEP USE ONLY
Date Received

FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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General Reference: Section 273.284
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP004W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor Township

Sampling Point — Latitude: 39 ° 57 ' 17.9 " — Longitude: 76 ° 26 ' 7.05 "

Depth to Water Level: 130.54 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: -1.37 ft — Elevation of Water Level: 398.99 ft./MSL

Sampling Depth: 130 ft — Volume of Water Column: 13.89 gal

Total Well Depth: 140 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: ___

Sample Field Filtered (must be 0.45 micron)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 1/21/2016 — Sample Collection Time: 13:02

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS Environmental

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?: ___ Yes X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2119794005 — Final Lab Analysis CompletionDate: 2/1/2016

Name/Affiliation of Person who Filled Out Form: Mark D. Reider

Comments:

I.D. No 100008
Monitoring Point No. CWMP004W
Sample Date 1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

ANALYTES

1-Q. Inorganics (Enter all data in mg/l except as noted

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	ASTM D6919-09
BICARBONATE	25	SM20 2321
CALCIUM, TOTAL	22.2	SW846 6010C
CALCIUM, DISSOLVED	21.5	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	40.6	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	6.5	SW846 6010C
MAGNESIUM, DISSOLVED	6.4	SW846 6010C
MANGANESE, TOTAL (ug/l)	7.3	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	7.2	SW846 6010C
NITRATE-NITROGEN	7.4	EPA 300
pH-FIELD (SU)	5.63	FIELD
pH-LAB (SU)	6.21	SM4500B
POTASSIUM, TOTAL	1.3	SW846 6010C
POTASSIUM, DISSOLVED	1.3	6SW846 010C
SODIUM, TOTAL	14	SW846 6010C
SODIUM, DISSOLVED	13.8	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	280	FIELD
SPEC. COND., LAB (umhos/cm)	242	EPA 120.1
SULFATE	4.9	EPA 300
ALKALINITY	25	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	159	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.21	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.
T Please indicate detection limit if analyte is not detected.
** Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4). Remaining quarterly samples only require total metals analysis.

I.D. No	100008
Monitoring Point No.	CWMP004W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-Q. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP004W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	11	SW846 6010C
BARIUM, DISSOLVED	11	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP004W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP004W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On LIst - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP004W
Sample Date	1/21/2016

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTE

Date Prepared/Revised
02/26/2016
DEP USE ONLY
Date Received

FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 19, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General Reference: Section 273.284
Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

Monitoring Wells must be designed and constructed in accordance with Department Standards. INDICATE THE LATITUDE AND LONGITUDE TO THE NEAREST ONE TENTH OF A SECOND (D° MM' SS.S")

Monitoring Point Number: CWMP012W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor Township

Sampling Point — Latitude: 39 ° 57 ' 1.48 " — Longitude: 76 ° 26 ' 36.02 "

Depth to Water Level: 50.81 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.90 ft — Elevation of Water Level: 331.89 ft./MSL

Sampling Depth: 0 ft — Volume of Water Column: 75.03 gal

Total Well Depth: 101.9 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: ___

Sample Field Filtered (must be 0.45 micron)?: X Yes ___ No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 1/21/2016 — Sample Collection Time: 10:18

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS Environmental

Laboratory(ies) Performing Analysis: ALS Environmental

Were any holding times exceeded?: ___ Yes X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2119794008 — Final Lab Analysis CompletionDate: 2/1/2016

Name/Affiliation of Person who Filled Out Form: Mark D. Reider

Comments:

I.D. No 100008
Monitoring Point No. CWMP012W
Sample Date 1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

ANALYTES

1-Q. Inorganics (Enter all data in mg/l except as noted

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	ASTM D6919-09
BICARBONATE	69	SM20 2321
CALCIUM, TOTAL	36.4	SW846 6010C
CALCIUM, DISSOLVED	34.7	SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	37.5	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	120000	SW846 6010C
IRON, DISSOLVED (ug/l)	60 ND	SW846 6010C
MAGNESIUM, TOTAL	9.8	SW846 6010C
MAGNESIUM, DISSOLVED	9.6	SW846 6010C
MANGANESE, TOTAL (ug/l)	630	SW846 6010C
MANGANESE, DISSOLVED (ug/l)	410	SW846 6010C
NITRATE-NITROGEN	11.8	EPA 300
pH-FIELD (SU)	7.53	FIELD
pH-LAB (SU)	6.31	SM4500B
POTASSIUM, TOTAL	1.4	SW846 6010C
POTASSIUM, DISSOLVED	1.4	6SW846 010C
SODIUM, TOTAL	13	SW846 6010C
SODIUM, DISSOLVED	12.7	SW 846 6010C
SPEC. COND., FIELD (umhos/cm)	418	FIELD
SPEC. COND., LAB (umhos/cm)	319	EPA 120.1
SULFATE	4.3	EPA 300
ALKALINITY	69	SM20 2320B
TDS (TOTAL DISSOLVED SOLIDS)	218	SM20 2540C
TOC (TOTAL ORGANIC CARBON)	3.2	SM20 5310B
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	233	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.
T Please indicate detection limit if analyte is not detected.
** Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4). Remaining quarterly samples only require total metals analysis.

I.D. No	100008
Monitoring Point No.	CWMP012W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-Q. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1.6	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP012W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

1-A. Metals (Enter all data in ug/l) If initial background analyses of four consecutive analyses show essentially identical (within 5%) dissolved and total analyses, dissolved analyses may not be required, subject to written DEP approval.

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ARSENIC, TOTAL	9 ND	SW846 6010C
ARSENIC, DISSOLVED	8 ND	SW846 6010C
BARIUM, TOTAL	110	SW846 6010C
BARIUM, DISSOLVED	84	SW846 6010C
CADMIUM, TOTAL	2.2 ND	SW846 6010C
CADMIUM, DISSOLVED	2 ND	SW846 6010C
CHROMIUM, TOTAL	5.6 ND	SW846 6010C
CHROMIUM, DISSOLVED	5 ND	SW846 6010C
COPPER, TOTAL	11 ND	SW846 6010C
COPPER, DISSOLVED	10 ND	SW846 6010C
LEAD-FLAMELESS, TOTAL	6.7 ND	SW846 6010C
LEAD, DISSOLVED	6 ND	SW846 6010C
MERCURY, TOTAL	0.5 ND	SW846 7470A
MERCURY, DISSOLVED	0.5 ND	SW846 7470A
SELENIUM, TOTAL	22 ND	SW846 6010C
SELENIUM, DISSOLVED	20 ND	SW846 6010C
SILVER, TOTAL	4.4 ND	SW846 6010C
SILVER, DISSOLVED	4 ND	SW846 6010C
ZINC, TOTAL	22 ND	SW846 6010C
ZINC, DISSOLVED	20 ND	SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP012W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

2-A. Organics (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BROMOFORM	1 ND	SW846 8260B
BROMOMETHANE	1 ND	SW846 8260B
CARBON TETRACHLORIDE	1 ND	SW846 8260B
CHLOROBENZENE	1 ND	SW846 8260B
CHLOROETHANE	1 ND	SW846 8260B
DIBROMOCHLOROMETHANE (CHLORODIBROMOMET	1 ND	SW846 8260B
CHLOROMETHANE	1 ND	SW846 8260B
3-CHLORO-1-PROPENE	1 ND	SW846 8260B
1,2-DICHLOROBENZENE	1 ND	SW846 8260B
1,3-DICHLOROBENZENE	1 ND	SW846 8260B
1,4-DICHLOROBENZENE	1 ND	SW846 8260B
DICHLORODIFLUOROMETHANE	1 ND	SW846 8260B
1,2-DICHLOROPROPANE	1 ND	SW846 8260B
cis 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
trans 1,3-DICHLOROPROPENE	1 ND	SW846 8260B
2-BUTANONE (MEK)	10 ND	SW846 8260B
4-METHYL-2-PENTANONE (MIBK)	5 ND	SW846 8260B
1,1,1,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2,2-TETRACHLOROETHANE	1 ND	SW846 8260B
1,1,2-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROFLUOROMETHANE	1 ND	SW846 8260B
1,2,3-TRICHLOROPROPANE	2 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP012W
Sample Date	1/21/2016

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

When the MCL of any VOC is exceeded in the detection zone Form 50 monitoring, the following analytes must be monitored quarterly in the groundwater monitoring wells.

SUBTITLE D - Detection Zone Add-On LIst - Required only when Form 50 detection Zone concentrations exceed MCLs (where established).

ORGANICS AND METALS (Enter all data in ug/l)

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
ACETONE	10 ND	SW846 8260B
ACRYLONITRILE	5 ND	SW846 8260B
BROMOCHLOROMETHANE) CHLOROBROMOMETHAN	1 ND	SW846 8260B
BROMODICHLOROMETHANE	1 ND	SW846 8260B
CARBON DISULFIDE	1 ND	SW846 8260B
CHLOROFORM	1 ND	SW846 8260B
1,2-DIBROMO-3-CHLOROPROPANE (DBCP) (DIBROMO	7 ND	SW846 8260B
trans 1,4-DICHLORO-2-BUTENE	3 ND	SW846 8260B
2-HEXANONE	5 ND	SW846 8260B
DIBROMOMETHANE	1 ND	SW846 8260B
IODOMETHANE	1 ND	SW846 8260B
STYRENE	1 ND	SW846 8260B
VINYL ACETATE	5 ND	SW846 8260B
ANTIMONY		EPA 200.8
BERYLLIUM		EPA 200.8
COBALT		SW846 6010C
NICKEL		SW846 6010C
THALLIUM		EPA 200.8
VANADIUM		SW846 6010C

T Please indicate detection limit if analyte is not detected.

I.D. No	100008
Monitoring Point No.	CWMP012W
Sample Date	1/21/2016

FORM 19

ANNUAL WATER QUALITY ANALYSES

Qualitatively Identified Organic Compounds

List at least ten volatile organic compounds not otherwise identified in this section. Their identification should be based upon those compounds showing the greatest apparent concentration from the peaks of a mass spectrum of each sample. These ten compounds shall be identified but the concentration of each is not required.

Constituent	CAS Number

ALS Environmental

34 Dogwood Lane ■ Middletown, PA 17057 ■ Phone: 717-944-5541 ■ Fax: 717-944-1430 ■ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

February 2, 2016

Mr. Daniel Brown
Lancaster County Solid Waste Authority
1299 Hbg Pike, P.O. Box 4425
Lancaster, PA 17604

Certificate of Analysis

Project Name:	**2016-CRESWELL**	Workorder:	**2119111**
Purchase Order:		Workorder ID:	**Annual CWMP Sampling**

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Monday, January 18, 2016.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Mark Reider , Mr. Jeff Musser

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

ALS Environmental

34 Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2119111 Annual CWMP Sampling

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2119111001	CWMP007W	Ground Water	1/18/2016 10:24	1/18/2016 16:29	Mr. Brian G Shade
2119111002	CWMP001W	Ground Water	1/18/2016 12:00	1/18/2016 16:29	Mr. Brian G Shade

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

ALS Environmental

34 Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

PROJECT SUMMARY

Workorder: 2119111 Annual CWMP Sampling

Sample Comments

Lab ID: 2119111001 **Sample ID:** CWMP007W **Sample Type:** SAMPLE

The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Lab ID: 2119111002 **Sample ID:** CWMP001W **Sample Type:** SAMPLE

The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

ALS Environmental

34 Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2119111 Annual CWMP Sampling

Lab ID: **2119111001** Date Collected: 1/18/2016 10:24 Matrix: Ground Water

Sample ID: **CWMP007W** Date Received: 1/18/2016 16:29

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
VOLATILE ORGANICS									
Acetone	ND		ug/L	10.0	SW846 8260B		1/19/16 17:50	SYB	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B		1/19/16 17:50	SYB	J
Benzene	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
Bromoform	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
Bromomethane	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
2-Butanone	ND		ug/L	10.0	SW846 8260B		1/19/16 17:50	SYB	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
Chlorobenzene	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
Chloroethane	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
Chloroform	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
Chloromethane	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B		1/19/16 17:50	SYB	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B		1/19/16 17:50	SYB	J
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B		1/19/16 17:50	SYB	J
Iodomethane	ND		ug/L	1.0	SW846 8260B		1/19/16 17:50	SYB	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B		1/19/16 17:50	SYB	J

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2119111 Annual CWMP Sampling

Lab ID: **2119111001** Date Collected: 1/18/2016 10:24 Matrix: Ground Water

Sample ID: **CWMP007W** Date Received: 1/18/2016 16:29

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			1/19/16 17:50	SYB	J
Styrene	ND		ug/L	1.0	SW846 8260B			1/19/16 17:50	SYB	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/19/16 17:50	SYB	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/19/16 17:50	SYB	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			1/19/16 17:50	SYB	J
Toluene	ND		ug/L	1.0	SW846 8260B			1/19/16 17:50	SYB	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			1/19/16 17:50	SYB	J
1,2,4-Trichlorobenzene	ND		ug/L	2.0	SW846 8260B			1/19/16 17:50	SYB	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/19/16 17:50	SYB	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/19/16 17:50	SYB	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			1/19/16 17:50	SYB	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			1/19/16 17:50	SYB	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			1/19/16 17:50	SYB	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			1/19/16 17:50	SYB	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			1/19/16 17:50	SYB	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	97.7		%	62 - 133	SW846 8260B			1/19/16 17:50	SYB	J
4-Bromofluorobenzene (S)	104		%	79 - 114	SW846 8260B			1/19/16 17:50	SYB	J
Dibromofluoromethane (S)	90		%	78 - 116	SW846 8260B			1/19/16 17:50	SYB	J
Toluene-d8 (S)	122		%	76 - 127	SW846 8260B			1/19/16 17:50	SYB	J
Library Search - Volatiles										
Unknown	250	J	ug/L		SW846 8260B			1/19/16 17:50	SYB	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	11		mg/L	5	S2320B-97			1/19/16 04:11	MSA	A
Alkalinity, Total	11		mg/L	5	S2320B-97			1/19/16 04:11	MSA	A
Ammonia-N	ND		mg/L	0.100	D6919-09			1/22/16 06:58	JAM	C
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			1/22/16 04:30	JAM	C
Chloride	63.9		mg/L	2.0	EPA 300.0			1/19/16 09:04	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			1/19/16 09:04	JP	B
Nitrate-N	10.9		mg/L	0.20	EPA 300.0			1/19/16 09:04	JP	B
pH	5.97		pH_Units		S4500HB-00			1/19/16 04:11	MSA	A
Phenolics	ND		mg/L	0.01	SW846 9066	2/1/16	AMH	2/2/16 12:30	JLG	I
Specific Conductance	342		umhos/cm	1	EPA 120.1			1/19/16 04:11	MSA	A
Sulfate	14.7		mg/L	2.0	EPA 300.0			1/19/16 09:04	JP	B
Total Dissolved Solids	191		mg/L	5	S2540C-11			1/20/16 09:56	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	S5310B-00			1/20/16 14:22	PAG	G

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2119111 Annual CWMP Sampling

Lab ID: **2119111001** Date Collected: 1/18/2016 10:24 Matrix: Ground Water

Sample ID: **CWMP007W** Date Received: 1/18/2016 16:29

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Turbidity	ND		NTU	0.10	S2130B-01			1/19/16 02:30	MSA	B
METALS										
Arsenic, Total	ND		mg/L	0.0090	SW846 6010C	1/25/16	JPS	1/27/16 05:27	TSS	E2
Arsenic, Dissolved	ND		mg/L	0.0080	SW846 6010C	1/25/16	SRT	1/27/16 04:13	TSS	D
Barium, Total	0.049		mg/L	0.011	SW846 6010C	1/25/16	JPS	1/27/16 05:27	TSS	E2
Barium, Dissolved	0.048		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:13	TSS	D
Cadmium, Total	ND		mg/L	0.0022	SW846 6010C	1/25/16	JPS	1/27/16 05:27	TSS	E2
Cadmium, Dissolved	ND		mg/L	0.0020	SW846 6010C	1/25/16	SRT	1/27/16 04:13	TSS	D
Calcium, Total	18.8		mg/L	0.11	SW846 6010C	1/25/16	JPS	1/27/16 05:27	TSS	E2
Calcium, Dissolved	18.7		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:13	TSS	D
Chromium, Total	ND		mg/L	0.0056	SW846 6010C	1/25/16	JPS	1/27/16 05:27	TSS	E2
Chromium, Dissolved	ND		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:13	TSS	D
Copper, Total	ND		mg/L	0.011	SW846 6010C	1/25/16	JPS	1/27/16 05:27	TSS	E2
Copper, Dissolved	ND		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:13	TSS	D
Iron, Total	ND		mg/L	0.067	SW846 6010C	1/25/16	JPS	1/27/16 05:27	TSS	E2
Iron, Dissolved	ND		mg/L	0.060	SW846 6010C	1/25/16	SRT	1/27/16 04:13	TSS	D
Lead, Total	ND		mg/L	0.0067	SW846 6010C	1/25/16	JPS	1/27/16 05:27	TSS	E2
Lead, Dissolved	ND		mg/L	0.0060	SW846 6010C	1/25/16	SRT	1/27/16 04:13	TSS	D
Magnesium, Total	9.2		mg/L	0.11	SW846 6010C	1/25/16	JPS	1/27/16 05:27	TSS	E2
Magnesium, Dissolved	9.2		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:13	TSS	D
Manganese, Total	0.0059		mg/L	0.0056	SW846 6010C	1/25/16	JPS	1/27/16 05:27	TSS	E2
Manganese, Dissolved	0.0056		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:13	TSS	D
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	1/22/16	MNP	1/22/16 11:40	MNP	E1
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	1/20/16	MNP	1/20/16 13:34	MNP	D1
Potassium, Total	2.1		mg/L	0.56	SW846 6010C	1/25/16	JPS	1/27/16 05:27	TSS	E2
Potassium, Dissolved	2.1		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:13	TSS	D
Selenium, Total	ND		mg/L	0.022	SW846 6010C	1/25/16	JPS	1/27/16 05:27	TSS	E2
Selenium, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:13	TSS	D
Silver, Total	ND		mg/L	0.0044	SW846 6010C	1/25/16	JPS	1/27/16 05:27	TSS	E2
Silver, Dissolved	ND		mg/L	0.0040	SW846 6010C	1/25/16	SRT	1/27/16 04:13	TSS	D
Sodium, Total	30.8		mg/L	0.56	SW846 6010C	1/25/16	JPS	1/27/16 05:27	TSS	E2
Sodium, Dissolved	30.2		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:13	TSS	D
Zinc, Total	ND		mg/L	0.022	SW846 6010C	1/25/16	JPS	1/27/16 05:27	TSS	E2
Zinc, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:13	TSS	D
FIELD PARAMETERS										
Depth to Water Level	6.15		Feet		Field			1/18/16 10:24	CLT	F

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ANALYTICAL RESULTS

Workorder: 2119111 Annual CWMP Sampling

Lab ID: **2119111001** Date Collected: 1/18/2016 10:24 Matrix: Ground Water

Sample ID: **CWMP007W** Date Received: 1/18/2016 16:29

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
Elev Top MW Casing above MSL	453.40		Feet		Field		1/18/16 10:24	CLT	F
Flow Rate	3.01		gal/min		Field		1/18/16 10:24	CLT	F
Ground Water Elevation	447.25		ft/MSL		Field		1/18/16 10:24	CLT	F
pH, Field (SM4500B)	4.71		pH_Units		Field		1/18/16 10:24	CLT	F
Sample Depth	33.00		Feet		Field		1/18/16 10:24	CLT	F
Specific Conductance, Field	397		umhos/cm	1	Field		1/18/16 10:24	CLT	F
Temperature	12.20		Deg. C		Field		1/18/16 10:24	CLT	F
Total Well Depth	36.50		Feet		Field		1/18/16 10:24	CLT	F
Volume in Water Column	44.61		Gallons		Field		1/18/16 10:24	CLT	F
Water Level After Purge	7.63		Feet		Field		1/18/16 10:24	CLT	F
Well Volumes Purged	3.71		Vol		Field		1/18/16 10:24	CLT	F

Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2119111 Annual CWMP Sampling

Lab ID: **2119111002** Date Collected: 1/18/2016 12:00 Matrix: Ground Water

Sample ID: **CWMP001W** Date Received: 1/18/2016 16:29

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
VOLATILE ORGANICS									
Acetone	ND		ug/L	10.0	SW846 8260B		1/19/16 19:15	SYB	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B		1/19/16 19:15	SYB	J
Benzene	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
Bromoform	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
Bromomethane	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
2-Butanone	ND		ug/L	10.0	SW846 8260B		1/19/16 19:15	SYB	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
Chlorobenzene	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
Chloroethane	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
Chloroform	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
Chloromethane	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B		1/19/16 19:15	SYB	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B		1/19/16 19:15	SYB	J
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B		1/19/16 19:15	SYB	J
Iodomethane	ND		ug/L	1.0	SW846 8260B		1/19/16 19:15	SYB	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B		1/19/16 19:15	SYB	J

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ANALYTICAL RESULTS

Workorder: 2119111 Annual CWMP Sampling

Lab ID: **2119111002** Date Collected: 1/18/2016 12:00 Matrix: Ground Water

Sample ID: **CWMP001W** Date Received: 1/18/2016 16:29

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			1/19/16 19:15	SYB	J
Styrene	ND		ug/L	1.0	SW846 8260B			1/19/16 19:15	SYB	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/19/16 19:15	SYB	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/19/16 19:15	SYB	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			1/19/16 19:15	SYB	J
Toluene	ND		ug/L	1.0	SW846 8260B			1/19/16 19:15	SYB	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			1/19/16 19:15	SYB	J
1,2,4-Trichlorobenzene	ND		ug/L	2.0	SW846 8260B			1/19/16 19:15	SYB	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/19/16 19:15	SYB	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/19/16 19:15	SYB	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			1/19/16 19:15	SYB	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			1/19/16 19:15	SYB	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			1/19/16 19:15	SYB	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			1/19/16 19:15	SYB	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			1/19/16 19:15	SYB	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	99.7		%	62 - 133	SW846 8260B			1/19/16 19:15	SYB	J
4-Bromofluorobenzene (S)	98.1		%	79 - 114	SW846 8260B			1/19/16 19:15	SYB	J
Dibromofluoromethane (S)	91		%	78 - 116	SW846 8260B			1/19/16 19:15	SYB	J
Toluene-d8 (S)	122		%	76 - 127	SW846 8260B			1/19/16 19:15	SYB	J
Library Search - Volatiles										
Unknown	246	J	ug/L		SW846 8260B			1/19/16 19:15	SYB	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			1/19/16 16:41	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	6		mg/L	5	S2320B-97			1/19/16 04:20	MSA	A
Alkalinity, Total	6		mg/L	5	S2320B-97			1/19/16 04:20	MSA	A
Ammonia-N	ND		mg/L	0.100	D6919-09			1/22/16 07:19	JAM	C
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			1/22/16 04:30	JAM	C
Chloride	29.9		mg/L	2.0	EPA 300.0			1/19/16 09:17	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			1/19/16 09:17	JP	B
Nitrate-N	22.4		mg/L	1.0	EPA 300.0			1/19/16 09:30	JP	B
pH	5.77		pH_Units		S4500HB-00			1/19/16 04:20	MSA	A
Phenolics	0.01		mg/L	0.01	SW846 9066	1/29/16	NV	1/29/16 13:08	AMH	I
Specific Conductance	268		umhos/cm	1	EPA 120.1			1/19/16 04:20	MSA	A
Sulfate	ND		mg/L	2.0	EPA 300.0			1/19/16 09:17	JP	B

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2119111 Annual CWMP Sampling

Lab ID: **2119111002** Date Collected: 1/18/2016 12:00 Matrix: Ground Water

Sample ID: **CWMP001W** Date Received: 1/18/2016 16:29

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Total Dissolved Solids	182	1	mg/L	5	S2540C-11			1/20/16 09:56	ML	B
Total Organic Carbon (TOC)	1.1		mg/L	1.0	S5310B-00			1/20/16 14:22	PAG	G
Turbidity	103		NTU	0.10	S2130B-01			1/19/16 02:30	MSA	B
METALS										
Arsenic, Total	ND		mg/L	0.0090	SW846 6010C	1/25/16	JPS	1/27/16 05:31	TSS	E2
Arsenic, Dissolved	ND		mg/L	0.0080	SW846 6010C	1/25/16	SRT	1/27/16 04:16	TSS	D
Barium, Total	0.094		mg/L	0.011	SW846 6010C	1/25/16	JPS	1/27/16 05:31	TSS	E2
Barium, Dissolved	0.080		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:16	TSS	D
Cadmium, Total	ND		mg/L	0.0022	SW846 6010C	1/25/16	JPS	1/27/16 05:31	TSS	E2
Cadmium, Dissolved	ND		mg/L	0.0020	SW846 6010C	1/25/16	SRT	1/27/16 04:16	TSS	D
Calcium, Total	18.3		mg/L	0.11	SW846 6010C	1/25/16	JPS	1/27/16 05:31	TSS	E2
Calcium, Dissolved	16.9		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:16	TSS	D
Chromium, Total	ND		mg/L	0.0056	SW846 6010C	1/25/16	JPS	1/27/16 05:31	TSS	E2
Chromium, Dissolved	ND		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:16	TSS	D
Copper, Total	ND		mg/L	0.011	SW846 6010C	1/25/16	JPS	1/27/16 05:31	TSS	E2
Copper, Dissolved	ND		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:16	TSS	D
Iron, Total	3.2		mg/L	0.067	SW846 6010C	1/25/16	JPS	1/27/16 05:31	TSS	E2
Iron, Dissolved	ND		mg/L	0.060	SW846 6010C	1/25/16	SRT	1/27/16 04:16	TSS	D
Lead, Total	0.012		mg/L	0.0067	SW846 6010C	1/25/16	JPS	1/27/16 10:06	TSS	E2
Lead, Dissolved	ND		mg/L	0.0060	SW846 6010C	1/25/16	SRT	1/27/16 04:16	TSS	D
Magnesium, Total	11.8		mg/L	0.11	SW846 6010C	1/25/16	JPS	1/27/16 05:31	TSS	E2
Magnesium, Dissolved	10.9		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:16	TSS	D
Manganese, Total	0.10		mg/L	0.0056	SW846 6010C	1/25/16	JPS	1/27/16 05:31	TSS	E2
Manganese, Dissolved	0.064		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:16	TSS	D
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	1/22/16	MNP	1/22/16 11:41	MNP	E1
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	1/20/16	MNP	1/20/16 13:35	MNP	D1
Potassium, Total	2.4		mg/L	0.56	SW846 6010C	1/25/16	JPS	1/27/16 05:31	TSS	E2
Potassium, Dissolved	2.3		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:16	TSS	D
Selenium, Total	ND		mg/L	0.022	SW846 6010C	1/25/16	JPS	1/27/16 05:31	TSS	E2
Selenium, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:16	TSS	D
Silver, Total	ND		mg/L	0.0044	SW846 6010C	1/25/16	JPS	1/27/16 05:31	TSS	E2
Silver, Dissolved	ND		mg/L	0.0040	SW846 6010C	1/25/16	SRT	1/27/16 04:16	TSS	D
Sodium, Total	13.5		mg/L	0.56	SW846 6010C	1/25/16	JPS	1/27/16 05:31	TSS	E2
Sodium, Dissolved	13.4		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:16	TSS	D
Zinc, Total	0.032		mg/L	0.022	SW846 6010C	1/25/16	JPS	1/27/16 05:31	TSS	E2
Zinc, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:16	TSS	D

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ANALYTICAL RESULTS

Workorder: 2119111 Annual CWMP Sampling

Lab ID: **2119111002** Date Collected: 1/18/2016 12:00 Matrix: Ground Water

Sample ID: **CWMP001W** Date Received: 1/18/2016 16:29

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
FIELD PARAMETERS									
Depth to Water Level	29.97		Feet		Field		1/18/16 12:00	CLT	F
Elev Top MW Casing above MSL	515.13		Feet		Field		1/18/16 12:00	CLT	F
Flow Rate	2.00		gal/min		Field		1/18/16 12:00	CLT	F
Ground Water Elevation	485.16		ft/MSL		Field		1/18/16 12:00	CLT	F
pH, Field (SM4500B)	4.89		pH_Units		Field		1/18/16 12:00	CLT	F
Sample Depth	57.00		Feet		Field		1/18/16 12:00	CLT	F
Specific Conductance, Field	312		umhos/cm	1	Field		1/18/16 12:00	CLT	F
Temperature	11.85		Deg. C		Field		1/18/16 12:00	CLT	F
Total Well Depth	66.30		Feet		Field		1/18/16 12:00	CLT	F
Volume in Water Column	53.41		Gallons		Field		1/18/16 12:00	CLT	F
Water Level After Purge	53.84		Feet		Field		1/18/16 12:00	CLT	F
Well Volumes Purged	2.25		Vol		Field		1/18/16 12:00	CLT	F

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

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PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2119111002	1	CWMP001W	S2540C-11	Total Dissolved Solids

This sample was analyzed in duplicate with result of 182 mg/L and 157 mg/L. The RPD between the duplicate results is above the established method limit.

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALS

1 of 1

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Client Name: Lancaster County Solid Waste MA
Address: 1299 Harrisburg Pike, P.O. Box 4424
Lancaster, PA 17604
Contact: Mark Reider
Phone#: (717) 735-0193
Project Name/#: Annual CWMP Sampling
Bill To: Lancaster County Solid Waste MA

TAT [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.
Date Required: _____ Approved By: _____
Email? [X] -Y mreider@LCSWMA.org
Fax? [X] -Y No.: (717) 397-9973

Container Type	AG	AN	CG	—	—	PL	PL	PL	PL	
Container Size	40 ml	500 ml	40 ml	—	—	500 ml	500 ml	500 ml	1 L	500 ml
Preservative	HCl	H2SO4	HCl	—	—	H2SO4	HNO3	HNO3	None	None

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	TOC	O-OH	VOC (Form 19A) + LS	*FM	Sample Depth for AUX Data	NH3-N, COD	Diss: Fe, Mn, Na, Ba, Cr, Cu, Pb, Mg, K, Zn, As, Cd, Se, Ag, Hg, Ca	Metals: Fe, Mn, Na, Ba, Cr, Cu, Pb, Mg, K, Zn, As, Cd, Se, Ag, Hg, Ca	pH, Cl, SpC, F, SO4, NO3, Tb, TDS	Alkalinity, HCO3
			Enter Number of Containers Per Sample or Field Results Below.											
1. CWMP002W	1-18-16	1024	G	GW	2	1	2	X	X	1	1	1	1	1
2. CWMP001W	1	1200	1	1	1	1	1	1	1	1	1	1	1	1
3														
4														
5														
6														
7														
8														
9														
10														

Cooler Temp: 6 Therm ID: IR352
No. of Coolers: _____ Y N Initial

	Y	N	Initial
Custody Seals Present?			
(if present) Seals Intact?			
Received on Ice?			AG
COC/Labels Complete/Accurate?			
Cont. in Good Cond.?			
Correct Containers?			
Correct Sample Volumes?			
Correct Preservation?			
Headspace/Volatiles?			

Courier/Tracking #:

Sample/COC Comments

ALS Field Services: [ ] Pickup [ ] Labor [ ] Composite_Sampling [ ] Rental_Equipment [ ] Other: _____

Project Comments:

LOGGED BY(signature): _____ DATE 1-18-16 TIME 2118
REVIEWED BY(signature): _____ DATE _____ TIME _____

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [signature] ALS	1-18-16	1624	2 [signature]	1/18/16	1625
3			4		
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [ ] CLP-like [ ] USACE
Special Processing: USACE [ ] Navy [ ]
State Samples Collected In: [ ] NY [ ] NJ [X] PA [ ] NC [ ]
Reportable to PADEP? Yes [ ] PWSID # _____
Sample Disposal: Lab [X] Special [ ]
EDDS: Format Type- _____

* G=Grab; C=Composite
**Matrix - Al=Air; DW=Drinking Water; GW=Groundwater; Ol=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS ENVIRONMENTAL SHIPPING ADDRESS: 34 DOGWOOD LANE, MIDDLETOWN, PA 17057

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February 2, 2016

Mr. Daniel Brown
Lancaster County Solid Waste Authority
1299 Hbg Pike, P.O. Box 4425
Lancaster, PA 17604

Certificate of Analysis

Project Name:	**2016-CRESWELL**	Workorder:	**2119254**
Purchase Order:		Workorder ID:	**Annual CWMP Sampling**

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, January 19, 2016.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Mark Reider , Mr. Jeff Musser

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2119254 Annual CWMP Sampling

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2119254001	CWMP005W	Ground Water	1/19/2016 09:48	1/19/2016 14:54	Mr. Brian G Shade

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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PROJECT SUMMARY

Workorder: 2119254 Annual CWMP Sampling

Sample Comments

Lab ID: 2119254001 **Sample ID:** CWMP005W **Sample Type:** SAMPLE

The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

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ANALYTICAL RESULTS

Workorder: 2119254 Annual CWMP Sampling

Lab ID: **2119254001** Date Collected: 1/19/2016 09:48 Matrix: Ground Water

Sample ID: **CWMP005W** Date Received: 1/19/2016 14:54

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
VOLATILE ORGANICS									
Acetone	ND		ug/L	10.0	SW846 8260B		1/29/16 13:16	TMP	K
Acrylonitrile	ND		ug/L	5.0	SW846 8260B		1/29/16 13:16	TMP	K
Benzene	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
Bromochloromethane	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
Bromoform	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
Bromomethane	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
2-Butanone	ND		ug/L	10.0	SW846 8260B		1/29/16 13:16	TMP	K
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
Chlorobenzene	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
Chloroethane	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
Chloroform	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
Chloromethane	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B		1/29/16 13:16	TMP	K
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
Dibromomethane	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B		1/29/16 13:16	TMP	K
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
Ethylbenzene	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
2-Hexanone	ND		ug/L	5.0	SW846 8260B		1/29/16 13:16	TMP	K
Iodomethane	ND		ug/L	1.0	SW846 8260B		1/29/16 13:16	TMP	K
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B		1/29/16 13:16	TMP	K

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ANALYTICAL RESULTS

Workorder: 2119254 Annual CWMP Sampling

Lab ID: **2119254001** Date Collected: 1/19/2016 09:48 Matrix: Ground Water

Sample ID: **CWMP005W** Date Received: 1/19/2016 14:54

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			1/29/16 13:16	TMP	K
Styrene	ND		ug/L	1.0	SW846 8260B			1/29/16 13:16	TMP	K
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/29/16 13:16	TMP	K
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/29/16 13:16	TMP	K
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			1/29/16 13:16	TMP	K
Toluene	ND		ug/L	1.0	SW846 8260B			1/29/16 13:16	TMP	K
Total Xylenes	ND		ug/L	3.0	SW846 8260B			1/29/16 13:16	TMP	K
1,2,4-Trichlorobenzene	ND		ug/L	2.0	SW846 8260B			1/29/16 13:16	TMP	K
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/29/16 13:16	TMP	K
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/29/16 13:16	TMP	K
Trichloroethene	ND		ug/L	1.0	SW846 8260B			1/29/16 13:16	TMP	K
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			1/29/16 13:16	TMP	K
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			1/29/16 13:16	TMP	K
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			1/29/16 13:16	TMP	K
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			1/29/16 13:16	TMP	K
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	90.7		%	62 - 133	SW846 8260B			1/29/16 13:16	TMP	K
4-Bromofluorobenzene (S)	104		%	79 - 114	SW846 8260B			1/29/16 13:16	TMP	K
Dibromofluoromethane (S)	89.5		%	78 - 116	SW846 8260B			1/29/16 13:16	TMP	K
Toluene-d8 (S)	101		%	76 - 127	SW846 8260B			1/29/16 13:16	TMP	K
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			1/29/16 13:16	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	20		mg/L	5	S2320B-97			1/20/16 03:26	MSA	A
Alkalinity, Total	20		mg/L	5	S2320B-97			1/20/16 03:26	MSA	A
Ammonia-N	ND		mg/L	0.100	D6919-09			1/22/16 20:53	JAM	C
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			1/22/16 04:30	JAM	C
Chloride	75.6		mg/L	2.0	EPA 300.0			1/21/16 07:30	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			1/21/16 07:30	JP	B
Nitrate-N	11.3		mg/L	0.20	EPA 300.0			1/21/16 07:30	JP	B
pH	5.88		pH_Units		S4500HB-00			1/20/16 03:26	MSA	A
Phenolics	ND		mg/L	0.01	SW846 9066	2/1/16	AMH	2/2/16 12:31	JLG	I
Specific Conductance	352		umhos/cm	1	EPA 120.1			1/20/16 03:26	MSA	A
Sulfate	ND		mg/L	2.0	EPA 300.0			1/21/16 07:30	JP	B
Total Dissolved Solids	208		mg/L	5	S2540C-11			1/20/16 13:32	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	S5310B-00			1/20/16 14:22	PAG	G

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2119254 Annual CWMP Sampling

Lab ID: **2119254001** Date Collected: 1/19/2016 09:48 Matrix: Ground Water

Sample ID: **CWMP005W** Date Received: 1/19/2016 14:54

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Turbidity	0.23		NTU	0.10	S2130B-01			1/20/16 03:44	MSA	B
METALS										
Arsenic, Total	ND		mg/L	0.0090	SW846 6010C	1/25/16	JPS	1/27/16 06:11	TSS	E2
Arsenic, Dissolved	ND		mg/L	0.0080	SW846 6010C	1/25/16	SRT	1/27/16 04:24	TSS	D
Barium, Total	0.056		mg/L	0.011	SW846 6010C	1/25/16	JPS	1/27/16 06:11	TSS	E2
Barium, Dissolved	0.054		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:24	TSS	D
Cadmium, Total	ND		mg/L	0.0022	SW846 6010C	1/25/16	JPS	1/27/16 06:11	TSS	E2
Cadmium, Dissolved	ND		mg/L	0.0020	SW846 6010C	1/25/16	SRT	1/27/16 04:24	TSS	D
Calcium, Total	17.7		mg/L	0.11	SW846 6010C	1/25/16	JPS	1/27/16 06:11	TSS	E2
Calcium, Dissolved	17.5		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:24	TSS	D
Chromium, Total	ND		mg/L	0.0056	SW846 6010C	1/25/16	JPS	1/27/16 06:11	TSS	E2
Chromium, Dissolved	ND		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:24	TSS	D
Copper, Total	ND		mg/L	0.011	SW846 6010C	1/25/16	JPS	1/27/16 06:11	TSS	E2
Copper, Dissolved	ND		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:24	TSS	D
Iron, Total	ND		mg/L	0.067	SW846 6010C	1/25/16	JPS	1/27/16 06:11	TSS	E2
Iron, Dissolved	ND		mg/L	0.060	SW846 6010C	1/25/16	SRT	1/27/16 04:24	TSS	D
Lead, Total	ND		mg/L	0.0067	SW846 6010C	1/25/16	JPS	1/27/16 06:11	TSS	E2
Lead, Dissolved	ND		mg/L	0.0060	SW846 6010C	1/25/16	SRT	1/27/16 04:24	TSS	D
Magnesium, Total	9.4		mg/L	0.11	SW846 6010C	1/25/16	JPS	1/27/16 06:11	TSS	E2
Magnesium, Dissolved	9.3		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:24	TSS	D
Manganese, Total	0.061		mg/L	0.0056	SW846 6010C	1/25/16	JPS	1/27/16 06:11	TSS	E2
Manganese, Dissolved	0.058		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:24	TSS	D
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	1/22/16	MNP	1/22/16 11:42	MNP	E1
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	1/20/16	MNP	1/20/16 13:36	MNP	D1
Potassium, Total	2.3		mg/L	0.56	SW846 6010C	1/25/16	JPS	1/27/16 06:11	TSS	E2
Potassium, Dissolved	2.3		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:24	TSS	D
Selenium, Total	ND		mg/L	0.022	SW846 6010C	1/25/16	JPS	1/27/16 06:11	TSS	E2
Selenium, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:24	TSS	D
Silver, Total	ND		mg/L	0.0044	SW846 6010C	1/25/16	JPS	1/27/16 06:11	TSS	E2
Silver, Dissolved	ND		mg/L	0.0040	SW846 6010C	1/25/16	SRT	1/27/16 04:24	TSS	D
Sodium, Total	32.1		mg/L	0.56	SW846 6010C	1/25/16	JPS	1/27/16 06:11	TSS	E2
Sodium, Dissolved	31.8		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:24	TSS	D
Zinc, Total	ND		mg/L	0.022	SW846 6010C	1/25/16	JPS	1/27/16 06:11	TSS	E2
Zinc, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:24	TSS	D
FIELD PARAMETERS										
Depth to Water Level	42.93		Feet		Field			1/19/16 09:48	CLT	F

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2119254 Annual CWMP Sampling

Lab ID: **2119254001** Date Collected: 1/19/2016 09:48 Matrix: Ground Water

Sample ID: **CWMP005W** Date Received: 1/19/2016 14:54

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
Elev Top MW Casing above MSL	513.43		Feet		Field		1/19/16 09:48	CLT	F
Flow Rate	4.10		gal/min		Field		1/19/16 09:48	CLT	F
Ground Water Elevation	470.50		ft/MSL		Field		1/19/16 09:48	CLT	F
pH, Field (SM4500B)	5.04		pH_Units		Field		1/19/16 09:48	CLT	F
Sample Depth	130.00		Feet		Field		1/19/16 09:48	CLT	F
Specific Conductance, Field	401		umhos/cm	1	Field		1/19/16 09:48	CLT	F
Temperature	12.11		Deg. C		Field		1/19/16 09:48	CLT	F
Total Well Depth	138.92		Feet		Field		1/19/16 09:48	CLT	F
Volume in Water Column	141.11		Gallons		Field		1/19/16 09:48	CLT	F
Water Level After Purge	46.57		Feet		Field		1/19/16 09:48	CLT	F
Well Volumes Purged	3.00		Vol		Field		1/19/16 09:48	CLT	F

Ms. Susan J Scherer
Project Coordinator

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALS

2119254

1 of 1

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Client Name: Lancaster County Solid Waste MA
Address: 1299 Harrisburg Pike, P.O. Box 4424
Lancaster, PA 17604
Contact: Mark Reider
Phone#: (717) 735-0193
Project Name/#: Annual CWMP Sampling
Bill To: Lancaster County Solid Waste MA

TAT [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.
Date Required: _____ Approved By: _____
Email? [X] -Y mreider@LCSWMA.org
Fax? [X] -Y No.: (717) 397-9973

Container Type	AG	AN	CG	—	—	PL	PL	PL	PL	
Container Size	40 ml	500 ml	40 ml	—	—	500 ml	500 ml	500 ml	1 L	500 ml
Preservative	HCl	H2SO4	HCl	—	—	H2SO4	HNO3	HNO3	None	None

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	TOC	O-OH	VOC (Form 19A) + LS	*FM	Sample Depth for AUX Data	NH3-N, COD	Diss: Fe, Mn, Na, Ba, Cr, Cu, Pb, Mg, K, Zn, As, Cd, Se, Ag, Hg, Ca	Metals: Fe, Mn, Na, Ba, Cr, Cu, Pb, Mg, K, Zn, As, Cd, Se, Ag, Hg, Ca	pH, Cl, SpC, F, SO4, NO3, Tb, TDS	Alkalinity, HCO3
			Enter Number of Containers Per Sample or Field Results Below.											
1.. CWMP005W	1-19-16	0948	G	GW	2	1	2	x	x	1	1	1	1	1
2														
3														
4														
5														
6														
7														
8														
9														
10														

Receipt Information (completed by Receiving Lab)
Cooler Temp: 6 Therm ID: 352
No. of Coolers: _____

	Y	N	Initial
Custody Seals Present?			
(if present) Seals Intact?			
Received on Ice?	1		
COC/Labels Complete/Accurate?			
Cont. in Good Cond.?			
Correct Containers?			
Correct Sample Volumes?			
Correct Preservation?			
Headspace/Volatiles?			

Courier/Tracking #:

Sample/COC Comments

ALS Field Services: ☐Pickup ☐Labor ☐Composite_Sampling ☐Rental_Equipment ☐Other:

Project Comments:

LOGGED BY(signature): DATE 1-19-16 TIME 1640
REVIEWED BY(signature): DATE TIME

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 ALS	1-19-16	1454	2 ALS	1/19	1454
3			4		
5			6		
7			8		
9			10		

Data Deliverables: ☐Standard ☐CLP-like ☐USACE
Special Processing: USACE ☐ Navy ☐
Reportable to PADEP? Yes ☐ PWSID #
Sample Disposal: Lab [X] Special ☐
State Samples Collected In: ☐NY ☐NJ [X]PA ☐NC ☐
EDDS: Format Type-

* G=Grab; C=Composite
**Matrix - Al=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS ENVIRONMENTAL SHIPPING ADDRESS: 34 DOGWOOD LANE, MIDDLETOWN, PA 17057

Rev 8/04

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February 15, 2016

Mr. Daniel Brown
Lancaster County Solid Waste Authority
1299 Hbg Pike, P.O. Box 4425
Lancaster, PA 17604

Certificate of Analysis

Project Name:	**2016-CRESWELL**	Workorder:	**2119528**
Purchase Order:		Workorder ID:	**Annual CWMP Sampling**

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, January 20, 2016.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Mark Reider , Mr. Jeff Musser

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2119528 Annual CWMP Sampling

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2119528001	CWMP016W	Ground Water	1/20/2016 10:01	1/20/2016 15:56	Mr. Brian G Shade
2119528002	CWMP010W	Ground Water	1/20/2016 11:58	1/20/2016 15:56	Mr. Brian G Shade
2119528003	CWMP009W	Ground Water	1/20/2016 12:21	1/20/2016 15:56	Mr. Brian G Shade
2119528004	CWMP008W	Ground Water	1/20/2016 12:55	1/20/2016 15:56	Mr. Brian G Shade
2119528005	Field Blank	Ground Water	1/20/2016 15:00	1/20/2016 15:56	Mr. Brian G Shade
2119528006	Trip Blank	Ground Water	1/20/2016 15:56	1/20/2016 15:56	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 2119528 Annual CWMP Sampling

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

PROJECT SUMMARY

Workorder: 2119528 Annual CWMP Sampling

Sample Comments

Lab ID: 2119528001 **Sample ID:** CWMP016W **Sample Type:** SAMPLE

The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Lab ID: 2119528002 **Sample ID:** CWMP010W **Sample Type:** SAMPLE

The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Lab ID: 2119528003 **Sample ID:** CWMP009W **Sample Type:** SAMPLE

The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Lab ID: 2119528004 **Sample ID:** CWMP008W **Sample Type:** SAMPLE

The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

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ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528001** Date Collected: 1/20/2016 10:01 Matrix: Ground Water

Sample ID: **CWMP016W** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
VOLATILE ORGANICS									
Acetone	ND		ug/L	10.0	SW846 8260B		1/21/16 13:04	TMP	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B		1/21/16 13:04	TMP	J
Benzene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
Bromoform	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
Bromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
2-Butanone	ND		ug/L	10.0	SW846 8260B		1/21/16 13:04	TMP	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
Chlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
Chloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
Chloroform	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
Chloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B		1/21/16 13:04	TMP	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B		1/21/16 13:04	TMP	J
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B		1/21/16 13:04	TMP	J
Iodomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:04	TMP	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B		1/21/16 13:04	TMP	J

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ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528001** Date Collected: 1/20/2016 10:01 Matrix: Ground Water

Sample ID: **CWMP016W** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			1/21/16 13:04	TMP	J
Styrene	ND		ug/L	1.0	SW846 8260B			1/21/16 13:04	TMP	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 13:04	TMP	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 13:04	TMP	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			1/21/16 13:04	TMP	J
Toluene	ND		ug/L	1.0	SW846 8260B			1/21/16 13:04	TMP	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			1/21/16 13:04	TMP	J
1,2,4-Trichlorobenzene	ND		ug/L	2.0	SW846 8260B			1/21/16 13:04	TMP	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 13:04	TMP	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 13:04	TMP	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			1/21/16 13:04	TMP	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			1/21/16 13:04	TMP	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			1/21/16 13:04	TMP	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			1/21/16 13:04	TMP	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			1/21/16 13:04	TMP	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	113		%	62 - 133	SW846 8260B			1/21/16 13:04	TMP	J
4-Bromofluorobenzene (S)	95.4		%	79 - 114	SW846 8260B			1/21/16 13:04	TMP	J
Dibromofluoromethane (S)	94.6		%	78 - 116	SW846 8260B			1/21/16 13:04	TMP	J
Toluene-d8 (S)	113		%	76 - 127	SW846 8260B			1/21/16 13:04	TMP	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			1/21/16 13:04	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	7		mg/L	5	S2320B-97			1/21/16 03:26	MSA	A
Alkalinity, Total	7		mg/L	5	S2320B-97			1/21/16 03:26	MSA	A
Ammonia-N	ND		mg/L	0.100	D6919-09			1/29/16 15:01	JAM	C
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			1/22/16 04:30	JAM	C
Chloride	3.0		mg/L	2.0	EPA 300.0			1/21/16 13:57	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			1/21/16 13:57	JP	B
Nitrate-N	0.72		mg/L	0.20	EPA 300.0			1/21/16 13:57	JP	B
pH	6.25		pH_Units		S4500HB-00			1/21/16 03:26	MSA	A
Phenolics	ND		mg/L	0.01	SW846 9066	1/29/16	NV	1/29/16 13:32	AMH	I
Specific Conductance	52		umhos/cm	1	EPA 120.1			1/21/16 03:26	MSA	A
Sulfate	12.0		mg/L	2.0	EPA 300.0			1/21/16 13:57	JP	B
Total Dissolved Solids	36		mg/L	5	S2540C-11			1/26/16 13:51	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	S5310B-00			1/21/16 11:39	PAG	G

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528001** Date Collected: 1/20/2016 10:01 Matrix: Ground Water

Sample ID: **CWMP016W** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Turbidity	1.22		NTU	0.10	S2130B-01			1/21/16 02:04	MSA	B
METALS										
Arsenic, Total	ND		mg/L	0.0090	SW846 6010C	1/26/16	JPS	1/27/16 06:56	TSS	E2
Arsenic, Dissolved	ND		mg/L	0.0080	SW846 6010C	1/25/16	SRT	1/27/16 04:28	TSS	D
Barium, Total	ND		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 06:56	TSS	E2
Barium, Dissolved	ND		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:28	TSS	D
Cadmium, Total	ND		mg/L	0.0022	SW846 6010C	1/26/16	JPS	1/27/16 06:56	TSS	E2
Cadmium, Dissolved	ND		mg/L	0.0020	SW846 6010C	1/25/16	SRT	1/27/16 04:28	TSS	D
Calcium, Total	5.1		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 06:56	TSS	E2
Calcium, Dissolved	5.1		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:28	TSS	D
Chromium, Total	ND		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 06:56	TSS	E2
Chromium, Dissolved	ND		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:28	TSS	D
Copper, Total	ND		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 06:56	TSS	E2
Copper, Dissolved	ND		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:28	TSS	D
Iron, Total	0.15		mg/L	0.067	SW846 6010C	1/26/16	JPS	1/27/16 06:56	TSS	E2
Iron, Dissolved	ND		mg/L	0.060	SW846 6010C	1/25/16	SRT	1/27/16 04:28	TSS	D
Lead, Total	ND		mg/L	0.0067	SW846 6010C	1/26/16	JPS	1/27/16 06:56	TSS	E2
Lead, Dissolved	ND		mg/L	0.0060	SW846 6010C	1/25/16	SRT	1/27/16 04:28	TSS	D
Magnesium, Total	1.2		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 06:56	TSS	E2
Magnesium, Dissolved	1.2		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:28	TSS	D
Manganese, Total	0.0081		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 06:56	TSS	E2
Manganese, Dissolved	0.0067		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:28	TSS	D
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	1/22/16	MNP	1/22/16 11:43	MNP	E1
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	1/22/16	MNP	1/22/16 11:14	MNP	D1
Potassium, Total	ND		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 06:56	TSS	E2
Potassium, Dissolved	ND		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:28	TSS	D
Selenium, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 06:56	TSS	E2
Selenium, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:28	TSS	D
Silver, Total	ND		mg/L	0.0044	SW846 6010C	1/26/16	JPS	1/27/16 06:56	TSS	E2
Silver, Dissolved	ND		mg/L	0.0040	SW846 6010C	1/25/16	SRT	1/27/16 04:28	TSS	D
Sodium, Total	3.1		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 06:56	TSS	E2
Sodium, Dissolved	3.0		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:28	TSS	D
Zinc, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 06:56	TSS	E2
Zinc, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:28	TSS	D
FIELD PARAMETERS										
Depth to Water Level	8.88		Feet		Field			1/20/16 10:01	CLT	F

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ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528001** Date Collected: 1/20/2016 10:01 Matrix: Ground Water

Sample ID: **CWMP016W** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
Elev Top MW Casing above MSL	311.97		Feet		Field		1/20/16 10:01	CLT	F
Flow Rate	2.47		gal/min		Field		1/20/16 10:01	CLT	F
Ground Water Elevation	303.09		ft/MSL		Field		1/20/16 10:01	CLT	F
pH, Field (SM4500B)	4.85		pH_Units		Field		1/20/16 10:01	CLT	F
Sample Depth	71.00		Feet		Field		1/20/16 10:01	CLT	F
Specific Conductance, Field	62		umhos/cm	1	Field		1/20/16 10:01	CLT	F
Temperature	11.08		Deg. C		Field		1/20/16 10:01	CLT	F
Total Well Depth	73.52		Feet		Field		1/20/16 10:01	CLT	F
Volume in Water Column	95.02		Gallons		Field		1/20/16 10:01	CLT	F
Water Level After Purge	19.61		Feet		Field		1/20/16 10:01	CLT	F
Well Volumes Purged	1.82		Vol		Field		1/20/16 10:01	CLT	F

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528002** Date Collected: 1/20/2016 11:58 Matrix: Ground Water

Sample ID: **CWMP010W** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
VOLATILE ORGANICS									
Acetone	ND		ug/L	10.0	SW846 8260B		1/21/16 13:22	TMP	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B		1/21/16 13:22	TMP	J
Benzene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
Bromoform	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
Bromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
2-Butanone	ND		ug/L	10.0	SW846 8260B		1/21/16 13:22	TMP	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
Chlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
Chloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
Chloroform	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
Chloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B		1/21/16 13:22	TMP	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B		1/21/16 13:22	TMP	J
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B		1/21/16 13:22	TMP	J
Iodomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:22	TMP	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B		1/21/16 13:22	TMP	J

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ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528002** Date Collected: 1/20/2016 11:58 Matrix: Ground Water

Sample ID: **CWMP010W** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			1/21/16 13:22	TMP	J
Styrene	ND		ug/L	1.0	SW846 8260B			1/21/16 13:22	TMP	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 13:22	TMP	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 13:22	TMP	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			1/21/16 13:22	TMP	J
Toluene	ND		ug/L	1.0	SW846 8260B			1/21/16 13:22	TMP	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			1/21/16 13:22	TMP	J
1,2,4-Trichlorobenzene	ND		ug/L	2.0	SW846 8260B			1/21/16 13:22	TMP	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 13:22	TMP	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 13:22	TMP	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			1/21/16 13:22	TMP	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			1/21/16 13:22	TMP	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			1/21/16 13:22	TMP	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			1/21/16 13:22	TMP	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			1/21/16 13:22	TMP	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	117		%	62 - 133	SW846 8260B			1/21/16 13:22	TMP	J
4-Bromofluorobenzene (S)	95.3		%	79 - 114	SW846 8260B			1/21/16 13:22	TMP	J
Dibromofluoromethane (S)	95.7		%	78 - 116	SW846 8260B			1/21/16 13:22	TMP	J
Toluene-d8 (S)	115		%	76 - 127	SW846 8260B			1/21/16 13:22	TMP	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			1/21/16 13:22	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	164		mg/L	5	S2320B-97			1/21/16 03:35	MSA	A
Alkalinity, Total	164		mg/L	5	S2320B-97			1/21/16 03:35	MSA	A
Ammonia-N	ND		mg/L	0.100	D6919-09			1/29/16 15:21	JAM	C
Chemical Oxygen Demand (COD)	23		mg/L	5	EPA 410.4			1/22/16 04:30	JAM	C
Chloride	266		mg/L	10.0	EPA 300.0			1/21/16 13:17	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			1/21/16 13:01	JP	B
Nitrate-N	5.4		mg/L	0.20	EPA 300.0			1/21/16 13:01	JP	B
pH	7.02		pH_Units		S4500HB-00			1/21/16 03:35	MSA	A
Phenolics	ND		mg/L	0.01	SW846 9066	1/29/16	NV	1/29/16 13:33	AMH	I
Specific Conductance	1430		umhos/cm	1	EPA 120.1			1/21/16 03:35	MSA	A
Sulfate	27.0		mg/L	2.0	EPA 300.0			1/21/16 13:01	JP	B
Total Dissolved Solids	731		mg/L	5	S2540C-11			1/26/16 13:51	ML	B
Total Organic Carbon (TOC)	8.3		mg/L	1.0	S5310B-00			1/21/16 11:39	PAG	G

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ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528002** Date Collected: 1/20/2016 11:58 Matrix: Ground Water

Sample ID: **CWMP010W** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Turbidity	1.38		NTU	0.10	S2130B-01			1/21/16 02:04	MSA	B
METALS										
Arsenic, Total	ND		mg/L	0.0090	SW846 6010C	1/26/16	JPS	1/27/16 06:59	TSS	E2
Arsenic, Dissolved	ND		mg/L	0.0080	SW846 6010C	1/25/16	SRT	1/27/16 04:31	TSS	D
Barium, Total	0.063		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 06:59	TSS	E2
Barium, Dissolved	0.059		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:31	TSS	D
Cadmium, Total	ND		mg/L	0.0022	SW846 6010C	1/26/16	JPS	1/27/16 06:59	TSS	E2
Cadmium, Dissolved	ND		mg/L	0.0020	SW846 6010C	1/25/16	SRT	1/27/16 04:31	TSS	D
Calcium, Total	49.5		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 06:59	TSS	E2
Calcium, Dissolved	47.9		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:31	TSS	D
Chromium, Total	0.013		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 06:59	TSS	E2
Chromium, Dissolved	0.0099		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:31	TSS	D
Copper, Total	ND		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 06:59	TSS	E2
Copper, Dissolved	ND		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:31	TSS	D
Iron, Total	0.35		mg/L	0.067	SW846 6010C	1/26/16	JPS	1/27/16 06:59	TSS	E2
Iron, Dissolved	0.081		mg/L	0.060	SW846 6010C	1/25/16	SRT	1/27/16 04:31	TSS	D
Lead, Total	ND		mg/L	0.0067	SW846 6010C	1/26/16	JPS	1/27/16 06:59	TSS	E2
Lead, Dissolved	ND		mg/L	0.0060	SW846 6010C	1/25/16	SRT	1/27/16 04:31	TSS	D
Magnesium, Total	32.4		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 06:59	TSS	E2
Magnesium, Dissolved	31.7		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:31	TSS	D
Manganese, Total	0.24		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 06:59	TSS	E2
Manganese, Dissolved	0.11		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:31	TSS	D
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	1/22/16	MNP	1/22/16 11:44	MNP	E1
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	1/22/16	MNP	1/22/16 11:15	MNP	D1
Potassium, Total	11.7		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 06:59	TSS	E2
Potassium, Dissolved	11.5		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:31	TSS	D
Selenium, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 06:59	TSS	E2
Selenium, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:31	TSS	D
Silver, Total	ND		mg/L	0.0044	SW846 6010C	1/26/16	JPS	1/27/16 06:59	TSS	E2
Silver, Dissolved	ND		mg/L	0.0040	SW846 6010C	1/25/16	SRT	1/27/16 04:31	TSS	D
Sodium, Total	161		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 06:59	TSS	E2
Sodium, Dissolved	159		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:31	TSS	D
Zinc, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 06:59	TSS	E2
Zinc, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:31	TSS	D
FIELD PARAMETERS										
Depth to Water Level	8.88		Feet		Field			1/20/16 11:58	CLT	F

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ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528002** Date Collected: 1/20/2016 11:58 Matrix: Ground Water

Sample ID: **CWMP010W** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
Elev Top MW Casing above MSL	360.90		Feet		Field		1/20/16 11:58	CLT	F
Flow Rate	1.21		gal/min		Field		1/20/16 11:58	CLT	F
Ground Water Elevation	352.02		ft/MSL		Field		1/20/16 11:58	CLT	F
pH, Field (SM4500B)	5.90		pH_Units		Field		1/20/16 11:58	CLT	F
Sample Depth	17.00		Feet		Field		1/20/16 11:58	CLT	F
Specific Conductance, Field	1469		umhos/cm	1	Field		1/20/16 11:58	CLT	F
Temperature	10.26		Deg. C		Field		1/20/16 11:58	CLT	F
Total Well Depth	19.60		Feet		Field		1/20/16 11:58	CLT	F
Volume in Water Column	6.97		Gallons		Field		1/20/16 11:58	CLT	F
Water Level After Purge	16.84		Feet		Field		1/20/16 11:58	CLT	F
Well Volumes Purged	1.74		Vol		Field		1/20/16 11:58	CLT	F

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ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528003** Date Collected: 1/20/2016 12:21 Matrix: Ground Water

Sample ID: **CWMP009W** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
VOLATILE ORGANICS									
Acetone	10.7		ug/L	10.0	SW846 8260B		1/21/16 13:39	TMP	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B		1/21/16 13:39	TMP	J
Benzene	1.7		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
Bromoform	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
Bromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
2-Butanone	ND		ug/L	10.0	SW846 8260B		1/21/16 13:39	TMP	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
Chlorobenzene	18.2		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
Chloroethane	18.8		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
Chloroform	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
Chloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B		1/21/16 13:39	TMP	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B		1/21/16 13:39	TMP	J
1,2-Dichlorobenzene	2.3		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
1,4-Dichlorobenzene	10.6		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
1,1-Dichloroethane	3.2		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B		1/21/16 13:39	TMP	J
Iodomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 13:39	TMP	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B		1/21/16 13:39	TMP	J

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ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528003** Date Collected: 1/20/2016 12:21 Matrix: Ground Water

Sample ID: **CWMP009W** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			1/21/16 13:39	TMP	J
Styrene	ND		ug/L	1.0	SW846 8260B			1/21/16 13:39	TMP	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 13:39	TMP	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 13:39	TMP	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			1/21/16 13:39	TMP	J
Toluene	ND		ug/L	1.0	SW846 8260B			1/21/16 13:39	TMP	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			1/21/16 13:39	TMP	J
1,2,4-Trichlorobenzene	ND		ug/L	2.0	SW846 8260B			1/21/16 13:39	TMP	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 13:39	TMP	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 13:39	TMP	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			1/21/16 13:39	TMP	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			1/21/16 13:39	TMP	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			1/21/16 13:39	TMP	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			1/21/16 13:39	TMP	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			1/21/16 13:39	TMP	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	110		%	62 - 133	SW846 8260B			1/21/16 13:39	TMP	J
4-Bromofluorobenzene (S)	91.6		%	79 - 114	SW846 8260B			1/21/16 13:39	TMP	J
Dibromofluoromethane (S)	92.1		%	78 - 116	SW846 8260B			1/21/16 13:39	TMP	J
Toluene-d8 (S)	118		%	76 - 127	SW846 8260B			1/21/16 13:39	TMP	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			1/21/16 13:39	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	553		mg/L	5	S2320B-97			1/21/16 03:47	MSA	A
Alkalinity, Total	553		mg/L	5	S2320B-97			1/21/16 03:47	MSA	A
Ammonia-N	38.6		mg/L	0.250	D6919-09			2/1/16 07:30	JAM	C
Chemical Oxygen Demand (COD)	100		mg/L	5	EPA 410.4			1/22/16 04:30	JAM	C
Chloride	447		mg/L	10.0	EPA 300.0			1/21/16 13:47	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			1/21/16 13:32	JP	B
Nitrate-N	ND		mg/L	0.20	EPA 300.0			1/21/16 13:32	JP	B
pH	6.54		pH_Units		S4500HB-00			1/21/16 03:47	MSA	A
Phenolics	ND		mg/L	0.01	SW846 9066	2/1/16	AMH	2/2/16 12:32	JLG	I
Specific Conductance	2550		umhos/cm	1	EPA 120.1			1/21/16 03:47	MSA	A
Sulfate	3.6		mg/L	2.0	EPA 300.0			1/21/16 13:32	JP	B
Total Dissolved Solids	1280		mg/L	5	S2540C-11			1/26/16 13:51	ML	B
Total Organic Carbon (TOC)	37.9		mg/L	10.0	S5310B-00			1/25/16 10:51	PAG	G

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ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528003** Date Collected: 1/20/2016 12:21 Matrix: Ground Water

Sample ID: **CWMP009W** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Turbidity	4.18		NTU	0.10	S2130B-01			1/21/16 02:04	MSA	B
METALS										
Arsenic, Total	ND		mg/L	0.0090	SW846 6010C	1/26/16	JPS	1/27/16 07:10	TSS	E2
Arsenic, Dissolved	ND		mg/L	0.0090	SW846 6010C	1/25/16	SRT	1/27/16 04:35	TSS	D
Barium, Total	0.70		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:10	TSS	E2
Barium, Dissolved	0.69		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:35	TSS	D
Cadmium, Total	ND		mg/L	0.0022	SW846 6010C	1/26/16	JPS	1/27/16 07:10	TSS	E2
Cadmium, Dissolved	ND		mg/L	0.0020	SW846 6010C	1/25/16	SRT	1/27/16 04:35	TSS	D
Calcium, Total	152		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:10	TSS	E2
Calcium, Dissolved	146		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:35	TSS	D
Chromium, Total	ND		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:10	TSS	E2
Chromium, Dissolved	ND		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:35	TSS	D
Copper, Total	ND		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:10	TSS	E2
Copper, Dissolved	ND		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:35	TSS	D
Iron, Total	35.3		mg/L	0.067	SW846 6010C	1/26/16	JPS	1/27/16 07:10	TSS	E2
Iron, Dissolved	34.1		mg/L	0.060	SW846 6010C	1/25/16	SRT	1/27/16 04:35	TSS	D
Lead, Total	ND		mg/L	0.0067	SW846 6010C	1/26/16	JPS	1/27/16 07:10	TSS	E2
Lead, Dissolved	ND		mg/L	0.0060	SW846 6010C	1/25/16	SRT	1/27/16 04:35	TSS	D
Magnesium, Total	74.4		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:10	TSS	E2
Magnesium, Dissolved	71.8		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:35	TSS	D
Manganese, Total	12.0		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:10	TSS	E2
Manganese, Dissolved	11.7		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:35	TSS	D
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	1/22/16	MNP	1/22/16 11:50	MNP	E1
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	1/22/16	MNP	1/22/16 11:16	MNP	D1
Potassium, Total	33.0		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:10	TSS	E2
Potassium, Dissolved	32.6		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:35	TSS	D
Selenium, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:10	TSS	E2
Selenium, Dissolved	0.030		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:35	TSS	D
Silver, Total	ND		mg/L	0.0044	SW846 6010C	1/26/16	JPS	1/27/16 07:10	TSS	E2
Silver, Dissolved	ND		mg/L	0.0040	SW846 6010C	1/25/16	SRT	1/27/16 04:35	TSS	D
Sodium, Total	143		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:10	TSS	E2
Sodium, Dissolved	139		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:35	TSS	D
Zinc, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:10	TSS	E2
Zinc, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:35	TSS	D
FIELD PARAMETERS										
Depth to Water Level	9.23		Feet		Field			1/20/16 12:21	CLT	F

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ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528003** Date Collected: 1/20/2016 12:21 Matrix: Ground Water

Sample ID: **CWMP009W** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
Elev Top MW Casing above MSL	404.20		Feet		Field		1/20/16 12:21	CLT	F
Flow Rate	1.62		gal/min		Field		1/20/16 12:21	CLT	F
Ground Water Elevation	394.97		ft/MSL		Field		1/20/16 12:21	CLT	F
pH, Field (SM4500B)	5.90		pH_Units		Field		1/20/16 12:21	CLT	F
Sample Depth	16.00		Feet		Field		1/20/16 12:21	CLT	F
Specific Conductance, Field	2691		umhos/cm	1	Field		1/20/16 12:21	CLT	F
Temperature	10.83		Deg. C		Field		1/20/16 12:21	CLT	F
Total Well Depth	19.70		Feet		Field		1/20/16 12:21	CLT	F
Volume in Water Column	6.81		Gallons		Field		1/20/16 12:21	CLT	F
Water Level After Purge	11.62		Feet		Field		1/20/16 12:21	CLT	F
Well Volumes Purged	3.80		Vol		Field		1/20/16 12:21	CLT	F

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ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528004** Date Collected: 1/20/2016 12:55 Matrix: Ground Water

Sample ID: **CWMP008W** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
VOLATILE ORGANICS									
Acetone	14.3		ug/L	10.0	SW846 8260B		1/21/16 15:38	TMP	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B		1/21/16 15:38	TMP	J
Benzene	1.2		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
Bromoform	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
Bromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
2-Butanone	ND		ug/L	10.0	SW846 8260B		1/21/16 15:38	TMP	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
Chlorobenzene	8.9		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
Chloroethane	12.3		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
Chloroform	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
Chloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B		1/21/16 15:38	TMP	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B		1/21/16 15:38	TMP	J
1,2-Dichlorobenzene	1.7		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
1,4-Dichlorobenzene	12.8		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
Dichlorodifluoromethane	1.2		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
1,1-Dichloroethane	4.3		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
1,2-Dichloropropane	1.1		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B		1/21/16 15:38	TMP	J
Iodomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 15:38	TMP	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B		1/21/16 15:38	TMP	J

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528004** Date Collected: 1/20/2016 12:55 Matrix: Ground Water

Sample ID: **CWMP008W** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			1/21/16 15:38	TMP	J
Styrene	ND		ug/L	1.0	SW846 8260B			1/21/16 15:38	TMP	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 15:38	TMP	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 15:38	TMP	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			1/21/16 15:38	TMP	J
Toluene	ND		ug/L	1.0	SW846 8260B			1/21/16 15:38	TMP	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			1/21/16 15:38	TMP	J
1,2,4-Trichlorobenzene	ND		ug/L	2.0	SW846 8260B			1/21/16 15:38	TMP	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 15:38	TMP	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 15:38	TMP	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			1/21/16 15:38	TMP	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			1/21/16 15:38	TMP	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			1/21/16 15:38	TMP	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			1/21/16 15:38	TMP	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			1/21/16 15:38	TMP	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	110		%	62 - 133	SW846 8260B			1/21/16 15:38	TMP	J
4-Bromofluorobenzene (S)	90.2		%	79 - 114	SW846 8260B			1/21/16 15:38	TMP	J
Dibromofluoromethane (S)	90.5		%	78 - 116	SW846 8260B			1/21/16 15:38	TMP	J
Toluene-d8 (S)	113		%	76 - 127	SW846 8260B			1/21/16 15:38	TMP	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			1/21/16 15:38	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	387		mg/L	5	S2320B-97			1/21/16 03:58	MSA	A
Alkalinity, Total	387		mg/L	5	S2320B-97			1/21/16 03:58	MSA	A
Ammonia-N	4.87		mg/L	0.100	D6919-09			2/1/16 07:50	JAM	C
Chemical Oxygen Demand (COD)	26		mg/L	5	EPA 410.4			1/22/16 04:30	JAM	C
Chloride	23.3		mg/L	2.0	EPA 300.0			1/21/16 14:02	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			1/21/16 14:02	JP	B
Nitrate-N	ND		mg/L	0.20	EPA 300.0			1/21/16 14:02	JP	B
pH	6.43		pH_Units		S4500HB-00			1/21/16 03:58	MSA	A
Phenolics	ND		mg/L	0.01	SW846 9066	1/29/16	NV	1/29/16 13:38	AMH	I
Specific Conductance	810		umhos/cm	1	EPA 120.1			1/21/16 03:58	MSA	A
Sulfate	4.7		mg/L	2.0	EPA 300.0			1/21/16 14:02	JP	B
Total Dissolved Solids	422		mg/L	5	S2540C-11			1/26/16 13:51	ML	B
Total Organic Carbon (TOC)	11.1		mg/L	5.0	S5310B-00			1/25/16 10:51	PAG	G

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ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528004** Date Collected: 1/20/2016 12:55 Matrix: Ground Water

Sample ID: **CWMP008W** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Turbidity	8.90		NTU	0.10	S2130B-01			1/21/16 02:04	MSA	B
METALS										
Arsenic, Total	ND		mg/L	0.0090	SW846 6010C	1/26/16	JPS	1/27/16 07:14	TSS	E2
Arsenic, Dissolved	ND		mg/L	0.0090	SW846 6010C	1/25/16	SRT	1/27/16 04:39	TSS	D
Barium, Total	0.12		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:14	TSS	E2
Barium, Dissolved	0.12		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:39	TSS	D
Cadmium, Total	ND		mg/L	0.0022	SW846 6010C	1/26/16	JPS	1/27/16 07:14	TSS	E2
Cadmium, Dissolved	ND		mg/L	0.0020	SW846 6010C	1/25/16	SRT	1/27/16 04:39	TSS	D
Calcium, Total	65.8		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:14	TSS	E2
Calcium, Dissolved	63.3		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:39	TSS	D
Chromium, Total	ND		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:14	TSS	E2
Chromium, Dissolved	ND		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:39	TSS	D
Copper, Total	ND		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:14	TSS	E2
Copper, Dissolved	ND		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:39	TSS	D
Iron, Total	25.0		mg/L	0.067	SW846 6010C	1/26/16	JPS	1/27/16 07:14	TSS	E2
Iron, Dissolved	24.4		mg/L	0.060	SW846 6010C	1/25/16	SRT	1/27/16 04:39	TSS	D
Lead, Total	ND		mg/L	0.0067	SW846 6010C	1/26/16	JPS	1/27/16 07:14	TSS	E2
Lead, Dissolved	ND		mg/L	0.0060	SW846 6010C	1/25/16	SRT	1/27/16 04:39	TSS	D
Magnesium, Total	28.2		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:14	TSS	E2
Magnesium, Dissolved	27.3		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:39	TSS	D
Manganese, Total	15.1		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:14	TSS	E2
Manganese, Dissolved	14.9		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:39	TSS	D
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	1/22/16	MNP	1/22/16 11:51	MNP	E1
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	1/22/16	MNP	1/22/16 11:20	MNP	D1
Potassium, Total	7.4		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:14	TSS	E2
Potassium, Dissolved	7.3		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:39	TSS	D
Selenium, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:14	TSS	E2
Selenium, Dissolved	0.022		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:39	TSS	D
Silver, Total	ND		mg/L	0.0044	SW846 6010C	1/26/16	JPS	1/27/16 07:14	TSS	E2
Silver, Dissolved	ND		mg/L	0.0040	SW846 6010C	1/25/16	SRT	1/27/16 04:39	TSS	D
Sodium, Total	32.7		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:14	TSS	E2
Sodium, Dissolved	32.1		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:39	TSS	D
Zinc, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:14	TSS	E2
Zinc, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:39	TSS	D
FIELD PARAMETERS										
Depth to Water Level	2.41		Feet		Field			1/20/16 12:55	CLT	F

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ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528004** Date Collected: 1/20/2016 12:55 Matrix: Ground Water

Sample ID: **CWMP008W** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
Elev Top MW Casing above MSL	422.30		Feet		Field		1/20/16 12:55	CLT	F
Flow Rate	1.84		gal/min		Field		1/20/16 12:55	CLT	F
Ground Water Elevation	419.89		ft/MSL		Field		1/20/16 12:55	CLT	F
pH, Field (SM4500B)	5.77		pH_Units		Field		1/20/16 12:55	CLT	F
Sample Depth	19.00		Feet		Field		1/20/16 12:55	CLT	F
Specific Conductance, Field	854		umhos/cm	1	Field		1/20/16 12:55	CLT	F
Temperature	12.51		Deg. C		Field		1/20/16 12:55	CLT	F
Total Well Depth	22.80		Feet		Field		1/20/16 12:55	CLT	F
Volume in Water Column	3.26		Gallons		Field		1/20/16 12:55	CLT	F
Water Level After Purge	14.78		Feet		Field		1/20/16 12:55	CLT	F
Well Volumes Purged	11.30		Vol		Field		1/20/16 12:55	CLT	F

Ms. Susan J Scherer
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ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528005** Date Collected: 1/20/2016 15:00 Matrix: Ground Water

Sample ID: **Field Blank** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
VOLATILE ORGANICS									
Acetone	11.3		ug/L	10.0	SW846 8260B		1/21/16 12:30	TMP	A
Acrylonitrile	ND		ug/L	5.0	SW846 8260B		1/21/16 12:30	TMP	A
Benzene	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
Bromochloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
Bromoform	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
Bromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
2-Butanone	ND		ug/L	10.0	SW846 8260B		1/21/16 12:30	TMP	A
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
Chlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
Chloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
Chloroform	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
Chloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B		1/21/16 12:30	TMP	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
Dibromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B		1/21/16 12:30	TMP	A
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
2-Hexanone	ND		ug/L	5.0	SW846 8260B		1/21/16 12:30	TMP	A
Iodomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 12:30	TMP	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B		1/21/16 12:30	TMP	A

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ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528005** Date Collected: 1/20/2016 15:00 Matrix: Ground Water

Sample ID: **Field Blank** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			1/21/16 12:30	TMP	A
Styrene	ND		ug/L	1.0	SW846 8260B			1/21/16 12:30	TMP	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 12:30	TMP	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 12:30	TMP	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			1/21/16 12:30	TMP	A
Toluene	ND		ug/L	1.0	SW846 8260B			1/21/16 12:30	TMP	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			1/21/16 12:30	TMP	A
1,2,4-Trichlorobenzene	ND		ug/L	2.0	SW846 8260B			1/21/16 12:30	TMP	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 12:30	TMP	A
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/21/16 12:30	TMP	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			1/21/16 12:30	TMP	A
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			1/21/16 12:30	TMP	A
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			1/21/16 12:30	TMP	A
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			1/21/16 12:30	TMP	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			1/21/16 12:30	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	113		%	62 - 133	SW846 8260B			1/21/16 12:30	TMP	A
4-Bromofluorobenzene (S)	97.2		%	79 - 114	SW846 8260B			1/21/16 12:30	TMP	A
Dibromofluoromethane (S)	95.5		%	78 - 116	SW846 8260B			1/21/16 12:30	TMP	A
Toluene-d8 (S)	116		%	76 - 127	SW846 8260B			1/21/16 12:30	TMP	A
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			1/21/16 12:30	CPK	A

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ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528006** Date Collected: 1/20/2016 15:56 Matrix: Ground Water

Sample ID: **Trip Blank** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
VOLATILE ORGANICS									
Acetone	ND		ug/L	10.0	SW846 8260B		1/21/16 21:02	CJG	A
Acrylonitrile	ND		ug/L	5.0	SW846 8260B		1/21/16 21:02	CJG	A
Benzene	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Bromochloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Bromoform	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Bromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
2-Butanone	ND		ug/L	10.0	SW846 8260B		1/21/16 21:02	CJG	A
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Chlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Chloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Chloroform	7.4		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Chloromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B		1/21/16 21:02	CJG	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Dibromomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B		1/21/16 21:02	CJG	A
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
2-Hexanone	ND		ug/L	5.0	SW846 8260B		1/21/16 21:02	CJG	A
Iodomethane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B		1/21/16 21:02	CJG	A

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2119528 Annual CWMP Sampling

Lab ID: **2119528006** Date Collected: 1/20/2016 15:56 Matrix: Ground Water

Sample ID: **Trip Blank** Date Received: 1/20/2016 15:56

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Styrene	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Toluene	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Total Xylenes	ND	1	ug/L	3.0	SW846 8260B		1/21/16 21:02	CJG	A
1,2,4-Trichlorobenzene	ND		ug/L	2.0	SW846 8260B		1/21/16 21:02	CJG	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B		1/21/16 21:02	CJG	A
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B		1/21/16 21:02	CJG	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B		1/21/16 21:02	CJG	A

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	115		%	62 - 133	SW846 8260B		1/21/16 21:02	CJG	A
4-Bromofluorobenzene (S)	92.4		%	79 - 114	SW846 8260B		1/21/16 21:02	CJG	A
Dibromofluoromethane (S)	97.6		%	78 - 116	SW846 8260B		1/21/16 21:02	CJG	A
Toluene-d8 (S)	119		%	76 - 127	SW846 8260B		1/21/16 21:02	CJG	A

LIBRARY SEARCH - VOLATILES

No TIC's Detected	.				Lib Search VOC		1/21/16 21:02	CPK	A

Ms. Susan J Scherer
Project Coordinator

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2119528006	1	Trip Blank	SW846 8260B	Total Xylenes

The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Total Xylenes. The % Recovery was reported as 77.7 and the control limits were 79 to 125.

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

1 of 1

2119528

Client Name: Lancaster County Solid Waste MA

Address: 1299 Harrisburg Pike, P.O. Box 4424

Lancaster, PA 17604

Contact: Mark Reider

Phone#: (717) 735-0193

Project Name/#: Annual CWMP Sampling

Bill To: Lancaster County Solid Waste MA

TAT [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALS approval and surcharges.

Date Required: _____ Approved By: _____

Email? [X] -Y mreider@LCSWMA.org

Fax? [X] -Y No.: (717) 397-9973

Container Type	AG	AN	CG	—	—	PL	PL	PL	PL	
Container Size	40 ml	500 ml	40 ml	—	—	500 ml	500 ml	500 ml	1 L	500 ml
Preservative	HCl	H2SO4	HCl	—	—	H2SO4	HNO3	HNO3	None	None

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	TOC	O-OH	VOC (Form 19A) + LS	*FM	Sample Depth for AUX Data	NH3-N, COD	Diss: Fe, Mn, Na, Ba, Cr, Cu, Pb, Mg, K, Zn, As, Cd, Se, Ag, Hg, Ca	Metals: Fe, Mn, Na, Ba, Cr, Cu, Pb, Mg, K, Zn, As, Cd, Se, Ag, Hg, Ca	pH, Cl, SpC, F, SO4, NO3, Tb, TDS	Alkalinity, HCO3	Sample/COC Comments
			Enter Number of Containers Per Sample or Field Results Below.												
1 CWMP010GW	1-20-16	1001	G	GW	2	1	2	X	X	1	1	1	1	1	
2 CWMP010W		1158													
3 CWMP009W		1224													
4 CWMP008		1255													
5 Field Blank		1500													
6 Trip Blank		1556													
7															
8															
9															
10															

Receiving Lab)

Cooler Temp: 5°C Therm ID: 352

No. of Coolers: _____

	Y	N	Initial
Custody Seals Present?			
(if present) Seals Intact?			
Received on Ice?	X		
COC/Labels Complete/Accurate?	X		
Cont. in Good Cond.?	X		
Correct Containers?	X		
Correct Sample Volumes?	X		
Correct Preservation?	X		
Headspace/Volatiles?			

Courier/Tracking #:

ALS Field Services: ☐Pickup ☐Labor ☐Composite_Sampling ☐Rental_Equipment ☐Other:_____

Project Comments:

LOGGED BY(signature): _____ DATE 1-20-16 TIME 1821

REVIEWED BY(signature): _____ DATE _____ TIME _____

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [illegible] ALS	1-20-16	1556	2 [illegible]	1/20	1556
3			4		
5			6		
7			8		
9			10		

Data Deliverables: ☐Standard ☐CLP-like ☐USACE

Special Processing: ☐USACE ☐Navy

State Samples Collected In: ☐NY ☐NJ [X] PA ☐NC ☐

Reportable to PADEP? Yes ☐ PWSID #

Sample Disposal: Lab [X] Special ☐

EDDS: Format Type-

* G=Grab; C=Composite

**Matrix - Al=Air; DW=Drinking Water; GW=Groundwater; Oi=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS ENVIRONMENTAL SHIPPING ADDRESS: 34 DOGWOOD LANE, MIDDLETOWN, PA 17057

Rev 8/04

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February 15, 2016

Mr. Daniel Brown
Lancaster County Solid Waste Authority
1299 Hbg Pike, P.O. Box 4425
Lancaster, PA 17604

Certificate of Analysis

Project Name:	**2016-CRESWELL**	Workorder:	**2119794**
Purchase Order:		Workorder ID:	**Annual CWMP Sampling**

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Thursday, January 21, 2016.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Mr. Mark Reider , Mr. Jeff Musser

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2119794 Annual CWMP Sampling

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2119794001	CWMP018S	Ground Water	1/21/2016 10:18	1/21/2016 16:08	Mr. Brian G Shade
2119794002	CWMP017S	Ground Water	1/21/2016 10:42	1/21/2016 16:08	Mr. Brian G Shade
2119794003	CWMP002W	Ground Water	1/21/2016 12:22	1/21/2016 16:08	Mr. Brian G Shade
2119794004	CWMP003W	Ground Water	1/21/2016 12:49	1/21/2016 16:08	Mr. Brian G Shade
2119794005	CWMP004W	Ground Water	1/21/2016 13:02	1/21/2016 16:08	Mr. Brian G Shade
2119794006	Field Blank	Ground Water	1/21/2016 13:55	1/21/2016 16:08	Mr. Brian G Shade
2119794007	Trip Blank	Ground Water	1/21/2016 16:08	1/21/2016 16:08	Mr. Brian G Shade
2119794008	CWMP012W	Ground Water	1/21/2016 10:18	1/21/2016 16:08	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 2119794 Annual CWMP Sampling

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

PROJECT SUMMARY

Workorder: 2119794 Annual CWMP Sampling

Sample Comments

Lab ID: 2119794001 **Sample ID:** CWMP018S **Sample Type:** SAMPLE

The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Lab ID: 2119794002 **Sample ID:** CWMP017S **Sample Type:** SAMPLE

The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Lab ID: 2119794003 **Sample ID:** CWMP002W **Sample Type:** SAMPLE

The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Lab ID: 2119794004 **Sample ID:** CWMP003W **Sample Type:** SAMPLE

The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Lab ID: 2119794005 **Sample ID:** CWMP004W **Sample Type:** SAMPLE

The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Lab ID: 2119794006 **Sample ID:** Field Blank **Sample Type:** FLDQC

The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

Lab ID: 2119794008 **Sample ID:** CWMP012W **Sample Type:** SAMPLE

The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794001** Date Collected: 1/21/2016 10:18 Matrix: Ground Water

Sample ID: **CWMP018S** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
VOLATILE ORGANICS									
Acetone	ND		ug/L	10.0	SW846 8260B		1/22/16 15:26	SYB	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B		1/22/16 15:26	SYB	J
Benzene	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
Bromoform	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
Bromomethane	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
2-Butanone	ND		ug/L	10.0	SW846 8260B		1/22/16 15:26	SYB	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
Chlorobenzene	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
Chloroethane	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
Chloroform	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
Chloromethane	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B		1/22/16 15:26	SYB	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B		1/22/16 15:26	SYB	J
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B		1/22/16 15:26	SYB	J
Iodomethane	ND	1	ug/L	1.0	SW846 8260B		1/22/16 15:26	SYB	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B		1/22/16 15:26	SYB	J

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794001** Date Collected: 1/21/2016 10:18 Matrix: Ground Water

Sample ID: **CWMP018S** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			1/22/16 15:26	SYB	J
Styrene	ND		ug/L	1.0	SW846 8260B			1/22/16 15:26	SYB	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/22/16 15:26	SYB	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/22/16 15:26	SYB	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			1/22/16 15:26	SYB	J
Toluene	ND		ug/L	1.0	SW846 8260B			1/22/16 15:26	SYB	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			1/22/16 15:26	SYB	J
1,2,4-Trichlorobenzene	ND		ug/L	2.0	SW846 8260B			1/22/16 15:26	SYB	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/22/16 15:26	SYB	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/22/16 15:26	SYB	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			1/22/16 15:26	SYB	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			1/22/16 15:26	SYB	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			1/22/16 15:26	SYB	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			1/22/16 15:26	SYB	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			1/22/16 15:26	SYB	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	120		%	62 - 133	SW846 8260B			1/22/16 15:26	SYB	J
4-Bromofluorobenzene (S)	92.2		%	79 - 114	SW846 8260B			1/22/16 15:26	SYB	J
Dibromofluoromethane (S)	99.8		%	78 - 116	SW846 8260B			1/22/16 15:26	SYB	J
Toluene-d8 (S)	119		%	76 - 127	SW846 8260B			1/22/16 15:26	SYB	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			1/22/16 15:26	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	221		mg/L	5	S2320B-97			1/22/16 03:21	MSA	A
Alkalinity, Total	221		mg/L	5	S2320B-97			1/22/16 03:21	MSA	A
Ammonia-N	0.486		mg/L	0.100	D6919-09			1/31/16 12:14	JAM	C
Chemical Oxygen Demand (COD)	24		mg/L	5	EPA 410.4			1/27/16 11:00	JAM	C
Chloride	516		mg/L	10.0	EPA 300.0			1/23/16 06:42	MBW	B
Fluoride	ND		mg/L	0.20	EPA 300.0			1/23/16 06:28	MBW	B
Nitrate-N	19.6		mg/L	0.20	EPA 300.0			1/23/16 06:28	MBW	B
pH	8.24		pH_Units		S4500HB-00			1/22/16 03:21	MSA	A
Phenolics	ND		mg/L	0.01	SW846 9066	1/29/16	NV	1/29/16 13:42	AMH	I
Specific Conductance	2170		umhos/cm	1	EPA 120.1			1/22/16 03:21	MSA	A
Sulfate	33.4		mg/L	2.0	EPA 300.0			1/23/16 06:28	MBW	B
Total Dissolved Solids	1120		mg/L	5	S2540C-11			1/28/16 09:19	ML	B
Total Organic Carbon (TOC)	7.5		mg/L	1.0	S5310B-00			1/25/16 10:51	PAG	G

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794001** Date Collected: 1/21/2016 10:18 Matrix: Ground Water

Sample ID: **CWMP018S** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Turbidity	1.02		NTU	0.10	S2130B-01			1/21/16 23:10	MSA	B
METALS										
Arsenic, Total	ND		mg/L	0.0090	SW846 6010C	1/26/16	JPS	1/27/16 07:18	TSS	E2
Arsenic, Dissolved	ND		mg/L	0.0080	SW846 6010C	1/25/16	SRT	1/27/16 04:42	TSS	D
Barium, Total	0.035		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:18	TSS	E2
Barium, Dissolved	0.035		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:42	TSS	D
Cadmium, Total	ND		mg/L	0.0022	SW846 6010C	1/26/16	JPS	1/27/16 07:18	TSS	E2
Cadmium, Dissolved	ND		mg/L	0.0020	SW846 6010C	1/25/16	SRT	1/27/16 04:42	TSS	D
Calcium, Total	68.0		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:18	TSS	E2
Calcium, Dissolved	66.7		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:42	TSS	D
Chromium, Total	ND		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:18	TSS	E2
Chromium, Dissolved	ND		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:42	TSS	D
Copper, Total	ND		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:18	TSS	E2
Copper, Dissolved	ND		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:42	TSS	D
Iron, Total	0.10		mg/L	0.067	SW846 6010C	1/26/16	JPS	1/27/16 07:18	TSS	E2
Iron, Dissolved	ND		mg/L	0.060	SW846 6010C	1/25/16	SRT	1/27/16 04:42	TSS	D
Lead, Total	ND		mg/L	0.0067	SW846 6010C	1/26/16	JPS	1/27/16 07:18	TSS	E2
Lead, Dissolved	ND		mg/L	0.0060	SW846 6010C	1/25/16	SRT	1/27/16 04:42	TSS	D
Magnesium, Total	48.2		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:18	TSS	E2
Magnesium, Dissolved	47.1		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:42	TSS	D
Manganese, Total	0.17		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:18	TSS	E2
Manganese, Dissolved	0.16		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:42	TSS	D
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	1/25/16	MNP	1/25/16 15:14	MNP	E1
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	2/1/16	MNP	2/1/16 12:25	MNP	D1
Potassium, Total	16.2		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:18	TSS	E2
Potassium, Dissolved	16.0		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:42	TSS	D
Selenium, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:18	TSS	E2
Selenium, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:42	TSS	D
Silver, Total	ND		mg/L	0.0044	SW846 6010C	1/26/16	JPS	1/27/16 07:18	TSS	E2
Silver, Dissolved	ND		mg/L	0.0040	SW846 6010C	1/25/16	SRT	1/27/16 04:42	TSS	D
Sodium, Total	259		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:18	TSS	E2
Sodium, Dissolved	251		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:42	TSS	D
Zinc, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:18	TSS	E2
Zinc, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:42	TSS	D
FIELD PARAMETERS										
Dissolved Oxygen	14.91		mg/L	0.01	Field			1/21/16 10:42	CLT	F

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794001** Date Collected: 1/21/2016 10:18 Matrix: Ground Water

Sample ID: **CWMP018S** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
pH, Field (SM4500B)	7.03		pH_Units		Field		1/21/16 10:42	CLT	F
Specific Conductance, Field	2330		umhos/cm	1	Field		1/21/16 10:42	CLT	F
Temperature	1.03		Deg. C		Field		1/21/16 10:42	CLT	F

Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794002** Date Collected: 1/21/2016 10:42 Matrix: Ground Water

Sample ID: **CWMP017S** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
VOLATILE ORGANICS									
Acetone	ND		ug/L	10.0	SW846 8260B		1/27/16 11:49	DD	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B		1/27/16 11:49	DD	J
Benzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
Bromoform	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
Bromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
2-Butanone	ND		ug/L	10.0	SW846 8260B		1/27/16 11:49	DD	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
Chlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
Chloroethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
Chloroform	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
Chloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B		1/27/16 11:49	DD	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B		1/27/16 11:49	DD	J
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B		1/27/16 11:49	DD	J
Iodomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:49	DD	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B		1/27/16 11:49	DD	J

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794002** Date Collected: 1/21/2016 10:42 Matrix: Ground Water

Sample ID: **CWMP017S** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			1/27/16 11:49	DD	J
Styrene	ND		ug/L	1.0	SW846 8260B			1/27/16 11:49	DD	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 11:49	DD	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 11:49	DD	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			1/27/16 11:49	DD	J
Toluene	ND		ug/L	1.0	SW846 8260B			1/27/16 11:49	DD	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			1/27/16 11:49	DD	J
1,2,4-Trichlorobenzene	ND		ug/L	2.0	SW846 8260B			1/27/16 11:49	DD	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 11:49	DD	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 11:49	DD	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			1/27/16 11:49	DD	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			1/27/16 11:49	DD	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			1/27/16 11:49	DD	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			1/27/16 11:49	DD	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			1/27/16 11:49	DD	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	102		%	62 - 133	SW846 8260B			1/27/16 11:49	DD	J
4-Bromofluorobenzene (S)	99.2		%	79 - 114	SW846 8260B			1/27/16 11:49	DD	J
Dibromofluoromethane (S)	88.4		%	78 - 116	SW846 8260B			1/27/16 11:49	DD	J
Toluene-d8 (S)	95.7		%	76 - 127	SW846 8260B			1/27/16 11:49	DD	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			11/27/16 11:49	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	307		mg/L	5	S2320B-97			1/22/16 03:32	MSA	A
Alkalinity, Total	307		mg/L	5	S2320B-97			1/22/16 03:32	MSA	A
Ammonia-N	0.126		mg/L	0.100	D6919-09			1/31/16 12:34	JAM	C
Chemical Oxygen Demand (COD)	11		mg/L	5	EPA 410.4			1/27/16 11:00	JAM	C
Chloride	756		mg/L	10.0	EPA 300.0			1/26/16 06:40	JP	B
Fluoride	ND		mg/L	0.50	EPA 300.0			1/23/16 06:03	MBW	B
Nitrate-N	25.4		mg/L	0.50	EPA 300.0			1/23/16 06:03	MBW	B
pH	7.88		pH_Units		S4500HB-00			1/22/16 03:32	MSA	A
Phenolics	ND		mg/L	0.01	SW846 9066	1/29/16	NV	1/29/16 13:49	AMH	I
Specific Conductance	3070		umhos/cm	1	EPA 120.1			1/22/16 03:32	MSA	A
Sulfate	41.7		mg/L	5.0	EPA 300.0			1/23/16 06:03	MBW	B
Total Dissolved Solids	1550		mg/L	5	S2540C-11			1/28/16 09:19	ML	B
Total Organic Carbon (TOC)	4.5		mg/L	1.0	S5310B-00			1/25/16 10:51	PAG	G

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794002** Date Collected: 1/21/2016 10:42 Matrix: Ground Water

Sample ID: **CWMP017S** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Turbidity	0.76		NTU	0.10	S2130B-01			1/21/16 23:10	MSA	B
METALS										
Arsenic, Total	ND		mg/L	0.0090	SW846 6010C	1/26/16	JPS	1/27/16 07:22	TSS	E2
Arsenic, Dissolved	ND		mg/L	0.0080	SW846 6010C	1/25/16	SRT	1/27/16 04:46	TSS	D
Barium, Total	0.032		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:22	TSS	E2
Barium, Dissolved	0.031		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:46	TSS	D
Cadmium, Total	ND		mg/L	0.0022	SW846 6010C	1/26/16	JPS	1/27/16 07:22	TSS	E2
Cadmium, Dissolved	ND		mg/L	0.0020	SW846 6010C	1/25/16	SRT	1/27/16 04:46	TSS	D
Calcium, Total	73.3		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:22	TSS	E2
Calcium, Dissolved	73.2		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:46	TSS	D
Chromium, Total	ND		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:22	TSS	E2
Chromium, Dissolved	ND		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:46	TSS	D
Copper, Total	ND		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:22	TSS	E2
Copper, Dissolved	ND		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:46	TSS	D
Iron, Total	0.11		mg/L	0.067	SW846 6010C	1/26/16	JPS	1/27/16 07:22	TSS	E2
Iron, Dissolved	0.066		mg/L	0.060	SW846 6010C	1/25/16	SRT	1/27/16 04:46	TSS	D
Lead, Total	ND		mg/L	0.0067	SW846 6010C	1/26/16	JPS	1/27/16 07:22	TSS	E2
Lead, Dissolved	ND		mg/L	0.0060	SW846 6010C	1/25/16	SRT	1/27/16 04:46	TSS	D
Magnesium, Total	62.7		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:22	TSS	E2
Magnesium, Dissolved	64.1		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:46	TSS	D
Manganese, Total	0.14		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:22	TSS	E2
Manganese, Dissolved	0.14		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:46	TSS	D
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	1/25/16	MNP	1/25/16 15:15	MNP	E1
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	2/1/16	MNP	2/1/16 12:26	MNP	D1
Potassium, Total	17.8		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:22	TSS	E2
Potassium, Dissolved	18.1		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:46	TSS	D
Selenium, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:22	TSS	E2
Selenium, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:46	TSS	D
Silver, Total	ND		mg/L	0.0044	SW846 6010C	1/26/16	JPS	1/27/16 07:22	TSS	E2
Silver, Dissolved	ND		mg/L	0.0040	SW846 6010C	1/25/16	SRT	1/27/16 04:46	TSS	D
Sodium, Total	406		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:22	TSS	E2
Sodium, Dissolved	404		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:46	TSS	D
Zinc, Total	0.047		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:22	TSS	E2
Zinc, Dissolved	0.044		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:46	TSS	D
FIELD PARAMETERS										
Dissolved Oxygen	10.46		mg/L	0.01	Field			1/21/16 11:09	BGS	F

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794002** Date Collected: 1/21/2016 10:42 Matrix: Ground Water

Sample ID: **CWMP017S** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
Flow Rate	199.60		gal/min		Field		1/21/16 11:09	BGS	F
pH, Field (SM4500B)	7.99		pH_Units		Field		1/21/16 11:09	BGS	F
Specific Conductance, Field	3346		umhos/cm	1	Field		1/21/16 11:09	BGS	F
Temperature	7.99		Deg. C		Field		1/21/16 11:09	BGS	F

Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794003** Date Collected: 1/21/2016 12:22 Matrix: Ground Water

Sample ID: **CWMP002W** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
VOLATILE ORGANICS									
Acetone	ND		ug/L	10.0	SW846 8260B		1/22/16 14:52	SYB	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B		1/22/16 14:52	SYB	J
Benzene	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
Bromoform	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
Bromomethane	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
2-Butanone	ND		ug/L	10.0	SW846 8260B		1/22/16 14:52	SYB	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
Chlorobenzene	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
Chloroethane	6.0		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
Chloroform	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
Chloromethane	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B		1/22/16 14:52	SYB	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B		1/22/16 14:52	SYB	J
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
1,4-Dichlorobenzene	1.1		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
1,1-Dichloroethane	12.6		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
1,1-Dichloroethene	ND	1	ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B		1/22/16 14:52	SYB	J
Iodomethane	ND	2	ug/L	1.0	SW846 8260B		1/22/16 14:52	SYB	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B		1/22/16 14:52	SYB	J

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794003** Date Collected: 1/21/2016 12:22 Matrix: Ground Water

Sample ID: **CWMP002W** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			1/22/16 14:52	SYB	J
Styrene	ND		ug/L	1.0	SW846 8260B			1/22/16 14:52	SYB	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/22/16 14:52	SYB	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/22/16 14:52	SYB	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			1/22/16 14:52	SYB	J
Toluene	ND		ug/L	1.0	SW846 8260B			1/22/16 14:52	SYB	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			1/22/16 14:52	SYB	J
1,2,4-Trichlorobenzene	ND		ug/L	2.0	SW846 8260B			1/22/16 14:52	SYB	J
1,1,1-Trichloroethane	1.8		ug/L	1.0	SW846 8260B			1/22/16 14:52	SYB	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/22/16 14:52	SYB	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			1/22/16 14:52	SYB	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			1/22/16 14:52	SYB	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			1/22/16 14:52	SYB	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			1/22/16 14:52	SYB	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			1/22/16 14:52	SYB	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	123		%	62 - 133	SW846 8260B			1/22/16 14:52	SYB	J
4-Bromofluorobenzene (S)	91.5		%	79 - 114	SW846 8260B			1/22/16 14:52	SYB	J
Dibromofluoromethane (S)	102		%	78 - 116	SW846 8260B			1/22/16 14:52	SYB	J
Toluene-d8 (S)	120		%	76 - 127	SW846 8260B			1/22/16 14:52	SYB	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			1/22/16 14:52	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	60		mg/L	5	S2320B-97			1/22/16 03:40	MSA	A
Alkalinity, Total	60		mg/L	5	S2320B-97			1/22/16 03:40	MSA	A
Ammonia-N	ND		mg/L	0.100	D6919-09			1/22/16 15:54	JAM	C
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			1/31/16 00:30	JAM	C
Chloride	106		mg/L	2.0	EPA 300.0			1/23/16 08:34	MBW	B
Fluoride	ND		mg/L	0.20	EPA 300.0			1/23/16 08:34	MBW	B
Nitrate-N	3.8		mg/L	0.20	EPA 300.0			1/23/16 08:34	MBW	B
pH	6.07		pH_Units		S4500HB-00			1/22/16 03:40	MSA	A
Phenolics	ND		mg/L	0.01	SW846 9066	2/1/16	AMH	2/2/16 12:41	JLG	I
Specific Conductance	550		umhos/cm	1	EPA 120.1			1/22/16 03:40	MSA	A
Sulfate	23.5		mg/L	2.0	EPA 300.0			1/23/16 08:34	MBW	B
Total Dissolved Solids	316		mg/L	5	S2540C-11			1/28/16 09:19	ML	B
Total Organic Carbon (TOC)	4.1		mg/L	1.0	S5310B-00			1/25/16 10:51	PAG	G

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794003** Date Collected: 1/21/2016 12:22 Matrix: Ground Water

Sample ID: **CWMP002W** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Turbidity	0.19		NTU	0.10	S2130B-01			1/21/16 23:10	MSA	B
METALS										
Arsenic, Total	ND		mg/L	0.0090	SW846 6010C	1/26/16	JPS	1/27/16 07:25	TSS	E2
Arsenic, Dissolved	ND		mg/L	0.0080	SW846 6010C	1/25/16	SRT	1/27/16 04:57	TSS	D
Barium, Total	0.037		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:25	TSS	E2
Barium, Dissolved	0.036		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:57	TSS	D
Cadmium, Total	ND		mg/L	0.0022	SW846 6010C	1/26/16	JPS	1/27/16 07:25	TSS	E2
Cadmium, Dissolved	ND		mg/L	0.0020	SW846 6010C	1/25/16	SRT	1/27/16 04:57	TSS	D
Calcium, Total	52.7		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:25	TSS	E2
Calcium, Dissolved	50.5		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:57	TSS	D
Chromium, Total	ND		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:25	TSS	E2
Chromium, Dissolved	ND		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:57	TSS	D
Copper, Total	ND		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:25	TSS	E2
Copper, Dissolved	ND		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 04:57	TSS	D
Iron, Total	ND		mg/L	0.067	SW846 6010C	1/26/16	JPS	1/27/16 07:25	TSS	E2
Iron, Dissolved	ND		mg/L	0.060	SW846 6010C	1/25/16	SRT	1/27/16 04:57	TSS	D
Lead, Total	ND		mg/L	0.0067	SW846 6010C	1/26/16	JPS	1/27/16 07:25	TSS	E2
Lead, Dissolved	ND		mg/L	0.0060	SW846 6010C	1/25/16	SRT	1/27/16 04:57	TSS	D
Magnesium, Total	15.2		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:25	TSS	E2
Magnesium, Dissolved	15.0		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 04:57	TSS	D
Manganese, Total	0.97		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:25	TSS	E2
Manganese, Dissolved	0.95		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 04:57	TSS	D
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	1/25/16	MNP	1/25/16 15:16	MNP	E1
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	2/1/16	MNP	2/1/16 12:27	MNP	D1
Potassium, Total	2.6		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:25	TSS	E2
Potassium, Dissolved	2.6		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:57	TSS	D
Selenium, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:25	TSS	E2
Selenium, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:57	TSS	D
Silver, Total	ND		mg/L	0.0044	SW846 6010C	1/26/16	JPS	1/27/16 07:25	TSS	E2
Silver, Dissolved	ND		mg/L	0.0040	SW846 6010C	1/25/16	SRT	1/27/16 04:57	TSS	D
Sodium, Total	20.9		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:25	TSS	E2
Sodium, Dissolved	20.3		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 04:57	TSS	D
Zinc, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:25	TSS	E2
Zinc, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 04:57	TSS	D
FIELD PARAMETERS										
Depth to Water Level	90.32		Feet		Field			1/21/16 12:22	CLT	F

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794003** Date Collected: 1/21/2016 12:22 Matrix: Ground Water

Sample ID: **CWMP002W** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
Elev Top MW Casing above MSL	525.81		Feet		Field		1/21/16 12:22	CLT	F
Ground Water Elevation	435.49		ft/MSL		Field		1/21/16 12:22	CLT	F
pH, Field (SM4500B)	5.89		pH_Units		Field		1/21/16 12:22	CLT	F
Sample Depth	85.00		Feet		Field		1/21/16 12:22	CLT	F
Specific Conductance, Field	576		umhos/cm	1	Field		1/21/16 12:22	CLT	F
Temperature	12.84		Deg. C		Field		1/21/16 12:22	CLT	F
Total Well Depth	100.00		Feet		Field		1/21/16 12:22	CLT	F

Ms. Susan J Scherer
Project Coordinator

ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794004** Date Collected: 1/21/2016 12:49 Matrix: Ground Water

Sample ID: **CWMP003W** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
VOLATILE ORGANICS									
Acetone	ND		ug/L	10.0	SW846 8260B		1/27/16 12:11	DD	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B		1/27/16 12:11	DD	J
Benzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
Bromoform	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
Bromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
2-Butanone	ND		ug/L	10.0	SW846 8260B		1/27/16 12:11	DD	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
Chlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
Chloroethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
Chloroform	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
Chloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B		1/27/16 12:11	DD	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B		1/27/16 12:11	DD	J
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
1,1-Dichloroethane	2.9		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B		1/27/16 12:11	DD	J
Iodomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:11	DD	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B		1/27/16 12:11	DD	J

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794004** Date Collected: 1/21/2016 12:49 Matrix: Ground Water

Sample ID: **CWMP003W** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			1/27/16 12:11	DD	J
Styrene	ND		ug/L	1.0	SW846 8260B			1/27/16 12:11	DD	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 12:11	DD	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 12:11	DD	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			1/27/16 12:11	DD	J
Toluene	ND		ug/L	1.0	SW846 8260B			1/27/16 12:11	DD	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			1/27/16 12:11	DD	J
1,2,4-Trichlorobenzene	ND		ug/L	2.0	SW846 8260B			1/27/16 12:11	DD	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 12:11	DD	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 12:11	DD	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			1/27/16 12:11	DD	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			1/27/16 12:11	DD	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			1/27/16 12:11	DD	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			1/27/16 12:11	DD	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			1/27/16 12:11	DD	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	99.4		%	62 - 133	SW846 8260B			1/27/16 12:11	DD	J
4-Bromofluorobenzene (S)	99.8		%	79 - 114	SW846 8260B			1/27/16 12:11	DD	J
Dibromofluoromethane (S)	89		%	78 - 116	SW846 8260B			1/27/16 12:11	DD	J
Toluene-d8 (S)	94.2		%	76 - 127	SW846 8260B			1/27/16 12:11	DD	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			11/27/16 12:11	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	17		mg/L	5	S2320B-97			1/22/16 03:49	MSA	A
Alkalinity, Total	17		mg/L	5	S2320B-97			1/22/16 03:49	MSA	A
Ammonia-N	ND		mg/L	0.100	D6919-09			1/22/16 16:14	JAM	C
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			1/31/16 00:30	JAM	C
Chloride	70.4		mg/L	2.0	EPA 300.0			1/23/16 08:47	MBW	B
Fluoride	ND		mg/L	0.20	EPA 300.0			1/23/16 08:47	MBW	B
Nitrate-N	9.0		mg/L	0.20	EPA 300.0			1/23/16 08:47	MBW	B
pH	6.02		pH_Units		S4500HB-00			1/22/16 03:49	MSA	A
Phenolics	ND		mg/L	0.01	SW846 9066	1/29/16	NV	1/29/16 13:51	AMH	I
Specific Conductance	341		umhos/cm	1	EPA 120.1			1/22/16 03:49	MSA	A
Sulfate	4.6		mg/L	2.0	EPA 300.0			1/23/16 08:47	MBW	B
Total Dissolved Solids	210		mg/L	5	S2540C-11			1/28/16 09:19	ML	B
Total Organic Carbon (TOC)	1.2		mg/L	1.0	S5310B-00			1/25/16 10:51	PAG	G

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794004** Date Collected: 1/21/2016 12:49 Matrix: Ground Water

Sample ID: **CWMP003W** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Turbidity	0.22		NTU	0.10	S2130B-01			1/21/16 23:10	MSA	B
METALS										
Arsenic, Total	ND		mg/L	0.0090	SW846 6010C	1/26/16	JPS	1/27/16 07:29	TSS	E2
Arsenic, Dissolved	ND		mg/L	0.0080	SW846 6010C	1/25/16	SRT	1/27/16 05:01	TSS	D
Barium, Total	0.016		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:29	TSS	E2
Barium, Dissolved	0.015		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 05:01	TSS	D
Cadmium, Total	ND		mg/L	0.0022	SW846 6010C	1/26/16	JPS	1/27/16 07:29	TSS	E2
Cadmium, Dissolved	ND		mg/L	0.0020	SW846 6010C	1/25/16	SRT	1/27/16 05:01	TSS	D
Calcium, Total	30.2		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:29	TSS	E2
Calcium, Dissolved	29.4		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 05:01	TSS	D
Chromium, Total	ND		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:29	TSS	E2
Chromium, Dissolved	ND		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 05:01	TSS	D
Copper, Total	ND		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:29	TSS	E2
Copper, Dissolved	ND		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 05:01	TSS	D
Iron, Total	ND		mg/L	0.067	SW846 6010C	1/26/16	JPS	1/27/16 07:29	TSS	E2
Iron, Dissolved	ND		mg/L	0.060	SW846 6010C	1/25/16	SRT	1/27/16 05:01	TSS	D
Lead, Total	ND		mg/L	0.0067	SW846 6010C	1/26/16	JPS	1/27/16 07:29	TSS	E2
Lead, Dissolved	ND		mg/L	0.0060	SW846 6010C	1/25/16	SRT	1/27/16 05:01	TSS	D
Magnesium, Total	9.9		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:29	TSS	E2
Magnesium, Dissolved	9.7		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 05:01	TSS	D
Manganese, Total	ND		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:29	TSS	E2
Manganese, Dissolved	ND		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 05:01	TSS	D
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	1/25/16	MNP	1/25/16 15:17	MNP	E1
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	2/1/16	MNP	2/1/16 12:33	MNP	D1
Potassium, Total	1.6		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:29	TSS	E2
Potassium, Dissolved	1.5		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 05:01	TSS	D
Selenium, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:29	TSS	E2
Selenium, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 05:01	TSS	D
Silver, Total	ND		mg/L	0.0044	SW846 6010C	1/26/16	JPS	1/27/16 07:29	TSS	E2
Silver, Dissolved	ND		mg/L	0.0040	SW846 6010C	1/25/16	SRT	1/27/16 05:01	TSS	D
Sodium, Total	17.8		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:29	TSS	E2
Sodium, Dissolved	17.4		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 05:01	TSS	D
Zinc, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:29	TSS	E2
Zinc, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 05:01	TSS	D
FIELD PARAMETERS										
Depth to Water Level	99.85		Feet		Field			1/21/16 12:49	CLT	F

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794004** Date Collected: 1/21/2016 12:49 Matrix: Ground Water

Sample ID: **CWMP003W** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
Elev Top MW Casing above MSL	524.21		Feet		Field		1/21/16 12:49	CLT	F
Ground Water Elevation	424.36		ft/MSL		Field		1/21/16 12:49	CLT	F
pH, Field (SM4500B)	5.64		pH_Units		Field		1/21/16 12:49	CLT	F
Sample Depth	100.00		Feet		Field		1/21/16 12:49	CLT	F
Specific Conductance, Field	394		umhos/cm	1	Field		1/21/16 12:49	CLT	F
Temperature	13.51		Deg. C		Field		1/21/16 12:49	CLT	F
Total Well Depth	140.00		Feet		Field		1/21/16 12:49	CLT	F

Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794005** Date Collected: 1/21/2016 13:02 Matrix: Ground Water

Sample ID: **CWMP004W** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
VOLATILE ORGANICS									
Acetone	ND		ug/L	10.0	SW846 8260B		1/27/16 12:33	DD	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B		1/27/16 12:33	DD	J
Benzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
Bromoform	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
Bromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
2-Butanone	ND		ug/L	10.0	SW846 8260B		1/27/16 12:33	DD	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
Chlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
Chloroethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
Chloroform	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
Chloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B		1/27/16 12:33	DD	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B		1/27/16 12:33	DD	J
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B		1/27/16 12:33	DD	J
Iodomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:33	DD	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B		1/27/16 12:33	DD	J

ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794005** Date Collected: 1/21/2016 13:02 Matrix: Ground Water

Sample ID: **CWMP004W** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			1/27/16 12:33	DD	J
Styrene	ND		ug/L	1.0	SW846 8260B			1/27/16 12:33	DD	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 12:33	DD	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 12:33	DD	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			1/27/16 12:33	DD	J
Toluene	ND		ug/L	1.0	SW846 8260B			1/27/16 12:33	DD	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			1/27/16 12:33	DD	J
1,2,4-Trichlorobenzene	ND		ug/L	2.0	SW846 8260B			1/27/16 12:33	DD	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 12:33	DD	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 12:33	DD	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			1/27/16 12:33	DD	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			1/27/16 12:33	DD	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			1/27/16 12:33	DD	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			1/27/16 12:33	DD	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			1/27/16 12:33	DD	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	100		%	62 - 133	SW846 8260B			1/27/16 12:33	DD	J
4-Bromofluorobenzene (S)	99.2		%	79 - 114	SW846 8260B			1/27/16 12:33	DD	J
Dibromofluoromethane (S)	87.4		%	78 - 116	SW846 8260B			1/27/16 12:33	DD	J
Toluene-d8 (S)	94.9		%	76 - 127	SW846 8260B			1/27/16 12:33	DD	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			11/27/16 12:33	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	25		mg/L	5	S2320B-97			1/22/16 03:57	MSA	A
Alkalinity, Total	25		mg/L	5	S2320B-97			1/22/16 03:57	MSA	A
Ammonia-N	ND		mg/L	0.100	D6919-09			1/30/16 13:33	JAM	C
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			1/31/16 00:30	JAM	C
Chloride	40.6		mg/L	2.0	EPA 300.0			1/23/16 08:59	MBW	B
Fluoride	ND		mg/L	0.20	EPA 300.0			1/23/16 08:59	MBW	B
Nitrate-N	7.4		mg/L	0.20	EPA 300.0			1/23/16 08:59	MBW	B
pH	6.21		pH_Units		S4500HB-00			1/22/16 03:57	MSA	A
Phenolics	ND		mg/L	0.01	SW846 9066	1/29/16	NV	1/29/16 13:52	AMH	I
Specific Conductance	242		umhos/cm	1	EPA 120.1			1/22/16 03:57	MSA	A
Sulfate	4.9		mg/L	2.0	EPA 300.0			1/23/16 08:59	MBW	B
Total Dissolved Solids	159		mg/L	5	S2540C-11			1/28/16 09:19	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	S5310B-00			1/25/16 10:51	PAG	G

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794005** Date Collected: 1/21/2016 13:02 Matrix: Ground Water

Sample ID: **CWMP004W** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Turbidity	0.21		NTU	0.10	S2130B-01			1/21/16 23:10	MSA	B
METALS										
Arsenic, Total	ND		mg/L	0.0090	SW846 6010C	1/26/16	JPS	1/27/16 07:33	TSS	E2
Arsenic, Dissolved	ND		mg/L	0.0080	SW846 6010C	1/25/16	SRT	1/27/16 05:05	TSS	D
Barium, Total	0.011		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:33	TSS	E2
Barium, Dissolved	0.011		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 05:05	TSS	D
Cadmium, Total	ND		mg/L	0.0022	SW846 6010C	1/26/16	JPS	1/27/16 07:33	TSS	E2
Cadmium, Dissolved	ND		mg/L	0.0020	SW846 6010C	1/25/16	SRT	1/27/16 05:05	TSS	D
Calcium, Total	22.2		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:33	TSS	E2
Calcium, Dissolved	21.5		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 05:05	TSS	D
Chromium, Total	ND		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:33	TSS	E2
Chromium, Dissolved	ND		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 05:05	TSS	D
Copper, Total	ND		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:33	TSS	E2
Copper, Dissolved	ND		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 05:05	TSS	D
Iron, Total	ND		mg/L	0.067	SW846 6010C	1/26/16	JPS	1/27/16 07:33	TSS	E2
Iron, Dissolved	ND		mg/L	0.060	SW846 6010C	1/25/16	SRT	1/27/16 05:05	TSS	D
Lead, Total	ND		mg/L	0.0067	SW846 6010C	1/26/16	JPS	1/27/16 07:33	TSS	E2
Lead, Dissolved	ND		mg/L	0.0060	SW846 6010C	1/25/16	SRT	1/27/16 05:05	TSS	D
Magnesium, Total	6.5		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:33	TSS	E2
Magnesium, Dissolved	6.4		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 05:05	TSS	D
Manganese, Total	0.0073		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:33	TSS	E2
Manganese, Dissolved	0.0072		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 05:05	TSS	D
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	1/25/16	MNP	1/25/16 15:18	MNP	E1
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	2/1/16	MNP	2/1/16 12:34	MNP	D1
Potassium, Total	1.3		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:33	TSS	E2
Potassium, Dissolved	1.3		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 05:05	TSS	D
Selenium, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:33	TSS	E2
Selenium, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 05:05	TSS	D
Silver, Total	ND		mg/L	0.0044	SW846 6010C	1/26/16	JPS	1/27/16 07:33	TSS	E2
Silver, Dissolved	ND		mg/L	0.0040	SW846 6010C	1/25/16	SRT	1/27/16 05:05	TSS	D
Sodium, Total	14.0		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:33	TSS	E2
Sodium, Dissolved	13.8		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 05:05	TSS	D
Zinc, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:33	TSS	E2
Zinc, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 05:05	TSS	D
FIELD PARAMETERS										
Depth to Water Level	130.54		Feet		Field			1/21/16 13:02	CLT	F

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794005** Date Collected: 1/21/2016 13:02 Matrix: Ground Water

Sample ID: **CWMP004W** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
Elev Top MW Casing above MSL	529.53		Feet		Field		1/21/16 13:02	CLT	F
Ground Water Elevation	398.99		ft/MSL		Field		1/21/16 13:02	CLT	F
pH, Field (SM4500B)	5.63		pH_Units		Field		1/21/16 13:02	CLT	F
Sample Depth	130.00		Feet		Field		1/21/16 13:02	CLT	F
Specific Conductance, Field	280		umhos/cm	1	Field		1/21/16 13:02	CLT	F
Temperature	13.01		Deg. C		Field		1/21/16 13:02	CLT	F
Total Well Depth	140.00		Feet		Field		1/21/16 13:02	CLT	F

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794006** Date Collected: 1/21/2016 13:55 Matrix: Ground Water

Sample ID: **Field Blank** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
VOLATILE ORGANICS									
Acetone	ND		ug/L	10.0	SW846 8260B		1/27/16 11:05	DD	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B		1/27/16 11:05	DD	J
Benzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
Bromoform	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
Bromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
2-Butanone	ND		ug/L	10.0	SW846 8260B		1/27/16 11:05	DD	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
Chlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
Chloroethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
Chloroform	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
Chloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B		1/27/16 11:05	DD	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B		1/27/16 11:05	DD	J
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B		1/27/16 11:05	DD	J
Iodomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:05	DD	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B		1/27/16 11:05	DD	J

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794006** Date Collected: 1/21/2016 13:55 Matrix: Ground Water

Sample ID: **Field Blank** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			1/27/16 11:05	DD	J
Styrene	ND		ug/L	1.0	SW846 8260B			1/27/16 11:05	DD	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 11:05	DD	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 11:05	DD	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			1/27/16 11:05	DD	J
Toluene	ND		ug/L	1.0	SW846 8260B			1/27/16 11:05	DD	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			1/27/16 11:05	DD	J
1,2,4-Trichlorobenzene	ND		ug/L	2.0	SW846 8260B			1/27/16 11:05	DD	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 11:05	DD	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 11:05	DD	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			1/27/16 11:05	DD	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			1/27/16 11:05	DD	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			1/27/16 11:05	DD	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			1/27/16 11:05	DD	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			1/27/16 11:05	DD	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	102		%	62 - 133	SW846 8260B			1/27/16 11:05	DD	J
4-Bromofluorobenzene (S)	101		%	79 - 114	SW846 8260B			1/27/16 11:05	DD	J
Dibromofluoromethane (S)	91.8		%	78 - 116	SW846 8260B			1/27/16 11:05	DD	J
Toluene-d8 (S)	95.7		%	76 - 127	SW846 8260B			1/27/16 11:05	DD	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			1/27/16 11:05	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	ND		mg/L	5	S2320B-97			1/22/16 04:06	MSA	A
Alkalinity, Total	ND		mg/L	5	S2320B-97			1/22/16 04:06	MSA	A
Ammonia-N	ND		mg/L	0.010	D6919-09			1/30/16 13:52	JAM	C
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			1/31/16 00:40	JAM	C
Chloride	ND		mg/L	1.0	EPA 300.0			1/23/16 09:24	MBW	B
Fluoride	ND		mg/L	0.10	EPA 300.0			1/23/16 09:24	MBW	B
Nitrate-N	ND		mg/L	0.10	EPA 300.0			1/23/16 09:24	MBW	B
pH	5.90		pH_Units		S4500HB-00			1/22/16 04:06	MSA	A
Phenolics	ND		mg/L	0.01	SW846 9066	1/25/16	NV	1/27/16 13:14	JLG	I
Specific Conductance	1		umhos/cm	1	EPA 120.1			1/27/16 01:27	MSA	A
Sulfate	ND		mg/L	1.0	EPA 300.0			1/23/16 09:24	MBW	B
Total Dissolved Solids	ND		mg/L	5	S2540C-11			1/28/16 09:19	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	S5310B-00			1/25/16 10:51	PAG	G

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794006** Date Collected: 1/21/2016 13:55 Matrix: Ground Water

Sample ID: **Field Blank** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Turbidity	ND		NTU	0.10	S2130B-01			1/21/16 23:10	MSA	B
METALS										
Arsenic, Total	ND		mg/L	0.0090	SW846 6010C	1/26/16	JPS	1/27/16 07:37	TSS	E2
Arsenic, Dissolved	ND		mg/L	0.0080	SW846 6010C	1/25/16	SRT	1/27/16 05:09	TSS	D
Barium, Total	ND		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:37	TSS	E2
Barium, Dissolved	ND		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 05:09	TSS	D
Cadmium, Total	ND		mg/L	0.0022	SW846 6010C	1/26/16	JPS	1/27/16 07:37	TSS	E2
Cadmium, Dissolved	ND		mg/L	0.0020	SW846 6010C	1/25/16	SRT	1/27/16 05:09	TSS	D
Calcium, Total	ND		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:37	TSS	E2
Calcium, Dissolved	ND		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 05:09	TSS	D
Chromium, Total	ND		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:37	TSS	E2
Chromium, Dissolved	ND		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 05:09	TSS	D
Copper, Total	ND		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:37	TSS	E2
Copper, Dissolved	ND		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 05:09	TSS	D
Iron, Total	ND		mg/L	0.067	SW846 6010C	1/26/16	JPS	1/27/16 07:37	TSS	E2
Iron, Dissolved	ND		mg/L	0.060	SW846 6010C	1/25/16	SRT	1/27/16 05:09	TSS	D
Lead, Total	ND		mg/L	0.0067	SW846 6010C	1/26/16	JPS	1/27/16 07:37	TSS	E2
Lead, Dissolved	ND		mg/L	0.0060	SW846 6010C	1/25/16	SRT	1/27/16 05:09	TSS	D
Magnesium, Total	ND		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:37	TSS	E2
Magnesium, Dissolved	ND		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 05:09	TSS	D
Manganese, Total	ND		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:37	TSS	E2
Manganese, Dissolved	ND		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 05:09	TSS	D
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	1/25/16	MNP	1/25/16 15:19	MNP	E1
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	2/1/16	MNP	2/1/16 12:35	MNP	D1
Potassium, Total	ND		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:37	TSS	E2
Potassium, Dissolved	ND		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 05:09	TSS	D
Selenium, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:37	TSS	E2
Selenium, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 05:09	TSS	D
Silver, Total	ND		mg/L	0.0044	SW846 6010C	1/26/16	JPS	1/27/16 07:37	TSS	E2
Silver, Dissolved	ND		mg/L	0.0040	SW846 6010C	1/25/16	SRT	1/27/16 05:09	TSS	D
Sodium, Total	ND		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:37	TSS	E2
Sodium, Dissolved	ND		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 05:09	TSS	D
Zinc, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:37	TSS	E2
Zinc, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 05:09	TSS	D

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794006** Date Collected: 1/21/2016 13:55 Matrix: Ground Water

Sample ID: **Field Blank** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*

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Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794007** Date Collected: 1/21/2016 16:08 Matrix: Ground Water

Sample ID: **Trip Blank** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
VOLATILE ORGANICS									
Acetone	ND		ug/L	10.0	SW846 8260B		1/27/16 11:27	DD	A
Acrylonitrile	ND		ug/L	5.0	SW846 8260B		1/27/16 11:27	DD	A
Benzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
Bromochloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
Bromoform	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
Bromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
2-Butanone	ND		ug/L	10.0	SW846 8260B		1/27/16 11:27	DD	A
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
Chlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
Chloroethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
Chloroform	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
Chloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B		1/27/16 11:27	DD	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
Dibromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B		1/27/16 11:27	DD	A
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
2-Hexanone	ND		ug/L	5.0	SW846 8260B		1/27/16 11:27	DD	A
Iodomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 11:27	DD	A
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B		1/27/16 11:27	DD	A

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794007** Date Collected: 1/21/2016 16:08 Matrix: Ground Water

Sample ID: **Trip Blank** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			1/27/16 11:27	DD	A
Styrene	ND		ug/L	1.0	SW846 8260B			1/27/16 11:27	DD	A
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 11:27	DD	A
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 11:27	DD	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			1/27/16 11:27	DD	A
Toluene	ND		ug/L	1.0	SW846 8260B			1/27/16 11:27	DD	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			1/27/16 11:27	DD	A
1,2,4-Trichlorobenzene	ND		ug/L	2.0	SW846 8260B			1/27/16 11:27	DD	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 11:27	DD	A
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 11:27	DD	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			1/27/16 11:27	DD	A
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			1/27/16 11:27	DD	A
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			1/27/16 11:27	DD	A
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			1/27/16 11:27	DD	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			1/27/16 11:27	DD	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	101		%	62 - 133	SW846 8260B			1/27/16 11:27	DD	A
4-Bromofluorobenzene (S)	103		%	79 - 114	SW846 8260B			1/27/16 11:27	DD	A
Dibromofluoromethane (S)	89.2		%	78 - 116	SW846 8260B			1/27/16 11:27	DD	A
Toluene-d8 (S)	95.8		%	76 - 127	SW846 8260B			1/27/16 11:27	DD	A
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			11/27/16 11:27	CPK	A

Ms. Susan J Scherer
Project Coordinator

ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794008** Date Collected: 1/21/2016 10:18 Matrix: Ground Water

Sample ID: **CWMP012W** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
VOLATILE ORGANICS									
Acetone	ND		ug/L	10.0	SW846 8260B		1/27/16 12:55	DD	J
Acrylonitrile	ND		ug/L	5.0	SW846 8260B		1/27/16 12:55	DD	J
Benzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
Bromochloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
Bromodichloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
Bromoform	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
Bromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
2-Butanone	ND		ug/L	10.0	SW846 8260B		1/27/16 12:55	DD	J
Carbon Disulfide	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
Carbon Tetrachloride	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
Chlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
Chlorodibromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
Chloroethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
Chloroform	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
Chloromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
3-Chloro-1-propene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
1,2-Dibromo-3-chloropropane	ND		ug/L	7.0	SW846 8260B		1/27/16 12:55	DD	J
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
Dibromomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
trans-1,4-Dichloro-2-butene	ND		ug/L	3.0	SW846 8260B		1/27/16 12:55	DD	J
1,2-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
1,3-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
1,4-Dichlorobenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
Dichlorodifluoromethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
1,1-Dichloroethane	1.6		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
1,2-Dichloropropane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
cis-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
trans-1,3-Dichloropropene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
Ethylbenzene	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
2-Hexanone	ND		ug/L	5.0	SW846 8260B		1/27/16 12:55	DD	J
Iodomethane	ND		ug/L	1.0	SW846 8260B		1/27/16 12:55	DD	J
4-Methyl-2-Pentanone(MIBK)	ND		ug/L	5.0	SW846 8260B		1/27/16 12:55	DD	J

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794008** Date Collected: 1/21/2016 10:18 Matrix: Ground Water

Sample ID: **CWMP012W** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			1/27/16 12:55	DD	J
Styrene	ND		ug/L	1.0	SW846 8260B			1/27/16 12:55	DD	J
1,1,1,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 12:55	DD	J
1,1,2,2-Tetrachloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 12:55	DD	J
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			1/27/16 12:55	DD	J
Toluene	ND		ug/L	1.0	SW846 8260B			1/27/16 12:55	DD	J
Total Xylenes	ND		ug/L	3.0	SW846 8260B			1/27/16 12:55	DD	J
1,2,4-Trichlorobenzene	ND		ug/L	2.0	SW846 8260B			1/27/16 12:55	DD	J
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 12:55	DD	J
1,1,2-Trichloroethane	ND		ug/L	1.0	SW846 8260B			1/27/16 12:55	DD	J
Trichloroethene	ND		ug/L	1.0	SW846 8260B			1/27/16 12:55	DD	J
Trichlorofluoromethane	ND		ug/L	1.0	SW846 8260B			1/27/16 12:55	DD	J
1,2,3-Trichloropropane	ND		ug/L	2.0	SW846 8260B			1/27/16 12:55	DD	J
Vinyl Acetate	ND		ug/L	5.0	SW846 8260B			1/27/16 12:55	DD	J
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			1/27/16 12:55	DD	J
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	101		%	62 - 133	SW846 8260B			1/27/16 12:55	DD	J
4-Bromofluorobenzene (S)	101		%	79 - 114	SW846 8260B			1/27/16 12:55	DD	J
Dibromofluoromethane (S)	88.8		%	78 - 116	SW846 8260B			1/27/16 12:55	DD	J
Toluene-d8 (S)	94.8		%	76 - 127	SW846 8260B			1/27/16 12:55	DD	J
LIBRARY SEARCH - VOLATILES										
No TIC's Detected	.				Lib Search VOC			11/27/16 12:55	CPK	J
WET CHEMISTRY										
Alkalinity, Bicarbonate	69		mg/L	5	S2320B-97			1/22/16 04:14	MSA	A
Alkalinity, Total	69		mg/L	5	S2320B-97			1/22/16 04:14	MSA	A
Ammonia-N	ND		mg/L	0.100	D6919-09			1/30/16 14:12	JAM	C
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			1/31/16 00:40	JAM	C
Chloride	37.5		mg/L	2.0	EPA 300.0			1/23/16 06:56	MBW	B
Fluoride	ND		mg/L	0.20	EPA 300.0			1/23/16 06:56	MBW	B
Nitrate-N	11.8		mg/L	0.20	EPA 300.0			1/23/16 06:56	MBW	B
pH	6.31		pH_Units		S4500HB-00			1/22/16 04:14	MSA	A
Phenolics	ND		mg/L	0.01	SW846 9066	1/25/16	NV	1/27/16 13:19	JLG	I
Specific Conductance	319		umhos/cm	1	EPA 120.1			1/22/16 04:14	MSA	A
Sulfate	4.3		mg/L	2.0	EPA 300.0			1/23/16 06:56	MBW	B
Total Dissolved Solids	218		mg/L	5	S2540C-11			1/28/16 09:19	ML	B
Total Organic Carbon (TOC)	3.2		mg/L	1.0	S5310B-00			1/25/16 10:51	PAG	G

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794008** Date Collected: 1/21/2016 10:18 Matrix: Ground Water

Sample ID: **CWMP012W** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Turbidity	233		NTU	0.10	S2130B-01			1/21/16 23:10	MSA	B
METALS										
Arsenic, Total	ND		mg/L	0.0090	SW846 6010C	1/26/16	JPS	1/27/16 07:41	TSS	E2
Arsenic, Dissolved	ND		mg/L	0.0080	SW846 6010C	1/25/16	SRT	1/27/16 05:12	TSS	D
Barium, Total	0.11		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:41	TSS	E2
Barium, Dissolved	0.084		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 05:12	TSS	D
Cadmium, Total	ND		mg/L	0.0022	SW846 6010C	1/26/16	JPS	1/27/16 07:41	TSS	E2
Cadmium, Dissolved	ND		mg/L	0.0020	SW846 6010C	1/25/16	SRT	1/27/16 05:12	TSS	D
Calcium, Total	36.4		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:41	TSS	E2
Calcium, Dissolved	34.7		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 05:12	TSS	D
Chromium, Total	ND		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:41	TSS	E2
Chromium, Dissolved	ND		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 05:12	TSS	D
Copper, Total	ND		mg/L	0.011	SW846 6010C	1/26/16	JPS	1/27/16 07:41	TSS	E2
Copper, Dissolved	ND		mg/L	0.010	SW846 6010C	1/25/16	SRT	1/27/16 05:12	TSS	D
Iron, Total	120		mg/L	0.067	SW846 6010C	1/26/16	JPS	1/27/16 07:41	TSS	E2
Iron, Dissolved	ND		mg/L	0.060	SW846 6010C	1/25/16	SRT	1/27/16 05:12	TSS	D
Lead, Total	ND		mg/L	0.0067	SW846 6010C	1/26/16	JPS	1/27/16 07:41	TSS	E2
Lead, Dissolved	ND		mg/L	0.0060	SW846 6010C	1/25/16	SRT	1/27/16 05:12	TSS	D
Magnesium, Total	9.8		mg/L	0.11	SW846 6010C	1/26/16	JPS	1/27/16 07:41	TSS	E2
Magnesium, Dissolved	9.6		mg/L	0.10	SW846 6010C	1/25/16	SRT	1/27/16 05:12	TSS	D
Manganese, Total	0.63		mg/L	0.0056	SW846 6010C	1/26/16	JPS	1/27/16 07:41	TSS	E2
Manganese, Dissolved	0.41		mg/L	0.0050	SW846 6010C	1/25/16	SRT	1/27/16 05:12	TSS	D
Mercury, Total	ND		mg/L	0.00050	SW846 7470A	1/25/16	MNP	1/25/16 15:21	MNP	E1
Mercury, Dissolved	ND		mg/L	0.00050	SW846 7470A	2/1/16	MNP	2/1/16 12:36	MNP	D1
Potassium, Total	1.4		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:41	TSS	E2
Potassium, Dissolved	1.4		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 05:12	TSS	D
Selenium, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:41	TSS	E2
Selenium, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 05:12	TSS	D
Silver, Total	ND		mg/L	0.0044	SW846 6010C	1/26/16	JPS	1/27/16 07:41	TSS	E2
Silver, Dissolved	ND		mg/L	0.0040	SW846 6010C	1/25/16	SRT	1/27/16 05:12	TSS	D
Sodium, Total	13.0		mg/L	0.56	SW846 6010C	1/26/16	JPS	1/27/16 07:41	TSS	E2
Sodium, Dissolved	12.7		mg/L	0.50	SW846 6010C	1/25/16	SRT	1/27/16 05:12	TSS	D
Zinc, Total	ND		mg/L	0.022	SW846 6010C	1/26/16	JPS	1/27/16 07:41	TSS	E2
Zinc, Dissolved	ND		mg/L	0.020	SW846 6010C	1/25/16	SRT	1/27/16 05:12	TSS	D
FIELD PARAMETERS										
Depth to Water Level	50.81		Feet		Field			1/21/16 10:18	BGS	F

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ANALYTICAL RESULTS

Workorder: 2119794 Annual CWMP Sampling

Lab ID: **2119794008** Date Collected: 1/21/2016 10:18 Matrix: Ground Water

Sample ID: **CWMP012W** Date Received: 1/21/2016 16:08

Parameters	Results	Flag	Units	RDL	Method	Prepared By	Analyzed	By	*Cntr*
pH, Field (SM4500B)	7.53		pH_Units		Field		1/21/16 10:18	BGS	F
Specific Conductance, Field	418		umhos/cm	1	Field		1/21/16 10:18	BGS	F
Temperature	11.00		Deg. C		Field		1/21/16 10:18	BGS	F

Ms. Susan J Scherer
Project Coordinator

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2119794001	1	CWMP018S	SW846 8260B	Iodomethane
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Iodomethane. The % Recovery was reported as 134 and the control limits were 37 to 128.				
2119794003	1	CWMP002W	SW846 8260B	1,1-Dichloroethene
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte 1,1-Dichloroethene. The % Recovery was reported as 145 and the control limits were 63 to 128.				
2119794003	2	CWMP002W	SW846 8260B	Iodomethane
The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Iodomethane. The % Recovery was reported as 134 and the control limits were 37 to 128.				

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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21197944

1 of 1

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

Client Name: Lancaster County Solid Waste MA
Address: 1299 Harrisburg Pike, P.O. Box 4424
Lancaster, PA 17604
Contact: Mark Reider
Phone#: (717) 735-0193
Project Name/#: Annual CWMP Sampling
Bill To: Lancaster County Solid Waste MA

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.
Date Required: _____ Approved By: _____
Email? [X] -Y mreider@LCSWMA.org
Fax? [X] -Y No.: (717) 397-9973

Container Type	AG	AN	CG	—	—	PL	PL	PL	PL	PL
Container Size	40 ml	500 ml	40 ml	—	—	500 ml	500 ml	500 ml	1 L	500 ml
Preservative	HCl	H2SO4	HCl	—	—	H2SO4	HNO3	HNO3	None	None

(Receiving Lab)

Cooler Temp: 4 Therm ID: 352
No. of Coolers: _____

	Y	N	Initial
Custody Seals Present?			
(if present) Seals Intact?			
Received on Ice?		✓	RB
COC/Labels Complete/Accurate?			
Cont. in Good Cond.?			
Correct Containers?			
Correct Sample Volumes?			
Correct Preservation?			
Headspace/Volatiles?			

Courier/Tracking #:

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	TOC	O-OH	VOC (Form 19A) + LS	*FM	Sample Depth for AUX Data	NH3-N, COD	Diss: Fe, Mn, Na, Ba, Cr, Cu, Pb, Mg, K, Zn, As, Cd, Se, Ag, Hg, Ca	Metals: Fe, Mn, Na, Ba, Cr, Cu, Pb, Mg, K, Zn, As, Cd, Se, Ag, Hg, Ca	pH, Cl, SpC, F, SO4, NO3, Tb, TDS	Alkalinity, HCO3	Sample/COC Comments
			Enter Number of Containers Per Sample or Field Results Below.											
1 CWMP01BS	1-21-16	1018	G	GW	2	1	2	X	X	1	1	1	1	1	
2 CWMP01RS		1042													
3 GWMP002W		1222													
4 CWMP003W		1249													
5 CWMP004W		1302													
6 Field Blank		1255													
7 Trip Blank		1608													
8 CWMP012W		1018			2	1		X	X	1	1	1	1	1	
9															
10															

ALS Field Services: ☐Pickup ☐Labor ☐Composite_Sampling ☐Rental_Equipment ☐Other: _____

Project Comments:

LOGGED BY(signature): _____ DATE 1-21-16 TIME 1953

REVIEWED BY(signature): _____ DATE _____ TIME _____

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [illegible] ALS	1-21-16	1608	2 [illegible]	1/21/16	1605
3			4		
5			6		
7			8		
9			10		

Data Deliverables: ☐Standard ☐CLP-like ☐USACE
Special Processing: USACE ☐ Navy ☐
State Samples Collected In: ☐NY ☐NJ ☒PA ☐NC

Reportable to PADEP? Yes ☐ PWSID # _____
Sample Disposal: Lab ☒ Special ☐
EDDS: Format Type- _____

* G=Grab; C=Composite **Matrix - Al=Air; DW=Drinking Water; GW=Groundwater; Oil=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS ENVIRONMENTAL SHIPPING ADDRESS: 34 DOGWOOD LANE, MIDDLETOWN, PA 17057

Rev 8/04