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

October 5, 2016

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

RE: Frey Farm Landfill (BWM Permit #101389)
Groundwater Monitoring; Forms 19 Submittal

Dear Ms. Sauls:

In accordance with the Municipal Waste Management Regulations, the Lancaster County Solid Waste Management Authority (LCSWMA) continues the above-referenced monitoring program.
Attached are the Forms 19, lab reports, and excel csv file for your LandLinks Access database. I have attached per your request:

1. USEPA MCL's exceedance report; samples 2, 3, 16, 23, 25, 27 & 28 exceeded the primary standard for nitrate, samples are consistent with historic data the cause is attributed to agricultural impacts (as well 2 our up gradient well shows our highest concentrations). No other MCL's were exceeded.

2. USEPA SMCL's exceedance report; samples 2, 3, 4, 16, 17, 18, 23, 26 & 30 exceeded the secondary standard for manganese, samples 13, 14, 15 & 30 exceeded the secondary standard for iron, samples 4, 5, 13, 26 & 30 exceeded the secondary standard for total dissolved solids, and samples 4 &30 exceeded the secondary standard for chlorides all samples are consistent with historic levels and exceedances are attributed to soil parent material, geologic conditions and historic land use. No other SMCL's were exceeded.

3. A copy of the field sampling data sheets for all locations.

Ground water monitoring concentrations where consistent with historic data no significant deviations where observed.

Please do not hesitate in contacting me if you have any questions or concerns at MREIDER@LCSWMA.ORG.

Respectfully Submitted,

Mark D. Reider
Director of Environmental Compliance

Enclosures:
cc: Bob Zorbaugh, Dan Brown, Bob Eshbach
Ed Rawski, Randy Weiss (PADEP)

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
09/22/2016
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: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP015W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 36.43 " — Longitude: 76 ° 27 ' 10.82 "

Depth to Water Level: 56.76 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.90 ft — Elevation of Water Level: 519.64 ft./MSL

Sampling Depth: 135 ft — Volume of Water Column: 135.32 gal

Total Well Depth: 148.9 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.4

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/18/2016 — Sample Collection Time: 10:15

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): 2168561001 — Final Lab Analysis CompletionDate: 8/31/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP015W
Sample Date	8/18/2016

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	D6919-09
BICARBONATE ALKALINITY	15	SM20-2320B
CALCIUM, TOTAL	8.2	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	7 ND	EPA 410.4
CHLORIDE	9.6	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	1300	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	8.2	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	22	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	7.4	EPA 300
pH-FIELD (SU)	5.8	FIELD
pH-LAB (SU)	6.49	SM20-4500HB
POTASSIUM, TOTAL	1.6	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	15.9	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	233	FIELD
SPEC. COND., LAB (umhos/cm)	195	SW846 9050A
SULFATE	36.6	EPA 300
ALKALINITY	15	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	146	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SW846 9060A
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	101389
Monitoring Point No.	FFMP015W
Sample Date	8/18/2016

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	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.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

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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: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP017W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 8.5 " — Longitude: 76 ° 27 ' 6.17 "

Depth to Water Level: 42.34 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.00 ft — Elevation of Water Level: 438.36 ft./MSL

Sampling Depth: 135 ft — Volume of Water Column: 158.85 gal

Total Well Depth: 150.5 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.2

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/18/2016 — Sample Collection Time: 12:10

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): 2168561002 — Final Lab Analysis CompletionDate: 8/31/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP017W
Sample Date	8/18/2016

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	D6919-09
BICARBONATE ALKALINITY	40	SM20-2320B
CALCIUM, TOTAL	69.4	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	9	EPA 410.4
CHLORIDE	231	EPA 300
FLUORIDE	0.5 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	30.6	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	270	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	2.3	EPA 300
pH-FIELD (SU)	5.57	FIELD
pH-LAB (SU)	6.51	SM20-4500HB
POTASSIUM, TOTAL	4	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	53.5	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1015	FIELD
SPEC. COND., LAB (umhos/cm)	976	SW846 9050A
SULFATE	60.9	EPA 300
ALKALINITY	40	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	137	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	2.7	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.29	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	101389
Monitoring Point No.	FFMP017W
Sample Date	8/18/2016

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	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.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
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FORM 19

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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: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP013W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 28.13 " — Longitude: 76 ° 27 ' 3.3 "

Depth to Water Level: 16.86 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.40 ft — Elevation of Water Level: 490.74 ft./MSL

Sampling Depth: 135 ft — Volume of Water Column: 197.00 gal

Total Well Depth: 151 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.0

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/18/2016 — Sample Collection Time: 13:51

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): 2168561003 — Final Lab Analysis CompletionDate: 8/31/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP013W
Sample Date	8/18/2016

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	D6919-09
BICARBONATE ALKALINITY	149	SM20-2320B
CALCIUM, TOTAL	96.5	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	7 ND	EPA 410.4
CHLORIDE	132	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	440	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	12	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	22	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	3.3	EPA 300
pH-FIELD (SU)	7.49	FIELD
pH-LAB (SU)	7.99	SM20-4500HB
POTASSIUM, TOTAL	1.2	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	44.7	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	882	FIELD
SPEC. COND., LAB (umhos/cm)	838	SW846 9050A
SULFATE	30.3	EPA 300
ALKALINITY	149	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	687	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	4.25	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	101389
Monitoring Point No.	FFMP013W
Sample Date	8/18/2016

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	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.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
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FORM 19

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SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP014W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 28.15 " — Longitude: 76 ° 27 ' 3.25 "

Depth to Water Level: 16.97 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.60 ft — Elevation of Water Level: 490.33 ft./MSL

Sampling Depth: 24.5 ft — Volume of Water Column: 8.24 gal

Total Well Depth: 29.6 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 6.4

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/18/2016 — Sample Collection Time: 14:06

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): 2168561004 — Final Lab Analysis CompletionDate: 8/31/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP014W
Sample Date	8/18/2016

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	D6919-09
BICARBONATE ALKALINITY	20	SM20-2320B
CALCIUM, TOTAL	24.1	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	7	EPA 410.4
CHLORIDE	94.9	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	340	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	13.8	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	18	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	5.3	EPA 300
pH-FIELD (SU)	5.3	FIELD
pH-LAB (SU)	6.13	SM20-4500HB
POTASSIUM, TOTAL	2	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	47.2	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	554	FIELD
SPEC. COND., LAB (umhos/cm)	530	SW846 9050A
SULFATE	39.7	EPA 300
ALKALINITY	20	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	334	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	3.4	SM 2130B

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T Please indicate detection limit if analyte is not detected.
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I.D. No	101389
Monitoring Point No.	FFMP014W
Sample Date	8/18/2016

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	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.

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Monitoring Point Number: FFMP027W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 32.62 " — Longitude: 76 ° 27 ' 7.12 "

Depth to Water Level: 21.33 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.50 ft — Elevation of Water Level: 500.77 ft./MSL

Sampling Depth: 45 ft — Volume of Water Column: 43.57 gal

Total Well Depth: 51 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 4.3

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/18/2016 — Sample Collection Time: 14:51

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): 2168561005 — Final Lab Analysis CompletionDate: 8/31/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP027W
Sample Date	8/18/2016

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	D6919-09
BICARBONATE ALKALINITY	9	SM20-2320B
CALCIUM, TOTAL	15.3	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	10	EPA 410.4
CHLORIDE	32.3	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	9.2	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	22	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	11.5	EPA 300
pH-FIELD (SU)	4.05	FIELD
pH-LAB (SU)	5.94	SM20-4500HB
POTASSIUM, TOTAL	1.3	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	10.1	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	260	FIELD
SPEC. COND., LAB (umhos/cm)	223	SW846 9050A
SULFATE	6.1	EPA 300
ALKALINITY	9	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	189	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SW846 9060A
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	101389
Monitoring Point No.	FFMP027W
Sample Date	8/18/2016

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	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.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
09/22/2016
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: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP024W — X Well ___ Spring ___ Stream ___ Other

X Upgradient/Upstream ___ Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 31.52 " — Longitude: 76 ° 27 ' 24.75 "

Depth to Water Level: 62.2 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 0.82 ft — Elevation of Water Level: 549.22 ft./MSL

Sampling Depth: 180.78 ft — Volume of Water Column: 203.58 gal

Total Well Depth: 200.82 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 0.7

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/19/2016 — Sample Collection Time: 11:36

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): 2168994001 — Final Lab Analysis CompletionDate: 8/31/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP024W
Sample Date	8/19/2016

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	D6919-09
BICARBONATE ALKALINITY	95	SM20-2320B
CALCIUM, TOTAL	27.3	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	7 ND	EPA 410.4
CHLORIDE	12.2	EPA 300
FLUORIDE	0.2	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	4.3	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	13	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	9.4	EPA 300
pH-FIELD (SU)	6.17	FIELD
pH-LAB (SU)	7.35	SM20-4500HB
POTASSIUM, TOTAL	0.99	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	36.3	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	370	FIELD
SPEC. COND., LAB (umhos/cm)	317	SW846 9050A
SULFATE	23.7	EPA 300
ALKALINITY	95	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	232	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.95	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	101389
Monitoring Point No.	FFMP024W
Sample Date	8/19/2016

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	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.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
09/22/2016
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: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP023W — X Well ___ Spring ___ Stream ___ Other

X Upgradient/Upstream ___ Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 31.62 " — Longitude: 76 ° 27 ' 24.05 "

Depth to Water Level: 61.61 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.50 ft — Elevation of Water Level: 550.19 ft./MSL

Sampling Depth: 79 ft — Volume of Water Column: 29.95 gal

Total Well Depth: 82 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.0

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/19/2016 — Sample Collection Time: 12:15

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): 2168994002 — Final Lab Analysis CompletionDate: 8/31/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP023W
Sample Date	8/19/2016

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	D6919-09
BICARBONATE ALKALINITY	5 ND	SM20-2320B
CALCIUM, TOTAL	9.9	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	7 ND	EPA 410.4
CHLORIDE	24.2	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	7.7	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	190	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	11.1	EPA 300
pH-FIELD (SU)	4.63	FIELD
pH-LAB (SU)	5.44	SM20-4500HB
POTASSIUM, TOTAL	1.1	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	8.3	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	204	FIELD
SPEC. COND., LAB (umhos/cm)	168	SW846 9050A
SULFATE	2 ND	EPA 300
ALKALINITY	5 ND	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	147	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SW846 9060A
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	101389
Monitoring Point No.	FFMP023W
Sample Date	8/19/2016

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	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.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
09/22/2016
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: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP002W — X Well ___ Spring ___ Stream ___ Other

X Upgradient/Upstream ___ Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 32.25 " — Longitude: 76 ° 27 ' 24.03 "

Depth to Water Level: 65.11 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.60 ft — Elevation of Water Level: 548.09 ft./MSL

Sampling Depth: 85 ft — Volume of Water Column: 153.46 gal

Total Well Depth: 169.6 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 0.8

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/19/2016 — Sample Collection Time: 12:54

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): 2168994003 — Final Lab Analysis CompletionDate: 8/31/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP002W
Sample Date	8/19/2016

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	D6919-09
BICARBONATE ALKALINITY	5 ND	SM20-2320B
CALCIUM, TOTAL	23.9	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	7 ND	EPA 410.4
CHLORIDE	21.6	EPA 300
FLUORIDE	0.5 ND	EPA 300
IRON, TOTAL (ug/l)	93	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	9.8	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	280	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	27.1	EPA 300
pH-FIELD (SU)	5.07	FIELD
pH-LAB (SU)	5.39	SM20-4500HB
POTASSIUM, TOTAL	1.3	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	14.4	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	348	FIELD
SPEC. COND., LAB (umhos/cm)	291	SW846 9050A
SULFATE	11	EPA 300
ALKALINITY	5 ND	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	239	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.28	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	101389
Monitoring Point No.	FFMP002W
Sample Date	8/19/2016

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	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.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
09/22/2016
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: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP029W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 12.93 " — Longitude: 76 ° 27 ' 0.67 "

Depth to Water Level: 39.74 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.00 ft — Elevation of Water Level: 437.56 ft./MSL

Sampling Depth: 55 ft — Volume of Water Column: 27.55 gal

Total Well Depth: 58.5 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 4.2

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/22/2016 — Sample Collection Time: 10:54

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): 2169248001 — Final Lab Analysis CompletionDate: 9/1/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP029W
Sample Date	8/22/2016

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	D6919-09
BICARBONATE ALKALINITY	10	SM20-2320B
CALCIUM, TOTAL	13.3	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	7 ND	EPA 410.4
CHLORIDE	56.6	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	8.5	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	26	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	3.8	EPA 300
pH-FIELD (SU)	4.44	FIELD
pH-LAB (SU)	6.12	SM20-4500HB
POTASSIUM, TOTAL	2	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	19.3	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	289	FIELD
SPEC. COND., LAB (umhos/cm)	238	SW846 9050A
SULFATE	7.1	EPA 300
ALKALINITY	10	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	181	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.14	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	101389
Monitoring Point No.	FFMP029W
Sample Date	8/22/2016

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	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.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
09/22/2016
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: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP028W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

Sampling Point — Latitude: 37 ° 57 ' 21.62 " — Longitude: 76 ° 27 ' 0.1 "

Depth to Water Level: 8.63 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.50 ft — Elevation of Water Level: 456.37 ft./MSL

Sampling Depth: 50 ft — Volume of Water Column: ___ gal

Total Well Depth: 60 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 2.5

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/22/2016 — Sample Collection Time: 12:14

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): 2169248002 — Final Lab Analysis CompletionDate: 9/1/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP028W
Sample Date	8/22/2016

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	D6919-09
BICARBONATE ALKALINITY	27	SM20-2320B
CALCIUM, TOTAL	40.6	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	7 ND	EPA 410.4
CHLORIDE	81.6	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	17.3	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	14	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	19.2	EPA 300
pH-FIELD (SU)	5.27	FIELD
pH-LAB (SU)	6.04	SM20-4500HB
POTASSIUM, TOTAL	2.1	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	25.7	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	590	FIELD
SPEC. COND., LAB (umhos/cm)	545	SW846 9050A
SULFATE	21.9	EPA 300
ALKALINITY	27	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	381	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.1	SW846 9060A
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	101389
Monitoring Point No.	FFMP028W
Sample Date	8/22/2016

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	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.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
09/22/2016
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: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP025W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 19.07 " — Longitude: 76 ° 27 ' 1.12 "

Depth to Water Level: 28.87 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.50 ft — Elevation of Water Level: 447.93 ft./MSL

Sampling Depth: 39 ft — Volume of Water Column: 16.35 gal

Total Well Depth: 40 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 5.1

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/22/2016 — Sample Collection Time: 12:53

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): 2169248003 — Final Lab Analysis CompletionDate: 9/1/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP025W
Sample Date	8/22/2016

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	D6919-09
BICARBONATE ALKALINITY	15	SM20-2320B
CALCIUM, TOTAL	28	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	7 ND	EPA 410.4
CHLORIDE	63.3	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	14.4	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	18	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	17.3	EPA 300
pH-FIELD (SU)	4.73	FIELD
pH-LAB (SU)	5.94	SM20-4500HB
POTASSIUM, TOTAL	2.1	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	20.2	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	445	FIELD
SPEC. COND., LAB (umhos/cm)	408	SW846 9050A
SULFATE	9.5	EPA 300
ALKALINITY	15	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	244	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.93	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	101389
Monitoring Point No.	FFMP025W
Sample Date	8/22/2016

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	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.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
09/22/2016
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: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP016W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 19.15 " — Longitude: 76 ° 27 ' 0.88 "

Depth to Water Level: 26.7 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.97 ft — Elevation of Water Level: 447.9 ft./MSL

Sampling Depth: 135 ft — Volume of Water Column: 180.79 gal

Total Well Depth: 149.8 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/22/2016 — Sample Collection Time: 13:15

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): 2169248004 — Final Lab Analysis CompletionDate: 9/1/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP016W
Sample Date	8/22/2016

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	D6919-09
BICARBONATE ALKALINITY	30	SM20-2320B
CALCIUM, TOTAL	46.5	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	7 ND	EPA 410.4
CHLORIDE	114	EPA 300
FLUORIDE	0.5 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	17.4	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	77	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	14.1	EPA 300
pH-FIELD (SU)	5.51	FIELD
pH-LAB (SU)	6.24	SM20-4500HB
POTASSIUM, TOTAL	2.1	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	32.8	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	637	FIELD
SPEC. COND., LAB (umhos/cm)	606	SW846 9050A
SULFATE	18	EPA 300
ALKALINITY	30	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	397	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.11	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	101389
Monitoring Point No.	FFMP016W
Sample Date	8/22/2016

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	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.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
09/22/2016
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: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP03AW — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 24.05 " — Longitude: 76 ° 27 ' 30.58 "

Depth to Water Level: 52.91 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.20 ft — Elevation of Water Level: 537.99 ft./MSL

Sampling Depth: 130 ft — Volume of Water Column: 138.48 gal

Total Well Depth: 147.2 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 0.9

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/22/2016 — Sample Collection Time: 14:50

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): 2169248005 — Final Lab Analysis CompletionDate: 9/1/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP03AW
Sample Date	8/22/2016

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	D6919-09
BICARBONATE ALKALINITY	14	SM20-2320B
CALCIUM, TOTAL	17.9	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	7 ND	EPA 410.4
CHLORIDE	24.1	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	11.9	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	220	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	21.1	EPA 300
pH-FIELD (SU)	5.24	FIELD
pH-LAB (SU)	5.79	SM20-4500HB
POTASSIUM, TOTAL	1.3	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	11.5	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	308	FIELD
SPEC. COND., LAB (umhos/cm)	260	SW846 9050A
SULFATE	3.2	EPA 300
ALKALINITY	14	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	190	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SW846 9060A
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	101389
Monitoring Point No.	FFMP03AW
Sample Date	8/22/2016

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	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.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
09/22/2016
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FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP30RW — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 15.52 " — Longitude: 76 ° 27 ' 26.8 "

Depth to Water Level: 36.47 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.20 ft — Elevation of Water Level: 525.83 ft./MSL

Sampling Depth: 85 ft — Volume of Water Column: 78.62 gal

Total Well Depth: 90 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.5

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/25/2016 — Sample Collection Time: 12:03

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): 2170213001 — Final Lab Analysis CompletionDate: 9/7/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP30RW
Sample Date	8/25/2016

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	D6919-09
BICARBONATE ALKALINITY	64	SM20-2320B
CALCIUM, TOTAL	63	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	16	EPA 410.4
CHLORIDE	291	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	18.3	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	3800	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	4.7	EPA 300
pH-FIELD (SU)	5.52	FIELD
pH-LAB (SU)	6.47	SM20-4500HB
POTASSIUM, TOTAL	7.2	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	122	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1232	FIELD
SPEC. COND., LAB (umhos/cm)	1210	SW846 9050A
SULFATE	42.2	EPA 300
ALKALINITY	64	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	737	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.3	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	1.53	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	101389
Monitoring Point No.	FFMP30RW
Sample Date	8/25/2016

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	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.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
09/22/2016
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: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP04AW — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 15.4 " — Longitude: 76 ° 27 ' 26.58 "

Depth to Water Level: 35.83 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.52 ft — Elevation of Water Level: 524.89 ft./MSL

Sampling Depth: 146 ft — Volume of Water Column: 390.21 gal

Total Well Depth: 301.52 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 0.7

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/25/2016 — Sample Collection Time: 13:17

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): 2170213002 — Final Lab Analysis CompletionDate: 9/7/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP04AW
Sample Date	8/25/2016

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	D6919-09
BICARBONATE ALKALINITY	188	SM20-2320B
CALCIUM, TOTAL	150	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	14	EPA 410.4
CHLORIDE	288	EPA 300
FLUORIDE	0.5 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	24.8	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	150	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	0.5 ND	EPA 300
pH-FIELD (SU)	6.33	FIELD
pH-LAB (SU)	7.6	SM20-4500HB
POTASSIUM, TOTAL	2	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	78.5	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1475	FIELD
SPEC. COND., LAB (umhos/cm)	1390	SW846 9050A
SULFATE	44.2	EPA 300
ALKALINITY	188	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	1110	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.65	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	101389
Monitoring Point No.	FFMP04AW
Sample Date	8/25/2016

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	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.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
09/22/2016
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: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP005W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 10.67 " — Longitude: 76 ° 27 ' 21.3 "

Depth to Water Level: 70.04 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.70 ft — Elevation of Water Level: 467.36 ft./MSL

Sampling Depth: 135 ft — Volume of Water Column: 117.43 gal

Total Well Depth: 150 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.0

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/25/2016 — Sample Collection Time: 14:46

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): 2170213003 — Final Lab Analysis CompletionDate: 9/7/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP005W
Sample Date	8/25/2016

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	D6919-09
BICARBONATE ALKALINITY	41	SM20-2320B
CALCIUM, TOTAL	69	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	12	EPA 410.4
CHLORIDE	164	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	15.8	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	40	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	3.5	EPA 300
pH-FIELD (SU)	5.29	FIELD
pH-LAB (SU)	6.24	SM20-4500HB
POTASSIUM, TOTAL	2.2	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	39.1	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	809	FIELD
SPEC. COND., LAB (umhos/cm)	764	SW846 9050A
SULFATE	46.4	EPA 300
ALKALINITY	41	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	571	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SW846 9060A
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	101389
Monitoring Point No.	FFMP005W
Sample Date	8/25/2016

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	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.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
09/22/2016
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: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP018W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 11.62 " — Longitude: 76 ° 27 ' 5.68 "

Depth to Water Level: 28.27 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.46 ft — Elevation of Water Level: 443.93 ft./MSL

Sampling Depth: 40 ft — Volume of Water Column: 15.12 gal

Total Well Depth: 51.43 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 3.1

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/26/2016 — Sample Collection Time: 10:11

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): 2170653001 — Final Lab Analysis CompletionDate: 9/8/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP018W
Sample Date	8/26/2016

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	D6919-09
BICARBONATE ALKALINITY	17	SM20-2320B
CALCIUM, TOTAL	35.2	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	7 ND	EPA 410.4
CHLORIDE	125	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	17.6	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	300	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	5.6	EPA 300
pH-FIELD (SU)	4.94	FIELD
pH-LAB (SU)	5.99	SM20-4500HB
POTASSIUM, TOTAL	4.6	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	42	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	659	FIELD
SPEC. COND., LAB (umhos/cm)	625	SW846 9050A
SULFATE	47.5	EPA 300
ALKALINITY	17	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	430	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.1	SW846 9060A
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	101389
Monitoring Point No.	FFMP018W
Sample Date	8/26/2016

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	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.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
09/22/2016
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: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP019W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 11.58 " — Longitude: 76 ° 27 ' 5.75 "

Depth to Water Level: 29.04 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.79 ft — Elevation of Water Level: 442.91 ft./MSL

Sampling Depth: 49 ft — Volume of Water Column: 67.72 gal

Total Well Depth: 132.79 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)?: ___ Yes X No

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/26/2016 — Sample Collection Time: 10:57

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): 2170653002 — Final Lab Analysis CompletionDate: 9/8/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP019W
Sample Date	8/26/2016

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	D6919-09
BICARBONATE ALKALINITY	61	SM20-2320B
CALCIUM, TOTAL	58	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	7 ND	EPA 410.4
CHLORIDE	74.6	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	5.5	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	5.6 ND	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	0.56	EPA 300
pH-FIELD (SU)	5.26	FIELD
pH-LAB (SU)	7.27	SM20-4500HB
POTASSIUM, TOTAL	1.1	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	9.7	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	461	FIELD
SPEC. COND., LAB (umhos/cm)	419	SW846 9050A
SULFATE	13.6	EPA 300
ALKALINITY	61	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	347	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SW846 9060A
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	101389
Monitoring Point No.	FFMP019W
Sample Date	8/26/2016

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	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.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
09/22/2016
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: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

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: FFMP26RW — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

Sampling Point — Latitude: 39 ° 57 ' 11.03 " — Longitude: 76 ° 27 ' 20.3 "

Depth to Water Level: 80.12 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 3.30 ft — Elevation of Water Level: 467.28 ft./MSL

Sampling Depth: 105 ft — Volume of Water Column: 49.76 gal

Total Well Depth: 114 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.4

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 8/26/2016 — Sample Collection Time: 12:30

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): 2170653003 — Final Lab Analysis CompletionDate: 9/8/2016

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP26RW
Sample Date	8/26/2016

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	D6919-09
BICARBONATE ALKALINITY	36	SM20-2320B
CALCIUM, TOTAL	65.7	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	7 ND	EPA 410.4
CHLORIDE	188	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	19	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	360	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	2.4	EPA 300
pH-FIELD (SU)	5.26	FIELD
pH-LAB (SU)	6	SM20-4500HB
POTASSIUM, TOTAL	7.1	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	56.6	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	930	FIELD
SPEC. COND., LAB (umhos/cm)	868	SW846 9050A
SULFATE	62.6	EPA 300
ALKALINITY	36	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	550	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.7	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.44	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	101389
Monitoring Point No.	FFMP26RW
Sample Date	8/26/2016

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	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.

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

September 1, 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-FREY FARM**	Workorder:	**2168561**
Purchase Order:		Workorder ID:	**3RD QTR 2016 GWMP-FORM 19Q**

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Thursday, August 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

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SAMPLE SUMMARY

Workorder: 2168561 3RD QTR 2016 GWMP-FORM 19Q

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2168561001	FFMP015W	Ground Water	8/18/2016 10:15	8/18/2016 16:23	Mr. Brian G Shade
2168561002	FFMP017W	Ground Water	8/18/2016 12:10	8/18/2016 16:23	Mr. Brian G Shade
2168561003	FFMP013W	Ground Water	8/18/2016 13:51	8/18/2016 16:23	Mr. Brian G Shade
2168561004	FFMP014W	Ground Water	8/18/2016 14:06	8/18/2016 16:23	Mr. Brian G Shade
2168561005	FFMP027W	Ground Water	8/18/2016 14:51	8/18/2016 16:23	Mr. Brian G Shade
2168561006	Field Blank	Ground Water	8/18/2016 15:05	8/18/2016 16:23	Mr. Brian G Shade
2168561007	Trip Blank	Ground Water	8/18/2016 16:23	8/18/2016 16:23	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 2168561 3RD QTR 2016 GWMP-FORM 19Q

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”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incurbator and the "Analyzed" value is the date/time out the incubator.

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: 2168561 3RD QTR 2016 GWMP-FORM 19Q

Workorder Comments

See attached subcontracted total phenolics by SW 9066 results from ALS Holland. SSL 08/30/16

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ANALYTICAL RESULTS

Workorder: 2168561 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168561001** Date Collected: 8/18/2016 10:15 Matrix: Ground Water

Sample ID: **FFMP015W** Date Received: 8/18/2016 16:23

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:53	TMP	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/26/16 16:53	TMP	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 16:53	TMP	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 16:53	TMP	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:53	TMP	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:53	TMP	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:53	TMP	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:53	TMP	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/26/16 16:53	TMP	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:53	TMP	H
Toluene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:53	TMP	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/26/16 16:53	TMP	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 16:53	TMP	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:53	TMP	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/26/16 16:53	TMP	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	119		%	62 - 133	SW846 8260B			8/26/16 16:53	TMP	H
4-Bromofluorobenzene (S)	100		%	79 - 114	SW846 8260B			8/26/16 16:53	TMP	H
Dibromofluoromethane (S)	84.1		%	78 - 116	SW846 8260B			8/26/16 16:53	TMP	H
Toluene-d8 (S)	90.8		%	76 - 127	SW846 8260B			8/26/16 16:53	TMP	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	15		mg/L	5	S2320B-97			8/19/16 20:38	REA	B
Alkalinity, Total	15	2	mg/L	5	S2320B-97			8/19/16 20:38	REA	B
Ammonia-N	ND		mg/L	0.100	D6919-09			8/27/16 08:42	CMM	A
Chemical Oxygen Demand (COD)	ND		mg/L	7	EPA 410.4			8/28/16 13:32	AK	A
Chloride	9.6		mg/L	2.0	EPA 300.0			8/19/16 09:21	MBW	B
Fluoride	ND		mg/L	0.20	EPA 300.0			8/19/16 09:21	MBW	B
Nitrate-N	7.4		mg/L	0.20	EPA 300.0			8/19/16 09:21	MBW	B
pH	6.49	1	pH_Units		SM4500B			8/19/16 20:38	REA	B
Specific Conductance	195		umhos/cm	1	SW846 9050A			8/19/16 20:38	REA	B
Sulfate	36.6		mg/L	2.0	EPA 300.0			8/19/16 09:21	MBW	B
Total Dissolved Solids	146	3	mg/L	5	S2540C-11			8/28/16 09:57	ML	J
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			8/26/16 18:21	PAG	E
Turbidity	ND		NTU	0.10	S2130B-01			8/20/16 02:10	GMM	B

Sub'd-ALSH Labs Cert 68-03827

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ANALYTICAL RESULTS

Workorder: 2168561 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168561001** Date Collected: 8/18/2016 10:15 Matrix: Ground Water

Sample ID: **FFMP015W** Date Received: 8/18/2016 16:23

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			8/30/16 10:15	SUB	G
METALS										
Calcium, Total	8.2		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:25	TSS	C1
Iron, Total	1.3		mg/L	0.067	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:25	TSS	C1
Magnesium, Total	8.2		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:25	TSS	C1
Manganese, Total	0.022		mg/L	0.0056	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:25	TSS	C1
Potassium, Total	1.6		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:25	TSS	C1
Sodium, Total	15.9		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:25	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	56.760		Feet		Field			8/18/16 10:15	BGS	D
Elev Top MW Casing above MSL	576.40		Feet		Field			8/18/16 10:15	BGS	D
Flow Rate	2.11		gal/min		Field			8/18/16 10:15	BGS	D
Ground Water Elevation	519.640		ft/MSL		Field			8/18/16 10:15	BGS	D
pH, Field (SM4500B)	5.800		pH_Units		Field			8/18/16 10:15	BGS	D
Sample Depth	135.000		Feet		Field			8/18/16 10:15	BGS	D
Specific Conductance, Field	233		umhos/cm	1	Field			8/18/16 10:15	BGS	D
Temperature	12.31		Deg. C		Field			8/18/16 10:15	BGS	D
Total Well Depth	149.900		Feet		Field			8/18/16 10:15	BGS	D
Volume in Water Column	136.916		Gallons		Field			8/18/16 10:15	BGS	D
Water Level After Purge	95.830		Feet		Field			8/18/16 10:15	BGS	D
Well Volumes Purged	1.38		Vol		Field			8/18/16 10:15	BGS	D

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

ALS Environmental

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ANALYTICAL RESULTS

Workorder: 2168561 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168561002** Date Collected: 8/18/2016 12:10 Matrix: Ground Water

Sample ID: **FFMP017W** Date Received: 8/18/2016 16:23

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/26/16 17:15	TMP	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/26/16 17:15	TMP	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 17:15	TMP	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 17:15	TMP	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 17:15	TMP	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 17:15	TMP	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 17:15	TMP	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/26/16 17:15	TMP	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/26/16 17:15	TMP	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 17:15	TMP	H
Toluene	ND		ug/L	1.0	SW846 8260B			8/26/16 17:15	TMP	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/26/16 17:15	TMP	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 17:15	TMP	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 17:15	TMP	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/26/16 17:15	TMP	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	119		%	62 - 133	SW846 8260B			8/26/16 17:15	TMP	H
4-Bromofluorobenzene (S)	99		%	79 - 114	SW846 8260B			8/26/16 17:15	TMP	H
Dibromofluoromethane (S)	84.6		%	78 - 116	SW846 8260B			8/26/16 17:15	TMP	H
Toluene-d8 (S)	89.3		%	76 - 127	SW846 8260B			8/26/16 17:15	TMP	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	40		mg/L	5	S2320B-97			8/19/16 21:21	REA	B
Alkalinity, Total	40	2	mg/L	5	S2320B-97			8/19/16 21:21	REA	B
Ammonia-N	ND		mg/L	0.100	D6919-09			8/27/16 09:02	CMM	A
Chemical Oxygen Demand (COD)	9		mg/L	7	EPA 410.4			8/28/16 13:32	AK	A
Chloride	231		mg/L	5.0	EPA 300.0			8/19/16 09:34	MBW	B
Fluoride	ND		mg/L	0.50	EPA 300.0			8/19/16 09:34	MBW	B
Nitrate-N	2.3		mg/L	0.50	EPA 300.0			8/19/16 09:34	MBW	B
pH	6.51	1	pH_Units		SM4500B			8/19/16 21:21	REA	B
Specific Conductance	976		umhos/cm	1	SW846 9050A			8/19/16 21:21	REA	B
Sulfate	60.9		mg/L	5.0	EPA 300.0			8/19/16 09:34	MBW	B
Total Dissolved Solids	137		mg/L	5	S2540C-11			8/23/16 10:00	KAM	J
Total Organic Carbon (TOC)	2.7		mg/L	1.0	SW846 9060A			8/26/16 18:21	PAG	E
Turbidity	0.29		NTU	0.10	S2130B-01			8/20/16 02:10	GMM	B

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ANALYTICAL RESULTS

Workorder: 2168561 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168561002** Date Collected: 8/18/2016 12:10 Matrix: Ground Water

Sample ID: **FFMP017W** Date Received: 8/18/2016 16:23

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			8/30/16 10:15	SUB	G
METALS										
Calcium, Total	69.4		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:36	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:36	TSS	C1
Magnesium, Total	30.6		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:36	TSS	C1
Manganese, Total	0.27		mg/L	0.0056	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:36	TSS	C1
Potassium, Total	4.0		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:36	TSS	C1
Sodium, Total	53.5		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:36	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	42.340		Feet		Field			8/18/16 12:10	BGS	D
Elev Top MW Casing above MSL	480.70		Feet		Field			8/18/16 12:10	BGS	D
Flow Rate	2.13		gal/min		Field			8/18/16 12:10	BGS	D
Ground Water Elevation	438.360		ft/MSL		Field			8/18/16 12:10	BGS	D
pH, Field (SM4500B)	5.570		pH_Units		Field			8/18/16 12:10	BGS	D
Sample Depth	135.000		Feet		Field			8/18/16 12:10	BGS	D
Specific Conductance, Field	1015		umhos/cm	1	Field			8/18/16 12:10	BGS	D
Temperature	11.69		Deg. C		Field			8/18/16 12:10	BGS	D
Total Well Depth	150.500		Feet		Field			8/18/16 12:10	BGS	D
Volume in Water Column	158.995		Gallons		Field			8/18/16 12:10	BGS	D
Water Level After Purge	48.920		Feet		Field			8/18/16 12:10	BGS	D
Well Volumes Purged	1.20		Vol		Field			8/18/16 12:10	BGS	D

Susan J. Scherer

Ms. Susan J Scherer
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ANALYTICAL RESULTS

Workorder: 2168561 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168561003** Date Collected: 8/18/2016 13:51 Matrix: Ground Water

Sample ID: **FFMP013W** Date Received: 8/18/2016 16:23

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/26/16 17:38	TMP	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/26/16 17:38	TMP	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 17:38	TMP	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 17:38	TMP	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 17:38	TMP	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 17:38	TMP	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 17:38	TMP	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/26/16 17:38	TMP	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/26/16 17:38	TMP	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 17:38	TMP	H
Toluene	ND		ug/L	1.0	SW846 8260B			8/26/16 17:38	TMP	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/26/16 17:38	TMP	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 17:38	TMP	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 17:38	TMP	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/26/16 17:38	TMP	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	119		%	62 - 133	SW846 8260B			8/26/16 17:38	TMP	H
4-Bromofluorobenzene (S)	101		%	79 - 114	SW846 8260B			8/26/16 17:38	TMP	H
Dibromofluoromethane (S)	83.4		%	78 - 116	SW846 8260B			8/26/16 17:38	TMP	H
Toluene-d8 (S)	91		%	76 - 127	SW846 8260B			8/26/16 17:38	TMP	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	149		mg/L	5	S2320B-97			8/19/16 21:30	REA	B
Alkalinity, Total	149	2	mg/L	5	S2320B-97			8/19/16 21:30	REA	B
Ammonia-N	ND		mg/L	0.100	D6919-09			8/27/16 09:21	CMM	A
Chemical Oxygen Demand (COD)	ND		mg/L	7	EPA 410.4			8/28/16 13:32	AK	A
Chloride	132		mg/L	2.0	EPA 300.0			8/19/16 11:08	MBW	B
Fluoride	ND		mg/L	0.20	EPA 300.0			8/19/16 11:08	MBW	B
Nitrate-N	3.3		mg/L	0.20	EPA 300.0			8/19/16 11:08	MBW	B
pH	7.99	1	pH_Units		SM4500B			8/19/16 21:30	REA	B
Specific Conductance	838		umhos/cm	1	SW846 9050A			8/19/16 21:30	REA	B
Sulfate	30.3		mg/L	2.0	EPA 300.0			8/19/16 11:08	MBW	B
Total Dissolved Solids	687		mg/L	5	S2540C-11			8/23/16 10:00	KAM	J
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			8/26/16 18:21	PAG	E
Turbidity	4.25		NTU	0.10	S2130B-01			8/20/16 02:10	GMM	B

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ANALYTICAL RESULTS

Workorder: 2168561 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168561003** Date Collected: 8/18/2016 13:51 Matrix: Ground Water

Sample ID: **FFMP013W** Date Received: 8/18/2016 16:23

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			8/30/16 10:15	SUB	G
METALS										
Calcium, Total	96.5		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:40	TSS	C1
Iron, Total	0.44		mg/L	0.067	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:40	TSS	C1
Magnesium, Total	12.0		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:40	TSS	C1
Manganese, Total	0.022		mg/L	0.0056	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:40	TSS	C1
Potassium, Total	1.2		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:40	TSS	C1
Sodium, Total	44.7		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:40	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	16.860		Feet		Field			8/18/16 13:51	BGS	D
Elev Top MW Casing above MSL	507.60		Feet		Field			8/18/16 13:51	BGS	D
Flow Rate	2.52		gal/min		Field			8/18/16 13:51	BGS	D
Ground Water Elevation	490.740		ft/MSL		Field			8/18/16 13:51	BGS	D
pH, Field (SM4500B)	7.490		pH_Units		Field			8/18/16 13:51	BGS	D
Sample Depth	135.000		Feet		Field			8/18/16 13:51	BGS	D
Specific Conductance, Field	882		umhos/cm	1	Field			8/18/16 13:51	BGS	D
Temperature	14.08		Deg. C		Field			8/18/16 13:51	BGS	D
Total Well Depth	150.500		Feet		Field			8/18/16 13:51	BGS	D
Volume in Water Column	196.451		Gallons		Field			8/18/16 13:51	BGS	D
Water Level After Purge	87.370		Feet		Field			8/18/16 13:51	BGS	D
Well Volumes Purged	1.03		Vol		Field			8/18/16 13:51	BGS	D

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ANALYTICAL RESULTS

Workorder: 2168561 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168561004** Date Collected: 8/18/2016 14:06 Matrix: Ground Water

Sample ID: **FFMP014W** Date Received: 8/18/2016 16:23

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/26/16 18:00	TMP	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/26/16 18:00	TMP	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 18:00	TMP	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 18:00	TMP	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 18:00	TMP	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 18:00	TMP	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 18:00	TMP	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/26/16 18:00	TMP	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/26/16 18:00	TMP	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 18:00	TMP	H
Toluene	ND		ug/L	1.0	SW846 8260B			8/26/16 18:00	TMP	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/26/16 18:00	TMP	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 18:00	TMP	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 18:00	TMP	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/26/16 18:00	TMP	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	114		%	62 - 133	SW846 8260B			8/26/16 18:00	TMP	H
4-Bromofluorobenzene (S)	99.4		%	79 - 114	SW846 8260B			8/26/16 18:00	TMP	H
Dibromofluoromethane (S)	83		%	78 - 116	SW846 8260B			8/26/16 18:00	TMP	H
Toluene-d8 (S)	90.7		%	76 - 127	SW846 8260B			8/26/16 18:00	TMP	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	20		mg/L	5	S2320B-97			8/19/16 21:39	REA	B
Alkalinity, Total	20	3	mg/L	5	S2320B-97			8/19/16 21:39	REA	B
Ammonia-N	ND		mg/L	0.100	D6919-09			8/27/16 09:40	CMM	A
Chemical Oxygen Demand (COD)	7		mg/L	7	EPA 410.4			8/28/16 13:32	AK	A
Chloride	94.9		mg/L	2.0	EPA 300.0			8/19/16 11:22	MBW	B
Fluoride	ND		mg/L	0.20	EPA 300.0			8/19/16 11:22	MBW	B
Nitrate-N	5.3		mg/L	0.20	EPA 300.0			8/19/16 11:22	MBW	B
pH	6.13	1	pH_Units		SM4500B			8/19/16 21:39	REA	B
Specific Conductance	530		umhos/cm	1	SW846 9050A			8/19/16 21:39	REA	B
Sulfate	39.7		mg/L	2.0	EPA 300.0			8/19/16 11:22	MBW	B
Total Dissolved Solids	334	2	mg/L	5	S2540C-11			8/23/16 10:00	KAM	J
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			8/26/16 18:21	PAG	E
Turbidity	3.40		NTU	0.10	S2130B-01			8/20/16 02:10	GMM	B

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ANALYTICAL RESULTS

Workorder: 2168561 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168561004** Date Collected: 8/18/2016 14:06 Matrix: Ground Water

Sample ID: **FFMP014W** Date Received: 8/18/2016 16:23

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			8/30/16 10:15	SUB	G
METALS										
Calcium, Total	24.1		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:55	TSS	C1
Iron, Total	0.34		mg/L	0.067	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:55	TSS	C1
Magnesium, Total	13.8		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:55	TSS	C1
Manganese, Total	0.018		mg/L	0.0056	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:55	TSS	C1
Potassium, Total	2.0		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:55	TSS	C1
Sodium, Total	47.2		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:55	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	16.970		Feet		Field			8/18/16 14:06	BGS	D
Elev Top MW Casing above MSL	507.30		Feet		Field			8/18/16 14:06	BGS	D
Flow Rate	5.27		gal/min		Field			8/18/16 14:06	BGS	D
Ground Water Elevation	490.330		ft/MSL		Field			8/18/16 14:06	BGS	D
pH, Field (SM4500B)	5.300		pH_Units		Field			8/18/16 14:06	BGS	D
Sample Depth	24.500		Feet		Field			8/18/16 14:06	BGS	D
Specific Conductance, Field	554		umhos/cm	1	Field			8/18/16 14:06	BGS	D
Temperature	11.72		Deg. C		Field			8/18/16 14:06	BGS	D
Total Well Depth	29.600		Feet		Field			8/18/16 14:06	BGS	D
Volume in Water Column	8.210		Gallons		Field			8/18/16 14:06	BGS	D
Water Level After Purge	18.310		Feet		Field			8/18/16 14:06	BGS	D
Well Volumes Purged	6.42		Vol		Field			8/18/16 14:06	BGS	D

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ANALYTICAL RESULTS

Workorder: 2168561 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168561005** Date Collected: 8/18/2016 14:51 Matrix: Ground Water

Sample ID: **FFMP027W** Date Received: 8/18/2016 16:23

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/26/16 18:22	TMP	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/26/16 18:22	TMP	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 18:22	TMP	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 18:22	TMP	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 18:22	TMP	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 18:22	TMP	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 18:22	TMP	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/26/16 18:22	TMP	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/26/16 18:22	TMP	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 18:22	TMP	H
Toluene	ND		ug/L	1.0	SW846 8260B			8/26/16 18:22	TMP	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/26/16 18:22	TMP	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 18:22	TMP	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 18:22	TMP	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/26/16 18:22	TMP	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	118		%	62 - 133	SW846 8260B			8/26/16 18:22	TMP	H
4-Bromofluorobenzene (S)	99.1		%	79 - 114	SW846 8260B			8/26/16 18:22	TMP	H
Dibromofluoromethane (S)	82.1		%	78 - 116	SW846 8260B			8/26/16 18:22	TMP	H
Toluene-d8 (S)	90.9		%	76 - 127	SW846 8260B			8/26/16 18:22	TMP	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	9		mg/L	5	S2320B-97			8/19/16 21:48	REA	B
Alkalinity, Total	9	2	mg/L	5	S2320B-97			8/19/16 21:48	REA	B
Ammonia-N	ND		mg/L	0.100	D6919-09			8/27/16 10:00	CMM	A
Chemical Oxygen Demand (COD)	10		mg/L	7	EPA 410.4			8/28/16 13:32	AK	A
Chloride	32.3		mg/L	2.0	EPA 300.0			8/19/16 11:35	MBW	B
Fluoride	ND		mg/L	0.20	EPA 300.0			8/19/16 11:35	MBW	B
Nitrate-N	11.5		mg/L	0.20	EPA 300.0			8/19/16 11:35	MBW	B
pH	5.94	1	pH_Units		SM4500B			8/19/16 21:48	REA	B
Specific Conductance	223		umhos/cm	1	SW846 9050A			8/19/16 21:48	REA	B
Sulfate	6.1		mg/L	2.0	EPA 300.0			8/19/16 11:35	MBW	B
Total Dissolved Solids	189	3	mg/L	5	S2540C-11			8/28/16 09:57	ML	J
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			8/26/16 18:21	PAG	E
Turbidity	ND		NTU	0.10	S2130B-01			8/20/16 02:10	GMM	B

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ANALYTICAL RESULTS

Workorder: 2168561 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168561005** Date Collected: 8/18/2016 14:51 Matrix: Ground Water

Sample ID: **FFMP027W** Date Received: 8/18/2016 16:23

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			8/30/16 10:15	SUB	G
METALS										
Calcium, Total	15.3		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:58	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:58	TSS	C1
Magnesium, Total	9.2		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:58	TSS	C1
Manganese, Total	0.022		mg/L	0.0056	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:58	TSS	C1
Potassium, Total	1.3		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:58	TSS	C1
Sodium, Total	10.1		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:58	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	21.330		Feet		Field			8/18/16 14:56	BGS	D
Elev Top MW Casing above MSL	522.10		Feet		Field			8/18/16 14:56	BGS	D
Flow Rate	5.84		gal/min		Field			8/18/16 14:56	BGS	D
Ground Water Elevation	500.770		ft/MSL		Field			8/18/16 14:56	BGS	D
pH, Field (SM4500B)	4.050		pH_Units		Field			8/18/16 14:56	BGS	D
Sample Depth	45.000		Feet		Field			8/18/16 14:56	BGS	D
Specific Conductance, Field	260		umhos/cm	1	Field			8/18/16 14:56	BGS	D
Temperature	14.21		Deg. C		Field			8/18/16 14:56	BGS	D
Total Well Depth	53.500		Feet		Field			8/18/16 14:56	BGS	D
Volume in Water Column	47.290		Gallons		Field			8/18/16 14:56	BGS	D
Water Level After Purge	21.800		Feet		Field			8/18/16 14:56	BGS	D
Well Volumes Purged	4.32		Vol		Field			8/18/16 14:56	BGS	D

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

ANALYTICAL RESULTS

Workorder: 2168561 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168561006** Date Collected: 8/18/2016 15:05 Matrix: Ground Water

Sample ID: **Field Blank** Date Received: 8/18/2016 16:23

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:31	TMP	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/26/16 16:31	TMP	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 16:31	TMP	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 16:31	TMP	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:31	TMP	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:31	TMP	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:31	TMP	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:31	TMP	A
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/26/16 16:31	TMP	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:31	TMP	A
Toluene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:31	TMP	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/26/16 16:31	TMP	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 16:31	TMP	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:31	TMP	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/26/16 16:31	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	118		%	62 - 133	SW846 8260B			8/26/16 16:31	TMP	A
4-Bromofluorobenzene (S)	98.2		%	79 - 114	SW846 8260B			8/26/16 16:31	TMP	A
Dibromofluoromethane (S)	84		%	78 - 116	SW846 8260B			8/26/16 16:31	TMP	A
Toluene-d8 (S)	93.3		%	76 - 127	SW846 8260B			8/26/16 16:31	TMP	A

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

ANALYTICAL RESULTS

Workorder: 2168561 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168561007** Date Collected: 8/18/2016 16:23 Matrix: Ground Water

Sample ID: **Trip Blank** Date Received: 8/18/2016 16:23

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:09	TMP	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/26/16 16:09	TMP	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 16:09	TMP	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 16:09	TMP	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:09	TMP	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:09	TMP	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:09	TMP	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:09	TMP	A
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/26/16 16:09	TMP	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:09	TMP	A
Toluene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:09	TMP	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/26/16 16:09	TMP	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/26/16 16:09	TMP	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/26/16 16:09	TMP	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/26/16 16:09	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	114		%	62 - 133	SW846 8260B			8/26/16 16:09	TMP	A
4-Bromofluorobenzene (S)	99.3		%	79 - 114	SW846 8260B			8/26/16 16:09	TMP	A
Dibromofluoromethane (S)	82.4		%	78 - 116	SW846 8260B			8/26/16 16:09	TMP	A
Toluene-d8 (S)	88.8		%	76 - 127	SW846 8260B			8/26/16 16:09	TMP	A

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2168561001	1	FFMP015W	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2168561001	2	FFMP015W	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2168561001	3	FFMP015W	S2540C-11	Total Dissolved Solids
The sample was originally run within hold time, but required further analysis that exceeded hold time.				
2168561002	1	FFMP017W	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2168561002	2	FFMP017W	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2168561003	1	FFMP013W	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2168561003	2	FFMP013W	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2168561004	1	FFMP014W	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2168561004	2	FFMP014W	S2540C-11	Total Dissolved Solids
The RPD associated with this sample was recovered at 12%. The RPD is outside method acceptance limits of 0-5%. The results used to calculate the RPD were 334 and 377.				
2168561004	3	FFMP014W	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2168561005	1	FFMP027W	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2168561005	2	FFMP027W	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2168561005	3	FFMP027W	S2540C-11	Total Dissolved Solids
The sample was originally run within hold time, but required further analysis that exceeded hold time.				

SS
Generated by ALS

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

COC #

ALS Q

1 of 1

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

ALS Environmental
34 Dogwood Lane • Middletown, PA 17057 • 717.944.5541 • Fax: 717.944.1430

* 2168561 *

Client Name: Lancaster County Solid Waste MA

Address: 1299 Harrisburg Pike, P.O. Box 4424
Lancaster, PA 17604

Contact: ~~Brooke Norris~~ Mark Reider

Phone#: (717) 397-9968

Project Name/#: Frey Farm Quarterly

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 ~~bnorris@LCSWMA.com~~

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

Container Type	AV	AN	CG	—	—	PL	PL	PL	PL	
Container Size	~~125 ml~~ 40	500 ml	40 ml	—	—	500 ml	500 ml	1 L	500 ml	
Preservative	HCl	H2SO4	HCl	—	—	H2SO4	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 19Q	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Metals: Fe, Mn, Na, Ca, K, Mg	pH, Cl, SpC, F, SO4, TDS, NO3, Turb.	Alkalinity, HCO3	
			Enter Number of Containers Per Sample or Field Results Below.											
1. FFMP015W	8-18-16	1015	G	GW	2	1	2	x	x	1	1	1	1	
2 FFMP017W		1210												
3 FFMP013W		1351												
4 FFMP014W		1406												
5 FFMP027W		1451												
6 Field Blank		1505												
7 Trip Blank		1623												
8														
9														
10														

Cooler Temp: 21 Therm ID: 352

No. of Coolers: _____

	Y	N	Initial
Custody Seals Present?			SES
(If present) Seals Intact?			
Received on Ice?			
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 8/18/16 Time 2107

REVIEWED BY(signature): _____ Date 8/18/16 Time

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 ~~Brooke~~ ALS	8-18-16	1623	2	8/18	1623
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

ALS Environmental
34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

COC #: 1 of 1

ALS Quote #:

Client Name: ALS Middletown	Container Type	AG										Receipt Information (completed by Receiving Lab)	
Address: 34 Dogwood Lane	Container Size	500mL										Cooler Temp: ____ Therm ID: ____	
Middletown PA 17057	Preservative	H2SO4										No. of Coolers: ____	Y / N / Initial
Contact: Susan Scherer	ANALYSES/METHOD REQUESTED											Custody Seals Present?	
Phone#: (717) 702-2245												(If present) Seals Intact?	
Project Name/#: LCSWMA-Frey Farm-Form 19Q												Received on Ice?	
Bill To: ALS Middletown												COC/Labels Complete/Accurate?	
TAT ☐ Normal-Standard TAT is 10-12 business days. ☐ Rush-Subject to ALS approval and surcharges.												Cont. In Good Cond.?	
Date Required: 9/1/2016 Approved By: ____												Correct Containers?	
Email? [X]-Y ALMDT.Subcontract@ALSGlobal.com												Correct Sample Volumes?	
Fax? ☐-Y No.: ____												Correct Preservation?	
												Headspace/Volatiles?	
												Courier/Tracking #:	

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	Phenols, Total SW846-9066									Sample/COC Comments
					Enter Number of Containers Per Sample or Field Results Below.									
1) 2168561001	8/18/2016	1015	G	GW	1									Subcontract to ALS Holland MI
2) 2168561002	8/18/2016	1210	G	GW	1									
3) 2168561003	8/18/2016	1351	G	GW	1									
4) 2168561004	8/18/2016	1406	G	GW	1									
5) 2168561005	8/18/2016	1451	G	GW	1									
6)														
7)														
8)														
9)														ALS Field Services: __Pickup __Labor __Composite Sampling __Rental Equipment __Other: ____
10)														

Project Comments:

LOGGED BY(signature): DATE TIME

REVIEWED BY(signature): DATE TIME

Data Deliverables: [X] Standard ☐ CLP-like ☐ USACE

Special Processing: USACE ☐ Navy ☐

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

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1	8/22/16	1610	2		
3			4		
5			6		
7			8		
9			10		

Reportable to PADEP? Yes ☐ PWSID # ____

Sample Disposal: Lab ☐ Special ☐

EDDS: Format Type: EXCEL SDG 8/22/16

* 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

Rev 10.11

ALS Environmental

30-Aug-2016

Susan Scherer
ALS Environmental
34 Dogwood Lane
Middletown, PA 17057

Re: **2168561** Work Order: **16081262**

Dear Susan,

ALS Environmental received 5 samples on 23-Aug-2016 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 12.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Electronically approved by: Tom Beamish

Tom Beamish
Client Services Coordinator

NELAP ACCREDITED LABORATORY

Certificate No: PA: 68-03827

Report of Laboratory Analysis

ALS Group USA, Corp

Date: 30-Aug-16

Client: ALS Environmental
Project: 2168561
Work Order: **16081262**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
16081262-01	2168561001	Groundwater		08/18/16 01:15	08/23/16 09:30	☐
16081262-02	2168561002	Groundwater		08/18/16 12:10	08/23/16 09:30	☐
16081262-03	2168561003	Groundwater		08/18/16 13:51	08/23/16 09:30	☐
16081262-04	2168561004	Groundwater		08/18/16 14:06	08/23/16 09:30	☐
16081262-05	2168561005	Groundwater		08/18/16 14:51	08/23/16 09:30	☐

Client: ALS Environmental
Project: 2168561
WorkOrder: 16081262

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/L	Milligrams per Liter

ALS Group USA, Corp

Date: *30-Aug-16*

Client: ALS Environmental
Project: 2168561
Sample ID: 2168561001
Collection Date: 08/18/16 01:15 AM

Work Order: 16081262
Lab ID: 16081262-01
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL			Method: **SW9066**				Analyst: **JJG**
Phenolics, Total		U	0.0030	0.010	mg/L	1	08/30/16 10:15

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *30-Aug-16*

Client: ALS Environmental
Project: 2168561
Sample ID: 2168561002
Collection Date: 08/18/16 12:10 PM

Work Order: 16081252
Lab ID: 16081252-02
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL		Method: **SW9066**					Analyst: **JJG**
Phenolics, Total		U	0.0030	0.010	mg/L	1	08/30/16 10:15

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *30-Aug-16*

Client: ALS Environmental
Project: 2168561
Sample ID: 2168561003
Collection Date: 08/18/16 01:51 PM

Work Order: 16081262
Lab ID: 16081262-03
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL		Method: **SW9066**					Analyst: **JJG**
Phenolics, Total	U		0.0030	0.010	mg/L	1	08/30/16 10:15

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *30-Aug-16*

Client: ALS Environmental
Project: 2168561
Sample ID: 2168561004
Collection Date: 08/18/16 02:06 PM

Work Order: 16081262
Lab ID: 16081262-04
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL		Method: **SW9066**					Analyst: **JJG**
Phenolics, Total	U		0.0031	0.010	mg/L	1	08/30/16 10:15

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *30-Aug-16*

Client: ALS Environmental
Project: 2168561
Sample ID: 2168561005
Collection Date: 08/18/16 02:51 PM

Work Order: 16081262
Lab ID: 16081262-05
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL		Method: **SW9066**					Analyst: **JJG**
Phenolics, Total	U		0.0031	0.010	mg/L	1	08/30/16 10:15

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 30-Aug-16

Client: ALS Environmental
Work Order: 16081262
Project: 2168561

QC BATCH REPORT

Batch ID: **90723B** Instrument ID **LACHAT** Method: **SW9066**

MBLK	Sample ID: **MBLK-90723-90723B**				Units: **mg/L**			Analysis Date: **08/30/16 10:15 AM**		
Client ID:	Run ID: **LACHAT_160830A**			SeqNo: **4001933**		Prep Date: **08/29/16**		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	U	0.010								

LCS	Sample ID: **LCS-90723-90723B**				Units: **mg/L**			Analysis Date: **08/30/16 10:15 AM**		
Client ID:	Run ID: **LACHAT_160830A**			SeqNo: **4001934**		Prep Date: **08/29/16**		DF: **1**		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	0.1078	0.010	0.1	0	108	75-110	0			

The following samples were analyzed in this batch:

16081262-01A	16081262-02A	16081262-03A
16081262-04A	16081262-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental
34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

COC #: 160812C02 | 1 of 1
ALS Quote #:

Client Name: ALS Middletown
Address: 34 Dogwood Lane, Middletown PA 17057
Contact: Susan Scherer
Phone#: (717)702-2246
Project Name#: LCSWMA Req Lam Form 19Q
Bill To: ALS Middletown
TAT: [X] Normal-Standard TAT is 10-12 business days [ ] Rush-Subject to ALS approval and surcharges
Date Required: 8/17/2016 Approved By:
Email? [X] Y ALMD.Subcontract@ALSGlobal.co [ ] Y No
Fax? [ ] Y No

Container Type	AG
Container Size	500mL
Preservative	H2SO4

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	Enter Number of Containers Per Sample or Field Results Below.
1) 2188561001	8/18/2016	1015	G	GW	1
2) 2188561002	8/18/2016	1210	G	GW	1
3) 2188561003	8/18/2016	1351	G	GW	1
4) 2188561004	8/18/2016	1406	G	GW	1
5) 2188561005	8/18/2016	1451	G	GW	1
6)					
7)					
8)					
9)					
10)					

Project Comments:

LOGGED BY (signature): Date: Time:
REVIEWED BY (signature): Date: Time:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1	8/17/16	1610	2	8/13/16	930
3			4		
5			6		
7			8		
9			10		

Receipt Information (completed by Receiving Lab)
Cooler Temp: 5.0 Therm ID:
No. of Coolers:

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

Courier/Tracking #:

Sample/COC Comments
Subcontract to ALS Holland MI

ALS Field Services: __Pickup __Labor __Composite Sampling __Rental Equipment __Other:

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

* 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 10/11

ORIGIN ID:AOTA (717) 944-5541
STEVE SMITH
34 DOGWOOD LANE
MIDDLETOWN, PA 17057
UNITED STATES US

SHIP DATE: 22AUG16
ACTWGT: 32.00 LB
CAD: 107335183/INET3700

BILL SENDER

TO SAMPLE RECEIVING
ALS - HOLLAND
3352 128TH AVE
HOLLAND MI 49424
(616) 399-6070
INV:
PO:
REF:
DEPT: ADMIN

544J1H370/4E6B

TUE - 23 AUG 10:30A
PRIORITY OVERNIGHT

1 of 2
TRK# 7770 5146 1920
0201
MASTER
XX HLMA

49424
MI-US
GRR

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **ALS - MIDDLETOWN** Date/Time Received: **23-Aug-16 09:30**

Work Order: **16081262** Received by: **MBB**

Checklist completed by Myglan Broadbent eSignature 23-Aug-16 Date Reviewed by: Tami Bramlett eSignature 23-Aug-16 Date

Matrices: water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.0/3.0	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	8/23/2016 11:50:49 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

SRC Page 1 of 1

ALS Environmental

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

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

September 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-FREY FARM**	Workorder:	**2168994**
Purchase Order:		Workorder ID:	**3RD QTR 2016 GWMP-FORM 19Q**

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Friday, August 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

ALS Environmental

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

SAMPLE SUMMARY

Workorder: 2168994 3RD QTR 2016 GWMP-FORM 19Q

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2168994001	FFMP024W	Ground Water	8/19/2016 11:36	8/19/2016 14:25	Mr. Brian G Shade
2168994002	FFMP023W	Ground Water	8/19/2016 12:15	8/19/2016 14:25	Mr. Brian G Shade
2168994003	FFMP002W	Ground Water	8/19/2016 12:54	8/19/2016 14:25	Mr. Brian G Shade
2168994004	Field Blank	Ground Water	8/19/2016 13:00	8/19/2016 14:25	Mr. Brian G Shade
2168994005	Trip Blank	Ground Water	8/19/2016 14:25	8/19/2016 14:25	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 2168994 3RD QTR 2016 GWMP-FORM 19Q

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”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incurbator and the "Analyzed" value is the date/time out the incubator.

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: 2168994 3RD QTR 2016 GWMP-FORM 19Q

Workorder Comments

See attached subcontracted total phenolics by SW 9066 results from ALS Holland. SSL 08/30/16

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ANALYTICAL RESULTS

Workorder: 2168994 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168994001** Date Collected: 8/19/2016 11:36 Matrix: Ground Water

Sample ID: **FFMP024W** Date Received: 8/19/2016 14:25

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/29/16 03:53	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/29/16 03:53	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 03:53	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 03:53	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 03:53	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 03:53	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 03:53	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/29/16 03:53	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 03:53	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 03:53	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			8/29/16 03:53	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/29/16 03:53	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 03:53	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 03:53	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 03:53	CJG	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	119		%	62 - 133	SW846 8260B			8/29/16 03:53	CJG	H
4-Bromofluorobenzene (S)	102		%	79 - 114	SW846 8260B			8/29/16 03:53	CJG	H
Dibromofluoromethane (S)	82.5		%	78 - 116	SW846 8260B			8/29/16 03:53	CJG	H
Toluene-d8 (S)	89.2		%	76 - 127	SW846 8260B			8/29/16 03:53	CJG	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	95		mg/L	5	S2320B-97			8/20/16 18:45	MSA	B
Alkalinity, Total	95	3	mg/L	5	S2320B-97			8/20/16 18:45	MSA	B
Ammonia-N	ND	1	mg/L	0.100	D6919-09			8/30/16 12:50	JAM	A
Chemical Oxygen Demand (COD)	ND		mg/L	7	EPA 410.4			8/30/16 14:02	AK	A
Chloride	12.2		mg/L	2.0	EPA 300.0			8/20/16 16:36	BSL	B
Fluoride	0.20		mg/L	0.20	EPA 300.0			8/20/16 16:36	BSL	B
Nitrate-N	9.4		mg/L	0.20	EPA 300.0			8/20/16 16:36	BSL	B
pH	7.35	2	pH_Units		SM4500B			8/20/16 18:45	MSA	B
Specific Conductance	317		umhos/cm	1	SW846 9050A			8/20/16 18:45	MSA	B
Sulfate	23.7		mg/L	2.0	EPA 300.0			8/20/16 16:36	BSL	B
Total Dissolved Solids	232		mg/L	5	S2540C-11			8/25/16 11:45	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			8/29/16 13:05	PAG	E
Turbidity	0.95		NTU	0.10	S2130B-01			8/20/16 11:10	MSA	B

Sub'd-ALSH Labs Cert 68-03827

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

ANALYTICAL RESULTS

Workorder: 2168994 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168994001** Date Collected: 8/19/2016 11:36 Matrix: Ground Water

Sample ID: **FFMP024W** Date Received: 8/19/2016 14:25

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			8/25/16 15:15	SUB	G
METALS										
Calcium, Total	27.3		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 08:54	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	8/23/16 09:30	JPS	8/31/16 08:54	TSS	C1
Magnesium, Total	4.3		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 08:54	TSS	C1
Manganese, Total	0.013		mg/L	0.0056	SW846 6010C	8/23/16 09:30	JPS	8/31/16 08:54	TSS	C1
Potassium, Total	0.99		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 08:54	TSS	C1
Sodium, Total	36.3		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 08:54	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	62.200		Feet		Field			8/19/16 11:36	BGS	D
Elev Top MW Casing above MSL	611.42		Feet		Field			8/19/16 11:36	BGS	D
Flow Rate	2.33		gal/min		Field			8/19/16 11:36	BGS	D
Ground Water Elevation	549.220		ft/MSL		Field			8/19/16 11:36	BGS	D
pH, Field (SM4500B)	6.170		pH_Units		Field			8/19/16 11:36	BGS	D
Sample Depth	180.780		Feet		Field			8/19/16 11:36	BGS	D
Specific Conductance, Field	370		umhos/cm	1	Field			8/19/16 11:36	BGS	D
Temperature	13.17		Deg. C		Field			8/19/16 11:36	BGS	D
Total Well Depth	200.820		Feet		Field			8/19/16 11:36	BGS	D
Volume in Water Column	203.771		Gallons		Field			8/19/16 11:36	BGS	D
Water Level After Purge	121.770		Feet		Field			8/19/16 11:36	BGS	D
Well Volumes Purged	0.69		Vol		Field			8/19/16 11:36	BGS	D

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

ALS Environmental

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ANALYTICAL RESULTS

Workorder: 2168994 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168994002** Date Collected: 8/19/2016 12:15 Matrix: Ground Water

Sample ID: **FFMP023W** Date Received: 8/19/2016 14:25

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/29/16 04:15	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/29/16 04:15	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 04:15	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 04:15	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 04:15	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 04:15	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 04:15	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/29/16 04:15	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 04:15	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 04:15	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			8/29/16 04:15	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/29/16 04:15	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 04:15	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 04:15	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 04:15	CJG	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	120		%	62 - 133	SW846 8260B			8/29/16 04:15	CJG	H
4-Bromofluorobenzene (S)	97		%	79 - 114	SW846 8260B			8/29/16 04:15	CJG	H
Dibromofluoromethane (S)	80.6		%	78 - 116	SW846 8260B			8/29/16 04:15	CJG	H
Toluene-d8 (S)	90.8		%	76 - 127	SW846 8260B			8/29/16 04:15	CJG	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	ND		mg/L	5	S2320B-97			8/20/16 20:30	MSA	B
Alkalinity, Total	ND	3	mg/L	5	S2320B-97			8/20/16 20:30	MSA	B
Ammonia-N	ND	1	mg/L	0.100	D6919-09			8/30/16 13:10	JAM	A
Chemical Oxygen Demand (COD)	ND		mg/L	7	EPA 410.4			8/30/16 14:02	AK	A
Chloride	24.2		mg/L	2.0	EPA 300.0			8/20/16 16:48	BSL	B
Fluoride	ND		mg/L	0.20	EPA 300.0			8/20/16 16:48	BSL	B
Nitrate-N	11.1		mg/L	0.20	EPA 300.0			8/20/16 16:48	BSL	B
pH	5.44	2	pH_Units		SM4500B			8/20/16 20:30	MSA	B
Specific Conductance	168		umhos/cm	1	SW846 9050A			8/20/16 20:30	MSA	B
Sulfate	ND		mg/L	2.0	EPA 300.0			8/20/16 16:48	BSL	B
Total Dissolved Solids	147		mg/L	5	S2540C-11			8/25/16 11:45	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			8/29/16 13:05	PAG	E
Turbidity	ND		NTU	0.10	S2130B-01			8/20/16 11:10	MSA	B

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ALS Environmental

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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: 2168994 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168994002** Date Collected: 8/19/2016 12:15 Matrix: Ground Water

Sample ID: **FFMP023W** Date Received: 8/19/2016 14:25

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			8/25/16 15:15	SUB	G
METALS										
Calcium, Total	9.9		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 08:58	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	8/23/16 09:30	JPS	8/31/16 08:58	TSS	C1
Magnesium, Total	7.7		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 08:58	TSS	C1
Manganese, Total	0.19		mg/L	0.0056	SW846 6010C	8/23/16 09:30	JPS	8/31/16 08:58	TSS	C1
Potassium, Total	1.1		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 08:58	TSS	C1
Sodium, Total	8.3		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 08:58	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	61.610		Feet		Field			8/18/16 12:15	BGS	D
Elev Top MW Casing above MSL	611.80		Feet		Field			8/18/16 12:15	BGS	D
Flow Rate	2.95		gal/min		Field			8/18/16 12:15	BGS	D
Ground Water Elevation	550.190		ft/MSL		Field			8/18/16 12:15	BGS	D
pH, Field (SM4500B)	4.630		pH_Units		Field			8/18/16 12:15	BGS	D
Sample Depth	79.000		Feet		Field			8/18/16 12:15	BGS	D
Specific Conductance, Field	204		umhos/cm	1	Field			8/18/16 12:15	BGS	D
Temperature	12.38		Deg. C		Field			8/18/16 12:15	BGS	D
Total Well Depth	81.500		Feet		Field			8/18/16 12:15	BGS	D
Volume in Water Column	29.238		Gallons		Field			8/18/16 12:15	BGS	D
Water Level After Purge	63.540		Feet		Field			8/18/16 12:15	BGS	D
Well Volumes Purged	1.01		Vol		Field			8/18/16 12:15	BGS	D

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2168994 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168994003** Date Collected: 8/19/2016 12:54 Matrix: Ground Water

Sample ID: **FFMP002W** Date Received: 8/19/2016 14:25

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/29/16 04:37	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/29/16 04:37	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 04:37	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 04:37	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 04:37	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 04:37	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 04:37	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/29/16 04:37	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 04:37	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 04:37	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			8/29/16 04:37	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/29/16 04:37	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 04:37	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 04:37	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 04:37	CJG	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	119		%	62 - 133	SW846 8260B			8/29/16 04:37	CJG	H
4-Bromofluorobenzene (S)	98.4		%	79 - 114	SW846 8260B			8/29/16 04:37	CJG	H
Dibromofluoromethane (S)	82.8		%	78 - 116	SW846 8260B			8/29/16 04:37	CJG	H
Toluene-d8 (S)	88.9		%	76 - 127	SW846 8260B			8/29/16 04:37	CJG	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	ND		mg/L	5	S2320B-97			8/20/16 21:36	MSA	B
Alkalinity, Total	ND	3	mg/L	5	S2320B-97			8/20/16 21:36	MSA	B
Ammonia-N	ND	1	mg/L	0.100	D6919-09			8/30/16 13:29	JAM	A
Chemical Oxygen Demand (COD)	ND		mg/L	7	EPA 410.4			8/30/16 14:02	AK	A
Chloride	21.6		mg/L	5.0	EPA 300.0			8/20/16 17:01	BSL	B
Fluoride	ND		mg/L	0.50	EPA 300.0			8/20/16 17:01	BSL	B
Nitrate-N	27.1		mg/L	0.50	EPA 300.0			8/20/16 17:01	BSL	B
pH	5.39	2	pH_Units		SM4500B			8/20/16 21:36	MSA	B
Specific Conductance	291		umhos/cm	1	SW846 9050A			8/20/16 21:36	MSA	B
Sulfate	11.0		mg/L	5.0	EPA 300.0			8/20/16 17:01	BSL	B
Total Dissolved Solids	239		mg/L	5	S2540C-11			8/25/16 11:45	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			8/29/16 13:05	PAG	E
Turbidity	0.28		NTU	0.10	S2130B-01			8/20/16 11:10	MSA	B

Sub'd-ALSH Labs Cert 68-03827

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ANALYTICAL RESULTS

Workorder: 2168994 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168994003** Date Collected: 8/19/2016 12:54 Matrix: Ground Water

Sample ID: **FFMP002W** Date Received: 8/19/2016 14:25

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			8/30/16 10:15	SUB	G
METALS										
Calcium, Total	23.9		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:02	TSS	C1
Iron, Total	0.093		mg/L	0.067	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:02	TSS	C1
Magnesium, Total	9.8		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:02	TSS	C1
Manganese, Total	0.28		mg/L	0.0056	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:02	TSS	C1
Potassium, Total	1.3		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:02	TSS	C1
Sodium, Total	14.4		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:02	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	65.110		Feet		Field			8/19/16 12:54	BGS	D
Elev Top MW Casing above MSL	613.20		Feet		Field			8/19/16 12:54	BGS	D
Flow Rate	1.29		gal/min		Field			8/19/16 12:54	BGS	D
Ground Water Elevation	548.090		ft/MSL		Field			8/19/16 12:54	BGS	D
pH, Field (SM4500B)	5.070		pH_Units		Field			8/19/16 12:54	BGS	D
Sample Depth	85.000		Feet		Field			8/19/16 12:54	BGS	D
Specific Conductance, Field	348		umhos/cm	1	Field			8/19/16 12:54	BGS	D
Temperature	13.44		Deg. C		Field			8/19/16 12:54	BGS	D
Total Well Depth	90.020		Feet		Field			8/19/16 12:54	BGS	D
Volume in Water Column	36.618		Gallons		Field			8/19/16 12:54	BGS	D
Water Level After Purge	80.720		Feet		Field			8/19/16 12:54	BGS	D
Well Volumes Purged	0.84		Vol		Field			8/19/16 12:54	BGS	D

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ANALYTICAL RESULTS

Workorder: 2168994 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168994004** Date Collected: 8/19/2016 13:00 Matrix: Ground Water

Sample ID: **Field Blank** Date Received: 8/19/2016 14:25

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/29/16 00:14	CJG	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/29/16 00:14	CJG	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 00:14	CJG	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 00:14	CJG	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 00:14	CJG	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 00:14	CJG	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 00:14	CJG	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/29/16 00:14	CJG	A
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 00:14	CJG	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 00:14	CJG	A
Toluene	ND		ug/L	1.0	SW846 8260B			8/29/16 00:14	CJG	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/29/16 00:14	CJG	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 00:14	CJG	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 00:14	CJG	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 00:14	CJG	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	118		%	62 - 133	SW846 8260B			8/29/16 00:14	CJG	A
4-Bromofluorobenzene (S)	97.6		%	79 - 114	SW846 8260B			8/29/16 00:14	CJG	A
Dibromofluoromethane (S)	82.1		%	78 - 116	SW846 8260B			8/29/16 00:14	CJG	A
Toluene-d8 (S)	87.9		%	76 - 127	SW846 8260B			8/29/16 00:14	CJG	A

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ANALYTICAL RESULTS

Workorder: 2168994 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2168994005** Date Collected: 8/19/2016 14:25 Matrix: Ground Water

Sample ID: **Trip Blank** Date Received: 8/19/2016 14:25

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/29/16 00:36	CJG	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/29/16 00:36	CJG	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 00:36	CJG	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 00:36	CJG	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 00:36	CJG	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 00:36	CJG	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 00:36	CJG	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/29/16 00:36	CJG	A
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 00:36	CJG	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 00:36	CJG	A
Toluene	ND		ug/L	1.0	SW846 8260B			8/29/16 00:36	CJG	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/29/16 00:36	CJG	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 00:36	CJG	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 00:36	CJG	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 00:36	CJG	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	121		%	62 - 133	SW846 8260B			8/29/16 00:36	CJG	A
4-Bromofluorobenzene (S)	96.5		%	79 - 114	SW846 8260B			8/29/16 00:36	CJG	A
Dibromofluoromethane (S)	85.9		%	78 - 116	SW846 8260B			8/29/16 00:36	CJG	A
Toluene-d8 (S)	89.2		%	76 - 127	SW846 8260B			8/29/16 00:36	CJG	A

Ms. Susan J Scherer
Project Coordinator

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2168994001	1	FFMP024W	D6919-09	Ammonia-N
A matrix blank (MB) 2398766 associated with this sample yielded a result of 0.0982 mg/L.				
2168994001	2	FFMP024W	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2168994001	3	FFMP024W	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2168994002	1	FFMP023W	D6919-09	Ammonia-N
A matrix blank (MB) 2398766 associated with this sample yielded a result of 0.0982 mg/L.				
2168994002	2	FFMP023W	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2168994002	3	FFMP023W	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2168994003	1	FFMP002W	D6919-09	Ammonia-N
A matrix blank (MB) 2398766 associated with this sample yielded a result of 0.0982 mg/L.				
2168994003	2	FFMP002W	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2168994003	3	FFMP002W	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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Generated by ALS

COC #:

ALS Qu

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: ~~Brooks Norris~~ Mark Roszkowski

Phone#: (717) 397-9968

Project Name/#: Frey Farm Quarterly

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: monday Approved By: _____

Email? [X] -Y ~~bnorris~~@LCSWMA.com

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

Container Type	AG	AN	CG	—	—	PL	PL	PL	PL	
Container Size	~~125 ml~~ 40	500 ml	40 ml	—	—	500 ml	500 ml	1 L	500 ml	
Preservative	HCl	H2SO4	HCl	—	—	H2SO4	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 19Q	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Metals: Fe, Mn, Na, Ca, K, Mg	pH, Cl, SpC, F, SO4, TDS, NO3, Turb.	Alkalinity, HCO3	
			Enter Number of Containers Per Sample or Field Results Below.											
1. FFMP024W	8-19-16	1130	G	GW	2	1	2	X	X	1	1	1	1	
2 FFMP023W		1215												
3 FFMP002W		1257												
4 Field Blank		1300												
5 Trip Blank		1425												
6														
7														
8														
9														
10														

Receipt Information (Comp... ...ab)

Cooler Temp: 2.2 Therm ID: 11-35

No. of Coolers: _____

	Y	N	Initial
Custody Seals Present?			
(if present) Seals Intact?			
Received on Ice?	✓		
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 8/19 Time

REVIEWED BY(signature): Date Time

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 RBCFull ALS	8-19-16	1425	2	8/19	1425
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

Rev 8/04

ALS Environmental
34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F.717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

COC #: | 1 of 1

ALS Quote #:

Client Name: ALS Middletown

Address: 34 Dogwood Lane
Middletown PA 17057

Contact: Susan Scherer

Phone#: (717) 702-2245

Project Name/#: LCSWMA-Frey Farm-Form 19Q

Bill To: ALS Middletown

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

Date Required: 9/2/2016 Approved By:

Email? [X] -Y ALMDT.Subcontract@ALSGlobal.cor

Fax? [ ] -Y No.:

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	Container Type	Container Size	Preservative	Phenols, Total SW846-9066	Sample/COC Comments
					AG	500mL	H2SO4	Enter Number of Containers Per Sample or Field Results Below.	
1) 2168994001	8/19/2016	1136	G	GW				1	Subcontract to ALS Holland MI
2) 2168994002	8/19/2016	1215	G	GW				1	
3) 2168994003	8/19/2016	1254	G	GW				1	
4)									
5)									
6)									
7)									
8)									
9)									
10)									

ANALYSES/METHOD REQUESTED

Receipt Information (completed by Receiving Lab)

Cooler Temp: Therm ID:

No. of Coolers:

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

Courier/Tracking #:

ALS Field Services: _Pickup _Labor
_Composite Sampling _Rental Equipment
_Other:

Project Comments:

LOGGED BY(signature): DATE TIME

REVIEWED BY(signature): DATE TIME

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1	8/22/16	1610	2		
3			4		
5			6		
7			8		
9			10		

Data Deliverables: [X] 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 [ ] Special [ ]

EDDS: Format Type: EXCEL

* G=Grab; C=Composite **Matrix - AI=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 10.11

ALS Environmental

30-Aug-2016

Susan Scherer
ALS Environmental
34 Dogwood Lane
Middletown, PA 17057

Re: **2168994** Work Order: **16081261**

Dear Susan,

ALS Environmental received 3 samples on 23-Aug-2016 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 11.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Electronically approved by Tom Beamish

Tom Beamish
Client Services Coordinator

NELAP ACCREDITED LABORATORY

Certificate No: PA: 68-03827

Report of Laboratory Analysis

ALS Group USA, Corp

Date: 30-Aug-16

Client: ALS Environmental
Project: 2168994
Work Order: 16081261

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
16081261-01	2168994001	Groundwater		08/19/16 11:36	08/23/16 09:30	☐
16081261-02	2168994002	Groundwater		08/19/16 12:15	08/23/16 09:30	☐
16081261-03	2168994003	Groundwater		08/19/16 12:54	08/23/16 09:30	☐

Client: ALS Environmental
Project: 2168994
WorkOrder: **16081261**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/L	Milligrams per Liter

ALS Group USA, Corp

Date: *30-Aug-16*

Client: ALS Environmental
Project: 2168994
Sample ID: 2168994001
Collection Date: 08/19/16 11:36 AM

Work Order: 16081261
Lab ID: 16081261-01
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL		Method: **SW9066**					Analyst: **JJG**
Phenolics, Total	U		0.0030	0.010	mg/L	1	08/25/16 15:15

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *30-Aug-16*

Client: ALS Environmental
Project: 2168994
Sample ID: 2168994002
Collection Date: 08/19/16 12:15 PM

Work Order: 16081261
Lab ID: 16081261-02
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL			Method: **SW9066**				Analyst: **JJG**
Phenolics, Total	U		0.0030	0.010	mg/L	1	08/25/16 15:15

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *30-Aug-16*

Client: ALS Environmental
Project: 2168994
Sample ID: 2168994003
Collection Date: 08/19/16 12:54 PM

Work Order: 16081261
Lab ID: 16081261-03
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL			Method: **SW9066**				Analyst: **JJG**
Phenolics, Total	U		0.0030	0.010	mg/L	1	08/30/16 10:15

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 30-Aug-16

Client: ALS Environmental
Work Order: 16081261
Project: 2168994

QC BATCH REPORT

Batch ID: **90481B** Instrument ID **LACHAT** Method: **SW9066**

MBLK	Sample ID: MBLK-90481-90481B				Units: mg/L			Analysis Date: 08/25/16 03:15 PM		
Client ID:	Run ID: LACHAT_160825G			SeqNo: 3995071		Prep Date: 08/24/16		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	0.01073	0.010								

LCS	Sample ID: LCS-90481-90481B				Units: mg/L			Analysis Date: 08/25/16 03:15 PM		
Client ID:	Run ID: LACHAT_160825G			SeqNo: 3995072		Prep Date: 08/24/16		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	0.09373	0.010	0.1	0	93.7	75-110	0			B

The following samples were analyzed in this batch: 16081261-01A 16081261-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental
Work Order: 16081261
Project: 2168994

QC BATCH REPORT

Batch ID: **90723B** Instrument ID **LACHAT** Method: **SW9066**

MBLK	Sample ID: **MBLK-90723-90723B**				Units: **mg/L**			Analysis Date: **08/30/16 10:15 AM**	
Client ID:	Run ID: **LACHAT_160830A**			SeqNo: **4001933**		Prep Date: **08/29/16**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	U	0.010								

LCS	Sample ID: **LCS-90723-90723B**				Units: **mg/L**			Analysis Date: **08/30/16 10:15 AM**	
Client ID:	Run ID: **LACHAT_160830A**			SeqNo: **4001934**		Prep Date: **08/29/16**		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	0.1078	0.010	0.1	0	108	75-110	0			

The following samples were analyzed in this batch: 16081261-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Environmental
34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

COC #: 16081261 | 1 of 1
ALS Quote #:

Client Name: ALS Middletown
Address: 34 Dogwood Lane, Middletown PA 17057
Contact: Susan Sciera
Phone#: (717) 702-2246
Project Name/#: LCSWMA Fly Farm Form 190
Bill to: ALS Middletown
TAT: [X] Normal-Standard TAT is 10-12 business days [ ] Rush-Subject to ALS approval and surcharges
Date Required: 9/2/2016 Approved By:
Email? [X] Y ALMDT.Subcontract@ALSGlobal.com [ ] N
Fax? [ ] Y No:

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	Container Type	Container Size	Preservative	PhenolsTotal SW846 9066	Enter Number of Containers Per Sample or Field Results Below:								
					AG	500mL	H2SO4										
1) 2188994001	8/19/2016	1136	G	GW					1								
2) 2188994002	8/19/2016	1215	G	GW					1								
3) 2188994003	8/19/2016	1254	G	GW					1								
4)																	
5)																	
6)																	
7)																	
8)																	
9)																	
10)																	

ANALYSES/METHOD REQUESTED

Receipt Information (completed by Receiving Lab)
Cooler Temp: 32 Therm ID:
No. of Coolers:

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

Courier/Tracking #:
Sample/COC Comments
Subcontract to ALS Holland MI

ALS Field Services: __Pickup __Labor __Composite Sampling __Rental Equipment __Other:

Project Comments:
LOGGED BY (signature): DATE: TIME:
REVIEWED BY (signature): DATE: TIME:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [signature]	8/22/16	1610	2 [signature]	8/23/16	930
3			4		
5			6		
7			8		
9			10		

Data Deliverables: [X] Standard [ ] QLP Like [ ] USAGE
Special Processing: [ ] USAGE [ ] Navy
State Samples Collected In: [ ] NY [ ] NJ [X] PA [ ] NC [ ]
Reportable to PADEP? [ ] Yes
Sample Disposal: [ ] Lab [ ] Special
PWS ID#:
EDDS Format Type: EXCEL

* 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 10/11

ORIGIN ID:MDTA (717) 944-5541
STEVE SMITH
34 DOGWOOD LANE
MIDDLETOWN, PA 17057
UNITED STATES US

SHIP DATE: 22AUG16
ACTWGT: 27.00 LB
CAD: 10753516/INET3190

BILL SENDER

TO SAMPLE RECEIVING
ALS - HOLLAND
3352 128TH AVE
HOLLAND MI 49424
(616) 399-6070
REF:
INV:
PO:
DEPT: ADMIN

54AJ1A370/1462

FedEx Express

TUE - 23 AUG 10:30A
PRIORITY OVERNIGHT

2 of 2
MPS# 7770 5146 2630
0263
Mstr# 7770 5146 1920

0201

49424
GRR
MI-US

XX HLMA

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
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Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **ALS - MIDDLETOWN** Date/Time Received: **23-Aug-16 09:30**

Work Order: **16081261** Received by: **MBB**

Checklist completed by Meghan Broadbent eSignature 23-Aug-16 Date Reviewed by: Tom Bramiak eSignature 23-Aug-16 Date

Matrices: water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.2/3.2	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	8/23/2016 11:46:48 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

SRC Page 1 of 1

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

September 6, 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-FREY FARM**	Workorder:	**2169248**
Purchase Order:		Workorder ID:	**3RD QTR 2016 GWMP-FORM 19Q**

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Monday, August 22, 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: 2169248 3RD QTR 2016 GWMP-FORM 19Q

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2169248001	FFMP029W	Ground Water	8/22/2016 10:54	8/22/2016 16:46	Mr. Brian G Shade
2169248002	FFMP028W	Ground Water	8/22/2016 12:14	8/22/2016 16:46	Mr. Brian G Shade
2169248003	FFMP025W	Ground Water	8/22/2016 12:53	8/22/2016 16:46	Mr. Brian G Shade
2169248004	FFMP016W	Ground Water	8/22/2016 13:15	8/22/2016 16:46	Mr. Brian G Shade
2169248005	FFMP03AW	Ground Water	8/22/2016 14:50	8/22/2016 16:46	Mr. Brian G Shade
2169248006	FIELD BLANK	Ground Water	8/22/2016 15:00	8/22/2016 16:46	Mr. Brian G Shade
2169248007	TRIP BLANK	Ground Water	8/22/2016 16:46	8/22/2016 16:46	Mr. Brian G Shade

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: 2169248 3RD QTR 2016 GWMP-FORM 19Q

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”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incurbator and the "Analyzed" value is the date/time out the incubator.

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: 2169248 3RD QTR 2016 GWMP-FORM 19Q

Workorder Comments

See attached subcontracted total phenolics by SW 9066 results from ALS Holland. SSL 09/01/16

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: 2169248 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2169248001** Date Collected: 8/22/2016 10:54 Matrix: Ground Water

Sample ID: **FFMP029W** Date Received: 8/22/2016 16:46

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:28	TMP	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/29/16 12:28	TMP	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 12:28	TMP	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 12:28	TMP	H
1,1-Dichloroethene	ND	2	ug/L	1.0	SW846 8260B			8/29/16 12:28	TMP	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:28	TMP	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:28	TMP	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:28	TMP	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 12:28	TMP	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:28	TMP	H
Toluene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:28	TMP	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/29/16 12:28	TMP	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 12:28	TMP	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:28	TMP	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 12:28	TMP	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	121		%	62 - 133	SW846 8260B			8/29/16 12:28	TMP	H
4-Bromofluorobenzene (S)	105		%	79 - 114	SW846 8260B			8/29/16 12:28	TMP	H
Dibromofluoromethane (S)	110		%	78 - 116	SW846 8260B			8/29/16 12:28	TMP	H
Toluene-d8 (S)	93.5		%	76 - 127	SW846 8260B			8/29/16 12:28	TMP	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	10		mg/L	5	S2320B-97			8/23/16 10:39	MBW	B
Alkalinity, Total	10	3	mg/L	5	S2320B-97			8/23/16 10:39	MBW	B
Ammonia-N	ND		mg/L	0.100	D6919-09			8/30/16 17:29	JAM	A
Chemical Oxygen Demand (COD)	ND		mg/L	7	EPA 410.4			8/31/16 12:46	AK	A
Chloride	56.6		mg/L	2.0	EPA 300.0			8/24/16 01:10	BSL	B
Fluoride	ND		mg/L	0.20	EPA 300.0			8/24/16 01:10	BSL	B
Nitrate-N	3.8		mg/L	0.20	EPA 300.0			8/24/16 01:10	BSL	B
pH	6.12	1	pH_Units		SM4500B			8/23/16 10:39	MBW	B
Specific Conductance	238		umhos/cm	1	SW846 9050A			8/23/16 10:39	MBW	B
Sulfate	7.1		mg/L	2.0	EPA 300.0			8/24/16 01:10	BSL	B
Total Dissolved Solids	181		mg/L	5	S2540C-11			8/26/16 10:30	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			8/31/16 14:25	PAG	E
Turbidity	0.14		NTU	0.10	S2130B-01			8/24/16 04:00	MBW	B

Sub'd-ALSH Labs Cert 68-03827

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: 2169248 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2169248001** Date Collected: 8/22/2016 10:54 Matrix: Ground Water

Sample ID: **FFMP029W** Date Received: 8/22/2016 16:46

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			9/1/16 11:43	SUB	G
METALS										
Calcium, Total	13.3		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:06	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:06	TSS	C1
Magnesium, Total	8.5		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:06	TSS	C1
Manganese, Total	0.026		mg/L	0.0056	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:06	TSS	C1
Potassium, Total	2.0		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:06	TSS	C1
Sodium, Total	19.3		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:06	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	39.740		Feet		Field			8/22/16 10:54	BGS	D
Elev Top MW Casing above MSL	477.30		Feet		Field			8/22/16 10:54	BGS	D
Flow Rate	2.34		gal/min		Field			8/22/16 10:54	BGS	D
Ground Water Elevation	437.560		ft/MSL		Field			8/22/16 10:54	BGS	D
pH, Field (SM4500B)	4.440		pH_Units		Field			8/22/16 10:54	BGS	D
Sample Depth	55.000		Feet		Field			8/22/16 10:54	BGS	D
Specific Conductance, Field	289		umhos/cm	1	Field			8/22/16 10:54	BGS	D
Temperature	12.81		Deg. C		Field			8/22/16 10:54	BGS	D
Total Well Depth	60.500		Feet		Field			8/22/16 10:54	BGS	D
Volume in Water Column	30.517		Gallons		Field			8/22/16 10:54	BGS	D
Water Level After Purge	47.180		Feet		Field			8/22/16 10:54	BGS	D
Well Volumes Purged	4.22		Vol		Field			8/22/16 10:54	BGS	D

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

ANALYTICAL RESULTS

Workorder: 2169248 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2169248002** Date Collected: 8/22/2016 12:14 Matrix: Ground Water

Sample ID: **FFMP028W** Date Received: 8/22/2016 16:46

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:46	TMP	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/29/16 12:46	TMP	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 12:46	TMP	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 12:46	TMP	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:46	TMP	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:46	TMP	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:46	TMP	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:46	TMP	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 12:46	TMP	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:46	TMP	H
Toluene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:46	TMP	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/29/16 12:46	TMP	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 12:46	TMP	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:46	TMP	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 12:46	TMP	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	110		%	62 - 133	SW846 8260B			8/29/16 12:46	TMP	H
4-Bromofluorobenzene (S)	92.1		%	79 - 114	SW846 8260B			8/29/16 12:46	TMP	H
Dibromofluoromethane (S)	101		%	78 - 116	SW846 8260B			8/29/16 12:46	TMP	H
Toluene-d8 (S)	87.5		%	76 - 127	SW846 8260B			8/29/16 12:46	TMP	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	27		mg/L	5	S2320B-97			8/23/16 10:47	MBW	B
Alkalinity, Total	27	2	mg/L	5	S2320B-97			8/23/16 10:47	MBW	B
Ammonia-N	ND		mg/L	0.100	D6919-09			8/30/16 17:48	JAM	A
Chemical Oxygen Demand (COD)	ND		mg/L	7	EPA 410.4			8/30/16 14:02	AK	A
Chloride	81.6		mg/L	2.0	EPA 300.0			8/24/16 01:23	BSL	B
Fluoride	ND		mg/L	0.20	EPA 300.0			8/24/16 01:23	BSL	B
Nitrate-N	19.2		mg/L	0.20	EPA 300.0			8/24/16 01:23	BSL	B
pH	6.04	1	pH_Units		SM4500B			8/23/16 10:47	MBW	B
Specific Conductance	545		umhos/cm	1	SW846 9050A			8/23/16 10:47	MBW	B
Sulfate	21.9		mg/L	2.0	EPA 300.0			8/24/16 01:23	BSL	B
Total Dissolved Solids	381		mg/L	5	S2540C-11			8/26/16 10:30	ML	B
Total Organic Carbon (TOC)	1.1		mg/L	1.0	SW846 9060A			8/31/16 14:25	PAG	E
Turbidity	ND		NTU	0.10	S2130B-01			8/24/16 04:00	MBW	B

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ANALYTICAL RESULTS

Workorder: 2169248 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2169248002** Date Collected: 8/22/2016 12:14 Matrix: Ground Water

Sample ID: **FFMP028W** Date Received: 8/22/2016 16:46

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			9/1/16 11:43	SUB	G
METALS										
Calcium, Total	40.6		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:10	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:10	TSS	C1
Magnesium, Total	17.3		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:10	TSS	C1
Manganese, Total	0.014		mg/L	0.0056	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:10	TSS	C1
Potassium, Total	2.1		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:10	TSS	C1
Sodium, Total	25.7		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:10	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	8.630		Feet		Field			8/22/16 12:14	BGS	D
Elev Top MW Casing above MSL	465.00		Feet		Field			8/22/16 12:14	BGS	D
Flow Rate	3.14		gal/min		Field			8/22/16 12:14	BGS	D
Ground Water Elevation	456.370		ft/MSL		Field			8/22/16 12:14	BGS	D
pH, Field (SM4500B)	5.270		pH_Units		Field			8/22/16 12:14	BGS	D
Sample Depth	50.000		Feet		Field			8/22/16 12:14	BGS	D
Specific Conductance, Field	590		umhos/cm	1	Field			8/22/16 12:14	BGS	D
Temperature	11.43		Deg. C		Field			8/22/16 12:14	BGS	D
Total Well Depth	60.000		Feet		Field			8/22/16 12:14	BGS	D
Volume in Water Column	75.514		Gallons		Field			8/22/16 12:14	BGS	D
Water Level After Purge	36.860		Feet		Field			8/22/16 12:14	BGS	D
Well Volumes Purged	2.50		Vol		Field			8/22/16 12:14	BGS	D

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ANALYTICAL RESULTS

Workorder: 2169248 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2169248003** Date Collected: 8/22/2016 12:53 Matrix: Ground Water

Sample ID: **FFMP025W** Date Received: 8/22/2016 16:46

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:03	TMP	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/29/16 13:03	TMP	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 13:03	TMP	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 13:03	TMP	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:03	TMP	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:03	TMP	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:03	TMP	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:03	TMP	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 13:03	TMP	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:03	TMP	H
Toluene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:03	TMP	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/29/16 13:03	TMP	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 13:03	TMP	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:03	TMP	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 13:03	TMP	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	122		%	62 - 133	SW846 8260B			8/29/16 13:03	TMP	H
4-Bromofluorobenzene (S)	105		%	79 - 114	SW846 8260B			8/29/16 13:03	TMP	H
Dibromofluoromethane (S)	113		%	78 - 116	SW846 8260B			8/29/16 13:03	TMP	H
Toluene-d8 (S)	93.4		%	76 - 127	SW846 8260B			8/29/16 13:03	TMP	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	15		mg/L	5	S2320B-97			8/23/16 10:56	MBW	B
Alkalinity, Total	15	2	mg/L	5	S2320B-97			8/23/16 10:56	MBW	B
Ammonia-N	ND		mg/L	0.100	D6919-09			8/30/16 18:07	JAM	A
Chemical Oxygen Demand (COD)	ND		mg/L	7	EPA 410.4			8/30/16 14:02	AK	A
Chloride	63.3		mg/L	2.0	EPA 300.0			8/24/16 01:37	BSL	B
Fluoride	ND		mg/L	0.20	EPA 300.0			8/24/16 01:37	BSL	B
Nitrate-N	17.3		mg/L	0.20	EPA 300.0			8/24/16 01:37	BSL	B
pH	5.94	1	pH_Units		SM4500B			8/23/16 10:56	MBW	B
Specific Conductance	408		umhos/cm	1	SW846 9050A			8/23/16 10:56	MBW	B
Sulfate	9.5		mg/L	2.0	EPA 300.0			8/24/16 01:37	BSL	B
Total Dissolved Solids	244		mg/L	5	S2540C-11			8/26/16 10:30	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			8/31/16 14:25	PAG	E
Turbidity	0.93		NTU	0.10	S2130B-01			8/24/16 04:00	MBW	B

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ANALYTICAL RESULTS

Workorder: 2169248 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2169248003** Date Collected: 8/22/2016 12:53 Matrix: Ground Water

Sample ID: **FFMP025W** Date Received: 8/22/2016 16:46

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			9/1/16 11:43	SUB	G
METALS										
Calcium, Total	28.0		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:13	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:13	TSS	C1
Magnesium, Total	14.4		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:13	TSS	C1
Manganese, Total	0.018		mg/L	0.0056	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:13	TSS	C1
Potassium, Total	2.1		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:13	TSS	C1
Sodium, Total	20.2		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:13	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	28.870		Feet		Field			8/22/16 12:53	BGS	D
Elev Top MW Casing above MSL	476.80		Feet		Field			8/22/16 12:53	BGS	D
Flow Rate	4.33		gal/min		Field			8/22/16 12:53	BGS	D
Ground Water Elevation	447.930		ft/MSL		Field			8/22/16 12:53	BGS	D
pH, Field (SM4500B)	4.730		pH_Units		Field			8/22/16 12:53	BGS	D
Sample Depth	39.000		Feet		Field			8/22/16 12:53	BGS	D
Specific Conductance, Field	445		umhos/cm	1	Field			8/22/16 12:53	BGS	D
Temperature	11.59		Deg. C		Field			8/22/16 12:53	BGS	D
Total Well Depth	41.500		Feet		Field			8/22/16 12:53	BGS	D
Volume in Water Column	18.566		Gallons		Field			8/22/16 12:53	BGS	D
Water Level After Purge	33.970		Feet		Field			8/22/16 12:53	BGS	D
Well Volumes Purged	5.13		Vol		Field			8/22/16 12:53	BGS	D

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ANALYTICAL RESULTS

Workorder: 2169248 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2169248004** Date Collected: 8/22/2016 13:15 Matrix: Ground Water

Sample ID: **FFMP016W** Date Received: 8/22/2016 16:46

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:20	TMP	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/29/16 13:20	TMP	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 13:20	TMP	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 13:20	TMP	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:20	TMP	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:20	TMP	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:20	TMP	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:20	TMP	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 13:20	TMP	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:20	TMP	H
Toluene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:20	TMP	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/29/16 13:20	TMP	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 13:20	TMP	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:20	TMP	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 13:20	TMP	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	116		%	62 - 133	SW846 8260B			8/29/16 13:20	TMP	H
4-Bromofluorobenzene (S)	97.6		%	79 - 114	SW846 8260B			8/29/16 13:20	TMP	H
Dibromofluoromethane (S)	108		%	78 - 116	SW846 8260B			8/29/16 13:20	TMP	H
Toluene-d8 (S)	92.7		%	76 - 127	SW846 8260B			8/29/16 13:20	TMP	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	30		mg/L	5	S2320B-97			8/23/16 11:05	MBW	B
Alkalinity, Total	30	2	mg/L	5	S2320B-97			8/23/16 11:05	MBW	B
Ammonia-N	ND		mg/L	0.100	D6919-09			8/31/16 01:40	CMM	A
Chemical Oxygen Demand (COD)	ND		mg/L	7	EPA 410.4			8/30/16 14:02	AK	A
Chloride	114		mg/L	5.0	EPA 300.0			8/24/16 01:50	BSL	B
Fluoride	ND		mg/L	0.50	EPA 300.0			8/24/16 01:50	BSL	B
Nitrate-N	14.1		mg/L	0.50	EPA 300.0			8/24/16 01:50	BSL	B
pH	6.24	1	pH_Units		SM4500B			8/23/16 11:05	MBW	B
Specific Conductance	606		umhos/cm	1	SW846 9050A			8/23/16 11:05	MBW	B
Sulfate	18.0		mg/L	5.0	EPA 300.0			8/24/16 01:50	BSL	B
Total Dissolved Solids	397		mg/L	5	S2540C-11			8/26/16 10:30	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			8/31/16 14:25	PAG	E
Turbidity	0.11		NTU	0.10	S2130B-01			8/24/16 04:00	MBW	B

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ANALYTICAL RESULTS

Workorder: 2169248 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2169248004** Date Collected: 8/22/2016 13:15 Matrix: Ground Water

Sample ID: **FFMP016W** Date Received: 8/22/2016 16:46

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			9/1/16 11:43	SUB	G
METALS										
Calcium, Total	46.5		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:17	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:17	TSS	C1
Magnesium, Total	17.4		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:17	TSS	C1
Manganese, Total	0.077		mg/L	0.0056	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:17	TSS	C1
Potassium, Total	2.1		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:17	TSS	C1
Sodium, Total	32.8		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:17	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	26.700		Feet		Field			8/22/16 13:15	BGS	D
Elev Top MW Casing above MSL	474.60		Feet		Field			8/22/16 13:15	BGS	D
Ground Water Elevation	447.900		ft/MSL		Field			8/22/16 13:15	BGS	D
pH, Field (SM4500B)	5.510		pH_Units		Field			8/22/16 13:15	BGS	D
Sample Depth	135.000		Feet		Field			8/22/16 13:15	BGS	D
Specific Conductance, Field	637		umhos/cm	1	Field			8/22/16 13:15	BGS	D
Temperature	12.48		Deg. C		Field			8/22/16 13:15	BGS	D
Total Well Depth	149.800		Feet		Field			8/22/16 13:15	BGS	D
Volume in Water Column	321.291		Gallons		Field			8/22/16 13:15	BGS	D

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

ANALYTICAL RESULTS

Workorder: 2169248 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2169248005** Date Collected: 8/22/2016 14:50 Matrix: Ground Water

Sample ID: **FFMP03AW** Date Received: 8/22/2016 16:46

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:37	TMP	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/29/16 13:37	TMP	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 13:37	TMP	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 13:37	TMP	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:37	TMP	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:37	TMP	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:37	TMP	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:37	TMP	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 13:37	TMP	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:37	TMP	H
Toluene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:37	TMP	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/29/16 13:37	TMP	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 13:37	TMP	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 13:37	TMP	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 13:37	TMP	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	124		%	62 - 133	SW846 8260B			8/29/16 13:37	TMP	H
4-Bromofluorobenzene (S)	104		%	79 - 114	SW846 8260B			8/29/16 13:37	TMP	H
Dibromofluoromethane (S)	114		%	78 - 116	SW846 8260B			8/29/16 13:37	TMP	H
Toluene-d8 (S)	99.9		%	76 - 127	SW846 8260B			8/29/16 13:37	TMP	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	14		mg/L	5	S2320B-97			8/23/16 11:46	MBW	B
Alkalinity, Total	14	2	mg/L	5	S2320B-97			8/23/16 11:46	MBW	B
Ammonia-N	ND		mg/L	0.100	D6919-09			8/31/16 01:59	CMM	A
Chemical Oxygen Demand (COD)	ND		mg/L	7	EPA 410.4			8/30/16 14:02	AK	A
Chloride	24.1		mg/L	2.0	EPA 300.0			8/24/16 02:04	BSL	B
Fluoride	ND		mg/L	0.20	EPA 300.0			8/24/16 02:04	BSL	B
Nitrate-N	21.1	3	mg/L	0.50	EPA 300.0			8/27/16 00:08	BSL	B
pH	5.79	1	pH_Units		SM4500B			8/23/16 11:46	MBW	B
Specific Conductance	260		umhos/cm	1	SW846 9050A			8/23/16 11:46	MBW	B
Sulfate	3.2		mg/L	2.0	EPA 300.0			8/24/16 02:04	BSL	B
Total Dissolved Solids	190		mg/L	5	S2540C-11			8/26/16 10:30	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			8/31/16 14:25	PAG	E
Turbidity	ND		NTU	0.10	S2130B-01			8/24/16 04:00	MBW	B

Sub'd-ALSH Labs Cert 68-03827

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

ANALYTICAL RESULTS

Workorder: 2169248 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2169248005** Date Collected: 8/22/2016 14:50 Matrix: Ground Water

Sample ID: **FFMP03AW** Date Received: 8/22/2016 16:46

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			9/1/16 11:43	SUB	G
METALS										
Calcium, Total	17.9		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:21	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:21	TSS	C1
Magnesium, Total	11.9		mg/L	0.11	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:21	TSS	C1
Manganese, Total	0.22		mg/L	0.0056	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:21	TSS	C1
Potassium, Total	1.3		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:21	TSS	C1
Sodium, Total	11.5		mg/L	0.56	SW846 6010C	8/23/16 09:30	JPS	8/31/16 09:21	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	52.910		Feet		Field			8/22/16 14:50	BGS	D
Elev Top MW Casing above MSL	590.90		Feet		Field			8/22/16 14:50	BGS	D
Flow Rate	2.06		gal/min		Field			8/22/16 14:50	BGS	D
Ground Water Elevation	537.990		ft/MSL		Field			8/22/16 14:50	BGS	D
pH, Field (SM4500B)	5.240		pH_Units		Field			8/22/16 14:50	BGS	D
Sample Depth	130.000		Feet		Field			8/22/16 14:50	BGS	D
Specific Conductance, Field	308		umhos/cm	1	Field			8/22/16 14:50	BGS	D
Temperature	12.06		Deg. C		Field			8/22/16 14:50	BGS	D
Total Well Depth	148.400		Feet		Field			8/22/16 14:50	BGS	D
Volume in Water Column	140.370		Gallons		Field			8/22/16 14:50	BGS	D
Water Level After Purge	86.780		Feet		Field			8/22/16 14:50	BGS	D
Well Volumes Purged	0.88		Vol		Field			8/22/16 14:50	BGS	D

Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2169248 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2169248006** Date Collected: 8/22/2016 15:00 Matrix: Ground Water

Sample ID: **FIELD BLANK** Date Received: 8/22/2016 16:46

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:11	TMP	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/29/16 12:11	TMP	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 12:11	TMP	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 12:11	TMP	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:11	TMP	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:11	TMP	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:11	TMP	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:11	TMP	A
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 12:11	TMP	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:11	TMP	A
Toluene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:11	TMP	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/29/16 12:11	TMP	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 12:11	TMP	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 12:11	TMP	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 12:11	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	120		%	62 - 133	SW846 8260B			8/29/16 12:11	TMP	A
4-Bromofluorobenzene (S)	105		%	79 - 114	SW846 8260B			8/29/16 12:11	TMP	A
Dibromofluoromethane (S)	109		%	78 - 116	SW846 8260B			8/29/16 12:11	TMP	A
Toluene-d8 (S)	95		%	76 - 127	SW846 8260B			8/29/16 12:11	TMP	A

Ms. Susan J Scherer
Project Coordinator

ALS Environmental

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

ANALYTICAL RESULTS

Workorder: 2169248 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2169248007** Date Collected: 8/22/2016 16:46 Matrix: Ground Water

Sample ID: **TRIP BLANK** Date Received: 8/22/2016 16:46

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			8/29/16 11:54	TMP	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			8/29/16 11:54	TMP	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 11:54	TMP	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 11:54	TMP	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 11:54	TMP	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 11:54	TMP	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 11:54	TMP	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			8/29/16 11:54	TMP	A
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 11:54	TMP	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 11:54	TMP	A
Toluene	ND		ug/L	1.0	SW846 8260B			8/29/16 11:54	TMP	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			8/29/16 11:54	TMP	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			8/29/16 11:54	TMP	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			8/29/16 11:54	TMP	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			8/29/16 11:54	TMP	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	116		%	62 - 133	SW846 8260B			8/29/16 11:54	TMP	A
4-Bromofluorobenzene (S)	101		%	79 - 114	SW846 8260B			8/29/16 11:54	TMP	A
Dibromofluoromethane (S)	106		%	78 - 116	SW846 8260B			8/29/16 11:54	TMP	A
Toluene-d8 (S)	93.5		%	76 - 127	SW846 8260B			8/29/16 11:54	TMP	A

Ms. Susan J Scherer
Project Coordinator

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2169248001	1	FFMP029W	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2169248001	2	FFMP029W	SW846 8260B	1,1-Dichloroethene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte 1,1-Dichloroethene. The % Recovery was reported as 129 and the control limits were 63 to 128.				
2169248001	3	FFMP029W	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2169248002	1	FFMP028W	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2169248002	2	FFMP028W	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2169248003	1	FFMP025W	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2169248003	2	FFMP025W	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2169248004	1	FFMP016W	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2169248004	2	FFMP016W	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2169248005	1	FFMP03AW	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2169248005	2	FFMP03AW	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2169248005	3	FFMP03AW	EPA 300.0	Nitrate-N
The sample was originally run within hold time, but required further analysis that exceeded hold time.				

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALS

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

21692248

1 of 1

Container Type	AG	AN	CG	—	—	PL	PL	PL	PL		
Container Size	~~125 ml~~ 40	500 ml	40 ml	—	—	500 ml	500 ml	1 L	500 ml		
Preservative	HCl	H2SO4	HCl	—	—	H2SO4	HNO3	None	None		

Client Name: Lancaster County Solid Waste MA

Address: 1299 Harrisburg Pike, P.O. Box 4424, Lancaster, PA 17604

Contact: Brooks Norris

Phone#: (717) 397-9968

Project Name/#: Frey Farm Quarterly

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 bnorris@LCSWMA.com

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

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 19Q	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Metals: Fe, Mn, Na, Ca, K, Mg	pH, Cl, SpC, F, SO4, TDS, NO3, Turb.	Alkalinity, HCO3	
			Enter Number of Containers Per Sample or Field Results Below.											
1 FFMP029W	8-22-16	1057	G	GW	2	1	2	X	X	1	1	1	1	
2 FFMP028W		1214												
3 FFMP025W		1253												
4 FFMP016W		1345												
5 FFMP03AW		1450												
6 Field Blank		1500												
7 Trip Blank		1646												
8														
9														
10														

Cooler Temp: 2 °C Therm ID: 352

No. of Coolers: _____

	Y	N	Initial
Custody Seals Present?			
(if present) Seals Intact?			
Received on Ice?	✓		
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 8/24/16 TIME 2042

REVIEWED BY(signature): _____ DATE _____ TIME _____

Data Deliverables: [ ] Standard [ ] CLP-like [ ] USACE

Special Processing: USACE [ ] Navy [ ]

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

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 BOWhode ALS	8-22-16	1646	2	8/22	1646
3			4		
5			6		
7			8		
9			10		

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

ALS Environmental
34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F.717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

COC #: | 1 of 1

ALS Quote #:

Client Name: ALS Middletown

Address: 34 Dogwood Lane
Middletown PA 17057

Contact: Susan Scherer

Phone#: (717) 702-2245

Project Name/#: LCSWMA-Frey Farm-Form 19Q

Bill To: ALS Middletown

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

Date Required: 9/6/2016 Approved By:

Email? [X] -Y ALMDT.Subcontract@ALSGlobal.com

Fax? [ ] -Y No.:

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	Container Type	Container Size	Preservative	Phenols, Total SW846-9066								
					AG	500mL	H2SO4	ANALYSES/METHOD REQUESTED								
					Enter Number of Containers Per Sample or Field Results Below.											
1) 2169248001	8/22/2016	1054	G	GW	1											
2) 2169248002	8/22/2016	1214	G	GW	1											
3) 2169248003	8/22/2016	1253	G	GW	1											
4) 2169248004	8/22/2016	1315	G	GW	1											
5) 2169248005	8/22/2016	1450	G	GW	1											
6)																
7)																
8)																
9)																
10)																

Receipt Information (completed by Receiving Lab)

Cooler Temp: ____ Therm ID: ____

No. of Coolers: ____

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

Courier/Tracking #:

Sample/COC Comments

Subcontract to ALS Holland MI

ALS Field Services: __Pickup __Labor
__Composite Sampling __Rental Equipment
__Other:

Project Comments:

LOGGED BY(signature): DATE TIME

REVIEWED BY(signature): DATE TIME

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1	8/25/16	1600	2		
3			4		
5			6		
7			8		
9			10		

Data Deliverables: [X] 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 [ ] Special [ ]

EDDS: Format Type ~~EXCEL~~ Not Required

* 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 10/11

ALS Environmental

01-Sep-2016

Susan Scherer
ALS Environmental
34 Dogwood Lane
Middletown, PA 17057

Re: **2169248** Work Order: **16081529**

Dear Susan,

ALS Environmental received 5 samples on 26-Aug-2016 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 11.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Electronically approved by: Tom Beamish

Tom Beamish
Client Services Coordinator

NELAP ACCREDITED LABORATORY

Certificate No: PA: 68-03827

Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185
ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

ALS Group USA, Corp

Date: 01-Sep-16

Client: ALS Environmental
Project: 2169248
Work Order: **16081529**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
16081529-01	2169248001	Groundwater		08/22/16 10:54	08/25/16 09:30	☐
16081529-02	2169248002	Groundwater		08/22/16 12:14	08/25/16 09:30	☐
16081529-03	2169248003	Groundwater		08/22/16 12:53	08/25/16 09:30	☐
16081529-04	2169248004	Groundwater		08/22/16 13:15	08/25/16 09:30	☐
16081529-05	2169248005	Groundwater		08/22/16 14:50	08/25/16 09:30	☐

Client: ALS Environmental
Project: 2169248
WorkOrder: 16081529

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/L	Milligrams per Liter

ALS Group USA, Corp

Date: *01-Sep-16*

Client: ALS Environmental
Project: 2169248
Sample ID: 2169248001
Collection Date: 08/22/16 10:54 AM

Work Order: 16081529
Lab ID: 16081529-01
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL			Method: **SW9066**				Analyst: **JJG**
Phenolics, Total		U	0.0030	0.010	mg/L	1	09/01/16 11:43

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *01-Sep-16*

Client: ALS Environmental
Project: 2169248
Sample ID: 2169248002
Collection Date: 08/22/16 12:14 PM

Work Order: 16081529
Lab ID: 16081529-02
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL			Method: **SW9066**				Analyst: **JJG**
Phenolics, Total		U	0.0030	0.010	mg/L	1	09/01/16 11:43

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *01-Sep-16*

Client: ALS Environmental
Project: 2169248
Sample ID: 2169248003
Collection Date: 08/22/16 12:53 PM

Work Order: 16081529
Lab ID: 16081529-03
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL			Method: **SW9066**				Analyst: **JJG**
Phenolics, Total		U	0.0030	0.010	mg/L	1	09/01/16 11:43

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *01-Sep-16*

Client: ALS Environmental
Project: 2169248
Sample ID: 2169248004
Collection Date: 08/22/16 01:15 PM

Work Order: 1608152[illegible]
Lab ID: 1608152[illegible]-04
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL		Method: **SW9066**					Analyst: **JJG**
Phenolics, Total	U		0.0033	0.011	mg/L	1	09/01/16 11:43

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *01-Sep-16*

Client: ALS Environmental
Project: 2169248
Sample ID: 2169248005
Collection Date: 08/22/16 02:50 PM

Work Order: 16081529
Lab ID: 16081529-05
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL			Method: **SW9066**				Analyst: **JJG**
Phenolics, Total		U	0.0030	0.010	mg/L	1	09/01/16 11:43

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 01-Sep-16

Client: ALS Environmental
Work Order: 16081529
Project: 2169248

QC BATCH REPORT

Batch ID: 90799B **Instrument ID** LACHAT **Method:** SW9066

MBLK Sample ID: **MBLK-90799-90799B** Units: **mg/L** Analysis Date: **09/01/16 11:43 AM**
Client ID: Run ID: **LACHAT_160901A** SeqNo: **4006611** Prep Date: **08/31/16** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	U	0.010								

LCS Sample ID: **LCS-90799-90799B** Units: **mg/L** Analysis Date: **09/01/16 11:43 AM**
Client ID: Run ID: **LACHAT_160901A** SeqNo: **4006612** Prep Date: **08/31/16** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	0.107	0.010	0.1	0	107	75-110	0			

The following samples were analyzed in this batch:

16081529-01A	16081529-02A	16081529-03A
16081529-04A	16081529-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC Page: 1 of 1

ALS Environmental
34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

COC #: 16081529 — 1 of 1
ALS Quote #:

Client Name: ALS Middletown
Address: 34 Dogwood Lane, Middletown, PA 17057
Contact: Susan Scherer
Phone#: (717)702-2245
Project Name/#: LCSW Hershey Farm Form 190
Bill To: ALS Middletown
TAT: [X] Normal-Standard TAT is 10-12 business days [ ] Rush-Subject to ALS approval and surcharges
Date Required: 9/6/2016 Approved By:
Email? [X] Y ALMDT.Subcontract@ALSGlobal.com [ ] Y No
Fax? [ ] Y No

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	Container Type	Container Size	Preservative	Analyses/Method Requested: Phenols 1Qtr SW846-9066	Enter Number of Containers Per Sample or Field Results Below.
1) 2169248001	8/22/2016	1054	G	GW	AG	500mL	H2SO4	3	
2) 2169248002	8/22/2016	1214	G	GW				3	
3) 2169248003	8/22/2016	1253	G	GW				3	
4) 2169248004	8/22/2016	1315	G	GW				3	
5) 2169248005	8/22/2016	1450	G	GW				3	
6)									
7)									
8)									
9)									
10)									

Project Comments:

LOGGED BY (signature): Date: Y
REVIEWED BY (signature): Date: Y

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1	8/26/16	1600	2 MT Brassell	8/26/16	930
3			4		
5			6		
7			8		
9			10		

Receipt Information (completed by Receiving Lab)
Cooler Temp: 3.4 Therm ID:

	Y	N	Initial
No. of Coolers:			
Custody Seals Present?			
(If present) Seals Intact?			
Received on Ice?			
COC/Labels Complete/Accurate?			
Cont. in Good Cond.?			
Correct Containers?			
Correct Sample Volumes?			
Correct Preservation?			
Headspace/VolatSes?			

Courier/Tracking #:
Sample/COC Comments
Subcontract to ALS Holland MI

ALS Field Services: _Pickup _Labor _Composite Sampling _Rental Equipment _Other:

Data Deliverables: [X] Standard [ ] QLP-like [ ] USACE
Special Processing: [ ] USACE [ ] Navy
State Samples Collected in: [ ] NY [ ] NJ [X] PA [ ] NC
Reportable to PADEP? [ ] Yes
PWSID #:
Sample Disposal: [ ] Lab [ ] Special
EDDS: Format/Type: EKim Not Required

* 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 10/11

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **ALS - MIDDLETOWN** Date/Time Received: **26-Aug-16 09:30**

Work Order: **16081529** Received by: **MBB**

Checklist completed by Meghan Brandbent eSignature 26-Aug-16 Date Reviewed by: Tom Bramcak eSignature 26-Aug-16 Date

Matrices: water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.4/3.4	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	8/26/2016 12:50:42 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

SRC Page 1 of 1

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

September 12, 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-FREY FARM**	Workorder:	**2170213**
Purchase Order:		Workorder ID:	**3RD QTR 2016 GWMP-FORM 19Q**

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Thursday, August 25, 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: 2170213 3RD QTR 2016 GWMP-FORM 19Q

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2170213001	FFMP30RW	Ground Water	8/25/2016 12:03	8/25/2016 16:12	Mr. Brian G Shade
2170213002	FFMP04AW	Ground Water	8/25/2016 13:17	8/25/2016 16:12	Mr. Brian G Shade
2170213003	FFMP005W	Ground Water	8/25/2016 14:46	8/25/2016 16:12	Mr. Brian G Shade

ALS Environmental

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

SAMPLE SUMMARY

Workorder: 2170213 3RD QTR 2016 GWMP-FORM 19Q

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”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incurbator and the "Analyzed" value is the date/time out the incubator.

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

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

PROJECT SUMMARY

Workorder: 2170213 3RD QTR 2016 GWMP-FORM 19Q

Workorder Comments

See attached subcontracted total phenolics by SW9066 results from ALS Holland. SSL 09/07/16

ALS Environmental

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ANALYTICAL RESULTS

Workorder: 2170213 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2170213001** Date Collected: 8/25/2016 12:03 Matrix: Ground Water

Sample ID: **FFMP30RW** Date Received: 8/25/2016 16:12

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			9/6/16 16:49	TMP	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			9/6/16 16:49	TMP	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			9/6/16 16:49	TMP	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			9/6/16 16:49	TMP	H
1,1-Dichloroethene	ND	2,3	ug/L	1.0	SW846 8260B			9/6/16 16:49	TMP	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/6/16 16:49	TMP	H
trans-1,2-Dichloroethene	ND	6	ug/L	1.0	SW846 8260B			9/6/16 16:49	TMP	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			9/6/16 16:49	TMP	H
Methylene Chloride	ND	4,5	ug/L	1.0	SW846 8260B			9/6/16 16:49	TMP	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			9/6/16 16:49	TMP	H
Toluene	ND		ug/L	1.0	SW846 8260B			9/6/16 16:49	TMP	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			9/6/16 16:49	TMP	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			9/6/16 16:49	TMP	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			9/6/16 16:49	TMP	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			9/6/16 16:49	TMP	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	109		%	62 - 133	SW846 8260B			9/6/16 16:49	TMP	H
4-Bromofluorobenzene (S)	104		%	79 - 114	SW846 8260B			9/6/16 16:49	TMP	H
Dibromofluoromethane (S)	102		%	78 - 116	SW846 8260B			9/6/16 16:49	TMP	H
Toluene-d8 (S)	114		%	76 - 127	SW846 8260B			9/6/16 16:49	TMP	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	64		mg/L	5	S2320B-97			8/26/16 12:24	MSA	B
Alkalinity, Total	64	7	mg/L	5	S2320B-97			8/26/16 12:24	MSA	B
Ammonia-N	ND		mg/L	0.100	D6919-09			9/4/16 01:31	JAM	A
Chemical Oxygen Demand (COD)	16		mg/L	7	EPA 410.4			8/31/16 12:00	AK	A
Chloride	291		mg/L	5.0	EPA 300.0			8/27/16 08:17	MBW	B
Fluoride	ND		mg/L	0.20	EPA 300.0			8/26/16 07:06	BSL	B
Nitrate-N	4.7		mg/L	0.20	EPA 300.0			8/26/16 07:06	BSL	B
pH	6.47	1	pH_Units		SM4500B			8/26/16 12:24	MSA	B
Specific Conductance	1210		umhos/cm	1	SW846 9050A			8/26/16 12:24	MSA	B
Sulfate	42.2		mg/L	2.0	EPA 300.0			8/26/16 07:06	BSL	B
Total Dissolved Solids	737		mg/L	5	S2540C-11			8/29/16 15:21	ML	B
Total Organic Carbon (TOC)	1.3		mg/L	1.0	SW846 9060A			9/6/16 10:57	PAG	E
Turbidity	1.53		NTU	0.10	S2130B-01			8/27/16 01:55	MSA	B

Sub'd-ALSH Labs Cert 68-03827

ALS Environmental

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

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

ANALYTICAL RESULTS

Workorder: 2170213 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2170213001** Date Collected: 8/25/2016 12:03 Matrix: Ground Water

Sample ID: **FFMP30RW** Date Received: 8/25/2016 16:12

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			9/7/16 09:29	SUB	G
METALS										
Calcium, Total	63.0		mg/L	0.11	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:02	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:02	TSS	C1
Magnesium, Total	18.3		mg/L	0.11	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:02	TSS	C1
Manganese, Total	3.8		mg/L	0.0056	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:02	TSS	C1
Potassium, Total	7.2		mg/L	0.56	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:02	TSS	C1
Sodium, Total	122		mg/L	0.56	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:02	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	36.470		Feet		Field			8/25/16 12:03	BGS	D
Elev Top MW Casing above MSL	562.30		Feet		Field			8/25/16 12:03	BGS	D
Flow Rate	2.18		gal/min		Field			8/25/16 12:03	BGS	D
Ground Water Elevation	525.830		ft/MSL		Field			8/25/16 12:03	BGS	D
pH, Field (SM4500B)	5.520		pH_Units		Field			8/25/16 12:03	BGS	D
Sample Depth	85.000		Feet		Field			8/25/16 12:03	BGS	D
Specific Conductance, Field	1232		umhos/cm	1	Field			8/25/16 12:03	BGS	D
Temperature	12.02		Deg. C		Field			8/25/16 12:03	BGS	D
Total Well Depth	94.200		Feet		Field			8/25/16 12:03	BGS	D
Volume in Water Column	84.863		Gallons		Field			8/25/16 12:03	BGS	D
Water Level After Purge	69.780		Feet		Field			8/25/16 12:03	BGS	D
Well Volumes Purged	1.54		Vol		Field			8/25/16 12:03	BGS	D

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

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

ANALYTICAL RESULTS

Workorder: 2170213 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2170213002** Date Collected: 8/25/2016 13:17 Matrix: Ground Water

Sample ID: **FFMP04AW** Date Received: 8/25/2016 16:12

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			9/7/16 15:31	TMP	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			9/7/16 15:31	TMP	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			9/7/16 15:31	TMP	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			9/7/16 15:31	TMP	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/7/16 15:31	TMP	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/7/16 15:31	TMP	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/7/16 15:31	TMP	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			9/7/16 15:31	TMP	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			9/7/16 15:31	TMP	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			9/7/16 15:31	TMP	H
Toluene	ND		ug/L	1.0	SW846 8260B			9/7/16 15:31	TMP	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			9/7/16 15:31	TMP	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			9/7/16 15:31	TMP	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			9/7/16 15:31	TMP	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			9/7/16 15:31	TMP	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	89.7		%	62 - 133	SW846 8260B			9/7/16 15:31	TMP	H
4-Bromofluorobenzene (S)	87.5		%	79 - 114	SW846 8260B			9/7/16 15:31	TMP	H
Dibromofluoromethane (S)	84.3		%	78 - 116	SW846 8260B			9/7/16 15:31	TMP	H
Toluene-d8 (S)	91		%	76 - 127	SW846 8260B			9/7/16 15:31	TMP	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	188		mg/L	5	S2320B-97			8/26/16 12:34	MSA	B
Alkalinity, Total	188	2	mg/L	5	S2320B-97			8/26/16 12:34	MSA	B
Ammonia-N	ND		mg/L	0.100	D6919-09			9/5/16 23:14	JAM	A
Chemical Oxygen Demand (COD)	14		mg/L	7	EPA 410.4			8/31/16 12:00	AK	A
Chloride	288		mg/L	5.0	EPA 300.0			8/26/16 07:18	BSL	B
Fluoride	ND		mg/L	0.50	EPA 300.0			8/26/16 07:18	BSL	B
Nitrate-N	ND		mg/L	0.50	EPA 300.0			8/26/16 07:18	BSL	B
pH	7.60	1	pH_Units		SM4500B			8/26/16 12:34	MSA	B
Specific Conductance	1390		umhos/cm	1	SW846 9050A			8/26/16 12:34	MSA	B
Sulfate	44.2		mg/L	5.0	EPA 300.0			8/26/16 07:18	BSL	B
Total Dissolved Solids	1110		mg/L	5	S2540C-11			8/29/16 15:21	ML	B
Total Organic Carbon (TOC)	1.0		mg/L	1.0	SW846 9060A			9/6/16 10:57	PAG	E
Turbidity	0.65		NTU	0.10	S2130B-01			8/27/16 01:55	MSA	B

Sub'd-ALSH Labs Cert 68-03827

ALS Environmental

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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: 2170213 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2170213002** Date Collected: 8/25/2016 13:17 Matrix: Ground Water

Sample ID: **FFMP04AW** Date Received: 8/25/2016 16:12

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			9/7/16 09:29	SUB	G
METALS										
Calcium, Total	150		mg/L	0.11	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:06	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:06	TSS	C1
Magnesium, Total	24.8		mg/L	0.11	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:06	TSS	C1
Manganese, Total	0.15		mg/L	0.0056	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:06	TSS	C1
Potassium, Total	2.0		mg/L	0.56	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:06	TSS	C1
Sodium, Total	78.5		mg/L	0.56	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:06	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	35.830		Feet		Field			8/22/16 13:17	BGS	D
Elev Top MW Casing above MSL	560.72		Feet		Field			8/22/16 13:17	BGS	D
Flow Rate	2.03		gal/min		Field			8/22/16 13:17	BGS	D
Ground Water Elevation	524.890		ft/MSL		Field			8/22/16 13:17	BGS	D
pH, Field (SM4500B)	6.330		pH_Units		Field			8/22/16 13:17	BGS	D
Sample Depth	146.000		Feet		Field			8/22/16 13:17	BGS	D
Specific Conductance, Field	1475		umhos/cm	1	Field			8/22/16 13:17	BGS	D
Temperature	12.94		Deg. C		Field			8/22/16 13:17	BGS	D
Total Well Depth	148.500		Feet		Field			8/22/16 13:17	BGS	D
Volume in Water Column	165.625		Gallons		Field			8/22/16 13:17	BGS	D
Water Level After Purge	80.790		Feet		Field			8/22/16 13:17	BGS	D
Well Volumes Purged	0.73		Vol		Field			8/22/16 13:17	BGS	D

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

ANALYTICAL RESULTS

Workorder: 2170213 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2170213003** Date Collected: 8/25/2016 14:46 Matrix: Ground Water

Sample ID: **FFMP005W** Date Received: 8/25/2016 16:12

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			9/6/16 16:32	TMP	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			9/6/16 16:32	TMP	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			9/6/16 16:32	TMP	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			9/6/16 16:32	TMP	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/6/16 16:32	TMP	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/6/16 16:32	TMP	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/6/16 16:32	TMP	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			9/6/16 16:32	TMP	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			9/6/16 16:32	TMP	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			9/6/16 16:32	TMP	H
Toluene	ND		ug/L	1.0	SW846 8260B			9/6/16 16:32	TMP	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			9/6/16 16:32	TMP	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			9/6/16 16:32	TMP	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			9/6/16 16:32	TMP	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			9/6/16 16:32	TMP	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	107		%	62 - 133	SW846 8260B			9/6/16 16:32	TMP	H
4-Bromofluorobenzene (S)	99.4		%	79 - 114	SW846 8260B			9/6/16 16:32	TMP	H
Dibromofluoromethane (S)	97.9		%	78 - 116	SW846 8260B			9/6/16 16:32	TMP	H
Toluene-d8 (S)	113		%	76 - 127	SW846 8260B			9/6/16 16:32	TMP	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	41		mg/L	5	S2320B-97			8/26/16 12:43	MSA	B
Alkalinity, Total	41	2	mg/L	5	S2320B-97			8/26/16 12:43	MSA	J
Ammonia-N	ND		mg/L	0.100	D6919-09			9/5/16 23:33	JAM	A
Chemical Oxygen Demand (COD)	12		mg/L	7	EPA 410.4			8/31/16 12:00	AK	A
Chloride	164		mg/L	2.0	EPA 300.0			8/26/16 07:30	BSL	B
Fluoride	ND		mg/L	0.20	EPA 300.0			8/26/16 07:30	BSL	B
Nitrate-N	3.5		mg/L	0.20	EPA 300.0			8/26/16 07:30	BSL	B
pH	6.24	1	pH_Units		SM4500B			8/26/16 12:43	MSA	B
Specific Conductance	764		umhos/cm	1	SW846 9050A			8/26/16 12:43	MSA	B
Sulfate	46.4		mg/L	2.0	EPA 300.0			8/26/16 07:30	BSL	B
Total Dissolved Solids	571		mg/L	5	S2540C-11			8/29/16 15:21	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			9/6/16 10:57	PAG	E
Turbidity	ND		NTU	0.10	S2130B-01			8/27/16 01:55	MSA	B

Sub'd-ALSH Labs Cert 68-03827

ALS Environmental

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

ANALYTICAL RESULTS

Workorder: 2170213 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2170213003** Date Collected: 8/25/2016 14:46 Matrix: Ground Water

Sample ID: **FFMP005W** Date Received: 8/25/2016 16:12

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			9/7/16 09:29	SUB	G
METALS										
Calcium, Total	69.0		mg/L	0.11	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:10	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:10	TSS	C1
Magnesium, Total	15.8		mg/L	0.11	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:10	TSS	C1
Manganese, Total	0.040		mg/L	0.0056	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:10	TSS	C1
Potassium, Total	2.2		mg/L	0.56	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:10	TSS	C1
Sodium, Total	39.1		mg/L	0.56	SW846 6010C	8/29/16 11:00	JPS	8/31/16 10:10	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	70.040		Feet		Field			8/25/16 14:46	BGS	D
Elev Top MW Casing above MSL	537.40		Feet		Field			8/25/16 14:46	BGS	D
Flow Rate	2.33		gal/min		Field			8/25/16 14:46	BGS	D
Ground Water Elevation	467.360		ft/MSL		Field			8/25/16 14:46	BGS	D
pH, Field (SM4500B)	5.290		pH_Units		Field			8/25/16 14:46	BGS	D
Sample Depth	135.000		Feet		Field			8/25/16 14:46	BGS	D
Specific Conductance, Field	809		umhos/cm	1	Field			8/25/16 14:46	BGS	D
Temperature	12.13		Deg. C		Field			8/25/16 14:46	BGS	D
Total Well Depth	149.700		Feet		Field			8/25/16 14:46	BGS	D
Volume in Water Column	117.100		Gallons		Field			8/25/16 14:46	BGS	D
Water Level After Purge	98.510		Feet		Field			8/25/16 14:46	BGS	D
Well Volumes Purged	1.00		Vol		Field			8/25/16 14:46	BGS	D

Ms. Susan J Scherer
Project Coordinator

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2170213001	1	FFMP30RW	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2170213001	2	FFMP30RW	SW846 8260B	1,1-Dichloroethene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte 1,1-Dichloroethene. The % Recovery was reported as 138 and the control limits were 63 to 128.				
2170213001	3	FFMP30RW	SW846 8260B	1,1-Dichloroethene
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte 1,1-Dichloroethene. The % Recovery was reported as 129 and the control limits were 63 to 128.				
2170213001	4	FFMP30RW	SW846 8260B	Methylene Chloride
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte Methylene Chloride. The % Recovery was reported as 147 and the control limits were 76 to 121.				
2170213001	5	FFMP30RW	SW846 8260B	Methylene Chloride
The QC sample type MSD for method SW846 8260B was outside the control limits for the analyte Methylene Chloride. The % Recovery was reported as 137 and the control limits were 76 to 121.				
2170213001	6	FFMP30RW	SW846 8260B	trans-1,2-Dichloroethene
The QC sample type MS for method SW846 8260B was outside the control limits for the analyte trans-1,2-Dichloroethene. The % Recovery was reported as 127 and the control limits were 71 to 122.				
2170213001	7	FFMP30RW	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2170213002	1	FFMP04AW	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2170213002	2	FFMP04AW	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2170213003	1	FFMP005W	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2170213003	2	FFMP005W	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

SJB

Generated by ALS

COC

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:	Brooks Norris
Phone#:	(717) 397-9968
Project Name/#:	Frey Farm Quarterly
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 bnorris@LCSWMA.com
Fax?	[X] -Y No.: (717) 397-9973

Container Type	AV	AN	CG	—	—	PL	PL	PL	PL	
Container Size	~~125 ml~~ 40	500 ml	40 ml	—	—	500 ml	500 ml	1 L	500 ml	
Preservative	HCl	H2SO4	HCl	—	—	H2SO4	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 19Q	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Metals: Fe, Mn, Na, Ca, K, Mg	pH, Cl, SpC, F, SO4, TDS, NO3, Turb.	Alkalinity, HCO3	
			Enter Number of Containers Per Sample or Field Results Below.											
1. FFMP30RW	8-25-16	1203	G	GW	2	1	2	X	X	1	1	1	1	
2. FFMP04AW	1	1317	1	1	1	1	1	1	1	1	1	1	1	
3. FFMP005W	1	1446	1	1	1	1	1	1	1	1	1	1	1	
4														
5														
6														
7														
8														
9														
10														

Cooler Temp: 6 Therm ID: 352

No. of Coolers: _____

	Y	N	Initial
Custody Seals Present?			SJB
(if present) Seals Intact?			
Received on Ice?			
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): [signature] DATE: 08/25/16 TIME: 1349

REVIEWED BY(signature): SR DATE: 8/26/16 TIME:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [signature] AGS	8-25-16	1612	2 [signature]	8/25	1612
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

Rev 8/04

ALS Environmental
34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

COC #: | 1 of 1

ALS Quote #:

Client Name: ALS Middletown

Address: 34 Dogwood Lane
Middletown PA 17057

Contact: Susan Scherer

Phone#: (717) 702-2245

Project Name/#: LCSWMA-Frey Farm-Form 19Q

Bill To: ALS Middletown

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

Date Required: 9/9/2016 Approved By:

Email? [X] -Y ALMDT.Subcontract@ALSGlobal.com

Fax? [ ] -Y No.:

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	Container Type	Container Size	Preservative	Phenols, Total SW846-9066
					AG	500mL	H2SO4	
1) 2170213001	8/25/2016	1203	G	GW				1
2) 2170213002	8/25/2016	1317	G	GW				1
3) 2170213003	8/25/2016	1446	G	GW				1
4)								
5)								
6)								
7)								
8)								
9)								
10)								

ANALYSES/METHOD REQUESTED

Enter Number of Containers Per Sample or Field Results Below.

Receipt Information (completed by Receiving Lab)

Cooler Temp: _____ Therm ID: _____

No. of Coolers: _____

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

Courier/Tracking #:

Sample/COC Comments

Subcontract to ALS Holland MI

ALS Field Services: _Pickup _Labor
_Composite Sampling _Rental Equipment
_Other:

Project Comments:

LOGGED BY(signature): DATE TIME

REVIEWED BY(signature): DATE TIME

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1	8/29/16	1635	2		
3			4		
5			6		
7			8		
9			10		

Data Deliverables: [X] 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 [ ] 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 10/11

ALS Environmental

07-Sep-2016

Susan Scherer
ALS Environmental
34 Dogwood Lane
Middletown, PA 17057

Re: **2170213** Work Order: **16081669**

Dear Susan,

ALS Environmental received 3 samples on 30-Aug-2016 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 9.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Electronically approved by: Tom Beamish

Tom Beamish
Client Services Coordinator

NELAP ACCREDITED TNI LABORATORY

Certificate No: PA: 68-03827

ALS Group USA, Corp

Date: 07-Sep-16

Client: ALS Environmental
Project: 2170213
Work Order: **16081669**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
16081669-01	2170213001	Groundwater		08/25/16 12:03	08/30/16 09:30	☐
16081669-02	2170213002	Groundwater		08/25/16 13:17	08/30/16 09:30	☐
16081669-03	2170213003	Groundwater		08/25/16 14:46	08/30/16 09:30	☐

ALS Group USA, Corp

Date: 07-Sep-16

Client: ALS Environmental
Project: 2170213
WorkOrder: 16081669

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/L	Milligrams per Liter

ALS Group USA, Corp

Date: *07-Sep-16*

Client: ALS Environmental
Project: 2170213
Sample ID: 2170213001
Collection Date: 08/25/16 12:03 PM

Work Order: 16081669
Lab ID: 16081669-01
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL		Method: **SW9066**					Analyst: **JJG**
Phenolics, Total	**0.0039**	J	**0.0030**	**0.010**	**mg/L**	1	09/07/16 09:29

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *07-Sep-16*

Client: ALS Environmental
Project: 2170213
Sample ID: 2170213002
Collection Date: 08/25/16 01:17 PM

Work Order: 16081669
Lab ID: 16081669-02
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL		Method: **SW9066**					Analyst: **JJG**
Phenolics, Total	U		0.0030	0.010	mg/L	1	09/07/16 09:29

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *07-Sep-16*

Client: ALS Environmental
Project: 2170213
Sample ID: 2170213003
Collection Date: 08/25/16 02:46 PM

Work Order: 16081669
Lab ID: 16081669-03
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL		Method: **SW9066**					Analyst: **JJG**
Phenolics, Total		U	0.0030	0.010	mg/L	1	09/07/16 09:29

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 07-Sep-16

Client: ALS Environmental
Work Order: 16081669
Project: 2170213

QC BATCH REPORT

Batch ID: **90903B** Instrument ID **LACHAT** Method: **SW9066**

MBLK Sample ID: **MBLK-90903-90903B** Units: **mg/L** Analysis Date: **09/07/16 09:29 AM**
Client ID: Run ID: **LACHAT_160907A** SeqNo: **4013869** Prep Date: **09/02/16** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	U	0.010								

LCS Sample ID: **LCS-90903-90903B** Units: **mg/L** Analysis Date: **09/07/16 09:29 AM**
Client ID: Run ID: **LACHAT_160907A** SeqNo: **4013870** Prep Date: **09/02/16** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	0.09388	0.010	0.1	0	93.9	75-110	0			

The following samples were analyzed in this batch: 16081669-01A, 16081669-02A, 16081669-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC Page: 1 of 1

ALS Environmental
34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

COC #: 16081669 | 1 of 1
ALS Quote#:

Client Name: ALS Middletown
Address: 34 Dogwood Lane, Middletown, PA 17057
Contact: Susan Scherer
Phone#: (717) 702-2245
Project Name/#: LCSWMA Levy Farm Form 180
Bill To: ALS Middletown
TAT: [X] Normal-Standard TAT is 10-12 business days [ ] Rush-Subject to ALS approval and surcharges
Date Required: 9/9/2016 Approved By:
Email? [X] Y ALMDT_Subcontract@ALSGlobal.co
Fax? [ ] Y No

Container Type	AG
Container Size	500mL
Preservative	H2SO4

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	Phenols, Total SW846-9066	Enter Number of Containers Per Sample or Field Results Below.
1) 217021300 1	8/25/2016	1203	G	GW	1	
2) 217021300 2	8/25/2016	1317	G	GW	1	
3) 217021300 3	8/25/2016	1446	G	GW	1	
4)						
5)						
6)						
7)						
8)						
9)						
10)						

Project Comments:

LOGGED BY(signature): DATE: TIME:
REVIEWED BY(signature): DATE: TIME:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1	8/29/16	1635	2 YNBrooks	8/30/16	930
3			4		
5			6		
7			8		
9			10		

Receipt Information (completed by Receiving Lab)
Cooler Temp: 2.2 Therm ID:
No. of Coolers:

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

Courier/Tracking #:
Sample/COC Comments
Subcontract to ALS Holland MI

ALS Field Services: __Pickup __Labor __Composite Sampling __Rental Equipment __Other:

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

* G=Grab; C=Composite **Matrix - AI=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 10/11

TBB

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **ALS - MIDDLETOWN** Date/Time Received: **30-Aug-16 09:30**

Work Order: **16081669** Received by: **MBB**

Checklist completed by Meghan Brandbent eSignature 30-Aug-16 Date Reviewed by: Tom Bramish eSignature 30-Aug-16 Date

Matrices: water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.2/2.2	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	8/30/2016 1:20:45 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

SRC Page 1 of 1

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

September 12, 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-FREY FARM**	Workorder:	**2170653**
Purchase Order:		Workorder ID:	**3RD QTR 2016 GWMP-FORM 19Q**

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Friday, August 26, 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: 2170653 3RD QTR 2016 GWMP-FORM 19Q

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2170653001	FFMP018W	Ground Water	8/26/2016 10:11	8/26/2016 17:49	Mr. Brian G Shade
2170653002	FFMP019W	Ground Water	8/26/2016 10:57	8/26/2016 17:49	Mr. Brian G Shade
2170653003	FFMP26RW	Ground Water	8/26/2016 12:30	8/26/2016 17:49	Mr. Brian G Shade
2170653004	FIELD BLANK	Ground Water	8/26/2016 16:30	8/26/2016 17:49	Mr. Brian G Shade
2170653005	TRIP BLANK	Ground Water	8/26/2016 17:49	8/26/2016 17:49	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 2170653 3RD QTR 2016 GWMP-FORM 19Q

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”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incurbator and the "Analyzed" value is the date/time out the incubator.

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

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PROJECT SUMMARY

Workorder: 2170653 3RD QTR 2016 GWMP-FORM 19Q

Workorder Comments

See attached subcontracted total phenolics by SW 9066 results from ALS Holland. SSL 09/08/16

ALS Environmental

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ANALYTICAL RESULTS

Workorder: 2170653 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2170653001** Date Collected: 8/26/2016 10:11 Matrix: Ground Water

Sample ID: **FFMP018W** Date Received: 8/26/2016 17:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			9/8/16 03:21	SYB	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			9/8/16 03:21	SYB	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			9/8/16 03:21	SYB	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			9/8/16 03:21	SYB	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 03:21	SYB	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 03:21	SYB	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 03:21	SYB	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			9/8/16 03:21	SYB	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			9/8/16 03:21	SYB	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 03:21	SYB	H
Toluene	ND		ug/L	1.0	SW846 8260B			9/8/16 03:21	SYB	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			9/8/16 03:21	SYB	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			9/8/16 03:21	SYB	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 03:21	SYB	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			9/8/16 03:21	SYB	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	87.8		%	62 - 133	SW846 8260B			9/8/16 03:21	SYB	H
4-Bromofluorobenzene (S)	86.7		%	79 - 114	SW846 8260B			9/8/16 03:21	SYB	H
Dibromofluoromethane (S)	83		%	78 - 116	SW846 8260B			9/8/16 03:21	SYB	H
Toluene-d8 (S)	88.7		%	76 - 127	SW846 8260B			9/8/16 03:21	SYB	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	17		mg/L	5	S2320B-97			8/27/16 16:49	MSA	B
Alkalinity, Total	17	2	mg/L	5	S2320B-97			8/27/16 16:49	MSA	B
Ammonia-N	ND		mg/L	0.100	D6919-09			9/7/16 03:15	CMM	A
Chemical Oxygen Demand (COD)	ND		mg/L	7	EPA 410.4			9/2/16 16:17	AK	A
Chloride	125		mg/L	2.0	EPA 300.0			8/27/16 14:59	BSL	B
Fluoride	ND		mg/L	0.20	EPA 300.0			8/27/16 14:59	BSL	B
Nitrate-N	5.6		mg/L	0.20	EPA 300.0			8/27/16 14:59	BSL	B
pH	5.99	1	pH_Units		SM4500B			8/27/16 16:49	MSA	B
Specific Conductance	625		umhos/cm	1	SW846 9050A			8/27/16 16:49	MSA	B
Sulfate	47.5		mg/L	2.0	EPA 300.0			8/27/16 14:59	BSL	B
Total Dissolved Solids	430		mg/L	5	S2540C-11			8/30/16 12:36	ML	B
Total Organic Carbon (TOC)	1.1		mg/L	1.0	SW846 9060A			9/7/16 13:48	PAG	E
Turbidity	ND		NTU	0.10	S2130B-01			8/28/16 06:51	MSA	B

Sub'd-ALSH Labs Cert 68-03827

ALS Environmental

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

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

ANALYTICAL RESULTS

Workorder: 2170653 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2170653001** Date Collected: 8/26/2016 10:11 Matrix: Ground Water

Sample ID: **FFMP018W** Date Received: 8/26/2016 17:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			9/7/16 09:29	SUB	G
METALS										
Calcium, Total	35.2		mg/L	0.11	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:14	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:14	TSS	C1
Magnesium, Total	17.6		mg/L	0.11	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:14	TSS	C1
Manganese, Total	0.30		mg/L	0.0056	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:14	TSS	C1
Potassium, Total	4.6		mg/L	0.56	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:14	TSS	C1
Sodium, Total	42.0		mg/L	0.56	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:14	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	28.270		Feet		Field			8/26/16 10:11	BGS	D
Elev Top MW Casing above MSL	472.20		Feet		Field			8/26/16 10:11	BGS	D
Flow Rate	4.61		gal/min		Field			8/26/16 10:11	BGS	D
Ground Water Elevation	443.930		ft/MSL		Field			8/26/16 10:11	BGS	D
pH, Field (SM4500B)	4.940		pH_Units		Field			8/26/16 10:11	BGS	D
Sample Depth	40.000		Feet		Field			8/26/16 10:11	BGS	D
Specific Conductance, Field	659		umhos/cm	1	Field			8/26/16 10:11	BGS	D
Temperature	13.50		Deg. C		Field			8/26/16 10:11	BGS	D
Total Well Depth	51.460		Feet		Field			8/26/16 10:11	BGS	D
Volume in Water Column	15.074		Gallons		Field			8/26/16 10:11	BGS	D
Water Level After Purge	30.290		Feet		Field			8/26/16 10:11	BGS	D
Well Volumes Purged	3.06		Vol		Field			8/26/16 10:11	BGS	D

Susan J. Scherer

Ms. Susan J Scherer
Project Coordinator

ALS Environmental

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

ANALYTICAL RESULTS

Workorder: 2170653 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2170653002** Date Collected: 8/26/2016 10:57 Matrix: Ground Water

Sample ID: **FFMP019W** Date Received: 8/26/2016 17:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			9/8/16 03:44	SYB	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			9/8/16 03:44	SYB	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			9/8/16 03:44	SYB	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			9/8/16 03:44	SYB	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 03:44	SYB	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 03:44	SYB	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 03:44	SYB	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			9/8/16 03:44	SYB	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			9/8/16 03:44	SYB	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 03:44	SYB	H
Toluene	ND		ug/L	1.0	SW846 8260B			9/8/16 03:44	SYB	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			9/8/16 03:44	SYB	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			9/8/16 03:44	SYB	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 03:44	SYB	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			9/8/16 03:44	SYB	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	88.5		%	62 - 133	SW846 8260B			9/8/16 03:44	SYB	H
4-Bromofluorobenzene (S)	88.1		%	79 - 114	SW846 8260B			9/8/16 03:44	SYB	H
Dibromofluoromethane (S)	83.8		%	78 - 116	SW846 8260B			9/8/16 03:44	SYB	H
Toluene-d8 (S)	90.8		%	76 - 127	SW846 8260B			9/8/16 03:44	SYB	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	61		mg/L	5	S2320B-97			8/27/16 16:59	MSA	B
Alkalinity, Total	61	2	mg/L	5	S2320B-97			8/27/16 16:59	MSA	B
Ammonia-N	ND		mg/L	0.100	D6919-09			9/7/16 04:49	CMM	A
Chemical Oxygen Demand (COD)	ND		mg/L	7	EPA 410.4			9/2/16 16:17	AK	A
Chloride	74.6		mg/L	2.0	EPA 300.0			8/27/16 16:25	BSL	B
Fluoride	ND		mg/L	0.20	EPA 300.0			8/27/16 16:25	BSL	B
Nitrate-N	0.56		mg/L	0.20	EPA 300.0			8/27/16 16:25	BSL	B
pH	7.27	1	pH_Units		SM4500B			8/27/16 16:59	MSA	B
Specific Conductance	419		umhos/cm	1	SW846 9050A			8/27/16 16:59	MSA	B
Sulfate	13.6		mg/L	2.0	EPA 300.0			8/27/16 16:25	BSL	B
Total Dissolved Solids	347		mg/L	5	S2540C-11			8/30/16 12:36	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			9/7/16 13:48	PAG	E
Turbidity	ND		NTU	0.10	S2130B-01			8/28/16 06:51	MSA	B

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ANALYTICAL RESULTS

Workorder: 2170653 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2170653002** Date Collected: 8/26/2016 10:57 Matrix: Ground Water

Sample ID: **FFMP019W** Date Received: 8/26/2016 17:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			9/7/16 09:29	SUB	G
METALS										
Calcium, Total	58.0		mg/L	0.11	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:18	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:18	TSS	C1
Magnesium, Total	5.5		mg/L	0.11	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:18	TSS	C1
Manganese, Total	ND		mg/L	0.0056	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:18	TSS	C1
Potassium, Total	1.1		mg/L	0.56	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:18	TSS	C1
Sodium, Total	9.7		mg/L	0.56	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:18	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	29.040		Feet		Field			8/26/16 10:57	BGS	D
Elev Top MW Casing above MSL	471.95		Feet		Field			8/26/16 10:57	BGS	D
Flow Rate	4.99		gal/min		Field			8/26/16 10:57	BGS	D
Ground Water Elevation	442.910		ft/MSL		Field			8/26/16 10:57	BGS	D
pH, Field (SM4500B)	5.260		pH_Units		Field			8/26/16 10:57	BGS	D
Sample Depth	49.000		Feet		Field			8/26/16 10:57	BGS	D
Specific Conductance, Field	461		umhos/cm	1	Field			8/26/16 10:57	BGS	D
Temperature	12.50		Deg. C		Field			8/26/16 10:57	BGS	D
Total Well Depth	132.790		Feet		Field			8/26/16 10:57	BGS	D
Volume in Water Column	67.438		Gallons		Field			8/26/16 10:57	BGS	D
Water Level After Purge	39.880		Feet		Field			8/26/16 10:57	BGS	D
Well Volumes Purged	2.96		Vol		Field			8/26/16 10:57	BGS	D

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ANALYTICAL RESULTS

Workorder: 2170653 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2170653003** Date Collected: 8/26/2016 12:30 Matrix: Ground Water

Sample ID: **FFMP26RW** Date Received: 8/26/2016 17:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			9/8/16 04:06	SYB	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			9/8/16 04:06	SYB	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			9/8/16 04:06	SYB	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			9/8/16 04:06	SYB	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 04:06	SYB	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 04:06	SYB	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 04:06	SYB	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			9/8/16 04:06	SYB	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			9/8/16 04:06	SYB	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 04:06	SYB	H
Toluene	ND		ug/L	1.0	SW846 8260B			9/8/16 04:06	SYB	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			9/8/16 04:06	SYB	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			9/8/16 04:06	SYB	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 04:06	SYB	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			9/8/16 04:06	SYB	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	90.5		%	62 - 133	SW846 8260B			9/8/16 04:06	SYB	H
4-Bromofluorobenzene (S)	86.2		%	79 - 114	SW846 8260B			9/8/16 04:06	SYB	H
Dibromofluoromethane (S)	85.1		%	78 - 116	SW846 8260B			9/8/16 04:06	SYB	H
Toluene-d8 (S)	90.9		%	76 - 127	SW846 8260B			9/8/16 04:06	SYB	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	36		mg/L	5	S2320B-97			8/27/16 17:07	MSA	B
Alkalinity, Total	36	2	mg/L	5	S2320B-97			8/27/16 17:07	MSA	B
Ammonia-N	ND		mg/L	0.100	D6919-09			9/7/16 05:08	CMM	A
Chemical Oxygen Demand (COD)	ND		mg/L	7	EPA 410.4			9/2/16 16:17	AK	A
Chloride	188		mg/L	2.0	EPA 300.0			8/27/16 16:37	BSL	B
Fluoride	ND		mg/L	0.20	EPA 300.0			8/27/16 16:37	BSL	B
Nitrate-N	2.4		mg/L	0.20	EPA 300.0			8/27/16 16:37	BSL	B
pH	6.00	1	pH_Units		SM4500B			8/27/16 17:07	MSA	B
Specific Conductance	868		umhos/cm	1	SW846 9050A			8/27/16 17:07	MSA	B
Sulfate	62.6		mg/L	2.0	EPA 300.0			8/27/16 16:37	BSL	B
Total Dissolved Solids	550		mg/L	5	S2540C-11			9/1/16 10:46	ML	B
Total Organic Carbon (TOC)	1.7		mg/L	1.0	SW846 9060A			9/7/16 13:48	PAG	E
Turbidity	0.44		NTU	0.10	S2130B-01			8/28/16 06:51	MSA	B

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ANALYTICAL RESULTS

Workorder: 2170653 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2170653003** Date Collected: 8/26/2016 12:30 Matrix: Ground Water

Sample ID: **FFMP26RW** Date Received: 8/26/2016 17:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			9/7/16 09:29	SUB	G
METALS										
Calcium, Total	65.7		mg/L	0.11	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:21	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:21	TSS	C1
Magnesium, Total	19.0		mg/L	0.11	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:21	TSS	C1
Manganese, Total	0.36		mg/L	0.0056	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:21	TSS	C1
Potassium, Total	7.1		mg/L	0.56	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:21	TSS	C1
Sodium, Total	56.6		mg/L	0.56	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:21	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	80.120		Feet		Field			8/26/16 12:30	BGS	D
Elev Top MW Casing above MSL	547.40		Feet		Field			8/26/16 12:30	BGS	D
Flow Rate	1.97		gal/min		Field			8/26/16 12:30	BGS	D
Ground Water Elevation	467.280		ft/MSL		Field			8/26/16 12:30	BGS	D
pH, Field (SM4500B)	5.260		pH_Units		Field			8/26/16 12:30	BGS	D
Sample Depth	105.000		Feet		Field			8/26/16 12:30	BGS	D
Specific Conductance, Field	930		umhos/cm	1	Field			8/26/16 12:30	BGS	D
Temperature	13.27		Deg. C		Field			8/26/16 12:30	BGS	D
Total Well Depth	118.300		Feet		Field			8/26/16 12:30	BGS	D
Volume in Water Column	56.125		Gallons		Field			8/26/16 12:30	BGS	D
Water Level After Purge	94.520		Feet		Field			8/26/16 12:30	BGS	D
Well Volumes Purged	1.40		Vol		Field			8/26/16 12:30	BGS	D

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ANALYTICAL RESULTS

Workorder: 2170653 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2170653004** Date Collected: 8/26/2016 16:30 Matrix: Ground Water

Sample ID: **FIELD BLANK** Date Received: 8/26/2016 17:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			9/8/16 01:53	SYB	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			9/8/16 01:53	SYB	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			9/8/16 01:53	SYB	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			9/8/16 01:53	SYB	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 01:53	SYB	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 01:53	SYB	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 01:53	SYB	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			9/8/16 01:53	SYB	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			9/8/16 01:53	SYB	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 01:53	SYB	H
Toluene	ND		ug/L	1.0	SW846 8260B			9/8/16 01:53	SYB	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			9/8/16 01:53	SYB	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			9/8/16 01:53	SYB	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 01:53	SYB	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			9/8/16 01:53	SYB	H
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	88.4		%	62 - 133	SW846 8260B			9/8/16 01:53	SYB	H
4-Bromofluorobenzene (S)	86.5		%	79 - 114	SW846 8260B			9/8/16 01:53	SYB	H
Dibromofluoromethane (S)	84.8		%	78 - 116	SW846 8260B			9/8/16 01:53	SYB	H
Toluene-d8 (S)	89.7		%	76 - 127	SW846 8260B			9/8/16 01:53	SYB	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	ND		mg/L	5	S2320B-97			8/27/16 17:16	MSA	B
Alkalinity, Total	ND	2	mg/L	5	S2320B-97			8/27/16 17:16	MSA	B
Ammonia-N	ND		mg/L	0.100	D6919-09			9/7/16 05:27	CMM	A
Chemical Oxygen Demand (COD)	ND		mg/L	7	EPA 410.4			9/2/16 16:17	AK	A
Chloride	ND		mg/L	1.0	EPA 300.0			8/27/16 16:49	BSL	B
Fluoride	ND		mg/L	0.10	EPA 300.0			8/27/16 16:49	BSL	B
Nitrate-N	ND		mg/L	0.10	EPA 300.0			8/27/16 16:49	BSL	B
pH	6.25	1	pH_Units		SM4500B			8/27/16 17:16	MSA	B
Specific Conductance	ND		umhos/cm	1	SW846 9050A			8/27/16 17:16	MSA	B
Sulfate	ND		mg/L	1.0	EPA 300.0			8/30/16 19:49	BSL	B
Total Dissolved Solids	ND		mg/L	5	S2540C-11			9/1/16 10:46	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			9/7/16 13:48	PAG	E
Turbidity	ND		NTU	0.10	S2130B-01			8/28/16 06:51	MSA	B

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ANALYTICAL RESULTS

Workorder: 2170653 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2170653004** Date Collected: 8/26/2016 16:30 Matrix: Ground Water

Sample ID: **FIELD BLANK** Date Received: 8/26/2016 17:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Phenolics	ND		mg/L	0.01	SW846 9066			9/7/16 09:29	SUB	G
METALS										
Calcium, Total	ND		mg/L	0.11	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:25	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:25	TSS	C1
Magnesium, Total	ND		mg/L	0.11	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:25	TSS	C1
Manganese, Total	ND		mg/L	0.0056	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:25	TSS	C1
Potassium, Total	ND		mg/L	0.56	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:25	TSS	C1
Sodium, Total	ND		mg/L	0.56	SW846 6010C	8/30/16 10:30	JPS	8/31/16 11:25	TSS	C1

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ANALYTICAL RESULTS

Workorder: 2170653 3RD QTR 2016 GWMP-FORM 19Q

Lab ID: **2170653005** Date Collected: 8/26/2016 17:49 Matrix: Ground Water

Sample ID: **TRIP BLANK** Date Received: 8/26/2016 17:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			9/8/16 01:09	SYB	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			9/8/16 01:09	SYB	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			9/8/16 01:09	SYB	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			9/8/16 01:09	SYB	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 01:09	SYB	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 01:09	SYB	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 01:09	SYB	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			9/8/16 01:09	SYB	A
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			9/8/16 01:09	SYB	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 01:09	SYB	A
Toluene	ND		ug/L	1.0	SW846 8260B			9/8/16 01:09	SYB	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			9/8/16 01:09	SYB	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			9/8/16 01:09	SYB	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			9/8/16 01:09	SYB	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			9/8/16 01:09	SYB	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	89.5		%	62 - 133	SW846 8260B			9/8/16 01:09	SYB	A
4-Bromofluorobenzene (S)	87.4		%	79 - 114	SW846 8260B			9/8/16 01:09	SYB	A
Dibromofluoromethane (S)	84		%	78 - 116	SW846 8260B			9/8/16 01:09	SYB	A
Toluene-d8 (S)	89.9		%	76 - 127	SW846 8260B			9/8/16 01:09	SYB	A

Susan J. Scherer

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PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2170653001	1	FFMP018W	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2170653001	2	FFMP018W	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2170653002	1	FFMP019W	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2170653002	2	FFMP019W	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2170653003	1	FFMP26RW	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2170653003	2	FFMP26RW	S2320B-97	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
2170653004	1	FIELD BLANK	SM4500B	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
2170653004	2	FIELD BLANK	S2320B-97	Alkalinity, Total
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 • 717.944.5541 • Fax: 717.944.1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALS

COC #: 1

ALS Quo

21706533

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: Brooks Norris

Phone#: (717) 397-9968

Project Name/#: Frey Farm Quarterly

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 bnorris@LCSWMA.com

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

Container Type	AG	AN	CG	—	—	PL	PL	PL	PL
Container Size	125 ml	500 ml	40 ml	—	—	500 ml	500 ml	1 L	500 ml
Preservative	HCl	H2SO4	HCl	—	—	H2SO4	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 19Q	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Metals: Fe, Mn, Na, Ca, K, Mg	pH, Cl, SpC, F, SO4, TDS, NO3, Turb.	Alkalinity, HCO3	
				Enter Number of Containers Per Sample or Field Results Below.											
1	FFMP018W	8-26-16	1011	G	GW	1	1	2	x	x	1	1	1	1	
2	FFMP019W	"	1052	"	"	"	"	"	"	"	"	"	"	"	
3	FFMP26RW	"	1230	"	"	"	"	"	"	"	"	"	"	"	
4	Field Blank	"	1630	"	"	"	"	"			"	"	"	"	
5	Trip Blank	"	1249	"	"			"							
6															
7															
8															
9															
10															

Rel

Cool

No. of Coolers: _____

	Y	N	Initial
Custody Seals Present?			SES
(If present) Seals Intact?			
Received on Ice?			
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 8/27 TIME 300

REVIEWED BY(signature): _____ DATE 08/30/16 TIME

Data Deliverables: [ ] Standard [ ] CLP-like [ ] USACE

Special Processing: USACE [ ] Navy [ ]

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

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [illegible] ALS	8-26-16	1249	2 [illegible]	8/26	1749
3			4		
5			6		
7			8		
9			10		

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

Re

ALS Environmental
34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

COC #: | 1 of 1
ALS Quote #:

Client Name: ALS Middletown
Address: 34 Dogwood Lane
Middletown PA 17057
Contact: Susan Scherer
Phone#: (717) 702-2245
Project Name/#: LCSWMA-Frey Farm-Form 19Q
Bill To: ALS Middletown

TAT [ ] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.
Date Required: 9/12/2016 Approved By:
Email? [X] -Y ALMDT.Subcontract@ALSGlobal.com
Fax? [ ] -Y No.:

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	Container Type	Container Size	Preservative	Phenols, Total SW846-9066
					AG	500mL	H2SO4	
					ANALYSES/METHOD REQUESTED			
					Enter Number of Containers Per Sample or Field Results Below.			
1) 2170653001	8/26/2016	1011	G	GW				1
2) 2170653002	8/26/2016	1057	G	GW				1
3) 2170653003	8/26/2016	1230	G	GW				1
4) 2170653004	8/26/2016	1630	G	GW				1
5)								
6)								
7)								
8)								
9)								
10)								

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

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

Courier/Tracking #:

Sample/COC Comments
Subcontract to ALS Holland MI

ALS Field Services: __Pickup __Labor
__Composite Sampling __Rental Equipment
__Other:

Project Comments:

LOGGED BY(signature): DATE: TIME:
REVIEWED BY(signature): DATE: TIME:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1	8/31/16	1645	2		
3			4		
5			6		
7			8		
9			10		

Data Deliverables: [X] Standard [ ] CLP-like [ ] USACE [ ]
Reportable to PADEP? Yes [ ] PWSID #
Special Processing: USACE [ ] Navy [ ]
Sample Disposal: Lab [ ] 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 10/11

ALS Environmental

08-Sep-2016

Susan Scherer
ALS Environmental
34 Dogwood Lane
Middletown, PA 17057

Re: **2170653** Work Order: **1609033**

Dear Susan,

ALS Environmental received 4 samples on 01-Sep-2016 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 10.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Electronically approved by Tom Beamish

Tom Beamish
Client Services Coordinator

NELAP ACCREDITED TNI LABORATORY

Certificate No: PA: 68-03827

Report of Laboratory Analysis

ALS Group USA, Corp

Date: 08-Sep-16

Client: ALS Environmental
Project: 2170653
Work Order: 1609033

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1609033-01	2170653001	Groundwater		08/26/16 10:11	09/01/16 09:30	☐
1609033-02	2170653002	Groundwater		08/26/16 10:57	09/01/16 09:30	☐
1609033-03	2170653003	Groundwater		08/26/16 12:30	09/01/16 09:30	☐
1609033-04	2170653004	Groundwater		08/26/16 16:30	09/01/16 09:30	☐

Client: ALS Environmental
Project: 2170653
WorkOrder: 1609033

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/L	Milligrams per Liter

ALS Group USA, Corp

Date: *08-Sep-16*

Client: ALS Environmental
Project: 2170653
Sample ID: 2170653001
Collection Date: 08/26/16 10:11 AM

Work Order: 1609033
Lab ID: 1609033-01
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL		Method:	**SW9066**				Analyst: **JJG**
Phenolics, Total	U		0.0030	0.010	mg/L	1	09/07/16 09:29

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *08-Sep-16*

Client: ALS Environmental
Project: 2170653
Sample ID: 2170653002
Collection Date: 08/26/16 10:57 AM

Work Order: 1609033
Lab ID: 1609033-02
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL			Method: **SW9066**				Analyst: **JJG**
Phenolics, Total		U	0.0030	0.010	mg/L	1	09/07/16 09:29

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *08-Sep-16*

Client: ALS Environmental
Project: 2170653
Sample ID: 2170653003
Collection Date: 08/26/16 12:30 PM

Work Order: 1609033
Lab ID: 1609033-03
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL		Method:	**SW9066**				Analyst: **JJG**
Phenolics, Total	U		0.0030	0.010	mg/L	1	09/07/16 09:29

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *08-Sep-16*

Client: ALS Environmental
Project: 2170653
Sample ID: 2170653004
Collection Date: 08/26/16 04:30 PM

Work Order: 1609033
Lab ID: 1609033-04
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PHENOLICS, TOTAL			Method: **SW9066**				Analyst: **JJG**
Phenolics, Total	U		0.0030	0.010	mg/L	1	09/07/16 09:29

Note: See Qualifiers page for a list of qualifiers and their definitions.

AR Page 4 of 4

ALS Group USA, Corp

Date: 08-Sep-16

Client: ALS Environmental
Work Order: 1609033
Project: 2170653

QC BATCH REPORT

Batch ID: **90903B** Instrument ID **LACHAT** Method: **SW9066**

MBLK	Sample ID: **MBLK-90903-90903B**				Units: **mg/L**			Analysis Date: **09/07/16 09:29 AM**
Client ID:	Run ID: **LACHAT_160907A**			SeqNo: **4013869**	Prep Date: **09/02/16**		DF: **1**	

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	U	0.010								

LCS	Sample ID: **LCS-90903-90903B**				Units: **mg/L**			Analysis Date: **09/07/16 09:29 AM**
Client ID:	Run ID: **LACHAT_160907A**			SeqNo: **4013870**	Prep Date: **09/02/16**		DF: **1**	

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Phenolics, Total	0.09386	0.010	0.1	0	93.9	75-110	0			

The following samples were analyzed in this batch:

1609033-01A 1609033-02A 1609033-03A
1609033-04A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

QC Page: 1 of 1

ALS Environmental
34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

COC #: 1609033 | 1 of 1
ALS Quote #:

Client Name: ALS Middletown
Address: 34 Dogwood Lane, Middletown PA 17057
Contact: Susan Scherer
Phone#: (717)702-2245
Project Name/#: LCSWMA Frey Farm Form 190
Bill To: ALS Middletown
TAT: [ ] Normal-Standard TAT is 10-12 business days [ ] Rush-Subject to ALS approval and surcharges
Date Required: 9/12/2016 Approved By:
Email? [X] Y [ ] N ALMDT.Subcontract@ALSGlobal.com
Fax? [ ] Y [ ] N

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	Container Type	Container Size	Preservative	Phenols, Total EMSL-0083	Enter Number of Containers Per Sample or Field Results Below.
1) 2170653001	8/26/2016	1011	G	GW	AG	500mL	H2SO4	1	
2) 2170653002	8/26/2016	1057	G	GW				1	
3) 2170653003	8/26/2016	1230	G	GW				1	
4) 2170653004	8/26/2016	1630	G	GW				1	
5)									
6)									
7)									
8)									
9)									
10)									

Project Comments:

LOGGED BY (signature): DATE: TIME:
REVIEWED BY (signature): DATE: TIME:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1	8/31/16	1645	2 ALS	9/1/16	0930
3			4		
5			6		
7			8		
9			10		

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

Receipt Information (completed by Receiving Lab)
Cooler Temp: 5.2 °C Therm ID:
No. of Coolers: ____

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

Courier/Tracking #:

Sample/COC Comments
Subcontract to ALS Holland MI.

ALS Field Services: _Pickup _Labor _Composite Sampling _Rental Equipment _Other:

Data Package: [X] Standard [ ] GIP_like [ ] USACE
Special Processing: USACE [ ] Navy [ ]
State Samples Collected In: [ ] NY [ ] NJ [X] PA [ ] NC [ ]
Reportable to PADEP? Yes [ ]
Sample Disposal: Lab [ ] Special [ ]
PWSID #:
EDDS / Format Type:

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

Rev 10/11

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **ALS - MIDDLETOWN** Date/Time Received: **01-Sep-16 09:30**

Work Order: **1609033** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 01-Sep-16 (Date) Reviewed by: Tom Bramish (eSignature) 01-Sep-16 (Date)

Matrices: Groundwater
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	5.2/5.2 c	SR2	
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	9/1/2016 12:44:52 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☑	N/A ☐
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

SRC Page 1 of 1