

March 30, 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; five samples (2, 3, 23, 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; nine samples (2, 3, 4, 17, 18, 23, 24, 26 & 30) exceeded the secondary standard for manganese, four samples (1, 2, 13 & 16) exceeded the secondary standard for iron, three samples (4, 5 & 26) exceeded the secondary standard for total dissolved solids, and one sample (26) 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
Environmental Manager

Enclosures:

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

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



Date Prepared/Revised
03/31/2016

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

Facility 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 ☒ Well ☐ Spring ☐ Stream ☐ Other
☐ Upgradient/Upstream ☒ 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: 5.51 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.50 ft Elevation of Water Level: 459.49 ft./MSL

Sampling Depth: 50 ft Volume of Water Column: _____ gal

Total Well Depth: 60 ft Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/15/2016 Sample Collection Time: 9:40

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 ☒ No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2124256001 Final Lab Analysis Completion Date: 2/24/2016

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP028W

Sample Date 2/15/2016

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	31	SM20-2320B
CALCIUM, TOTAL	39.4	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	6	EPA 410.4
CHLORIDE	93.9	EPA 300
FLUORIDE	0.5 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	17.7	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	16	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	21.9	EPA 300
pH-FIELD (SU)	4.99	FIELD
pH-LAB (SU)	5.91	SM20-4500HB
POTASSIUM, TOTAL	2.2	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	27	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	586	FIELD
SPEC. COND., LAB (umhos/cm)	551	SW846 9050A
SULFATE	20.1	EPA 300
ALKALINITY	31	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	373	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.4	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 2/15/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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 ☒ Well ☐ Spring ☐ Stream ☐ Other
☐ Upgradient/Upstream ☒ 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: 23.51 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.50 ft Elevation of Water Level: 453.29 ft./MSL

Sampling Depth: 39 ft Volume of Water Column: 24.22 gal

Total Well Depth: 40 ft Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/15/2016 Sample Collection Time: 10:13

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 ☒ No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2124256002 Final Lab Analysis Completion Date: 2/24/2016

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP025W

Sample Date 2/15/2016

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	26	SM20-2320B
CALCIUM, TOTAL	30.4	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	9	EPA 410.4
CHLORIDE	91.4	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	17.2	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	6.4	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	4.1	EPA 300
pH-FIELD (SU)	5.05	FIELD
pH-LAB (SU)	6.02	SM20-4500HB
POTASSIUM, TOTAL	2.3	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	24	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	494	FIELD
SPEC. COND., LAB (umhos/cm)	468	SW846 9050A
SULFATE	46.2	EPA 300
ALKALINITY	26	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	278	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.8	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.15	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 2/15/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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 ☒ Well ☐ Spring ☐ Stream ☐ Other
☐ Upgradient/Upstream ☒ 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: 15.36 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.60 ft Elevation of Water Level: 491.94 ft./MSL

Sampling Depth: 24.5 ft Volume of Water Column: 9.29 gal

Total Well Depth: 29.6 ft Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/15/2016 Sample Collection Time: 10:39

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 ☒ No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2124256003 Final Lab Analysis Completion Date: 2/24/2016

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP014W

Sample Date 2/15/2016

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	25.8	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	6	EPA 410.4
CHLORIDE	118	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	14.9	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	12	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	6	EPA 300
pH-FIELD (SU)	4.33	FIELD
pH-LAB (SU)	5.87	SM20-4500HB
POTASSIUM, TOTAL	2.1	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	51.9	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	596	FIELD
SPEC. COND., LAB (umhos/cm)	573	SW846 9050A
SULFATE	47.8	EPA 300
ALKALINITY	27	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	336	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.22	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

^T Please indicate detection limit if analyte is not detected.

** Total and dissolved analysis required only in conjunction with additional annual metals sampling (see page 4).

Remaining quarterly samples only require total metals analysis.

I.D. No 101389

Monitoring Point No. FFMP014W

Sample Date 2/15/2016

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.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF LAND RECYCLING AND WASTEDate Prepared/Revised
03/31/2016

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

Facility 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

☒ Well ☐ Spring ☐ Stream ☐ Other

☐ Upgradient/Upstream ☒ 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: 15.13 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.40 ft

Elevation of Water Level: 492.47 ft./MSL

Sampling Depth: 135 ft

Volume of Water Column: 199.55 gal

Total Well Depth: 151 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ GrabWell Purged: ☒ Yes ☐ No

Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/15/2016

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 ☒ No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2124256004 Final Lab Analysis Completion Date: 2/24/2016

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP013W

Sample Date 2/15/2016

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	167	SM20-2320B
CALCIUM, TOTAL	89.2	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	112	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	520	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	11.6	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	14	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	6.1	EPA 300
pH-FIELD (SU)	6.83	FIELD
pH-LAB (SU)	7.75	SM20-4500HB
POTASSIUM, TOTAL	1.2	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	38.2	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	805	FIELD
SPEC. COND., LAB (umhos/cm)	767	SW846 9050A
SULFATE	32	EPA 300
ALKALINITY	167	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	438	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	1.97	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 2/15/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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: FFMP027W ☒ Well ☐ Spring ☐ Stream ☐ Other
☐ Upgradient/Upstream ☒ 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: 20.28 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.50 ft Elevation of Water Level: 501.82 ft./MSL

Sampling Depth: 45 ft Volume of Water Column: 45.12 gal

Total Well Depth: 51 ft Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/15/2016 Sample Collection Time: 13:03

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 ☒ No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2124256005 Final Lab Analysis Completion Date: 2/24/2016

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP027W

Sample Date 2/15/2016

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	16	SM20-2320B
CALCIUM, TOTAL	14	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	29.2	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	9	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	19	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	11.1	EPA 300
pH-FIELD (SU)	3.93	FIELD
pH-LAB (SU)	5.9	SM20-4500HB
POTASSIUM, TOTAL	1.3	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	10.2	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	245	FIELD
SPEC. COND., LAB (umhos/cm)	209	SW846 9050A
SULFATE	9.4	EPA 300
ALKALINITY	16	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	141	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 2/15/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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 ☒ Well ☐ Spring ☐ Stream ☐ Other
☐ Upgradient/Upstream ☒ 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: 55.7 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.90 ft Elevation of Water Level: 520.70 ft./MSL

Sampling Depth: 135 ft Volume of Water Column: 136.88 gal

Total Well Depth: 148.9 ft Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/15/2016 Sample Collection Time: 15:00

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS Environmental

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2124256006 Final Lab Analysis Completion Date: 2/24/2016

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP015W

Sample Date 2/15/2016

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	12	SM20-2320B
CALCIUM, TOTAL	6.9	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	8.9	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	6.8	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	7.2	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	7.4	EPA 300
pH-FIELD (SU)	4.94	FIELD
pH-LAB (SU)	6.16	SM20-4500HB
POTASSIUM, TOTAL	1.3	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	9.6	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	168	FIELD
SPEC. COND., LAB (umhos/cm)	145	SW846 9050A
SULFATE	23.1	EPA 300
ALKALINITY	12	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	65	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 2/15/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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 ☒ Well ☐ Spring ☐ Stream ☐ Other
☐ Upgradient/Upstream ☒ 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: 31.16 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.20 ft Elevation of Water Level: 531.14 ft./MSL

Sampling Depth: 85 ft Volume of Water Column: 86.42 gal

Total Well Depth: 90 ft Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/16/2016 Sample Collection Time: 10:16

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 ☒ No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2124435001 Final Lab Analysis Completion Date: 2/24/2016

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP30RW

Sample Date 2/16/2016

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	26	SM20-2320B
CALCIUM, TOTAL	17.6	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	14	EPA 410.4
CHLORIDE	123	EPA 300
FLUORIDE	0.5 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	12.6	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	970	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	4	EPA 300
pH-FIELD (SU)	4.87	FIELD
pH-LAB (SU)	5.78	SM20-4500HB
POTASSIUM, TOTAL	2.3	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	42.5	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	503	FIELD
SPEC. COND., LAB (umhos/cm)	478	SW846 9050A
SULFATE	13	EPA 300
ALKALINITY	26	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	262	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	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. FFMP30RW

Sample Date 2/16/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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 ☒ Well ☐ Spring ☐ Stream ☐ Other
☐ Upgradient/Upstream ☒ 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: 31.51 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.52 ft Elevation of Water Level: 529.21 ft./MSL

Sampling Depth: 146 ft Volume of Water Column: 396.55 gal

Total Well Depth: 301.52 ft Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/16/2016 Sample Collection Time: 11:25

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 ☒ No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2124435002 Final Lab Analysis Completion Date: 2/24/2016

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP04AW

Sample Date 2/16/2016

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	205	SM20-2320B
CALCIUM, TOTAL	145	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	21	EPA 410.4
CHLORIDE	309	EPA 300
FLUORIDE	0.5 ND	EPA 300
IRON, TOTAL (ug/l)	95	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	24.8	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	190	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	0.5 ND	EPA 300
pH-FIELD (SU)	6.64	FIELD
pH-LAB (SU)	7.43	SM20-4500HB
POTASSIUM, TOTAL	2.1	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	76.2	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1466	FIELD
SPEC. COND., LAB (umhos/cm)	1400	SW846 9050A
SULFATE	56.1	EPA 300
ALKALINITY	205	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	874	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.3	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	1.25	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. FFMP04AW

Sample Date 2/16/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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 ☒ Well ☐ Spring ☐ Stream ☐ Other
☐ Upgradient/Upstream ☒ 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: 69.53 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 3.30 ft Elevation of Water Level: 477.87 ft./MSL

Sampling Depth: 105 ft Volume of Water Column: 65.31 gal

Total Well Depth: 114 ft Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/16/2016 Sample Collection Time: 12:38

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 ☒ No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2124435003 Final Lab Analysis Completion Date: 2/24/2016

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP26RW

Sample Date 2/16/2016

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	44	SM20-2320B
CALCIUM, TOTAL	63.9	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	11	EPA 410.4
CHLORIDE	178	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	18.7	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	400	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	1.7	EPA 300
pH-FIELD (SU)	5.08	FIELD
pH-LAB (SU)	5.85	SM20-4500HB
POTASSIUM, TOTAL	8.4	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	52.6	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	890	FIELD
SPEC. COND., LAB (umhos/cm)	841	SW846 9050A
SULFATE	83.6	EPA 300
ALKALINITY	44	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	507	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	2	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.82	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 2/16/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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 ☒ Well ☐ Spring ☐ Stream ☐ Other
☐ Upgradient/Upstream ☒ 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: 61.4 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.70 ft Elevation of Water Level: 476.00 ft./MSL

Sampling Depth: 135 ft Volume of Water Column: 130.12 gal

Total Well Depth: 150 ft Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/16/2016 Sample Collection Time: 13:55

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS Environmental

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2124435004 Final Lab Analysis Completion Date: 2/24/2016

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP005W

Sample Date 2/16/2016

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	46	SM20-2320B
CALCIUM, TOTAL	72.1	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	16	EPA 410.4
CHLORIDE	180	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	17.5	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	42	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	3.2	EPA 300
pH-FIELD (SU)	5.28	FIELD
pH-LAB (SU)	6.06	SM20-4500HB
POTASSIUM, TOTAL	2.4	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	41.3	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	847	FIELD
SPEC. COND., LAB (umhos/cm)	810	SW846 9050A
SULFATE	61	EPA 300
ALKALINITY	46	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	529	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.5	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 2/16/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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 ☒ Well ☐ Spring ☐ Stream ☐ Other
☐ Upgradient/Upstream ☒ 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: 52.04 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.20 ft Elevation of Water Level: 538.86 ft./MSL

Sampling Depth: 130 ft Volume of Water Column: 139.76 gal

Total Well Depth: 147.2 ft Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/16/2016 Sample Collection Time: 15:11

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 ☒ No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2124435005 Final Lab Analysis Completion Date: 2/24/2016

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP03AW

Sample Date 2/16/2016

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	17.1	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	18	EPA 410.4
CHLORIDE	25.1	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	11.8	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	180	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	21.7	EPA 300
pH-FIELD (SU)	4.84	FIELD
pH-LAB (SU)	5.66	SM20-4500HB
POTASSIUM, TOTAL	1.3	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	11.3	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	302	FIELD
SPEC. COND., LAB (umhos/cm)	256	SW846 9050A
SULFATE	3.7	EPA 300
ALKALINITY	15	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	163	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 2/16/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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 ☒ Well ☐ Spring ☐ Stream ☐ Other
☐ Upgradient/Upstream ☒ 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: 38.63 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.00 ft Elevation of Water Level: 442.07 ft./MSL

Sampling Depth: 135 ft Volume of Water Column: 164.30 gal

Total Well Depth: 150.5 ft Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/17/2016 Sample Collection Time: 10:12

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 ☒ No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2124702001 Final Lab Analysis Completion Date: 2/24/2016

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP017W

Sample Date 2/17/2016

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	48	SM20-2320B
CALCIUM, TOTAL	60.5	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	8	EPA 410.4
CHLORIDE	220	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	100	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	28.4	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)	5.04	FIELD
pH-LAB (SU)	6.14	SM20-4500HB
POTASSIUM, TOTAL	4.2	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	50.5	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	952	FIELD
SPEC. COND., LAB (umhos/cm)	899	SW846 9050A
SULFATE	50.7	EPA 300
ALKALINITY	48	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	488	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	2.4	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.45	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 2/17/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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 ☒ Well ☐ Spring ☐ Stream ☐ Other
☐ Upgradient/Upstream ☒ 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: 25.63 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.46 ft Elevation of Water Level: 446.57 ft./MSL

Sampling Depth: 40 ft Volume of Water Column: 16.84 gal

Total Well Depth: 51.43 ft Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/17/2016 Sample Collection Time: 10:39

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 ☒ No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2124702002 Final Lab Analysis Completion Date: 2/24/2016

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP018W

Sample Date 2/17/2016

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	31	SM20-2320B
CALCIUM, TOTAL	40.1	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	6	EPA 410.4
CHLORIDE	131	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	5.1	EPA 300
pH-FIELD (SU)	4.51	FIELD
pH-LAB (SU)	6.06	SM20-4500HB
POTASSIUM, TOTAL	6.6	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	44	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	686	FIELD
SPEC. COND., LAB (umhos/cm)	637	SW846 9050A
SULFATE	53.3	EPA 300
ALKALINITY	31	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	361	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.6	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.25	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. FFMP018W

Sample Date 2/17/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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

☒ Well ☐ Spring ☐ Stream ☐ Other

☐ Upgradient/Upstream ☒ 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: 26.31 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.79 ft

Elevation of Water Level: 445.64 ft./MSL

Sampling Depth: 49 ft

Volume of Water Column: 69.50 gal

Total Well Depth: 132.79 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/17/2016

Sample Collection Time: 11:23

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 ☒ No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2124702003 Final Lab Analysis Completion Date: 2/24/2016

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP019W

Sample Date 2/17/2016

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	71	SM20-2320B
CALCIUM, TOTAL	54.5	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	78.4	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	5.4	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)	5.06	FIELD
pH-LAB (SU)	7.05	SM20-4500HB
POTASSIUM, TOTAL	0.98	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	9.5	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	450	FIELD
SPEC. COND., LAB (umhos/cm)	422	SW846 9050A
SULFATE	13.7	EPA 300
ALKALINITY	71	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	280	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 2/17/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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 ☒ Well ☐ Spring ☐ Stream ☐ Other
☐ Upgradient/Upstream ☒ 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: 37.02 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.00 ft Elevation of Water Level: 440.28 ft./MSL

Sampling Depth: 55 ft Volume of Water Column: 31.55 gal

Total Well Depth: 58.5 ft Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/17/2016 Sample Collection Time: 12:24

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS Environmental

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2124702004 Final Lab Analysis Completion Date: 2/24/2016

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP029W

Sample Date 2/17/2016

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	11	SM20-2320B
CALCIUM, TOTAL	6.6	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	38.7	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	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	17	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	3.2	EPA 300
pH-FIELD (SU)	4.87	FIELD
pH-LAB (SU)	5.98	SM20-4500HB
POTASSIUM, TOTAL	1.6	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	15.1	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	185	FIELD
SPEC. COND., LAB (umhos/cm)	159	SW846 9050A
SULFATE	2 ND	EPA 300
ALKALINITY	11	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	108	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.68	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 2/17/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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 ☒ Well ☐ Spring ☐ Stream ☐ Other
☐ Upgradient/Upstream ☒ 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: 21.37 ft Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.97 ft Elevation of Water Level: 453.23 ft./MSL

Sampling Depth: 135 ft Volume of Water Column: 188.62 gal

Total Well Depth: 149.8 ft Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/17/2016 Sample Collection Time: 12:35

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 ☒ No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2124702005 Final Lab Analysis Completion Date: 2/24/2016

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP016W

Sample Date 2/17/2016

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	43	SM20-2320B
CALCIUM, TOTAL	40.3	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	85.1	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	730	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	14.7	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	29	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	5.7	EPA 300
pH-FIELD (SU)	5.37	FIELD
pH-LAB (SU)	6.38	SM20-4500HB
POTASSIUM, TOTAL	2	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	24.7	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	530	FIELD
SPEC. COND., LAB (umhos/cm)	499	SW846 9050A
SULFATE	46.7	EPA 300
ALKALINITY	43	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	287	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	2	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	13.6	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 2/17/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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

☒ Well ☐ Spring ☐ Stream ☐ Other

☒ 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: 60.63 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.50 ft

Elevation of Water Level: 551.17 ft./MSL

Sampling Depth: 79 ft

Volume of Water Column: 31.39 gal

Total Well Depth: 82 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/19/2016

Sample Collection Time: 10:14

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 ☒ No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2125322001 Final Lab Analysis Completion Date: 2/29/2016

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP023W

Sample Date 2/19/2016

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	6	SM20-2320B
CALCIUM, TOTAL	11.1	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	26.3	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	8	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	170	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	13.7	EPA 300
pH-FIELD (SU)	4.27	FIELD
pH-LAB (SU)	5.39	SM20-4500HB
POTASSIUM, TOTAL	1	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	8.9	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	218	FIELD
SPEC. COND., LAB (umhos/cm)	185	SW846 9050A
SULFATE	2 ND	EPA 300
ALKALINITY	6	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	112	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 2/19/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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

☒ Well ☐ Spring ☐ Stream ☐ Other

☒ 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: 61.62 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 0.82 ft

Elevation of Water Level: 549.8 ft./MSL

Sampling Depth: 180.78 ft

Volume of Water Column: 204.44 gal

Total Well Depth: 200.82 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/19/2016

Sample Collection Time: 11:19

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 ☒ No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2125322002 Final Lab Analysis Completion Date: 2/29/2016

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP024W

Sample Date 2/19/2016

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	104	SM20-2320B
CALCIUM, TOTAL	44.5	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	13.2	EPA 300
FLUORIDE	0.36	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	5.1	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	68	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	2.4	EPA 300
pH-FIELD (SU)	6.49	FIELD
pH-LAB (SU)	7.65	SM20-4500HB
POTASSIUM, TOTAL	0.89	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	8.7	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	330	FIELD
SPEC. COND., LAB (umhos/cm)	282	SW846 9050A
SULFATE	31.6	EPA 300
ALKALINITY	104	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	179	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	0.15	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 2/19/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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

☒ Well ☐ Spring ☐ Stream ☐ Other

☒ 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: 54.45 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.60 ft

Elevation of Water Level: 558.75 ft./MSL

Sampling Depth: 85 ft

Volume of Water Column: 169.12 gal

Total Well Depth: 169.6 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/19/2016

Sample Collection Time: 12:09

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 ☒ No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2125322003 Final Lab Analysis Completion Date: 2/29/2016

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

Comments:

I.D. No 101389

Monitoring Point No. FFMP002W

Sample Date 2/19/2016

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	SM20-2320B
CALCIUM, TOTAL	21.1	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	5 ND	EPA 410.4
CHLORIDE	24.4	EPA 300
FLUORIDE	0.5 ND	EPA 300
IRON, TOTAL (ug/l)	1800	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	8.9	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	260	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	22.8	EPA 300
pH-FIELD (SU)	4.56	FIELD
pH-LAB (SU)	5.57	SM20-4500HB
POTASSIUM, TOTAL	1.4	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	14.5	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	311	FIELD
SPEC. COND., LAB (umhos/cm)	263	SW846 9050A
SULFATE	17.7	EPA 300
ALKALINITY	5	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	156	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	10.1	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 2/19/2016

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.

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



Date Prepared/Revised
03/31/2016

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

Facility 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: FFMP001P Well ☐ Spring ☒ Stream ☐ Other
Upgradient/Upstream ☐ Downgradient/Downstream ☒

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point Latitude: 39 ° 57 ' 20 " Longitude: 76 ° 27 ' 5 "

Depth to Water Level: _____ ft Measured from: _____ Land Surface ☒ TOC

Casing Stickup: 0.00 ft Elevation of Water Level: #Error ft./MSL

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

Total Well Depth: 0 ft Sampling Method: ☐ Pumped ☐ Bailed ☒ Grab

Well Purged: ☐ Yes ☒ No Well Volumes Purged: _____

Sample Field Filtered (must be 0.45 micron)?: ☐ Yes ☒ No

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/19/2016 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 ☒ No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 2125322004 Final Lab Analysis Completion Date: 2/29/2016

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

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP001P

Sample Date 2/19/2016

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	45	SM20-2320B
CALCIUM, TOTAL	55.1	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15	EPA 410.4
CHLORIDE	191	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	730	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	16.8	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	48	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	7.7	EPA 300
pH-FIELD (SU)	5.84	FIELD
pH-LAB (SU)	6.73	SM20-4500HB
POTASSIUM, TOTAL	6.8	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	69.3	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	785	FIELD
SPEC. COND., LAB (umhos/cm)	855	SW846 9050A
SULFATE	48.5	EPA 300
ALKALINITY	45	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	475	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.7	SW846 9060A
TOTAL PHENOLICS (ug/l)	10 ND	SW846 9066
TURBIDITY (N.T.U.)	3.25	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. FFMP001P

Sample Date 2/19/2016

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.

February 29, 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: 2124256
Purchase Order:	Workorder ID: 1st QTR 2016 GWMP-FORM 19Q

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Monday, February 15, 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.

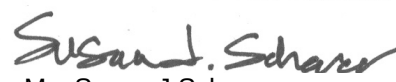
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications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

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

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.


Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

**SAMPLE SUMMARY**

Workorder: 2124256 1st QTR 2016 GWMP-FORM 19Q

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2124256001	FFMP028W	Ground Water	2/15/2016 09:40	2/15/2016 16:26	Mr. Brian G Shade
2124256002	FFMP025W	Ground Water	2/15/2016 10:13	2/15/2016 16:26	Mr. Brian G Shade
2124256003	FFMP014W	Ground Water	2/15/2016 10:39	2/15/2016 16:26	Mr. Brian G Shade
2124256004	FFMP013W	Ground Water	2/15/2016 12:15	2/15/2016 16:26	Mr. Brian G Shade
2124256005	FFMP027W	Ground Water	2/15/2016 13:03	2/15/2016 16:26	Mr. Brian G Shade
2124256006	FFMP015W	Ground Water	2/15/2016 15:00	2/15/2016 16:26	Mr. Brian G Shade
2124256007	Field Blank	Ground Water	2/15/2016 15:07	2/15/2016 16:26	Mr. Brian G Shade
2124256008	Trip Blank	Ground Water	2/15/2016 16:26	2/15/2016 16:26	Mr. Brian G Shade

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

SAMPLE SUMMARY

Workorder: 2124256 1st 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 performed 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 incubator 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

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

PROJECT SUMMARY

Workorder: 2124256 1st QTR 2016 GWMP-FORM 19Q

Sample Comments**Lab ID:** 2124256001 **Sample ID:** FFMP028W **Sample Type:** SAMPLE

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

Lab ID: 2124256002 **Sample ID:** FFMP025W **Sample Type:** SAMPLE

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

Lab ID: 2124256003 **Sample ID:** FFMP014W **Sample Type:** SAMPLE

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

Lab ID: 2124256004 **Sample ID:** FFMP013W **Sample Type:** SAMPLE

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

Lab ID: 2124256005 **Sample ID:** FFMP027W **Sample Type:** SAMPLE

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

Lab ID: 2124256006 **Sample ID:** FFMP015W **Sample Type:** SAMPLE

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

This sample was randomly chosen for a Phenol QC matrix spike. The matrix spike result was outside of QC limits for two runs.

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2124256 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124256001**
Sample ID: **FFMP028W**

Date Collected: 2/15/2016 09:40 Matrix: Ground Water
Date Received: 2/15/2016 16:26

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/17/16 22:24	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/17/16 22:24	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 22:24	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 22:24	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 22:24	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 22:24	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 22:24	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/17/16 22:24	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/17/16 22:24	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 22:24	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/17/16 22:24	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/17/16 22:24	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 22:24	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 22:24	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/17/16 22:24	CJG	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	93.7		%	62 - 133	SW846 8260B			2/17/16 22:24	CJG	H
4-Bromofluorobenzene (S)	90.2		%	79 - 114	SW846 8260B			2/17/16 22:24	CJG	H
Dibromofluoromethane (S)	81.5		%	78 - 116	SW846 8260B			2/17/16 22:24	CJG	H
Toluene-d8 (S)	87		%	76 - 127	SW846 8260B			2/17/16 22:24	CJG	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	31		mg/L	5	S2320B-97			2/16/16 02:11	MSA	J
Alkalinity, Total	31		mg/L	5	S2320B-97			2/16/16 02:11	MSA	J
Ammonia-N	ND		mg/L	0.100	D6919-09			2/18/16 23:21	JAM	A
Chemical Oxygen Demand (COD)	6		mg/L	5	EPA 410.4			2/19/16 07:00	JAM	A
Chloride	93.9		mg/L	5.0	EPA 300.0			2/16/16 09:58	JP	B
Fluoride	ND		mg/L	0.50	EPA 300.0			2/16/16 09:58	JP	B
Nitrate-N	21.9		mg/L	0.50	EPA 300.0			2/16/16 09:58	JP	B
pH	5.91		pH_Units		SM4500B			2/16/16 02:11	MSA	J
Phenolics	ND		mg/L	0.01	SW846 9066	2/18/16 06:24	JLG	2/24/16 13:55	JLG	G
Specific Conductance	551		umhos/cm	1	SW846 9050A			2/16/16 02:11	MSA	J
Sulfate	20.1		mg/L	5.0	EPA 300.0			2/16/16 09:58	JP	B
Total Dissolved Solids	373		mg/L	5	S2540C-11			2/18/16 13:00	ML	B
Total Organic Carbon (TOC)	1.4		mg/L	1.0	SW846 9060A			2/22/16 10:35	PAG	E
Turbidity	ND		NTU	0.10	S2130B-01			2/17/16 01:28	MSA	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2124256 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124256001**
Sample ID: **FFMP028W**

Date Collected: 2/15/2016 09:40 Matrix: Ground Water
Date Received: 2/15/2016 16:26

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	39.4		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:38	SRT	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:38	SRT	C1
Magnesium, Total	17.7		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:38	SRT	C1
Manganese, Total	0.016		mg/L	0.0056	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:38	SRT	C1
Potassium, Total	2.2		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:38	SRT	C1
Sodium, Total	27.0		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:38	SRT	C1
FIELD PARAMETERS										
Depth to Water Level	5.51		Feet		Field			2/15/16 09:40	CLT	D
Elev Top MW Casing above MSL	465.00		Feet		Field			2/15/16 09:40	CLT	D
Flow Rate	3.23		gal/min		Field			2/15/16 09:40	CLT	D
Ground Water Elevation	459.49		ft/MSL		Field			2/15/16 09:40	CLT	D
pH, Field (SM4500B)	4.99		pH_Units		Field			2/15/16 09:40	CLT	D
Sample Depth	50.00		Feet		Field			2/15/16 09:40	CLT	D
Specific Conductance, Field	586		umhos/cm	1	Field			2/15/16 09:40	CLT	D
Temperature	11.63		Deg. C		Field			2/15/16 09:40	CLT	D
Total Well Depth	60.00		Feet		Field			2/15/16 09:40	CLT	D
Volume in Water Column	80.10		Gallons		Field			2/15/16 09:40	CLT	D
Water Level After Purge	35.18		Feet		Field			2/15/16 09:40	CLT	D
Well Volumes Purged	2.82		Vol		Field			2/15/16 09:40	CLT	D



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 2124256 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124256002**
Sample ID: **FFMP025W**

Date Collected: 2/15/2016 10:13 Matrix: Ground Water
Date Received: 2/15/2016 16:26

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/17/16 22:46	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/17/16 22:46	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 22:46	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 22:46	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 22:46	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 22:46	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 22:46	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/17/16 22:46	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/17/16 22:46	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 22:46	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/17/16 22:46	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/17/16 22:46	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 22:46	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 22:46	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/17/16 22:46	CJG	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	95		%	62 - 133	SW846 8260B			2/17/16 22:46	CJG	H
4-Bromofluorobenzene (S)	95.4		%	79 - 114	SW846 8260B			2/17/16 22:46	CJG	H
Dibromofluoromethane (S)	82.5		%	78 - 116	SW846 8260B			2/17/16 22:46	CJG	H
Toluene-d8 (S)	94.6		%	76 - 127	SW846 8260B			2/17/16 22:46	CJG	H
METALS										
Calcium, Total	30.4		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:42	SRT	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:42	SRT	C1
Magnesium, Total	17.2		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:42	SRT	C1
Manganese, Total	0.0064		mg/L	0.0056	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:42	SRT	C1
Potassium, Total	2.3		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:42	SRT	C1
Sodium, Total	24.0		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:42	SRT	C1
WET CHEMISTRY										
Alkalinity, Bicarbonate	26		mg/L	5	S2320B-97			2/16/16 02:19	MSA	J
Alkalinity, Total	26		mg/L	5	S2320B-97			2/16/16 02:19	MSA	J
Ammonia-N	ND		mg/L	0.100	D6919-09			2/18/16 23:40	JAM	A
Chemical Oxygen Demand (COD)	9		mg/L	5	EPA 410.4			2/19/16 07:00	JAM	A
Chloride	91.4		mg/L	2.0	EPA 300.0			2/16/16 10:13	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			2/16/16 10:13	JP	B
Nitrate-N	4.1		mg/L	0.20	EPA 300.0			2/16/16 10:13	JP	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2124256 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124256002**
Sample ID: **FFMP025W**

Date Collected: 2/15/2016 10:13 Matrix: Ground Water
Date Received: 2/15/2016 16:26

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
pH	6.02		pH_Units		SM4500B			2/16/16 02:19	MSA	J
Phenolics	ND		mg/L	0.01	SW846 9066	2/18/16 06:24	JLG	2/24/16 13:55	JLG	G
Specific Conductance	468		umhos/cm	1	SW846 9050A			2/16/16 02:19	MSA	J
Sulfate	46.2		mg/L	2.0	EPA 300.0			2/16/16 10:13	JP	B
Total Dissolved Solids	278		mg/L	5	S2540C-11			2/18/16 13:00	ML	B
Total Organic Carbon (TOC)	1.8		mg/L	1.0	SW846 9060A			2/22/16 10:35	PAG	E
Turbidity	0.15		NTU	0.10	S2130B-01			2/17/16 01:28	MSA	B
FIELD PARAMETERS										
Depth to Water Level	23.51		Feet		Field			2/15/16 10:13	CLT	D
Elev Top MW Casing above MSL	476.80		Feet		Field			2/15/16 10:13	CLT	D
Flow Rate	4.86		gal/min		Field			2/15/16 10:13	CLT	D
Ground Water Elevation	453.29		ft/MSL		Field			2/15/16 10:13	CLT	D
pH, Field (SM4500B)	5.05		pH_Units		Field			2/15/16 10:13	CLT	D
Sample Depth	39.00		Feet		Field			2/15/16 10:13	CLT	D
Specific Conductance, Field	494		umhos/cm	1	Field			2/15/16 10:13	CLT	D
Temperature	12.28		Deg. C		Field			2/15/16 10:13	CLT	D
Total Well Depth	41.50		Feet		Field			2/15/16 10:13	CLT	D
Volume in Water Column	26.45		Gallons		Field			2/15/16 10:13	CLT	D
Water Level After Purge	24.72		Feet		Field			2/15/16 10:13	CLT	D
Well Volumes Purged	3.67		Vol		Field			2/15/16 10:13	CLT	D



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 2124256 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124256003**
Sample ID: **FFMP014W**

Date Collected: 2/15/2016 10:39 Matrix: Ground Water
Date Received: 2/15/2016 16:26

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:07	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/17/16 23:07	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 23:07	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 23:07	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:07	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:07	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:07	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:07	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/17/16 23:07	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:07	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:07	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/17/16 23:07	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 23:07	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:07	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/17/16 23:07	CJG	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	95		%	62 - 133	SW846 8260B			2/17/16 23:07	CJG	H
4-Bromofluorobenzene (S)	92		%	79 - 114	SW846 8260B			2/17/16 23:07	CJG	H
Dibromofluoromethane (S)	81.7		%	78 - 116	SW846 8260B			2/17/16 23:07	CJG	H
Toluene-d8 (S)	95.4		%	76 - 127	SW846 8260B			2/17/16 23:07	CJG	H
METALS										
Calcium, Total	25.8		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:53	SRT	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:53	SRT	C1
Magnesium, Total	14.9		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:53	SRT	C1
Manganese, Total	0.012		mg/L	0.0056	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:53	SRT	C1
Potassium, Total	2.1		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:53	SRT	C1
Sodium, Total	51.9		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:53	SRT	C1
WET CHEMISTRY										
Alkalinity, Bicarbonate	27		mg/L	5	S2320B-97			2/16/16 02:28	MSA	J
Alkalinity, Total	27		mg/L	5	S2320B-97			2/16/16 02:28	MSA	J
Ammonia-N	ND		mg/L	0.100	D6919-09			2/18/16 23:59	JAM	A
Chemical Oxygen Demand (COD)	6		mg/L	5	EPA 410.4			2/19/16 07:00	JAM	A
Chloride	118		mg/L	2.0	EPA 300.0			2/16/16 10:28	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			2/16/16 10:28	JP	B
Nitrate-N	6.0		mg/L	0.20	EPA 300.0			2/16/16 10:28	JP	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2124256 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124256003**
Sample ID: **FFMP014W**

Date Collected: 2/15/2016 10:39 Matrix: Ground Water
Date Received: 2/15/2016 16:26

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
pH	5.87		pH_Units		SM4500B			2/16/16 02:28	MSA	J
Phenolics	ND		mg/L	0.01	SW846 9066	2/18/16 06:24	JLG	2/24/16 13:55	JLG	G
Specific Conductance	573		umhos/cm	1	SW846 9050A			2/16/16 02:28	MSA	J
Sulfate	47.8		mg/L	2.0	EPA 300.0			2/16/16 10:28	JP	B
Total Dissolved Solids	336		mg/L	5	S2540C-11			2/18/16 13:00	ML	B
Total Organic Carbon (TOC)	1.0		mg/L	1.0	SW846 9060A			2/22/16 10:35	PAG	E
Turbidity	0.22		NTU	0.10	S2130B-01			2/17/16 01:28	MSA	B
FIELD PARAMETERS										
Depth to Water Level	15.36		Feet		Field			2/15/16 10:39	CLT	D
Elev Top MW Casing above MSL	507.30		Feet		Field			2/15/16 10:39	CLT	D
Flow Rate	5.59		gal/min		Field			2/15/16 10:39	CLT	D
Ground Water Elevation	491.94		ft/MSL		Field			2/15/16 10:39	CLT	D
pH, Field (SM4500B)	4.33		pH_Units		Field			2/15/16 10:39	CLT	D
Sample Depth	24.50		Feet		Field			2/15/16 10:39	CLT	D
Specific Conductance, Field	596		umhos/cm	1	Field			2/15/16 10:39	CLT	D
Temperature	12.36		Deg. C		Field			2/15/16 10:39	CLT	D
Total Well Depth	29.60		Feet		Field			2/15/16 10:39	CLT	D
Volume in Water Column	9.26		Gallons		Field			2/15/16 10:39	CLT	D
Water Level After Purge	18.01		Feet		Field			2/15/16 10:39	CLT	D
Well Volumes Purged	6.04		Vol		Field			2/15/16 10:39	CLT	D



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 2124256 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124256004**

Date Collected: 2/15/2016 12:15

Matrix: Ground Water

Sample ID: **FFMP013W**

Date Received: 2/15/2016 16:26

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:29	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/17/16 23:29	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 23:29	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 23:29	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:29	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:29	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:29	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:29	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/17/16 23:29	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:29	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:29	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/17/16 23:29	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 23:29	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:29	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/17/16 23:29	CJG	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	94.4		%	62 - 133	SW846 8260B			2/17/16 23:29	CJG	H
4-Bromofluorobenzene (S)	94.3		%	79 - 114	SW846 8260B			2/17/16 23:29	CJG	H
Dibromofluoromethane (S)	81.5		%	78 - 116	SW846 8260B			2/17/16 23:29	CJG	H
Toluene-d8 (S)	86.5		%	76 - 127	SW846 8260B			2/17/16 23:29	CJG	H
METALS										
Calcium, Total	89.2		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:57	SRT	C1
Iron, Total	0.52		mg/L	0.067	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:57	SRT	C1
Magnesium, Total	11.6		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:57	SRT	C1
Manganese, Total	0.014		mg/L	0.0056	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:57	SRT	C1
Potassium, Total	1.2		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:57	SRT	C1
Sodium, Total	38.2		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 12:57	SRT	C1
WET CHEMISTRY										
Alkalinity, Bicarbonate	167		mg/L	5	S2320B-97			2/16/16 03:08	MSA	J
Alkalinity, Total	167		mg/L	5	S2320B-97			2/16/16 03:08	MSA	J
Ammonia-N	ND		mg/L	0.100	D6919-09			2/19/16 00:18	JAM	A
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			2/19/16 07:00	JAM	A
Chloride	112		mg/L	2.0	EPA 300.0			2/16/16 10:43	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			2/16/16 10:43	JP	B
Nitrate-N	6.1		mg/L	0.20	EPA 300.0			2/16/16 10:43	JP	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

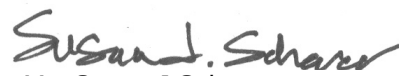
ANALYTICAL RESULTS

Workorder: 2124256 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124256004**
Sample ID: **FFMP013W**

Date Collected: 2/15/2016 12:15 Matrix: Ground Water
Date Received: 2/15/2016 16:26

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
pH	7.75		pH_Units		SM4500B			2/16/16 03:08	MSA	J
Phenolics	ND		mg/L	0.01	SW846 9066	2/18/16 06:24	JLG	2/24/16 13:55	JLG	G
Specific Conductance	767		umhos/cm	1	SW846 9050A			2/16/16 03:08	MSA	J
Sulfate	32.0		mg/L	2.0	EPA 300.0			2/16/16 10:43	JP	B
Total Dissolved Solids	438		mg/L	5	S2540C-11			2/21/16 09:41	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			2/22/16 10:35	PAG	E
Turbidity	1.97		NTU	0.10	S2130B-01			2/17/16 01:28	MSA	B
FIELD PARAMETERS										
Depth to Water Level	15.13		Feet		Field			2/15/16 12:15	CLT	D
Elev Top MW Casing above MSL	507.60		Feet		Field			2/15/16 12:15	CLT	D
Flow Rate	2.63		gal/min		Field			2/15/16 12:15	CLT	D
Ground Water Elevation	492.47		ft/MSL		Field			2/15/16 12:15	CLT	D
pH, Field (SM4500B)	6.83		pH_Units		Field			2/15/16 12:15	CLT	D
Sample Depth	135.00		Feet		Field			2/15/16 12:15	CLT	D
Specific Conductance, Field	805		umhos/cm	1	Field			2/15/16 12:15	CLT	D
Temperature	12.08		Deg. C		Field			2/15/16 12:15	CLT	D
Total Well Depth	150.50		Feet		Field			2/15/16 12:15	CLT	D
Volume in Water Column	198.99		Gallons		Field			2/15/16 12:15	CLT	D
Water Level After Purge	88.94		Feet		Field			2/15/16 12:15	CLT	D
Well Volumes Purged	1.06		Vol		Field			2/15/16 12:15	CLT	D



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 2124256 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124256005**
Sample ID: **FFMP027W**

Date Collected: 2/15/2016 13:03 Matrix: Ground Water
Date Received: 2/15/2016 16:26

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:51	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/17/16 23:51	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 23:51	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 23:51	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:51	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:51	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:51	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:51	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/17/16 23:51	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:51	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:51	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/17/16 23:51	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 23:51	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 23:51	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/17/16 23:51	CJG	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	94.3		%	62 - 133	SW846 8260B			2/17/16 23:51	CJG	H
4-Bromofluorobenzene (S)	99.2		%	79 - 114	SW846 8260B			2/17/16 23:51	CJG	H
Dibromofluoromethane (S)	80.8		%	78 - 116	SW846 8260B			2/17/16 23:51	CJG	H
Toluene-d8 (S)	86.8		%	76 - 127	SW846 8260B			2/17/16 23:51	CJG	H
METALS										
Calcium, Total	14.0		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:00	SRT	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:00	SRT	C1
Magnesium, Total	9.0		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:00	SRT	C1
Manganese, Total	0.019		mg/L	0.0056	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:00	SRT	C1
Potassium, Total	1.3		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:00	SRT	C1
Sodium, Total	10.2		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:00	SRT	C1
WET CHEMISTRY										
Alkalinity, Bicarbonate	16		mg/L	5	S2320B-97			2/16/16 03:17	MSA	J
Alkalinity, Total	16		mg/L	5	S2320B-97			2/16/16 03:17	MSA	J
Ammonia-N	ND		mg/L	0.100	D6919-09			2/19/16 00:37	JAM	A
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			2/19/16 07:00	JAM	A
Chloride	29.2		mg/L	2.0	EPA 300.0			2/16/16 10:58	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			2/16/16 10:58	JP	B
Nitrate-N	11.1		mg/L	0.20	EPA 300.0			2/16/16 10:58	JP	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2124256 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124256005**
Sample ID: **FFMP027W**

Date Collected: 2/15/2016 13:03 Matrix: Ground Water
Date Received: 2/15/2016 16:26

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
pH	5.90		pH_Units		SM4500B			2/16/16 03:17	MSA	J
Phenolics	ND		mg/L	0.01	SW846 9066	2/18/16 06:24	JLG	2/24/16 13:55	JLG	G
Specific Conductance	209		umhos/cm	1	SW846 9050A			2/16/16 03:17	MSA	J
Sulfate	9.4		mg/L	2.0	EPA 300.0			2/16/16 10:58	JP	B
Total Dissolved Solids	141		mg/L	5	S2540C-11			2/21/16 09:41	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			2/22/16 10:35	PAG	E
Turbidity	ND		NTU	0.10	S2130B-01			2/17/16 01:28	MSA	B
FIELD PARAMETERS										
Depth to Water Level	20.28		Feet		Field			2/15/16 13:03	CLT	D
Elev Top MW Casing above MSL	522.10		Feet		Field			2/15/16 13:03	CLT	D
Flow Rate	5.76		gal/min		Field			2/15/16 13:03	CLT	D
Ground Water Elevation	501.82		ft/MSL		Field			2/15/16 13:03	CLT	D
pH, Field (SM4500B)	3.93		pH_Units		Field			2/15/16 13:03	CLT	D
Sample Depth	45.00		Feet		Field			2/15/16 13:03	CLT	D
Specific Conductance, Field	245		umhos/cm	1	Field			2/15/16 13:03	CLT	D
Temperature	14.75		Deg. C		Field			2/15/16 13:03	CLT	D
Total Well Depth	53.50		Feet		Field			2/15/16 13:03	CLT	D
Volume in Water Column	48.83		Gallons		Field			2/15/16 13:03	CLT	D
Water Level After Purge	20.87		Feet		Field			2/15/16 13:03	CLT	D
Well Volumes Purged	3.54		Vol		Field			2/15/16 13:03	CLT	D



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 2124256 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124256006**

Date Collected: 2/15/2016 15:00

Matrix: Ground Water

Sample ID: **FFMP015W**

Date Received: 2/15/2016 16:26

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:13	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/18/16 00:13	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 00:13	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 00:13	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:13	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:13	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:13	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:13	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 00:13	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:13	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:13	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/18/16 00:13	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 00:13	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:13	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 00:13	CJG	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	94.6		%	62 - 133	SW846 8260B			2/18/16 00:13	CJG	H
4-Bromofluorobenzene (S)	96.6		%	79 - 114	SW846 8260B			2/18/16 00:13	CJG	H
Dibromofluoromethane (S)	81.1		%	78 - 116	SW846 8260B			2/18/16 00:13	CJG	H
Toluene-d8 (S)	87.7		%	76 - 127	SW846 8260B			2/18/16 00:13	CJG	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	12		mg/L	5	S2320B-97			2/16/16 03:25	MSA	J
Alkalinity, Total	12		mg/L	5	S2320B-97			2/16/16 03:25	MSA	J
Ammonia-N	ND		mg/L	0.100	D6919-09			2/19/16 00:56	JAM	A
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			2/19/16 07:00	JAM	A
Chloride	8.9		mg/L	2.0	EPA 300.0			2/16/16 11:13	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			2/16/16 11:13	JP	B
Nitrate-N	7.4		mg/L	0.20	EPA 300.0			2/16/16 11:13	JP	B
pH	6.16		pH_Units		SM4500B			2/16/16 03:25	MSA	J
Phenolics	ND	1	mg/L	0.01	SW846 9066	2/18/16 06:24	JLG	2/24/16 16:16	JLG	G
Specific Conductance	145		umhos/cm	1	SW846 9050A			2/16/16 03:25	MSA	J
Sulfate	23.1		mg/L	2.0	EPA 300.0			2/16/16 11:13	JP	B
Total Dissolved Solids	65		mg/L	5	S2540C-11			2/21/16 09:41	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			2/22/16 10:35	PAG	E
Turbidity	ND		NTU	0.10	S2130B-01			2/17/16 01:28	MSA	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2124256 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124256006**
Sample ID: **FFMP015W**

Date Collected: 2/15/2016 15:00 Matrix: Ground Water
Date Received: 2/15/2016 16:26

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	6.9		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:04	SRT	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:04	SRT	C1
Magnesium, Total	6.8		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:04	SRT	C1
Manganese, Total	0.0072		mg/L	0.0056	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:04	SRT	C1
Potassium, Total	1.3		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:04	SRT	C1
Sodium, Total	9.6		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:04	SRT	C1
FIELD PARAMETERS										
Depth to Water Level	55.70		Feet		Field			2/15/16 15:00	CLT	D
Elev Top MW Casing above MSL	576.40		Feet		Field			2/15/16 15:00	CLT	D
Flow Rate	2.28		gal/min		Field			2/15/16 15:00	CLT	D
Ground Water Elevation	520.70		ft/MSL		Field			2/15/16 15:00	CLT	D
pH, Field (SM4500B)	4.94		pH_Units		Field			2/15/16 15:00	CLT	D
Sample Depth	135.00		Feet		Field			2/15/16 15:00	CLT	D
Specific Conductance, Field	168		umhos/cm	1	Field			2/15/16 15:00	CLT	D
Temperature	11.78		Deg. C		Field			2/15/16 15:00	CLT	D
Total Well Depth	149.90		Feet		Field			2/15/16 15:00	CLT	D
Volume in Water Column	138.47		Gallons		Field			2/15/16 15:00	CLT	D
Well Volumes Purged	0.66		Vol		Field			2/15/16 15:00	CLT	D



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

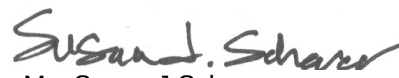
ANALYTICAL RESULTS

Workorder: 2124256 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124256007**
Sample ID: **Field Blank**

Date Collected: 2/15/2016 15:07 Matrix: Ground Water
Date Received: 2/15/2016 16:26

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/17/16 21:18	CJG	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/17/16 21:18	CJG	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 21:18	CJG	A
1,2-Dichloroethane	1.4		ug/L	1.0	SW846 8260B			2/17/16 21:18	CJG	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 21:18	CJG	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 21:18	CJG	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 21:18	CJG	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/17/16 21:18	CJG	A
Methylene Chloride	3230		ug/L	1.0	SW846 8260B			2/17/16 21:18	CJG	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 21:18	CJG	A
Toluene	ND		ug/L	1.0	SW846 8260B			2/17/16 21:18	CJG	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/17/16 21:18	CJG	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 21:18	CJG	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 21:18	CJG	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/17/16 21:18	CJG	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	94.1		%	62 - 133	SW846 8260B			2/17/16 21:18	CJG	A
4-Bromofluorobenzene (S)	100		%	79 - 114	SW846 8260B			2/17/16 21:18	CJG	A
Dibromofluoromethane (S)	82.1		%	78 - 116	SW846 8260B			2/17/16 21:18	CJG	A
Toluene-d8 (S)	78.6		%	76 - 127	SW846 8260B			2/17/16 21:18	CJG	A


Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

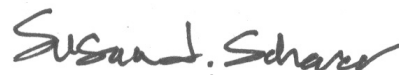
ANALYTICAL RESULTS

Workorder: 2124256 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124256008**
Sample ID: **Trip Blank**

Date Collected: 2/15/2016 16:26 Matrix: Ground Water
Date Received: 2/15/2016 16:26

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/17/16 21:40	CJG	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/17/16 21:40	CJG	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 21:40	CJG	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 21:40	CJG	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 21:40	CJG	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 21:40	CJG	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 21:40	CJG	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/17/16 21:40	CJG	A
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/17/16 21:40	CJG	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 21:40	CJG	A
Toluene	ND		ug/L	1.0	SW846 8260B			2/17/16 21:40	CJG	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/17/16 21:40	CJG	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 21:40	CJG	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 21:40	CJG	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/17/16 21:40	CJG	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	93.3		%	62 - 133	SW846 8260B			2/17/16 21:40	CJG	A
4-Bromofluorobenzene (S)	102		%	79 - 114	SW846 8260B			2/17/16 21:40	CJG	A
Dibromofluoromethane (S)	80.5		%	78 - 116	SW846 8260B			2/17/16 21:40	CJG	A
Toluene-d8 (S)	88.9		%	76 - 127	SW846 8260B			2/17/16 21:40	CJG	A



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey



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

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2124256006	1	FFMP015W	SW846 9066	Phenolics

The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits.

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

February 29, 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: 2124435
Purchase Order:	Workorder ID: 1st QTR 2016 GWMP-FORM 19Q

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, February 16, 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.

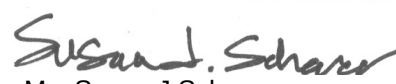
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications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

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

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.


Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

SAMPLE SUMMARY

Workorder: 2124435 1st QTR 2016 GWMP-FORM 19Q

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2124435001	FFMP30RW	Ground Water	2/16/2016 10:16	2/16/2016 16:37	Mr. Brian G Shade
2124435002	FFMP04AW	Ground Water	2/16/2016 11:25	2/16/2016 16:37	Mr. Brian G Shade
2124435003	FFMP26RW	Ground Water	2/16/2016 12:38	2/16/2016 16:37	Mr. Brian G Shade
2124435004	FFMP005W	Ground Water	2/16/2016 13:55	2/16/2016 16:37	Mr. Brian G Shade
2124435005	FFMP03AW	Ground Water	2/16/2016 15:11	2/16/2016 16:37	Mr. Brian G Shade
2124435006	Field Blank	Ground Water	2/16/2016 15:29	2/16/2016 16:37	Mr. Brian G Shade
2124435007	Trip Blank	Ground Water	2/16/2016 16:37	2/16/2016 16:37	Mr. Brian G Shade

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

SAMPLE SUMMARY

Workorder: 2124435 1st 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 performed 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 incubator 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

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

PROJECT SUMMARY

Workorder: 2124435 1st QTR 2016 GWMP-FORM 19Q

Sample Comments

Lab ID: 2124435001**Sample ID:** FFMP30RW**Sample Type:** SAMPLE

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

Lab ID: 2124435002**Sample ID:** FFMP04AW**Sample Type:** SAMPLE

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

Lab ID: 2124435003**Sample ID:** FFMP26RW**Sample Type:** SAMPLE

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

Lab ID: 2124435004**Sample ID:** FFMP005W**Sample Type:** SAMPLE

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

Lab ID: 2124435005**Sample ID:** FFMP03AW**Sample Type:** SAMPLE

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

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2124435 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124435001**

Date Collected: 2/16/2016 10:16

Matrix: Ground Water

Sample ID: **FFMP30RW**

Date Received: 2/16/2016 16:37

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:35	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/18/16 00:35	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 00:35	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 00:35	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:35	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:35	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:35	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:35	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 00:35	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:35	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:35	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/18/16 00:35	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 00:35	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:35	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 00:35	CJG	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	98.2		%	62 - 133	SW846 8260B			2/18/16 00:35	CJG	H
4-Bromofluorobenzene (S)	99.5		%	79 - 114	SW846 8260B			2/18/16 00:35	CJG	H
Dibromofluoromethane (S)	84.9		%	78 - 116	SW846 8260B			2/18/16 00:35	CJG	H
Toluene-d8 (S)	85.9		%	76 - 127	SW846 8260B			2/18/16 00:35	CJG	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	26		mg/L	5	S2320B-97			2/17/16 02:26	MSA	B
Alkalinity, Total	26		mg/L	5	S2320B-97			2/17/16 02:26	MSA	B
Ammonia-N	ND		mg/L	0.100	D6919-09			2/19/16 12:53	JAM	A
Chemical Oxygen Demand (COD)	14		mg/L	5	EPA 410.4			2/19/16 07:00	JAM	A
Chloride	123		mg/L	5.0	EPA 300.0			2/17/16 13:43	JP	B
Fluoride	ND		mg/L	0.50	EPA 300.0			2/17/16 13:43	JP	B
Nitrate-N	4.0		mg/L	0.50	EPA 300.0			2/17/16 13:43	JP	B
pH	5.78		pH_Units		SM4500B			2/17/16 02:26	MSA	B
Phenolics	ND		mg/L	0.01	SW846 9066	2/18/16 06:24	JLG	2/24/16 14:53	JLG	G
Specific Conductance	478		umhos/cm	1	SW846 9050A			2/17/16 02:26	MSA	B
Sulfate	13.0		mg/L	5.0	EPA 300.0			2/17/16 13:43	JP	B
Total Dissolved Solids	262		mg/L	5	S2540C-11			2/22/16 09:38	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			2/22/16 10:35	PAG	E
Turbidity	0.65		NTU	0.10	S2130B-01			2/17/16 00:53	MSA	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

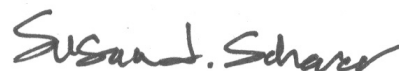
ANALYTICAL RESULTS

Workorder: 2124435 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124435001**
Sample ID: **FFMP30RW**

Date Collected: 2/16/2016 10:16 Matrix: Ground Water
Date Received: 2/16/2016 16:37

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	17.6		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:42	SRT	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:42	SRT	C1
Magnesium, Total	12.6		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:42	SRT	C1
Manganese, Total	0.97		mg/L	0.0056	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:42	SRT	C1
Potassium, Total	2.3		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:42	SRT	C1
Sodium, Total	42.5		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:42	SRT	C1
FIELD PARAMETERS										
Depth to Water Level	31.16		Feet		Field			2/16/16 10:16	CLT	D
Elev Top MW Casing above MSL	562.30		Feet		Field			2/16/16 10:16	CLT	D
Flow Rate	2.66		gal/min		Field			2/16/16 10:16	CLT	D
Ground Water Elevation	531.14		ft/MSL		Field			2/16/16 10:16	CLT	D
pH, Field (SM4500B)	4.87		pH_Units		Field			2/16/16 10:16	CLT	D
Sample Depth	85.00		Feet		Field			2/16/16 10:16	CLT	D
Specific Conductance, Field	503		umhos/cm	1	Field			2/16/16 10:16	CLT	D
Temperature	11.81		Deg. C		Field			2/16/16 10:16	CLT	D
Total Well Depth	94.20		Feet		Field			2/16/16 10:16	CLT	D
Volume in Water Column	92.67		Gallons		Field			2/16/16 10:16	CLT	D
Water Level After Purge	35.66		Feet		Field			2/16/16 10:16	CLT	D
Well Volumes Purged	1.72		Vol		Field			2/16/16 10:16	CLT	D



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 2124435 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124435002**
Sample ID: **FFMP04AW**

Date Collected: 2/16/2016 11:25 Matrix: Ground Water
Date Received: 2/16/2016 16:37

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:57	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/18/16 00:57	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 00:57	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 00:57	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:57	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:57	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:57	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:57	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 00:57	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:57	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:57	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/18/16 00:57	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 00:57	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 00:57	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 00:57	CJG	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	94.1		%	62 - 133	SW846 8260B			2/18/16 00:57	CJG	H
4-Bromofluorobenzene (S)	100		%	79 - 114	SW846 8260B			2/18/16 00:57	CJG	H
Dibromofluoromethane (S)	81.9		%	78 - 116	SW846 8260B			2/18/16 00:57	CJG	H
Toluene-d8 (S)	80		%	76 - 127	SW846 8260B			2/18/16 00:57	CJG	H
METALS										
Calcium, Total	145		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:46	SRT	C1
Iron, Total	0.095		mg/L	0.067	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:46	SRT	C1
Magnesium, Total	24.8		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:46	SRT	C1
Manganese, Total	0.19		mg/L	0.0056	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:46	SRT	C1
Potassium, Total	2.1		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:46	SRT	C1
Sodium, Total	76.2		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:46	SRT	C1
WET CHEMISTRY										
Alkalinity, Bicarbonate	205		mg/L	5	S2320B-97			2/17/16 03:07	MSA	B
Alkalinity, Total	205		mg/L	5	S2320B-97			2/17/16 03:07	MSA	B
Ammonia-N	ND		mg/L	0.100	D6919-09			2/19/16 13:50	JAM	A
Chemical Oxygen Demand (COD)	21		mg/L	5	EPA 410.4			2/19/16 07:00	JAM	A
Chloride	309		mg/L	5.0	EPA 300.0			2/17/16 15:12	JP	B
Fluoride	ND		mg/L	0.50	EPA 300.0			2/17/16 15:12	JP	B
Nitrate-N	ND		mg/L	0.50	EPA 300.0			2/17/16 15:12	JP	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2124435 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124435002**
Sample ID: **FFMP04AW**

Date Collected: 2/16/2016 11:25 Matrix: Ground Water
Date Received: 2/16/2016 16:37

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
pH	7.43		pH_Units		SM4500B			2/17/16 03:07	MSA	B
Phenolics	ND		mg/L	0.01	SW846 9066	2/18/16 06:24	JLG	2/24/16 13:55	JLG	G
Specific Conductance	1400		umhos/cm	1	SW846 9050A			2/17/16 03:07	MSA	B
Sulfate	56.1		mg/L	5.0	EPA 300.0			2/17/16 15:12	JP	B
Total Dissolved Solids	874		mg/L	5	S2540C-11			2/22/16 09:38	ML	B
Total Organic Carbon (TOC)	1.3		mg/L	1.0	SW846 9060A			2/22/16 10:35	PAG	E
Turbidity	1.25		NTU	0.10	S2130B-01			2/17/16 00:53	MSA	B
FIELD PARAMETERS										
Depth to Water Level	31.51		Feet		Field			2/16/16 11:25	CLT	D
Elev Top MW Casing above MSL	560.72		Feet		Field			2/16/16 11:25	CLT	D
Flow Rate	2.40		gal/min		Field			2/16/16 11:25	CLT	D
Ground Water Elevation	529.21		ft/MSL		Field			2/16/16 11:25	CLT	D
pH, Field (SM4500B)	6.64		pH_Units		Field			2/16/16 11:25	CLT	D
Sample Depth	146.00		Feet		Field			2/16/16 11:25	CLT	D
Specific Conductance, Field	1466		umhos/cm	1	Field			2/16/16 11:25	CLT	D
Temperature	11.93		Deg. C		Field			2/16/16 11:25	CLT	D
Total Well Depth	148.50		Feet		Field			2/16/16 11:25	CLT	D
Volume in Water Column	171.98		Gallons		Field			2/16/16 11:25	CLT	D
Water Level After Purge	87.88		Feet		Field			2/16/16 11:25	CLT	D
Well Volumes Purged	0.84		Vol		Field			2/16/16 11:25	CLT	D



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 2124435 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124435003**
Sample ID: **FFMP26RW**

Date Collected: 2/16/2016 12:38 Matrix: Ground Water
Date Received: 2/16/2016 16:37

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/18/16 01:19	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/18/16 01:19	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 01:19	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 01:19	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 01:19	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 01:19	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 01:19	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/18/16 01:19	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 01:19	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 01:19	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/18/16 01:19	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/18/16 01:19	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 01:19	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 01:19	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 01:19	CJG	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	94.8		%	62 - 133	SW846 8260B			2/18/16 01:19	CJG	H
4-Bromofluorobenzene (S)	90.8		%	79 - 114	SW846 8260B			2/18/16 01:19	CJG	H
Dibromofluoromethane (S)	81.5		%	78 - 116	SW846 8260B			2/18/16 01:19	CJG	H
Toluene-d8 (S)	95.7		%	76 - 127	SW846 8260B			2/18/16 01:19	CJG	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	44		mg/L	5	S2320B-97			2/17/16 03:15	MSA	B
Alkalinity, Total	44		mg/L	5	S2320B-97			2/17/16 03:15	MSA	B
Ammonia-N	ND		mg/L	0.100	D6919-09			2/19/16 14:09	JAM	A
Chemical Oxygen Demand (COD)	11		mg/L	5	EPA 410.4			2/19/16 07:00	JAM	A
Chloride	178		mg/L	2.0	EPA 300.0			2/17/16 15:27	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			2/17/16 15:27	JP	B
Nitrate-N	1.7		mg/L	0.20	EPA 300.0			2/17/16 15:27	JP	B
pH	5.85		pH_Units		SM4500B			2/17/16 03:15	MSA	B
Phenolics	ND		mg/L	0.01	SW846 9066	2/18/16 06:24	JLG	2/24/16 14:53	JLG	G
Specific Conductance	841		umhos/cm	1	SW846 9050A			2/17/16 03:15	MSA	B
Sulfate	83.6		mg/L	2.0	EPA 300.0			2/17/16 15:27	JP	B
Total Dissolved Solids	507		mg/L	5	S2540C-11			2/22/16 09:38	ML	B
Total Organic Carbon (TOC)	2.0		mg/L	1.0	SW846 9060A			2/22/16 10:35	PAG	E
Turbidity	0.82		NTU	0.10	S2130B-01			2/17/16 00:53	MSA	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2124435 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124435003**
Sample ID: **FFMP26RW**

Date Collected: 2/16/2016 12:38 Matrix: Ground Water
Date Received: 2/16/2016 16:37

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	63.9		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:50	SRT	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:50	SRT	C1
Magnesium, Total	18.7		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:50	SRT	C1
Manganese, Total	0.40		mg/L	0.0056	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:50	SRT	C1
Potassium, Total	8.4		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:50	SRT	C1
Sodium, Total	52.6		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:50	SRT	C1
FIELD PARAMETERS										
Depth to Water Level	69.53		Feet		Field			2/16/16 12:38	CLT	D
Elev Top MW Casing above MSL	547.40		Feet		Field			2/16/16 12:38	CLT	D
Flow Rate	2.64		gal/min		Field			2/16/16 12:38	CLT	D
Ground Water Elevation	477.87		ft/MSL		Field			2/16/16 12:38	CLT	D
pH, Field (SM4500B)	5.08		pH_Units		Field			2/16/16 12:38	CLT	D
Sample Depth	105.00		Feet		Field			2/16/16 12:38	CLT	D
Specific Conductance, Field	890		umhos/cm	1	Field			2/16/16 12:38	CLT	D
Temperature	12.52		Deg. C		Field			2/16/16 12:38	CLT	D
Total Well Depth	118.30		Feet		Field			2/16/16 12:38	CLT	D
Volume in Water Column	71.69		Gallons		Field			2/16/16 12:38	CLT	D
Water Level After Purge	88.39		Feet		Field			2/16/16 12:38	CLT	D
Well Volumes Purged	1.66		Vol		Field			2/16/16 12:38	CLT	D



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 2124435 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124435004**

Date Collected: 2/16/2016 13:55

Matrix: Ground Water

Sample ID: **FFMP005W**

Date Received: 2/16/2016 16:37

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/18/16 01:41	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/18/16 01:41	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 01:41	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 01:41	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 01:41	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 01:41	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 01:41	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/18/16 01:41	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 01:41	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 01:41	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/18/16 01:41	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/18/16 01:41	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 01:41	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 01:41	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 01:41	CJG	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	95.5		%	62 - 133	SW846 8260B			2/18/16 01:41	CJG	H
4-Bromofluorobenzene (S)	89.6		%	79 - 114	SW846 8260B			2/18/16 01:41	CJG	H
Dibromofluoromethane (S)	82.4		%	78 - 116	SW846 8260B			2/18/16 01:41	CJG	H
Toluene-d8 (S)	85		%	76 - 127	SW846 8260B			2/18/16 01:41	CJG	H
METALS										
Calcium, Total	72.1		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:54	SRT	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:54	SRT	C1
Magnesium, Total	17.5		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:54	SRT	C1
Manganese, Total	0.042		mg/L	0.0056	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:54	SRT	C1
Potassium, Total	2.4		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:54	SRT	C1
Sodium, Total	41.3		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:54	SRT	C1
WET CHEMISTRY										
Alkalinity, Bicarbonate	46		mg/L	5	S2320B-97			2/17/16 03:24	MSA	B
Alkalinity, Total	46		mg/L	5	S2320B-97			2/17/16 03:24	MSA	B
Ammonia-N	ND		mg/L	0.100	D6919-09			2/19/16 14:28	JAM	A
Chemical Oxygen Demand (COD)	16		mg/L	5	EPA 410.4			2/19/16 07:00	JAM	A
Chloride	180		mg/L	2.0	EPA 300.0			2/17/16 15:42	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			2/17/16 15:42	JP	B
Nitrate-N	3.2		mg/L	0.20	EPA 300.0			2/17/16 15:42	JP	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

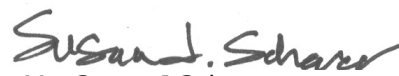
ANALYTICAL RESULTS

Workorder: 2124435 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124435004**
Sample ID: **FFMP005W**

Date Collected: 2/16/2016 13:55 Matrix: Ground Water
Date Received: 2/16/2016 16:37

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
pH	6.06		pH_Units		SM4500B			2/17/16 03:24	MSA	B
Phenolics	ND		mg/L	0.01	SW846 9066	2/18/16 06:24	JLG	2/24/16 14:53	JLG	G
Specific Conductance	810		umhos/cm	1	SW846 9050A			2/17/16 03:24	MSA	B
Sulfate	61.0		mg/L	2.0	EPA 300.0			2/17/16 15:42	JP	B
Total Dissolved Solids	529		mg/L	5	S2540C-11			2/22/16 09:38	ML	B
Total Organic Carbon (TOC)	1.5		mg/L	1.0	SW846 9060A			2/22/16 10:35	PAG	E
Turbidity	ND		NTU	0.10	S2130B-01			2/17/16 00:53	MSA	B
FIELD PARAMETERS										
Depth to Water Level	61.40		Feet		Field			2/16/16 13:55	CLT	D
Elev Top MW Casing above MSL	537.40		Feet		Field			2/16/16 13:55	CLT	D
Flow Rate	2.45		gal/min		Field			2/16/16 13:55	CLT	D
Ground Water Elevation	476.00		ft/MSL		Field			2/16/16 13:55	CLT	D
pH, Field (SM4500B)	5.28		pH_Units		Field			2/16/16 13:55	CLT	D
Sample Depth	135.00		Feet		Field			2/16/16 13:55	CLT	D
Specific Conductance, Field	847		umhos/cm	1	Field			2/16/16 13:55	CLT	D
Temperature	12.09		Deg. C		Field			2/16/16 13:55	CLT	D
Total Well Depth	149.70		Feet		Field			2/16/16 13:55	CLT	D
Volume in Water Column	129.80		Gallons		Field			2/16/16 13:55	CLT	D
Water Level After Purge	90.81		Feet		Field			2/16/16 13:55	CLT	D
Well Volumes Purged	1.32		Vol		Field			2/16/16 13:55	CLT	D



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 2124435 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124435005**
Sample ID: **FFMP03AW**

Date Collected: 2/16/2016 15:11 Matrix: Ground Water
Date Received: 2/16/2016 16:37

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/18/16 02:03	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/18/16 02:03	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 02:03	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 02:03	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 02:03	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 02:03	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 02:03	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/18/16 02:03	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 02:03	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 02:03	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/18/16 02:03	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/18/16 02:03	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 02:03	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 02:03	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 02:03	CJG	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	94		%	62 - 133	SW846 8260B			2/18/16 02:03	CJG	H
4-Bromofluorobenzene (S)	92.6		%	79 - 114	SW846 8260B			2/18/16 02:03	CJG	H
Dibromofluoromethane (S)	81.3		%	78 - 116	SW846 8260B			2/18/16 02:03	CJG	H
Toluene-d8 (S)	94.3		%	76 - 127	SW846 8260B			2/18/16 02:03	CJG	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	15		mg/L	5	S2320B-97			2/17/16 03:33	MSA	B
Alkalinity, Total	15		mg/L	5	S2320B-97			2/17/16 03:33	MSA	B
Ammonia-N	ND		mg/L	0.100	D6919-09			2/19/16 14:47	JAM	A
Chemical Oxygen Demand (COD)	18		mg/L	5	EPA 410.4			2/19/16 07:00	JAM	A
Chloride	25.1		mg/L	2.0	EPA 300.0			2/17/16 15:57	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			2/17/16 15:57	JP	B
Nitrate-N	21.7		mg/L	1.0	EPA 300.0			2/17/16 16:12	JP	B
pH	5.66		pH_Units		SM4500B			2/17/16 03:33	MSA	B
Phenolics	ND		mg/L	0.01	SW846 9066	2/18/16 06:24	JLG	2/24/16 14:53	JLG	G
Specific Conductance	256		umhos/cm	1	SW846 9050A			2/17/16 03:33	MSA	B
Sulfate	3.7		mg/L	2.0	EPA 300.0			2/17/16 15:57	JP	B
Total Dissolved Solids	163		mg/L	5	S2540C-11			2/22/16 09:38	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			2/22/16 10:35	PAG	E
Turbidity	ND		NTU	0.10	S2130B-01			2/17/16 00:53	MSA	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2124435 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124435005**
Sample ID: **FFMP03AW**

Date Collected: 2/16/2016 15:11 Matrix: Ground Water
Date Received: 2/16/2016 16:37

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	17.1		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:57	SRT	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:57	SRT	C1
Magnesium, Total	11.8		mg/L	0.11	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:57	SRT	C1
Manganese, Total	0.18		mg/L	0.0056	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:57	SRT	C1
Potassium, Total	1.3		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:57	SRT	C1
Sodium, Total	11.3		mg/L	0.56	SW846 6010C	2/17/16 17:01	TSS	2/19/16 13:57	SRT	C1
FIELD PARAMETERS										
Depth to Water Level	52.04		Feet		Field			2/16/16 15:11	CLT	D
Elev Top MW Casing above MSL	590.90		Feet		Field			2/16/16 15:11	CLT	D
Flow Rate	2.24		gal/min		Field			2/16/16 15:11	CLT	D
Ground Water Elevation	538.86		ft/MSL		Field			2/16/16 15:11	CLT	D
pH, Field (SM4500B)	4.84		pH_Units		Field			2/16/16 15:11	CLT	D
Sample Depth	130.00		Feet		Field			2/16/16 15:11	CLT	D
Specific Conductance, Field	302		umhos/cm	1	Field			2/16/16 15:11	CLT	D
Temperature	12.01		Deg. C		Field			2/16/16 15:11	CLT	D
Total Well Depth	148.40		Feet		Field			2/16/16 15:11	CLT	D
Volume in Water Column	141.65		Gallons		Field			2/16/16 15:11	CLT	D
Water Level After Purge	86.46		Feet		Field			2/16/16 15:11	CLT	D
Well Volumes Purged	0.95		Vol		Field			2/16/16 15:11	CLT	D



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

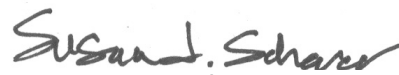
ANALYTICAL RESULTS

Workorder: 2124435 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124435006**
Sample ID: **Field Blank**

Date Collected: 2/16/2016 15:29 Matrix: Ground Water
Date Received: 2/16/2016 16:37

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/17/16 20:34	CJG	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/17/16 20:34	CJG	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 20:34	CJG	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 20:34	CJG	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 20:34	CJG	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 20:34	CJG	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 20:34	CJG	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/17/16 20:34	CJG	A
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/17/16 20:34	CJG	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 20:34	CJG	A
Toluene	ND		ug/L	1.0	SW846 8260B			2/17/16 20:34	CJG	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/17/16 20:34	CJG	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 20:34	CJG	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 20:34	CJG	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/17/16 20:34	CJG	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	92.7		%	62 - 133	SW846 8260B			2/17/16 20:34	CJG	A
4-Bromofluorobenzene (S)	97.7		%	79 - 114	SW846 8260B			2/17/16 20:34	CJG	A
Dibromofluoromethane (S)	81.1		%	78 - 116	SW846 8260B			2/17/16 20:34	CJG	A
Toluene-d8 (S)	95.5		%	76 - 127	SW846 8260B			2/17/16 20:34	CJG	A



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

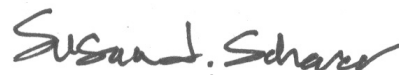
ANALYTICAL RESULTS

Workorder: 2124435 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124435007**
Sample ID: **Trip Blank**

Date Collected: 2/16/2016 16:37 Matrix: Ground Water
Date Received: 2/16/2016 16:37

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/17/16 20:56	CJG	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/17/16 20:56	CJG	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 20:56	CJG	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 20:56	CJG	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 20:56	CJG	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 20:56	CJG	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 20:56	CJG	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/17/16 20:56	CJG	A
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/17/16 20:56	CJG	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 20:56	CJG	A
Toluene	ND		ug/L	1.0	SW846 8260B			2/17/16 20:56	CJG	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/17/16 20:56	CJG	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/17/16 20:56	CJG	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/17/16 20:56	CJG	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/17/16 20:56	CJG	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	93.9		%	62 - 133	SW846 8260B			2/17/16 20:56	CJG	A
4-Bromofluorobenzene (S)	95		%	79 - 114	SW846 8260B			2/17/16 20:56	CJG	A
Dibromofluoromethane (S)	80.9		%	78 - 116	SW846 8260B			2/17/16 20:56	CJG	A
Toluene-d8 (S)	85.5		%	76 - 127	SW846 8260B			2/17/16 20:56	CJG	A



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

March 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: 2124702
Purchase Order:	Workorder ID: 1st QTR 2016 GWMP-FORM 19Q

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, February 17, 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.

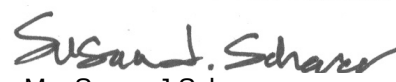
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications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

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

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.


Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

SAMPLE SUMMARY

Workorder: 2124702 1st QTR 2016 GWMP-FORM 19Q

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2124702001	FFMP017W	Ground Water	2/17/2016 10:12	2/17/2016 16:03	Mr. Brian G Shade
2124702002	FFMP018W	Ground Water	2/17/2016 10:39	2/17/2016 16:03	Mr. Brian G Shade
2124702003	FFMP019W	Ground Water	2/17/2016 11:23	2/17/2016 16:03	Mr. Brian G Shade
2124702004	FFMP029W	Ground Water	2/17/2016 12:24	2/17/2016 16:03	Mr. Brian G Shade
2124702005	FFMP016W	Ground Water	2/17/2016 12:35	2/17/2016 16:03	Mr. Brian G Shade
2124702006	Field Blank	Ground Water	2/17/2016 14:04	2/17/2016 16:03	Mr. Brian G Shade
2124702007	Trip Blank	Ground Water	2/17/2016 16:03	2/17/2016 16:03	Mr. Brian G Shade

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

SAMPLE SUMMARY

Workorder: 2124702 1st 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 performed 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 incubator 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

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

PROJECT SUMMARY

Workorder: 2124702 1st QTR 2016 GWMP-FORM 19Q

Workorder Comments

Please note that due to an error in sampling, a field blank was not collected for this site. There were no detections of volatile organic compounds in the project samples. Volatile organic contamination from field conditions is not indicated for this sample set.

Sample Comments

Lab ID: 2124702001**Sample ID:** FFMP017W**Sample Type:** SAMPLE

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

Lab ID: 2124702002**Sample ID:** FFMP018W**Sample Type:** SAMPLE

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

Lab ID: 2124702003**Sample ID:** FFMP019W**Sample Type:** SAMPLE

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

Lab ID: 2124702004**Sample ID:** FFMP029W**Sample Type:** SAMPLE

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

Lab ID: 2124702005**Sample ID:** FFMP016W**Sample Type:** SAMPLE

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

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2124702 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124702001**

Date Collected: 2/17/2016 10:12

Matrix: Ground Water

Sample ID: **FFMP017W**

Date Received: 2/17/2016 16:03

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/18/16 05:46	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/18/16 05:46	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 05:46	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 05:46	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 05:46	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 05:46	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 05:46	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/18/16 05:46	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 05:46	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 05:46	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/18/16 05:46	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/18/16 05:46	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 05:46	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 05:46	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 05:46	CJG	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	81.8		%	62 - 133	SW846 8260B			2/18/16 05:46	CJG	H
4-Bromofluorobenzene (S)	95		%	79 - 114	SW846 8260B			2/18/16 05:46	CJG	H
Dibromofluoromethane (S)	80		%	78 - 116	SW846 8260B			2/18/16 05:46	CJG	H
Toluene-d8 (S)	80.7		%	76 - 127	SW846 8260B			2/18/16 05:46	CJG	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	48		mg/L	5	S2320B-97			2/18/16 03:24	MSA	J
Alkalinity, Total	48		mg/L	5	S2320B-97			2/18/16 03:24	MSA	J
Ammonia-N	ND		mg/L	0.100	D6919-09			2/19/16 16:16	JAM	A
Chemical Oxygen Demand (COD)	8		mg/L	5	EPA 410.4			2/19/16 07:00	JAM	A
Chloride	220		mg/L	5.0	EPA 300.0			2/19/16 06:27	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			2/18/16 12:57	JP	B
Nitrate-N	2.3		mg/L	0.20	EPA 300.0			2/18/16 12:57	JP	B
pH	6.14		pH_Units		SM4500B			2/18/16 03:24	MSA	J
Phenolics	ND		mg/L	0.01	SW846 9066	2/23/16 08:00	JLG	2/24/16 16:16	JLG	G
Specific Conductance	899		umhos/cm	1	SW846 9050A			2/18/16 03:24	MSA	J
Sulfate	50.7		mg/L	2.0	EPA 300.0			2/18/16 12:57	JP	B
Total Dissolved Solids	488		mg/L	5	S2540C-11			2/23/16 13:40	ML	B
Total Organic Carbon (TOC)	2.4		mg/L	1.0	SW846 9060A			2/23/16 12:31	PAG	E
Turbidity	0.45		NTU	0.10	S2130B-01			2/18/16 03:03	MSA	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

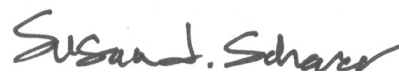
ANALYTICAL RESULTS

Workorder: 2124702 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124702001**
Sample ID: **FFMP017W**

Date Collected: 2/17/2016 10:12 Matrix: Ground Water
Date Received: 2/17/2016 16:03

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	60.5		mg/L	0.11	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:24	SRT	C1
Iron, Total	0.10		mg/L	0.067	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:24	SRT	C1
Magnesium, Total	28.4		mg/L	0.11	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:24	SRT	C1
Manganese, Total	0.27		mg/L	0.0056	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:24	SRT	C1
Potassium, Total	4.2		mg/L	0.56	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:24	SRT	C1
Sodium, Total	50.5		mg/L	0.56	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:24	SRT	C1
FIELD PARAMETERS										
Depth to Water Level	38.63		Feet		Field			2/17/16 10:12	CLT	D
Elev Top MW Casing above MSL	480.70		Feet		Field			2/17/16 10:12	CLT	D
Flow Rate	2.41		gal/min		Field			2/17/16 10:12	CLT	D
Ground Water Elevation	442.07		ft/MSL		Field			2/17/16 10:12	CLT	D
pH, Field (SM4500B)	5.04		pH_Units		Field			2/17/16 10:12	CLT	D
Sample Depth	135.00		Feet		Field			2/17/16 10:12	CLT	D
Specific Conductance, Field	952		umhos/cm	1	Field			2/17/16 10:12	CLT	D
Temperature	11.47		Deg. C		Field			2/17/16 10:12	CLT	D
Total Well Depth	150.50		Feet		Field			2/17/16 10:12	CLT	D
Volume in Water Column	164.45		Gallons		Field			2/17/16 10:12	CLT	D
Water Level After Purge	46.72		Feet		Field			2/17/16 10:12	CLT	D
Well Volumes Purged	1.32		Vol		Field			2/17/16 10:12	CLT	D



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 2124702 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124702002**
Sample ID: **FFMP018W**

Date Collected: 2/17/2016 10:39 Matrix: Ground Water
Date Received: 2/17/2016 16:03

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:10	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/18/16 06:10	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 06:10	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 06:10	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:10	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:10	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:10	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:10	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 06:10	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:10	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:10	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/18/16 06:10	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 06:10	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:10	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 06:10	CJG	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	83		%	62 - 133	SW846 8260B			2/18/16 06:10	CJG	H
4-Bromofluorobenzene (S)	97.1		%	79 - 114	SW846 8260B			2/18/16 06:10	CJG	H
Dibromofluoromethane (S)	80.8		%	78 - 116	SW846 8260B			2/18/16 06:10	CJG	H
Toluene-d8 (S)	81.6		%	76 - 127	SW846 8260B			2/18/16 06:10	CJG	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	31		mg/L	5	S2320B-97			2/18/16 03:32	MSA	J
Alkalinity, Total	31		mg/L	5	S2320B-97			2/18/16 03:32	MSA	J
Ammonia-N	ND		mg/L	0.100	D6919-09			2/19/16 16:36	JAM	A
Chemical Oxygen Demand (COD)	6		mg/L	5	EPA 410.4			2/19/16 07:00	JAM	A
Chloride	131		mg/L	2.0	EPA 300.0			2/18/16 13:10	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			2/18/16 13:10	JP	B
Nitrate-N	5.1		mg/L	0.20	EPA 300.0			2/18/16 13:10	JP	B
pH	6.06		pH_Units		SM4500B			2/18/16 03:32	MSA	J
Phenolics	ND		mg/L	0.01	SW846 9066	2/23/16 08:00	JLG	2/24/16 16:16	JLG	G
Specific Conductance	637		umhos/cm	1	SW846 9050A			2/18/16 03:32	MSA	J
Sulfate	53.3		mg/L	2.0	EPA 300.0			2/18/16 13:10	JP	B
Total Dissolved Solids	361		mg/L	5	S2540C-11			2/23/16 13:40	ML	B
Total Organic Carbon (TOC)	1.6		mg/L	1.0	SW846 9060A			2/23/16 12:31	PAG	E
Turbidity	0.25		NTU	0.10	S2130B-01			2/18/16 03:03	MSA	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2124702 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124702002**

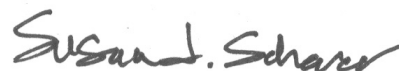
Date Collected: 2/17/2016 10:39

Matrix: Ground Water

Sample ID: **FFMP018W**

Date Received: 2/17/2016 16:03

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	40.1		mg/L	0.11	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:28	SRT	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:28	SRT	C1
Magnesium, Total	17.6		mg/L	0.11	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:28	SRT	C1
Manganese, Total	0.30		mg/L	0.0056	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:28	SRT	C1
Potassium, Total	6.6		mg/L	0.56	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:28	SRT	C1
Sodium, Total	44.0		mg/L	0.56	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:28	SRT	C1
FIELD PARAMETERS										
Depth to Water Level	25.63		Feet		Field			2/17/16 10:39	CLT	D
Elev Top MW Casing above MSL	472.20		Feet		Field			2/17/16 10:39	CLT	D
Flow Rate	4.81		gal/min		Field			2/17/16 10:39	CLT	D
Ground Water Elevation	446.57		ft/MSL		Field			2/17/16 10:39	CLT	D
pH, Field (SM4500B)	4.51		pH_Units		Field			2/17/16 10:39	CLT	D
Sample Depth	40.00		Feet		Field			2/17/16 10:39	CLT	D
Specific Conductance, Field	686		umhos/cm	1	Field			2/17/16 10:39	CLT	D
Temperature	13.90		Deg. C		Field			2/17/16 10:39	CLT	D
Total Well Depth	51.46		Feet		Field			2/17/16 10:39	CLT	D
Volume in Water Column	16.79		Gallons		Field			2/17/16 10:39	CLT	D
Water Level After Purge	28.02		Feet		Field			2/17/16 10:39	CLT	D
Well Volumes Purged	2.86		Vol		Field			2/17/16 10:39	CLT	D



Ms. Susan J Scherer

Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 2124702 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124702003**

Date Collected: 2/17/2016 11:23

Matrix: Ground Water

Sample ID: **FFMP019W**

Date Received: 2/17/2016 16:03

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:33	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/18/16 06:33	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 06:33	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 06:33	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:33	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:33	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:33	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:33	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 06:33	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:33	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:33	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/18/16 06:33	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 06:33	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:33	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 06:33	CJG	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	83.1		%	62 - 133	SW846 8260B			2/18/16 06:33	CJG	H
4-Bromofluorobenzene (S)	96.5		%	79 - 114	SW846 8260B			2/18/16 06:33	CJG	H
Dibromofluoromethane (S)	79.5		%	78 - 116	SW846 8260B			2/18/16 06:33	CJG	H
Toluene-d8 (S)	81.7		%	76 - 127	SW846 8260B			2/18/16 06:33	CJG	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	71		mg/L	5	S2320B-97			2/18/16 04:14	MSA	J
Alkalinity, Total	71		mg/L	5	S2320B-97			2/18/16 04:14	MSA	J
Ammonia-N	ND		mg/L	0.100	D6919-09			2/19/16 16:56	JAM	A
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			2/19/16 07:00	JAM	A
Chloride	78.4		mg/L	2.0	EPA 300.0			2/18/16 13:23	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			2/18/16 13:23	JP	B
Nitrate-N	0.56		mg/L	0.20	EPA 300.0			2/18/16 13:23	JP	B
pH	7.05		pH_Units		SM4500B			2/18/16 04:14	MSA	J
Phenolics	ND		mg/L	0.01	SW846 9066	2/23/16 08:00	JLG	2/24/16 16:16	JLG	G
Specific Conductance	422		umhos/cm	1	SW846 9050A			2/18/16 04:14	MSA	J
Sulfate	13.7		mg/L	2.0	EPA 300.0			2/18/16 13:23	JP	B
Total Dissolved Solids	280		mg/L	5	S2540C-11			2/23/16 13:40	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			2/23/16 12:31	PAG	E
Turbidity	ND		NTU	0.10	S2130B-01			2/18/16 03:03	MSA	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2124702 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124702003**
Sample ID: **FFMP019W**

Date Collected: 2/17/2016 11:23 Matrix: Ground Water
Date Received: 2/17/2016 16:03

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	54.5		mg/L	0.11	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:32	SRT	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:32	SRT	C1
Magnesium, Total	5.4		mg/L	0.11	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:32	SRT	C1
Manganese, Total	ND		mg/L	0.0056	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:32	SRT	C1
Potassium, Total	0.98		mg/L	0.56	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:32	SRT	C1
Sodium, Total	9.5		mg/L	0.56	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:32	SRT	C1
FIELD PARAMETERS										
Depth to Water Level	26.31		Feet		Field			2/17/16 11:23	CLT	D
Elev Top MW Casing above MSL	471.95		Feet		Field			2/17/16 11:23	CLT	D
Flow Rate	4.75		gal/min		Field			2/17/16 11:23	CLT	D
Ground Water Elevation	445.64		ft/MSL		Field			2/17/16 11:23	CLT	D
pH, Field (SM4500B)	5.06		pH_Units		Field			2/17/16 11:23	CLT	D
Sample Depth	49.00		Feet		Field			2/17/16 11:23	CLT	D
Specific Conductance, Field	450		umhos/cm	1	Field			2/17/16 11:23	CLT	D
Temperature	12.69		Deg. C		Field			2/17/16 11:23	CLT	D
Total Well Depth	132.79		Feet		Field			2/17/16 11:23	CLT	D
Volume in Water Column	69.21		Gallons		Field			2/17/16 11:23	CLT	D
Water Level After Purge	35.77		Feet		Field			2/17/16 11:23	CLT	D
Well Volumes Purged	2.75		Vol		Field			2/17/16 11:23	CLT	D



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 2124702 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124702004**

Date Collected: 2/17/2016 12:24

Matrix: Ground Water

Sample ID: **FFMP029W**

Date Received: 2/17/2016 16:03

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:56	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/18/16 06:56	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 06:56	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 06:56	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:56	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:56	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:56	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:56	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 06:56	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:56	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:56	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/18/16 06:56	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 06:56	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 06:56	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 06:56	CJG	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	82		%	62 - 133	SW846 8260B			2/18/16 06:56	CJG	H
4-Bromofluorobenzene (S)	96.2		%	79 - 114	SW846 8260B			2/18/16 06:56	CJG	H
Dibromofluoromethane (S)	79.5		%	78 - 116	SW846 8260B			2/18/16 06:56	CJG	H
Toluene-d8 (S)	81.2		%	76 - 127	SW846 8260B			2/18/16 06:56	CJG	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	11		mg/L	5	S2320B-97			2/18/16 04:22	MSA	J
Alkalinity, Total	11		mg/L	5	S2320B-97			2/18/16 04:22	MSA	J
Ammonia-N	ND		mg/L	0.100	D6919-09			2/19/16 17:16	JAM	A
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			2/19/16 07:00	JAM	A
Chloride	38.7		mg/L	2.0	EPA 300.0			2/18/16 13:36	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			2/18/16 13:36	JP	B
Nitrate-N	3.2		mg/L	0.20	EPA 300.0			2/18/16 13:36	JP	B
pH	5.98		pH_Units		SM4500B			2/18/16 04:22	MSA	J
Phenolics	ND		mg/L	0.01	SW846 9066	2/23/16 08:00	JLG	2/24/16 16:16	JLG	G
Specific Conductance	159		umhos/cm	1	SW846 9050A			2/18/16 04:22	MSA	J
Sulfate	ND		mg/L	2.0	EPA 300.0			2/18/16 13:36	JP	B
Total Dissolved Solids	108		mg/L	5	S2540C-11			2/23/16 13:40	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			2/23/16 12:31	PAG	E
Turbidity	0.68		NTU	0.10	S2130B-01			2/18/16 03:03	MSA	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

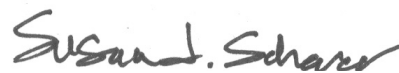
ANALYTICAL RESULTS

Workorder: 2124702 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124702004**
Sample ID: **FFMP029W**

Date Collected: 2/17/2016 12:24 Matrix: Ground Water
Date Received: 2/17/2016 16:03

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	6.6		mg/L	0.11	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:35	SRT	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:35	SRT	C1
Magnesium, Total	5.0		mg/L	0.11	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:35	SRT	C1
Manganese, Total	0.017		mg/L	0.0056	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:35	SRT	C1
Potassium, Total	1.6		mg/L	0.56	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:35	SRT	C1
Sodium, Total	15.1		mg/L	0.56	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:35	SRT	C1
FIELD PARAMETERS										
Depth to Water Level	37.02		Feet		Field			2/17/16 12:24	CLT	D
Elev Top MW Casing above MSL	477.30		Feet		Field			2/17/16 12:24	CLT	D
Flow Rate	2.62		gal/min		Field			2/17/16 12:24	CLT	D
Ground Water Elevation	440.28		ft/MSL		Field			2/17/16 12:24	CLT	D
pH, Field (SM4500B)	4.87		pH_Units		Field			2/17/16 12:24	CLT	D
Sample Depth	55.00		Feet		Field			2/17/16 12:24	CLT	D
Specific Conductance, Field	185		umhos/cm	1	Field			2/17/16 12:24	CLT	D
Temperature	13.06		Deg. C		Field			2/17/16 12:24	CLT	D
Total Well Depth	60.50		Feet		Field			2/17/16 12:24	CLT	D
Volume in Water Column	34.52		Gallons		Field			2/17/16 12:24	CLT	D
Water Level After Purge	44.50		Feet		Field			2/17/16 12:24	CLT	D
Well Volumes Purged	3.80		Vol		Field			2/17/16 12:24	CLT	D



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 2124702 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124702005**

Date Collected: 2/17/2016 12:35

Matrix: Ground Water

Sample ID: **FFMP016W**

Date Received: 2/17/2016 16:03

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/18/16 07:19	CJG	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/18/16 07:19	CJG	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 07:19	CJG	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 07:19	CJG	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 07:19	CJG	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 07:19	CJG	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 07:19	CJG	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/18/16 07:19	CJG	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 07:19	CJG	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 07:19	CJG	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/18/16 07:19	CJG	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/18/16 07:19	CJG	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 07:19	CJG	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 07:19	CJG	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 07:19	CJG	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	83.3		%	62 - 133	SW846 8260B			2/18/16 07:19	CJG	H
4-Bromofluorobenzene (S)	98.6		%	79 - 114	SW846 8260B			2/18/16 07:19	CJG	H
Dibromofluoromethane (S)	79.8		%	78 - 116	SW846 8260B			2/18/16 07:19	CJG	H
Toluene-d8 (S)	81.7		%	76 - 127	SW846 8260B			2/18/16 07:19	CJG	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	43		mg/L	5	S2320B-97			2/18/16 04:32	MSA	J
Alkalinity, Total	43		mg/L	5	S2320B-97			2/18/16 04:32	MSA	J
Ammonia-N	ND		mg/L	0.100	D6919-09			2/19/16 17:35	JAM	A
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			2/19/16 07:00	JAM	A
Chloride	85.1		mg/L	2.0	EPA 300.0			2/18/16 13:49	JP	B
Fluoride	ND		mg/L	0.20	EPA 300.0			2/18/16 13:49	JP	B
Nitrate-N	5.7		mg/L	0.20	EPA 300.0			2/18/16 13:49	JP	B
pH	6.38		pH_Units		SM4500B			2/18/16 04:32	MSA	J
Phenolics	ND		mg/L	0.01	SW846 9066	2/23/16 08:00	JLG	2/24/16 16:16	JLG	G
Specific Conductance	499		umhos/cm	1	SW846 9050A			2/18/16 04:32	MSA	J
Sulfate	46.7		mg/L	2.0	EPA 300.0			2/18/16 13:49	JP	B
Total Dissolved Solids	287		mg/L	5	S2540C-11			2/23/16 13:40	ML	B
Total Organic Carbon (TOC)	2.0		mg/L	1.0	SW846 9060A			2/23/16 12:31	PAG	E
Turbidity	13.6		NTU	0.10	S2130B-01			2/18/16 03:03	MSA	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2124702 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124702005**

Date Collected: 2/17/2016 12:35

Matrix: Ground Water

Sample ID: **FFMP016W**

Date Received: 2/17/2016 16:03

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	40.3		mg/L	0.11	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:39	SRT	C1
Iron, Total	0.73		mg/L	0.067	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:39	SRT	C1
Magnesium, Total	14.7		mg/L	0.11	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:39	SRT	C1
Manganese, Total	0.029		mg/L	0.0056	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:39	SRT	C1
Potassium, Total	2.0		mg/L	0.56	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:39	SRT	C1
Sodium, Total	24.7		mg/L	0.56	SW846 6010C	2/19/16 12:45	TSS	2/23/16 11:39	SRT	C1
FIELD PARAMETERS										
Depth to Water Level	21.37		Feet		Field			2/17/16 12:35	CLT	D
Elev Top MW Casing above MSL	474.60		Feet		Field			2/17/16 12:35	CLT	D
Ground Water Elevation	453.23		ft/MSL		Field			2/17/16 12:35	CLT	D
pH, Field (SM4500B)	5.37		pH_Units		Field			2/17/16 12:35	CLT	D
Sample Depth	135.00		Feet		Field			2/17/16 12:35	CLT	D
Specific Conductance, Field	530		umhos/cm	1	Field			2/17/16 12:35	CLT	D
Temperature	10.54		Deg. C		Field			2/17/16 12:35	CLT	D
Total Well Depth	149.80		Feet		Field			2/17/16 12:35	CLT	D
Volume in Water Column	335.20		Gallons		Field			2/17/16 12:35	CLT	D
Water Level After Purge	21.37		Feet		Field			2/17/16 12:35	CLT	D



Ms. Susan J Scherer

Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

**ANALYTICAL RESULTS**

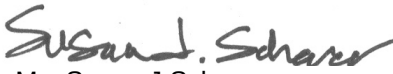
Workorder: 2124702 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124702006**
Sample ID: **Field Blank**Date Collected: 2/17/2016 14:04 Matrix: Ground Water
Date Received: 2/17/2016 16:03

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
------------	---------	------	-------	-----	--------	----------	----	----------	----	------

ADMINISTRATIVE

Sample Cancelled Not Submitted 3/2/16 15:16 SJB


Ms. Susan J Scherer
Project Coordinator**ALS Environmental Laboratory Locations Across North America**Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

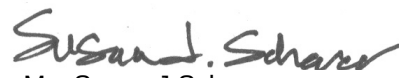
ANALYTICAL RESULTS

Workorder: 2124702 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2124702007**
Sample ID: **Trip Blank**

Date Collected: 2/17/2016 16:03 Matrix: Ground Water
Date Received: 2/17/2016 16:03

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/18/16 16:03	TMP	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/18/16 16:03	TMP	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 16:03	TMP	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 16:03	TMP	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 16:03	TMP	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 16:03	TMP	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 16:03	TMP	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/18/16 16:03	TMP	A
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 16:03	TMP	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 16:03	TMP	A
Toluene	ND		ug/L	1.0	SW846 8260B			2/18/16 16:03	TMP	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/18/16 16:03	TMP	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/18/16 16:03	TMP	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/18/16 16:03	TMP	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/18/16 16:03	TMP	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	98.4		%	62 - 133	SW846 8260B			2/18/16 16:03	TMP	A
4-Bromofluorobenzene (S)	96.3		%	79 - 114	SW846 8260B			2/18/16 16:03	TMP	A
Dibromofluoromethane (S)	90.2		%	78 - 116	SW846 8260B			2/18/16 16:03	TMP	A
Toluene-d8 (S)	106		%	76 - 127	SW846 8260B			2/18/16 16:03	TMP	A


Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

February 29, 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: 2125322
Purchase Order:	Workorder ID: 1st QTR 2016 GWMP-FORM 19Q

Dear Mr. Brown:

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

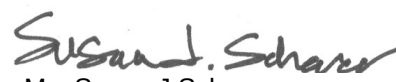
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications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

This laboratory report may not be reproduced, except in full, without the written approval of ALS Environmental.

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.


Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

SAMPLE SUMMARY

Workorder: 2125322 1st QTR 2016 GWMP-FORM 19Q

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2125322001	FFMP023W	Ground Water	2/19/2016 10:14	2/19/2016 15:49	Mr. Brian G Shade
2125322002	FFMP024W	Ground Water	2/19/2016 11:19	2/19/2016 15:49	Mr. Brian G Shade
2125322003	FFMP002W	Ground Water	2/19/2016 12:09	2/19/2016 15:49	Mr. Brian G Shade
2125322004	FFMP001P	Ground Water	2/19/2016 12:30	2/19/2016 15:49	Mr. Brian G Shade
2125322005	Field Blank	Ground Water	2/19/2016 14:28	2/19/2016 15:49	Mr. Brian G Shade
2125322006	Trip Blank	Ground Water	2/19/2016 15:49	2/19/2016 15:49	Mr. Brian G Shade

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed 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 incubator 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

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

PROJECT SUMMARY

Workorder: 2125322 1st QTR 2016 GWMP-FORM 19Q

Sample Comments**Lab ID:** 2125322001 **Sample ID:** FFMP023W **Sample Type:** SAMPLE

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

Lab ID: 2125322002 **Sample ID:** FFMP024W **Sample Type:** SAMPLE

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

Lab ID: 2125322003 **Sample ID:** FFMP002W **Sample Type:** SAMPLE

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

Lab ID: 2125322004 **Sample ID:** FFMP001P **Sample Type:** SAMPLE

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

Lab ID: 2125322005 **Sample ID:** Field Blank **Sample Type:** FLDQC

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

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

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2125322 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2125322001**
Sample ID: **FFMP023W**

Date Collected: 2/19/2016 10:14 Matrix: Ground Water
Date Received: 2/19/2016 15:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:01	DD	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/22/16 17:01	DD	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 17:01	DD	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 17:01	DD	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:01	DD	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:01	DD	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:01	DD	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:01	DD	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/22/16 17:01	DD	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:01	DD	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:01	DD	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/22/16 17:01	DD	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 17:01	DD	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:01	DD	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/22/16 17:01	DD	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	93.6		%	62 - 133	SW846 8260B			2/22/16 17:01	DD	H
4-Bromofluorobenzene (S)	101		%	79 - 114	SW846 8260B			2/22/16 17:01	DD	H
Dibromofluoromethane (S)	83.7		%	78 - 116	SW846 8260B			2/22/16 17:01	DD	H
Toluene-d8 (S)	83.3		%	76 - 127	SW846 8260B			2/22/16 17:01	DD	H
METALS										
Calcium, Total	11.1		mg/L	0.11	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:21	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:21	TSS	C1
Magnesium, Total	8.0		mg/L	0.11	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:21	TSS	C1
Manganese, Total	0.17		mg/L	0.0056	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:21	TSS	C1
Potassium, Total	1.0		mg/L	0.56	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:21	TSS	C1
Sodium, Total	8.9		mg/L	0.56	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:21	TSS	C1
WET CHEMISTRY										
Alkalinity, Bicarbonate	6		mg/L	5	S2320B-97			2/20/16 05:30	MSA	J
Alkalinity, Total	6		mg/L	5	S2320B-97			2/20/16 05:30	MSA	J
Ammonia-N	ND		mg/L	0.100	D6919-09			2/25/16 14:30	JAM	A
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			2/27/16 16:00	JAM	A
Chloride	26.3		mg/L	2.0	EPA 300.0			2/20/16 14:19	MBW	B
Fluoride	ND		mg/L	0.20	EPA 300.0			2/20/16 14:19	MBW	B
Nitrate-N	13.7		mg/L	0.20	EPA 300.0			2/20/16 14:19	MBW	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2125322 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2125322001**

Date Collected: 2/19/2016 10:14

Matrix: Ground Water

Sample ID: **FFMP023W**

Date Received: 2/19/2016 15:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
pH	5.39		pH_Units		SM4500B			2/20/16 05:30	MSA	J
Phenolics	ND		mg/L	0.01	SW846 9066	2/25/16 23:00	NV	2/29/16 16:22	JLG	G
Specific Conductance	185		umhos/cm	1	SW846 9050A			2/20/16 05:30	MSA	J
Sulfate	ND		mg/L	2.0	EPA 300.0			2/20/16 14:19	MBW	B
Total Dissolved Solids	112		mg/L	5	S2540C-11			2/25/16 11:21	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			2/23/16 12:31	PAG	E
Turbidity	ND		NTU	0.10	S2130B-01			2/20/16 02:30	MSA	B
FIELD PARAMETERS										
Depth to Water Level	60.63		Feet		Field			2/19/16 10:14	CLT	D
Elev Top MW Casing above MSL	611.80		Feet		Field			2/19/16 10:14	CLT	D
Flow Rate	3.23		gal/min		Field			2/19/16 10:14	CLT	D
Ground Water Elevation	551.17		ft/MSL		Field			2/19/16 10:14	CLT	D
pH, Field (SM4500B)	4.27		pH_Units		Field			2/19/16 10:14	CLT	D
Sample Depth	79.00		Feet		Field			2/19/16 10:14	CLT	D
Specific Conductance, Field	218		umhos/cm	1	Field			2/19/16 10:14	CLT	D
Temperature	12.40		Deg. C		Field			2/19/16 10:14	CLT	D
Total Well Depth	81.50		Feet		Field			2/19/16 10:14	CLT	D
Volume in Water Column	30.68		Gallons		Field			2/19/16 10:14	CLT	D
Water Level After Purge	61.62		Feet		Field			2/19/16 10:14	CLT	D
Well Volumes Purged	3.16		Vol		Field			2/19/16 10:14	CLT	D



Ms. Susan J Scherer

Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 2125322 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2125322002**

Date Collected: 2/19/2016 11:19

Matrix: Ground Water

Sample ID: **FFMP024W**

Date Received: 2/19/2016 15:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:23	DD	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/22/16 17:23	DD	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 17:23	DD	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 17:23	DD	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:23	DD	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:23	DD	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:23	DD	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:23	DD	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/22/16 17:23	DD	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:23	DD	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:23	DD	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/22/16 17:23	DD	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 17:23	DD	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:23	DD	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/22/16 17:23	DD	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	93.3		%	62 - 133	SW846 8260B			2/22/16 17:23	DD	H
4-Bromofluorobenzene (S)	101		%	79 - 114	SW846 8260B			2/22/16 17:23	DD	H
Dibromofluoromethane (S)	83.8		%	78 - 116	SW846 8260B			2/22/16 17:23	DD	H
Toluene-d8 (S)	82.5		%	76 - 127	SW846 8260B			2/22/16 17:23	DD	H
WET CHEMISTRY										
Alkalinity, Bicarbonate	104		mg/L	5	S2320B-97			2/20/16 05:40	MSA	J
Alkalinity, Total	104		mg/L	5	S2320B-97			2/20/16 05:40	MSA	J
Ammonia-N	ND		mg/L	0.100	D6919-09			2/25/16 15:33	JAM	A
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			2/27/16 16:00	JAM	A
Chloride	13.2		mg/L	2.0	EPA 300.0			2/20/16 16:04	MBW	B
Fluoride	0.36		mg/L	0.20	EPA 300.0			2/20/16 16:04	MBW	B
Nitrate-N	2.4		mg/L	0.20	EPA 300.0			2/20/16 16:04	MBW	B
pH	7.65		pH_Units		SM4500B			2/20/16 05:40	MSA	J
Phenolics	ND		mg/L	0.01	SW846 9066	2/25/16 23:00	NV	2/29/16 16:23	JLG	G
Specific Conductance	282		umhos/cm	1	SW846 9050A			2/20/16 05:40	MSA	J
Sulfate	31.6		mg/L	2.0	EPA 300.0			2/20/16 16:04	MBW	B
Total Dissolved Solids	179		mg/L	5	S2540C-11			2/25/16 11:21	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			2/23/16 12:31	PAG	E
Turbidity	0.15		NTU	0.10	S2130B-01			2/20/16 02:30	MSA	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2125322 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2125322002**

Date Collected: 2/19/2016 11:19

Matrix: Ground Water

Sample ID: **FFMP024W**

Date Received: 2/19/2016 15:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	44.5		mg/L	0.11	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:25	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:25	TSS	C1
Magnesium, Total	5.1		mg/L	0.11	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:25	TSS	C1
Manganese, Total	0.068		mg/L	0.0056	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:25	TSS	C1
Potassium, Total	0.89		mg/L	0.56	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:25	TSS	C1
Sodium, Total	8.7		mg/L	0.56	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:25	TSS	C1
FIELD PARAMETERS										
Depth to Water Level	61.62		Feet		Field			2/19/16 11:19	CLT	D
Elev Top MW Casing above MSL	611.42		Feet		Field			2/19/16 11:19	CLT	D
Flow Rate	2.38		gal/min		Field			2/19/16 11:19	CLT	D
Ground Water Elevation	549.80		ft/MSL		Field			2/19/16 11:19	CLT	D
pH, Field (SM4500B)	6.49		pH_Units		Field			2/19/16 11:19	CLT	D
Sample Depth	180.78		Feet		Field			2/19/16 11:19	CLT	D
Specific Conductance, Field	330		umhos/cm	1	Field			2/19/16 11:19	CLT	D
Temperature	12.03		Deg. C		Field			2/19/16 11:19	CLT	D
Total Well Depth	200.82		Feet		Field			2/19/16 11:19	CLT	D
Volume in Water Column	204.62		Gallons		Field			2/19/16 11:19	CLT	D
Water Level After Purge	123.12		Feet		Field			2/19/16 11:19	CLT	D
Well Volumes Purged	0.70		Vol		Field			2/19/16 11:19	CLT	D



Ms. Susan J Scherer

Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 2125322 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2125322003**

Date Collected: 2/19/2016 12:09

Matrix: Ground Water

Sample ID: **FFMP002W**

Date Received: 2/19/2016 15:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:45	DD	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/22/16 17:45	DD	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 17:45	DD	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 17:45	DD	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:45	DD	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:45	DD	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:45	DD	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:45	DD	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/22/16 17:45	DD	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:45	DD	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:45	DD	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/22/16 17:45	DD	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 17:45	DD	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 17:45	DD	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/22/16 17:45	DD	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	93.4		%	62 - 133	SW846 8260B			2/22/16 17:45	DD	H
4-Bromofluorobenzene (S)	103		%	79 - 114	SW846 8260B			2/22/16 17:45	DD	H
Dibromofluoromethane (S)	83.6		%	78 - 116	SW846 8260B			2/22/16 17:45	DD	H
Toluene-d8 (S)	83.7		%	76 - 127	SW846 8260B			2/22/16 17:45	DD	H
METALS										
Calcium, Total	21.1		mg/L	0.11	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:29	TSS	C1
Iron, Total	1.8		mg/L	0.067	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:29	TSS	C1
Magnesium, Total	8.9		mg/L	0.11	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:29	TSS	C1
Manganese, Total	0.26		mg/L	0.0056	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:29	TSS	C1
Potassium, Total	1.4		mg/L	0.56	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:29	TSS	C1
Sodium, Total	14.5		mg/L	0.56	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:29	TSS	C1
WET CHEMISTRY										
Alkalinity, Bicarbonate	5		mg/L	5	S2320B-97			2/20/16 05:48	MSA	J
Alkalinity, Total	5		mg/L	5	S2320B-97			2/20/16 05:48	MSA	J
Ammonia-N	ND		mg/L	0.100	D6919-09			2/25/16 15:53	JAM	A
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			2/27/16 16:00	JAM	A
Chloride	24.4		mg/L	5.0	EPA 300.0			2/20/16 16:19	MBW	B
Fluoride	ND		mg/L	0.50	EPA 300.0			2/20/16 16:19	MBW	B
Nitrate-N	22.8		mg/L	0.50	EPA 300.0			2/20/16 16:19	MBW	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2125322 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2125322003**
Sample ID: **FFMP002W**

Date Collected: 2/19/2016 12:09 Matrix: Ground Water
Date Received: 2/19/2016 15:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
pH	5.57		pH_Units		SM4500B			2/20/16 05:48	MSA	J
Phenolics	ND		mg/L	0.01	SW846 9066	2/25/16 23:00	NV	2/29/16 16:24	JLG	G
Specific Conductance	263		umhos/cm	1	SW846 9050A			2/20/16 05:48	MSA	J
Sulfate	17.7		mg/L	5.0	EPA 300.0			2/20/16 16:19	MBW	B
Total Dissolved Solids	156		mg/L	5	S2540C-11			2/25/16 11:21	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			2/23/16 12:31	PAG	E
Turbidity	10.1		NTU	0.10	S2130B-01			2/20/16 02:30	MSA	B
FIELD PARAMETERS										
Depth to Water Level	54.45		Feet		Field			2/19/16 12:09	CLT	D
Elev Top MW Casing above MSL	613.20		Feet		Field			2/19/16 12:09	CLT	D
Flow Rate	1.77		gal/min		Field			2/19/16 12:09	CLT	D
Ground Water Elevation	558.75		ft/MSL		Field			2/19/16 12:09	CLT	D
pH, Field (SM4500B)	4.56		pH_Units		Field			2/19/16 12:09	CLT	D
Sample Depth	85.00		Feet		Field			2/19/16 12:09	CLT	D
Specific Conductance, Field	311		umhos/cm	1	Field			2/19/16 12:09	CLT	D
Temperature	12.04		Deg. C		Field			2/19/16 12:09	CLT	D
Total Well Depth	90.02		Feet		Field			2/19/16 12:09	CLT	D
Volume in Water Column	52.29		Gallons		Field			2/19/16 12:09	CLT	D
Water Level After Purge	79.51		Feet		Field			2/19/16 12:09	CLT	D
Well Volumes Purged	1.36		Vol		Field			2/19/16 12:09	CLT	D



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 2125322 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2125322004**

Date Collected: 2/19/2016 12:30

Matrix: Ground Water

Sample ID: **FFMP001P**

Date Received: 2/19/2016 15:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/22/16 18:07	DD	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/22/16 18:07	DD	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 18:07	DD	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 18:07	DD	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 18:07	DD	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 18:07	DD	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 18:07	DD	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/22/16 18:07	DD	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/22/16 18:07	DD	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 18:07	DD	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/22/16 18:07	DD	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/22/16 18:07	DD	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 18:07	DD	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 18:07	DD	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/22/16 18:07	DD	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	92.3		%	62 - 133	SW846 8260B			2/22/16 18:07	DD	H
4-Bromofluorobenzene (S)	102		%	79 - 114	SW846 8260B			2/22/16 18:07	DD	H
Dibromofluoromethane (S)	82.1		%	78 - 116	SW846 8260B			2/22/16 18:07	DD	H
Toluene-d8 (S)	82.2		%	76 - 127	SW846 8260B			2/22/16 18:07	DD	H
METALS										
Calcium, Total	55.1		mg/L	0.11	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:33	TSS	C1
Iron, Total	0.73		mg/L	0.067	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:33	TSS	C1
Magnesium, Total	16.8		mg/L	0.11	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:33	TSS	C1
Manganese, Total	0.048		mg/L	0.0056	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:33	TSS	C1
Potassium, Total	6.8		mg/L	0.56	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:33	TSS	C1
Sodium, Total	69.3		mg/L	0.56	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:33	TSS	C1
WET CHEMISTRY										
Alkalinity, Bicarbonate	45		mg/L	5	S2320B-97			2/20/16 05:57	MSA	J
Alkalinity, Total	45		mg/L	5	S2320B-97			2/20/16 05:57	MSA	J
Ammonia-N	ND		mg/L	0.100	D6919-09			2/25/16 16:14	JAM	A
Chemical Oxygen Demand (COD)	15		mg/L	5	EPA 410.4			2/27/16 16:00	JAM	A
Chloride	191		mg/L	2.0	EPA 300.0			2/20/16 16:34	MBW	B
Fluoride	ND		mg/L	0.20	EPA 300.0			2/20/16 16:34	MBW	B
Nitrate-N	7.7		mg/L	0.20	EPA 300.0			2/20/16 16:34	MBW	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

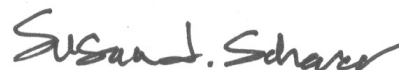
ANALYTICAL RESULTS

Workorder: 2125322 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2125322004**
Sample ID: **FFMP001P**

Date Collected: 2/19/2016 12:30 Matrix: Ground Water
Date Received: 2/19/2016 15:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
pH	6.73		pH_Units		SM4500B			2/20/16 05:57	MSA	J
Phenolics	ND		mg/L	0.01	SW846 9066	2/25/16 23:00	NV	2/29/16 16:25	JLG	G
Specific Conductance	855		umhos/cm	1	SW846 9050A			2/20/16 05:57	MSA	J
Sulfate	48.5		mg/L	2.0	EPA 300.0			2/20/16 16:34	MBW	B
Total Dissolved Solids	475		mg/L	5	S2540C-11			2/25/16 11:21	ML	B
Total Organic Carbon (TOC)	1.7		mg/L	1.0	SW846 9060A			2/23/16 12:31	PAG	E
Turbidity	3.25		NTU	0.10	S2130B-01			2/20/16 02:30	MSA	B
FIELD PARAMETERS										
pH, Field (SM4500B)	5.84		pH_Units		Field			2/19/16 12:30	CLT	D
Specific Conductance, Field	785		umhos/cm	1	Field			2/19/16 12:30	CLT	D
Temperature	14.40		Deg. C		Field			2/19/16 12:30	CLT	D


Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

ANALYTICAL RESULTS

Workorder: 2125322 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2125322005**
Sample ID: **Field Blank**

Date Collected: 2/19/2016 14:28 Matrix: Ground Water
Date Received: 2/19/2016 15:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/22/16 15:33	DD	H
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/22/16 15:33	DD	H
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 15:33	DD	H
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 15:33	DD	H
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 15:33	DD	H
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 15:33	DD	H
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 15:33	DD	H
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/22/16 15:33	DD	H
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/22/16 15:33	DD	H
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 15:33	DD	H
Toluene	ND		ug/L	1.0	SW846 8260B			2/22/16 15:33	DD	H
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/22/16 15:33	DD	H
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 15:33	DD	H
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 15:33	DD	H
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/22/16 15:33	DD	H
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	92.3		%	62 - 133	SW846 8260B			2/22/16 15:33	DD	H
4-Bromofluorobenzene (S)	103		%	79 - 114	SW846 8260B			2/22/16 15:33	DD	H
Dibromofluoromethane (S)	83.8		%	78 - 116	SW846 8260B			2/22/16 15:33	DD	H
Toluene-d8 (S)	83.3		%	76 - 127	SW846 8260B			2/22/16 15:33	DD	H
METALS										
Calcium, Total	0.13		mg/L	0.11	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:36	TSS	C1
Iron, Total	ND		mg/L	0.067	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:36	TSS	C1
Magnesium, Total	ND		mg/L	0.11	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:36	TSS	C1
Manganese, Total	ND		mg/L	0.0056	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:36	TSS	C1
Potassium, Total	ND		mg/L	0.56	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:36	TSS	C1
Sodium, Total	ND		mg/L	0.56	SW846 6010C	2/23/16 11:00	JPS	2/25/16 11:36	TSS	C1
WET CHEMISTRY										
Alkalinity, Bicarbonate	ND		mg/L	5	S2320B-97			2/20/16 06:06	MSA	J
Alkalinity, Total	ND		mg/L	5	S2320B-97			2/20/16 06:06	MSA	J
Ammonia-N	ND		mg/L	0.100	D6919-09			2/25/16 16:35	JAM	A
Chemical Oxygen Demand (COD)	ND		mg/L	5	EPA 410.4			2/27/16 16:00	JAM	A
Chloride	ND		mg/L	1.0	EPA 300.0			2/20/16 16:49	MBW	B
Fluoride	ND		mg/L	0.10	EPA 300.0			2/20/16 16:49	MBW	B
Nitrate-N	ND		mg/L	0.10	EPA 300.0			2/20/16 16:49	MBW	B

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

ANALYTICAL RESULTS

Workorder: 2125322 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2125322005**
Sample ID: **Field Blank**

Date Collected: 2/19/2016 14:28 Matrix: Ground Water
Date Received: 2/19/2016 15:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
pH	5.95		pH_Units		SM4500B			2/20/16 06:06	MSA	J
Phenolics	ND		mg/L	0.01	SW846 9066	2/26/16 17:23	NV	2/29/16 13:57	JLG	G
Specific Conductance	1		umhos/cm	1	SW846 9050A			2/20/16 06:06	MSA	J
Sulfate	ND		mg/L	1.0	EPA 300.0			2/20/16 16:49	MBW	B
Total Dissolved Solids	ND		mg/L	5	S2540C-11			2/25/16 14:06	ML	B
Total Organic Carbon (TOC)	ND		mg/L	1.0	SW846 9060A			2/24/16 12:18	PAG	E
Turbidity	0.30		NTU	0.10	S2130B-01			2/20/16 02:30	MSA	B



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

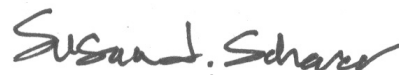
ANALYTICAL RESULTS

Workorder: 2125322 1st QTR 2016 GWMP-FORM 19Q

Lab ID: **2125322006**
Sample ID: **Trip Blank**

Date Collected: 2/19/2016 15:49 Matrix: Ground Water
Date Received: 2/19/2016 15:49

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND		ug/L	1.0	SW846 8260B			2/22/16 15:11	DD	A
1,2-Dibromoethane	ND		ug/L	1.0	SW846 8260B			2/22/16 15:11	DD	A
1,1-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 15:11	DD	A
1,2-Dichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 15:11	DD	A
1,1-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 15:11	DD	A
cis-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 15:11	DD	A
trans-1,2-Dichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 15:11	DD	A
Ethylbenzene	ND		ug/L	1.0	SW846 8260B			2/22/16 15:11	DD	A
Methylene Chloride	ND		ug/L	1.0	SW846 8260B			2/22/16 15:11	DD	A
Tetrachloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 15:11	DD	A
Toluene	ND		ug/L	1.0	SW846 8260B			2/22/16 15:11	DD	A
Total Xylenes	ND		ug/L	3.0	SW846 8260B			2/22/16 15:11	DD	A
1,1,1-Trichloroethane	ND		ug/L	1.0	SW846 8260B			2/22/16 15:11	DD	A
Trichloroethene	ND		ug/L	1.0	SW846 8260B			2/22/16 15:11	DD	A
Vinyl Chloride	ND		ug/L	1.0	SW846 8260B			2/22/16 15:11	DD	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>	<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i>	<i>Cntr</i>
1,2-Dichloroethane-d4 (S)	94.7		%	62 - 133	SW846 8260B			2/22/16 15:11	DD	A
4-Bromofluorobenzene (S)	102		%	79 - 114	SW846 8260B			2/22/16 15:11	DD	A
Dibromofluoromethane (S)	85		%	78 - 116	SW846 8260B			2/22/16 15:11	DD	A
Toluene-d8 (S)	84.2		%	76 - 127	SW846 8260B			2/22/16 15:11	DD	A



Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

Canada: Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey



11 Downing Lane • Middletown, PA 17057 • Phone: 717 944 5541 • Fax: 717 944 1430 • www.alsenv.com

34 Dogwood Lane • Middletown, PA 17057 • 717 944 5541 • Fax: 717 944 1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALS

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

COC
ALS

1 of 1

* 2 1 2 5 3 2 2 *

Client Name: Lancaster County Solid Waste MA		Container Type	AG	AN	CG	PL	PL	PL	PL
Address: 1299 Harrisburg Pike, P.O. Box 4424		Container Size	40 ml	500 ml	40 ml	500 ml	500 ml	1 L	500 ml
Lancaster, PA 17604		Preservative	HCl	H2SO4	HCl	H2SO4	HNO3	None	None
Contact: Mark Reider		ANALYSIS/METHOD REQUESTED							
Phone#: (717) 735-0193									
Project Name/ID: Frey Farm Quarterly (GWMP)									
Bill To: Lancaster County Solid Waste MA									
TAT ☒ Normal-Standard TAT is 10-12 business days.									
Date Required: ☐ Rush-Subject to ALS approval and surcharges.									
Email? ☒ Y mreider@LCSWMA.com									
Fax? ☒ Y No.: (717) 397-9973									
Sample Description/Location (as it will appear on the lab report)		Sample Date	Time						
1. FFWP023W		2-19-16	1014						
2. FFWP024W			1119						
3. FFWP002W			1209						
4. FFWP002P			1220						
5. Field Blank			1428						
6. Trip Blank			1549						
7.									
8.									
9.									
10.									
Project Comments:		LOGGED BY (signature):		2-19-16					
Requisitioned By / Company Name		Date	Time	Received By / Company Name		Date	Time		
1. R. G. McCall ALS		2-18-16	1549	2-19-16		1549			
3.									
5.									
7.									
9.									
State Samples Collected In		Special Processing		Data Deliverables		Reportable to PADEP?		Sample Disposal	
NY ☐ NJ ☐ PA ☒ NC ☐		USACE ☐ Navy ☐		Standard ☐ CLP-like ☐ USACE ☐		Yes ☐ PWSID #		Lab ☒ Special ☐	
ALS Field Services: ☐ Pickup ☐ Labor ☐ Composite_Sampling ☐ Rental_Equipment ☐ Other:		EDDS: Format Type		SO=Soil; WP=Wipe; WW=Wastewater		ALS ENVIRONMENTAL SHIPPING ADDRESS: 34 DOGWOOD LANE, MIDDLETOWN, PA 17057		Rev 8/04	