

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT**



Date Prepared/Revised
05/20/2021

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: 34.64 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.20 ft

Elevation of Water Level: 527.66 ft./MSL

Sampling Depth: 85 ft

Volume of Water Column: 81.30 gal

Total Well Depth: 90 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 1.3

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

Spring Flow Rate: gpm

Sample Date (mm/dd/yy): 2/15/2021

Sample Collection Time: 11:04

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158045001 Final Lab Analysis CompletionDate: 2/25/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments:

I.D. No 101389

Monitoring Point No. FFMP30RW

Sample Date 2/15/2021

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	0.518	D6919-09
BICARBONATE ALKALINITY	27	SM20-2320B
CALCIUM, TOTAL	31.6	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	18	EPA 410.4
CHLORIDE	199	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	140	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	14.4	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	1900	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	5	EPA 300
pH-FIELD (SU)	5.26	FIELD
pH-LAB (SU)	5.81	SM20-4500HB
POTASSIUM, TOTAL	5.5	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	77.7	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	864	FIELD
SPEC. COND., LAB (umhos/cm)	877	SW846 9050A
SULFATE	23.9	EPA 300
ALKALINITY	27	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	540	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.88	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	3.5	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 2/15/2021

FORM 19**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****2-Q. Organics (Enter all data in ug/l)**

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
CIS 1,2-DICHLOROETHENE	1 ND	SW846 8260B
TRANS 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



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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

X	Well	Spring	Stream	Other
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Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 15.4 "

Longitude: 76 ° 27 ' 26.58 "

Depth to Water Level: 34.39 ft

Measured from: Land Surface X TOC

Casing Stickup: 2.52 ft

Elevation of Water Level: 526.33 ft./MSL

Sampling Depth: 146 ft

Volume of Water Column:	392.32	gal
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Total Well Depth: 301.52 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: X Yes No

Well Volumes Purged: 0.7

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/15/2021

Sample Collection Time: 12:20

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158045002 Final Lab Analysis CompletionDate: 2/25/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments:

I.D. No 101389

Monitoring Point No. FFMP04AW

Sample Date 2/15/2021

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	191	SM20-2320B
CALCIUM, TOTAL	138	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	24	EPA 410.4
CHLORIDE	323	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	23.1	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	200	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	0.36	EPA 300
pH-FIELD (SU)	7.14	FIELD
pH-LAB (SU)	7.37	SM20-4500HB
POTASSIUM, TOTAL	3.3	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	78.7	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1581	FIELD
SPEC. COND., LAB (umhos/cm)	1520	SW846 9050A
SULFATE	42.9	EPA 300
ALKALINITY	191	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	938	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.82	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.41	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 2/15/2021

FORM 19**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****2-Q. Organics (Enter all data in ug/l)**

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
CIS 1,2-DICHLOROETHENE	1 ND	SW846 8260B
TRANS 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



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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

X	Well	Spring	Stream	Other
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Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 10.67 "

Longitude: 76 ° 27 ' 21.3 "

Depth to Water Level: 52.04 ft

Measured from: Land Surface X TOC

Casing Stickup: 1.70 ft

Elevation of Water Level: 485.36 ft./MSL

Sampling Depth: 135 ft

Volume of Water Column:	143.87	gal
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Total Well Depth: 150 ft

Sampling Method: X Pumped Bailed Grab

Well Purged: X Yes No

Well Volumes Purged: 1.0

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/15/2021

Sample Collection Time: 13:50

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158045003 Final Lab Analysis CompletionDate: 3/9/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments:

I.D. No 101389

Monitoring Point No. FFMP005W

Sample Date 2/15/2021

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	58	SM20-2320B
CALCIUM, TOTAL	73.5	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	29	EPA 410.4
CHLORIDE	181	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	18.4	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	110	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	1.3	EPA 300
pH-FIELD (SU)	5.44	FIELD
pH-LAB (SU)	6.05	SM20-4500HB
POTASSIUM, TOTAL	4.1	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	50.5	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	991	FIELD
SPEC. COND., LAB (umhos/cm)	959	SW846 9050A
SULFATE	73	EPA 300
ALKALINITY	58	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	558	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.7	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 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 2/15/2021

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 WASTE MANAGEMENT**



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**FORM 19
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QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

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SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

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: 62.88 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 3.30 ft

Elevation of Water Level: 484.52 ft./MSL

Sampling Depth: 105 ft

Volume of Water Column: 75.08 gal

Total Well Depth: 114 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 1.6

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

Spring Flow Rate: ☐ gpm

Sample Date (mm/dd/yy): 2/15/2021

Sample Collection Time: 15:10

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158045004 Final Lab Analysis CompletionDate: 3/9/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments:

I.D. No 101389

Monitoring Point No. FFMP26RW

Sample Date 2/15/2021

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	0.117	D6919-09
BICARBONATE ALKALINITY	64	SM20-2320B
CALCIUM, TOTAL	63.2	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	27	EPA 410.4
CHLORIDE	121	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	14.1	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	660	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	0.56	EPA 300
pH-FIELD (SU)	5.51	FIELD
pH-LAB (SU)	6.09	SM20-4500HB
POTASSIUM, TOTAL	9.3	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	43.4	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	851	FIELD
SPEC. COND., LAB (umhos/cm)	815	SW846 9050A
SULFATE	101	EPA 300
ALKALINITY	64	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	468	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	2.2	SW846 9060A
TOTAL PHENOLICS (ug/l)	6	SW846 9066
TURBIDITY (N.T.U.)	0.2	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

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I.D. No 101389

Monitoring Point No. FFMP26RW

Sample Date 2/15/2021

FORM 19**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****2-Q. Organics (Enter all data in ug/l)**

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BENZENE	1 ND	SW846 8260B
1,2-DIBROMOETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
CIS 1,2-DICHLOROETHENE	1 ND	SW846 8260B
TRANS 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.



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SECTION B. FACILITY INFORMATION

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Monitoring Point Number: FFMP015W

X	Well	Spring	Stream	Other
---	------	--------	--------	-------

Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 36.43 "

Longitude: 76 ° 27 ' 10.82 "

Depth to Water Level: 62.41 ft

Measured from: Land Surface X TOC

Casing Stickup: 1.90 ft

Elevation of Water Level: 513.99 ft./MSL

Sampling Depth: 135 ft

Volume of Water Column:	127.02	gal
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Total Well Depth: 148.9 ft

Sampling Method: X Pumped Bailed Grab

Well Purged: X Yes No

Well Volumes Purged: 0.9

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/16/2021

Sample Collection Time: 10:43

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158263001 Final Lab Analysis CompletionDate: 2/27/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments:

I.D. No 101389

Monitoring Point No. FFMP015W

Sample Date 2/16/2021

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	36.2	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	38.2	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	26.2	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	10	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	39.5	EPA 300
pH-FIELD (SU)	5.63	FIELD
pH-LAB (SU)	6.29	SM20-4500HB
POTASSIUM, TOTAL	2.6	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	25.3	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	596	FIELD
SPEC. COND., LAB (umhos/cm)	538	SW846 9050A
SULFATE	23.7	EPA 300
ALKALINITY	27	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	384	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.4	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 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 2/16/2021

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.

I.D. No 101389

Monitoring Point No. FFMP033W

Sample Date 2/16/2021

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	0.58	D6919-09
BICARBONATE ALKALINITY	43	SM20-2320B
CALCIUM, TOTAL	28.2	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	45	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	6100	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	10	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	440	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	10.6	EPA 300
pH-FIELD (SU)	5.9	FIELD
pH-LAB (SU)	6.49	SM20-4500HB
POTASSIUM, TOTAL	1.8	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	14.4	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	381	FIELD
SPEC. COND., LAB (umhos/cm)	354	SW846 9050A
SULFATE	5	EPA 300
ALKALINITY	43	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	214	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.58	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	11.5	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. FFMP033W

Sample Date 2/16/2021

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 WASTE MANAGEMENT**



Date Prepared/Revised
05/20/2021

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: 10.71 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.50 ft

Elevation of Water Level: 454.29 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: 2.5

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

Spring Flow Rate: gpm

Sample Date (mm/dd/yy): 2/16/2021

Sample Collection Time: 13:36

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158263003 Final Lab Analysis CompletionDate: 2/25/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments:

I.D. No 101389

Monitoring Point No. FFMP028W

Sample Date 2/16/2021

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	40.7	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	87.3	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	17.4	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	6	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	13.9	EPA 300
pH-FIELD (SU)	5.27	FIELD
pH-LAB (SU)	6.28	SM20-4500HB
POTASSIUM, TOTAL	2.4	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	27.3	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	562	FIELD
SPEC. COND., LAB (umhos/cm)	541	SW846 9050A
SULFATE	23.1	EPA 300
ALKALINITY	26	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	322	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.1	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.11	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

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

Remaining quarterly samples only require total metals analysis.

I.D. No 101389

Monitoring Point No. FFMP028W

Sample Date 2/16/2021

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.



Date Prepared/Revised
05/20/2021

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FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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General Reference: Section 273.284

Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

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

X	Well	Spring	Stream	Other
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Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 19.07 "

Longitude: 76 ° 27 ' 1.12 "

Depth to Water Level: 22.71 ft

Measured from: Land Surface X TOC

Casing Stickup: 1.50 ft

Elevation of Water Level: 454.09 ft./MSL

Sampling Depth: 39 ft

Volume of Water Column:	25.39	gal
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Total Well Depth: 40 ft

Sampling Method: X Pumped Bailed Grab

Well Purged: X Yes No

Well Volumes Purged: 2.5

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/16/2021

Sample Collection Time: 14:24

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158263004 Final Lab Analysis CompletionDate: 2/25/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments:

I.D. No 101389

Monitoring Point No. FFMP025W

Sample Date 2/16/2021

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	23	SM20-2320B
CALCIUM, TOTAL	46.8	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	156	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	23	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	9.2	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	5.7	EPA 300
pH-FIELD (SU)	5.37	FIELD
pH-LAB (SU)	6.23	SM20-4500HB
POTASSIUM, TOTAL	4.1	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	44.2	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	746	FIELD
SPEC. COND., LAB (umhos/cm)	722	SW846 9050A
SULFATE	26	EPA 300
ALKALINITY	23	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	426	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.3	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.17	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 2/16/2021

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.



Date Prepared/Revised
05/20/2021

DEP USE ONLY

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FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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General Reference: Section 273.284

Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

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

X	Well	Spring	Stream	Other
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Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 12.93 "

Longitude: 76 ° 27 ' 0.67 "

Depth to Water Level: 37.48 ft

Measured from: Land Surface X TOC

Casing Stickup: 2.00 ft

Elevation of Water Level: 439.82 ft./MSL

Sampling Depth: 55 ft

Volume of Water Column:	30.87	gal
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Total Well Depth: 58.5 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: X Yes No

Well Volumes Purged: 3.4

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/16/2021

Sample Collection Time: 15:32

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158263005 Final Lab Analysis CompletionDate: 2/25/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments:

I.D. No 101389

Monitoring Point No. FFMP029W

Sample Date 2/16/2021

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	11.8	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	53.7	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	9.1	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	27	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	3.6	EPA 300
pH-FIELD (SU)	5.02	FIELD
pH-LAB (SU)	5.94	SM20-4500HB
POTASSIUM, TOTAL	2.3	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	20.2	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	279	FIELD
SPEC. COND., LAB (umhos/cm)	260	SW846 9050A
SULFATE	4.6	EPA 300
ALKALINITY	11	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	146	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.6	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.24	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 2/16/2021

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.



Date Prepared/Revised
05/20/2021

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FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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General Reference: Section 273.284

Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

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

X	Well	Spring	Stream	Other
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Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County

Municipality: Manor Township

Sampling Point: Latitude: 39 ° 57 ' 24.05 "

Longitude: 76 ° 27 ' 30.58 "

Depth to Water Level: 51.92 ft

Measured from: Land Surface X TOC

Casing Stickup: 1.20 ft

Elevation of Water Level: 538.98 ft./MSL

Sampling Depth: 130 ft

Volume of Water Column:	139.93	gal
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Total Well Depth: 147.2 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: X Yes No

Well Volumes Purged: 0.7

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/17/2021

Sample Collection Time: 10:24

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158480001 Final Lab Analysis CompletionDate: 2/27/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments:

I.D. No 101389

Monitoring Point No. FFMP03AW

Sample Date 2/17/2021

FORM 19**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****ANALYTES****1-Q. Inorganics (Enter all data in mg/l except as noted)**

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	D6919-09
BICARBONATE ALKALINITY	17	SM20-2320B
CALCIUM, TOTAL	19.1	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	18	EPA 410.4
CHLORIDE	28.2	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	14.8	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	330	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	19.9	EPA 300
pH-FIELD (SU)	4.83	FIELD
pH-LAB (SU)	6.21	SM20-4500HB
POTASSIUM, TOTAL	1.6	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	13.4	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	460	FIELD
SPEC. COND., LAB (umhos/cm)	330	SW846 9050A
SULFATE	2.9	EPA 300
ALKALINITY	17	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	212	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.9	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 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 2/17/2021

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.



Date Prepared/Revised
05/20/2021

DEP USE ONLY

Date Received

FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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General Reference: Section 273.284

Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

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: FFMP02SW

X	Well	Spring	Stream	Other
---	------	--------	--------	-------

Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County

Municipality: MANOR TOWNSHIP

Sampling Point: Latitude: 39 ° 57 ' 27.9"

Longitude: 76 ° 27 ' 1.58 "

Depth to Water Level: 13.69 ft

Measured from: Land Surface X TOC

Casing Stickup: _____ ft

Elevation of Water Level: 496.21 ft./MSL

Sampling Depth: 19 ft

Volume of Water Column: _____ gal

Total Well Depth: 25 ft

Sampling Method: X Pumped Bailed Grab

Well Purged: X Yes No

Well Volumes Purged: 0.3

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 2/17/2021

Sample Collection Time: 10:50

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158480002 Final Lab Analysis CompletionDate: 2/27/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments:

I.D. No 101389

Monitoring Point No. FFMP02SW

Sample Date 2/17/2021

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	0.102	D6919-09
BICARBONATE ALKALINITY	10	SM20-2320B
CALCIUM, TOTAL	16.5	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	28	EPA 410.4
CHLORIDE	32.7	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	2700	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	6.9	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	34	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	16.1	EPA 300
pH-FIELD (SU)	5.66	FIELD
pH-LAB (SU)	6.41	SM20-4500HB
POTASSIUM, TOTAL	5.8	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	36.2	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	435	FIELD
SPEC. COND., LAB (umhos/cm)	347	SW846 9050A
SULFATE	23.4	EPA 300
ALKALINITY	10	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	216	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	4.3	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	75.8	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. FFMP02SW

Sample Date 2/17/2021

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 WASTE MANAGEMENT**



Date Prepared/Revised
05/20/2021

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: FFMP02DW

☒ Well ☐ Spring ☐ Stream ☐ Other

☐ Upgradient/Upstream ☒ Downgradient/Downstream

Location (County): Lancaster County

Municipality: MANOR TOWNSHIP

Sampling Point: Latitude: 39 ° 57 ' 27.74 "

Longitude: 76 ° 27 ' 1.49 "

Depth to Water Level: 23.42 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: ft

Elevation of Water Level: 486.18 ft./MSL

Sampling Depth: 120 ft

Volume of Water Column: gal

Total Well Depth: 152 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 0.5

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

Spring Flow Rate: gpm

Sample Date (mm/dd/yy): 2/17/2021

Sample Collection Time: 12:06

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158480003 Final Lab Analysis CompletionDate: 2/26/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments:

I.D. No 101389

Monitoring Point No. FFMP02DW

Sample Date 2/17/2021

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	112	SM20-2320B
CALCIUM, TOTAL	130	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	18	EPA 410.4
CHLORIDE	387	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	1000	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	23	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	490	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	8.5	EPA 300
pH-FIELD (SU)	7.23	FIELD
pH-LAB (SU)	7.71	SM20-4500HB
POTASSIUM, TOTAL	2.3	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	135	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	2312	FIELD
SPEC. COND., LAB (umhos/cm)	1690	SW846 9050A
SULFATE	33.3	EPA 300
ALKALINITY	112	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	998	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.92	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	13.4	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. FFMP02DW

Sample Date 2/17/2021

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 WASTE MANAGEMENT**



Date Prepared/Revised
05/20/2021

DEP USE ONLY

Date Received

**FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

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General Reference: Section 273.284

Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

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: 37.72 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.00 ft

Elevation of Water Level: 442.98 ft./MSL

Sampling Depth: 135 ft

Volume of Water Column: 165.63 gal

Total Well Depth: 150.5 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 0.9

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

Spring Flow Rate: gpm

Sample Date (mm/dd/yy): 2/17/2021

Sample Collection Time: 13:46

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158480004 Final Lab Analysis Completion Date: 3/9/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments:

I.D. No 101389

Monitoring Point No. FFMP017W

Sample Date 2/17/2021

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	0.243	D6919-09
BICARBONATE ALKALINITY	70	SM20-2320B
CALCIUM, TOTAL	99.1	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	24	EPA 410.4
CHLORIDE	369	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	46.5	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	1400	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	3.3	EPA 300
pH-FIELD (SU)	5.82	FIELD
pH-LAB (SU)	6.81	SM20-4500HB
POTASSIUM, TOTAL	9.4	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	108	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	2138	FIELD
SPEC. COND., LAB (umhos/cm)	1540	SW846 9050A
SULFATE	72.2	EPA 300
ALKALINITY	70	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	892	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	2.8	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.21	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

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

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

Remaining quarterly samples only require total metals analysis.

I.D. No 101389

Monitoring Point No. FFMP017W

Sample Date 2/17/2021

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 WASTE MANAGEMENT**



Date Prepared/Revised
05/20/2021

DEP USE ONLY

Date Received

**FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

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General Reference: Section 273.284

Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

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: 24.85 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.46 ft

Elevation of Water Level: 447.35 ft./MSL

Sampling Depth: 40 ft

Volume of Water Column: 17.35 gal

Total Well Depth: 51.43 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 3.0

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

Spring Flow Rate: ☐ gpm

Sample Date (mm/dd/yy): 2/17/2021

Sample Collection Time: 14:20

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158480005 Final Lab Analysis CompletionDate: 2/26/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments:

I.D. No 101389

Monitoring Point No. FFMP018W

Sample Date 2/17/2021

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	31.1	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	17	EPA 410.4
CHLORIDE	92.5	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	16.2	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	210	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	4	EPA 300
pH-FIELD (SU)	5.26	FIELD
pH-LAB (SU)	6.65	SM20-4500HB
POTASSIUM, TOTAL	5.2	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	35.2	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	720	FIELD
SPEC. COND., LAB (umhos/cm)	521	SW846 9050A
SULFATE	38.1	EPA 300
ALKALINITY	26	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	302	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.1	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	0.1 ND	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

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

Remaining quarterly samples only require total metals analysis.

I.D. No 101389

Monitoring Point No. FFMP018W

Sample Date 2/17/2021

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 WASTE MANAGEMENT**



Date Prepared/Revised
05/20/2021

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: 25.81 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.79 ft

Elevation of Water Level: 446.14 ft./MSL

Sampling Depth: 49 ft

Volume of Water Column: 69.83 gal

Total Well Depth: 132.79 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 2.6

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

Spring Flow Rate: ☐ gpm

Sample Date (mm/dd/yy): 2/17/2021

Sample Collection Time: 15:13

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158480006 Final Lab Analysis Completion Date: 2/26/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments:

I.D. No 101389

Monitoring Point No. FFMP019W

Sample Date 2/17/2021

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	68	SM20-2320B
CALCIUM, TOTAL	60.7	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	83.1	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	6.2	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	6.7	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	6.58	FIELD
pH-LAB (SU)	7.5	SM20-4500HB
POTASSIUM, TOTAL	1	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	11.2	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	652	FIELD
SPEC. COND., LAB (umhos/cm)	470	SW846 9050A
SULFATE	14.9	EPA 300
ALKALINITY	68	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	336	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.1	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 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 2/17/2021

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 WASTE MANAGEMENT**



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**FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

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General Reference: Section 273.284

Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

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: FFMP031W

☒ Well ☐ Spring ☐ Stream ☐ Other

☒ Upgradient/Upstream ☐ Downgradient/Downstream

Location (County): Lancaster County

Municipality: MANOR TOWNSHIP

Sampling Point: Latitude: 39 ° 57 ' 31.2 "

Longitude: 76 ° 27 ' 23.53 "

Depth to Water Level: 65.81 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.38 ft

Elevation of Water Level: 546.85 ft./MSL

Sampling Depth: 130 ft

Volume of Water Column: 108.96 gal

Total Well Depth: 140 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 1.2

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

Spring Flow Rate: ☐ gpm

Sample Date (mm/dd/yy): 2/19/2021

Sample Collection Time: 10:43

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158904001 Final Lab Analysis CompletionDate: 2/28/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments:

I.D. No 101389

Monitoring Point No. FFMP031W

Sample Date 2/19/2021

FORM 19**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****ANALYTES****1-Q. Inorganics (Enter all data in mg/l except as noted)**

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	D6919-09
BICARBONATE ALKALINITY	61	SM20-2320B
CALCIUM, TOTAL	33.9	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	22.6	EPA 300
FLUORIDE	0.28	EPA 300
IRON, TOTAL (ug/l)	6200	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	4	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	280	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	7.98	FIELD
pH-LAB (SU)	7.85	SM20-4500HB
POTASSIUM, TOTAL	1.6	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	11.8	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	450	FIELD
SPEC. COND., LAB (umhos/cm)	252	SW846 9050A
SULFATE	41.2	EPA 300
ALKALINITY	61	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	164	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	64.6	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. FFMP031W

Sample Date 2/19/2021

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 WASTE MANAGEMENT**



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**FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

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General Reference: Section 273.284

Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

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: 62.4 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 1.60 ft

Elevation of Water Level: 550.8 ft./MSL

Sampling Depth: 85 ft

Volume of Water Column: 157.44 gal

Total Well Depth: 169.6 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 0.6

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

Spring Flow Rate: ☐ gpm

Sample Date (mm/dd/yy): 2/19/2021

Sample Collection Time: 11:21

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158904002 Final Lab Analysis CompletionDate: 2/28/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments:

I.D. No 101389

Monitoring Point No. FFMP002W

Sample Date 2/19/2021

FORM 19**QUARTERLY AND ANNUAL WATER QUALITY ANALYSES****ANALYTES****1-Q. Inorganics (Enter all data in mg/l except as noted)**

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	D6919-09
BICARBONATE ALKALINITY	5 ND	SM20-2320B
CALCIUM, TOTAL	15.2	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	21	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	7800	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	5.9	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	570	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	21.3	EPA 300
pH-FIELD (SU)	4.51	FIELD
pH-LAB (SU)	5.13	SM20-4500HB
POTASSIUM, TOTAL	1.5	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	13.7	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	437	FIELD
SPEC. COND., LAB (umhos/cm)	251	SW846 9050A
SULFATE	11.5	EPA 300
ALKALINITY	5 ND	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	134	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.52	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 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. FFMP002W

Sample Date 2/19/2021

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 WASTE MANAGEMENT**



Date Prepared/Revised
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**FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES**

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General Reference: Section 273.284

Federal Regulations, Subtitle D: 258.54 and Appendix I to Part 258.

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

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: FFMP032W

☒ Well ☐ Spring ☐ Stream ☐ Other

☒ Upgradient/Upstream ☐ Downgradient/Downstream

Location (County): Lancaster County

Municipality: MANOR TOWNSHIP

Sampling Point: Latitude: 39 ° 57 ' 33.45 "

Longitude: 76 ° 27 ' 17.71 "

Depth to Water Level: 50.3 ft

Measured from: ☐ Land Surface ☒ TOC

Casing Stickup: 2.06 ft

Elevation of Water Level: 543.79 ft./MSL

Sampling Depth: 62 ft

Volume of Water Column: 36.28 gal

Total Well Depth: 75 ft

Sampling Method: ☒ Pumped ☐ Bailed ☐ Grab

Well Purged: ☒ Yes ☐ No

Well Volumes Purged: 0.0

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

Spring Flow Rate: ☐ gpm

Sample Date (mm/dd/yy): 2/19/2021

Sample Collection Time: 14:32

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158904003 Final Lab Analysis CompletionDate: 2/28/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments:

I.D. No 101389

Monitoring Point No. FFMP032W

Sample Date 2/19/2021

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	0.944	D6919-09
BICARBONATE ALKALINITY	68	SM20-2320B
CALCIUM, TOTAL	18.5	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	23	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	8.3	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	230	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	0.2 ND	EPA 300
pH-FIELD (SU)	6.89	FIELD
pH-LAB (SU)	7.45	SM20-4500HB
POTASSIUM, TOTAL	1.5	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	14.4	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	328	FIELD
SPEC. COND., LAB (umhos/cm)	185	SW846 9050A
SULFATE	2 ND	EPA 300
ALKALINITY	68	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	84	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.56	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 ND	SW846 9066
TURBIDITY (N.T.U.)	151	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. FFMP032W

Sample Date 2/19/2021

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 WASTE MANAGEMENT**



Date Prepared/Revised
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General Reference: Section 273.284
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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: _____ ft Measured from: ☐ Land Surface ☒ TOC

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

Sampling Depth: 135 ft Volume of Water Column: #Error 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): 2/19/2021 Sample Collection Time: 14:48

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

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): 3158904004 Final Lab Analysis Completion Date: 3/2/2021

Name/Affiliation of Person who Filled Out Form: Daniel A. Brown

Comments: _____

I.D. No 101389

Monitoring Point No. FFMP016W

Sample Date 2/19/2021

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	29	SM20-2320B
CALCIUM, TOTAL	73.7	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	19	EPA 410.4
CHLORIDE	279	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	30.5	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	330	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	7.7	EPA 300
pH-FIELD (SU)	563	FIELD
pH-LAB (SU)	6.34	SM20-4500HB
POTASSIUM, TOTAL	5.7	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	69.4	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1686	FIELD
SPEC. COND., LAB (umhos/cm)	1000	SW846 9050A
SULFATE	43	EPA 300
ALKALINITY	29	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	640	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.6	SW846 9060A
TOTAL PHENOLICS (ug/l)	5 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. FFMP016W

Sample Date 2/19/2021

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.

March 12, 2021

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

Certificate of Analysis

Project Name:	FREY FARM	Workorder:	3158045
Purchase Order:	PO-1000371	Workorder ID:	1ST QTR 2021 GWMP-FORM 19Q

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Monday, February 15, 2021.

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.

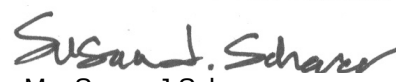
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications 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: Ms. Ashley Gichuki , Ms. Jordan Gallagher , 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

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**SAMPLE SUMMARY**

Workorder: 3158045 1ST QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3158045001	FFMP30RW	Ground Water	2/15/2021 11:04	2/15/2021 16:11	Mr. Brian G Shade
3158045002	FFMP04AW	Ground Water	2/15/2021 12:20	2/15/2021 16:11	Mr. Brian G Shade
3158045003	FFMP005W	Ground Water	2/15/2021 13:50	2/15/2021 16:11	Mr. Brian G Shade
3158045004	FFMP26RW	Ground Water	2/15/2021 15:10	2/15/2021 16:11	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3158045 1ST QTR 2021 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.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

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

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ALS Environmental



301 Fulling Mill Road - 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: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

PROJECT SUMMARY

Workorder: 3158045 1ST QTR 2021 GWMP-FORM 19Q

Workorder Comments

Temperature of sample taken at time of sample receipt in the laboratory. See chain of custody for actual temperature.

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ANALYTICAL RESULTS

Workorder: 3158045 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158045001**
Sample ID: **FFMP30RW**

Date Collected: 2/15/2021 11:04 Matrix: Ground Water
Date Received: 2/15/2021 16:11

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:37	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:37	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:37	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:37	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:37	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:37	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:37	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:37	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:37	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:37	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:37	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/17/21 01:37	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:37	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:37	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:37	PDK	G
<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)	96.1	C	%	62 - 133	SW846 8260B			2/17/21 01:37	PDK	G
4-Bromofluorobenzene (S)	103	C	%	79 - 114	SW846 8260B			2/17/21 01:37	PDK	G
Dibromofluoromethane (S)	95	C	%	78 - 116	SW846 8260B			2/17/21 01:37	PDK	G
Toluene-d8 (S)	91.3	C	%	76 - 127	SW846 8260B			2/17/21 01:37	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	27	C	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	B
Alkalinity, Total	27	C,3	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	I
Ammonia-N	0.518	C	mg/L	0.100	ASTM D6919-09			2/19/21 06:50	JXL	A
Chemical Oxygen Demand (COD)	18	C	mg/L	15	EPA 410.4			2/25/21 16:00	AK	A
Chloride	199	C	mg/L	2.0	EPA 300.0			2/16/21 06:00	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/16/21 06:00	MBW	B
Nitrate-N	5.0	C	mg/L	0.20	EPA 300.0			2/16/21 06:00	MBW	B
pH	5.81	C,1	pH_Units		S4500HB-11			2/19/21 02:20	LXZ	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	2/17/21 01:00	VXF	2/24/21 20:25	VXF	F
Specific Conductance	877	C,2	umhos/cm	1	SW846 9050A			2/19/21 02:20	LXZ	B
Sulfate	23.9	C	mg/L	2.0	EPA 300.0			2/16/21 06:00	MBW	B
Total Dissolved Solids	540	C	mg/L	25	S2540C-11			2/20/21 06:51	KMM	B
Total Organic Carbon (TOC)	0.88	C	mg/L	0.50	SW846 9060A			2/16/21 20:27	PAG	D
Turbidity	3.50	C	NTU	0.10	SM2130B-2011			2/17/21 12:44	R2B	B

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ANALYTICAL RESULTS

Workorder: 3158045 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158045001**
Sample ID: **FFMP30RW**

Date Collected: 2/15/2021 11:04 Matrix: Ground Water
Date Received: 2/15/2021 16:11

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	31.6	C	mg/L	0.11	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:14	SRT	J1
Iron, Total	0.14	C	mg/L	0.067	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:14	SRT	J1
Magnesium, Total	14.4	C	mg/L	0.11	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:14	SRT	J1
Manganese, Total	1.9	C	mg/L	0.0056	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:14	SRT	J1
Potassium, Total	5.5	C	mg/L	0.56	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:14	SRT	J1
Sodium, Total	77.7	C	mg/L	0.56	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:14	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	34.64	C	Feet		Field			2/15/21 11:04	BGS	C
Elev Top MW Casing above MSL	562.30	C	Feet		Field			2/15/21 11:04	BGS	C
Flow Rate	1.85	C	gal/min		Field			2/15/21 11:04	BGS	C
Ground Water Elevation	527.66	C	ft/MSL		Field			2/15/21 11:04	BGS	C
pH, Field (SM4500B)	5.26	C	pH_Units		Field			2/15/21 11:04	BGS	C
Sample Depth	85.00	C	Feet		Field			2/15/21 11:04	BGS	C
Specific Conductance, Field	864	C	umhos/cm	1	Field			2/15/21 11:04	BGS	C
Temperature	13.25	C	Deg. C		Field			2/15/21 11:04	BGS	C
Total Well Depth	94.20	C	Feet		Field			2/15/21 11:04	BGS	C
Volume in Water Column	87.55	C	Gallons		Field			2/15/21 11:04	BGS	C
Water Level After Purge	52.72	C	Feet		Field			2/15/21 11:04	BGS	C
Well Volumes Purged	1.27	C	Vol		Field			2/15/21 11:04	BGS	C



Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3158045 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158045002**

Date Collected: 2/15/2021 12:20

Matrix: Ground Water

Sample ID: **FFMP04AW**

Date Received: 2/15/2021 16:11

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:59	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:59	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:59	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:59	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:59	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:59	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:59	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:59	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:59	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:59	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:59	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/17/21 01:59	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:59	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:59	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/17/21 01:59	PDK	G
<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)	94.5	C	%	62 - 133	SW846 8260B			2/17/21 01:59	PDK	G
4-Bromofluorobenzene (S)	101	C	%	79 - 114	SW846 8260B			2/17/21 01:59	PDK	G
Dibromofluoromethane (S)	93.1	C	%	78 - 116	SW846 8260B			2/17/21 01:59	PDK	G
Toluene-d8 (S)	91.2	C	%	76 - 127	SW846 8260B			2/17/21 01:59	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	191	C	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	B
Alkalinity, Total	191	C,3	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			2/19/21 07:32	JXL	A
Chemical Oxygen Demand (COD)	24	C	mg/L	15	EPA 410.4			2/25/21 16:00	AK	A
Chloride	323	C	mg/L	5.0	EPA 300.0			2/18/21 06:08	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/16/21 06:21	MBW	B
Nitrate-N	0.36	C	mg/L	0.20	EPA 300.0			2/16/21 06:21	MBW	B
pH	7.37	C,1	pH_Units		S4500HB-11			2/19/21 02:20	LXZ	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	2/17/21 01:00	VXF	2/24/21 20:25	VXF	F
Specific Conductance	1520	C,2	umhos/cm	1	SW846 9050A			2/19/21 02:20	LXZ	B
Sulfate	42.9	C	mg/L	2.0	EPA 300.0			2/16/21 06:21	MBW	B
Total Dissolved Solids	938	C	mg/L	25	S2540C-11			2/20/21 06:51	KMM	B
Total Organic Carbon (TOC)	0.82	C	mg/L	0.50	SW846 9060A			2/16/21 20:27	PAG	D
Turbidity	0.41	C	NTU	0.10	SM2130B-2011			2/17/21 12:44	R2B	B

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ANALYTICAL RESULTS

Workorder: 3158045 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158045002**

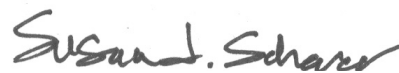
Date Collected: 2/15/2021 12:20

Matrix: Ground Water

Sample ID: **FFMP04AW**

Date Received: 2/15/2021 16:11

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	138	C	mg/L	0.11	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:03	SRT	J1
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:03	SRT	J1
Magnesium, Total	23.1	C	mg/L	0.11	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:03	SRT	J1
Manganese, Total	0.20	C	mg/L	0.0056	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:03	SRT	J1
Potassium, Total	3.3	C	mg/L	0.56	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:03	SRT	J1
Sodium, Total	78.7	C	mg/L	0.56	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:03	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	34.39	C	Feet		Field			2/15/21 12:20	BGS	C
Elev Top MW Casing above MSL	560.72	C	Feet		Field			2/15/21 12:20	BGS	C
Flow Rate	1.84	C	gal/min		Field			2/15/21 12:20	BGS	C
Ground Water Elevation	526.33	C	ft/MSL		Field			2/15/21 12:20	BGS	C
pH, Field (SM4500B)	7.14	C	pH_Units		Field			2/15/21 12:20	BGS	C
Sample Depth	146.00	C	Feet		Field			2/15/21 12:20	BGS	C
Specific Conductance, Field	1581	C	umhos/cm	1	Field			2/15/21 12:20	BGS	C
Temperature	12.95	C	Deg. C		Field			2/15/21 12:20	BGS	C
Total Well Depth	148.50	C	Feet		Field			2/15/21 12:20	BGS	C
Volume in Water Column	167.74	C	Gallons		Field			2/15/21 12:20	BGS	C
Water Level After Purge	79.52	C	Feet		Field			2/15/21 12:20	BGS	C
Well Volumes Purged	0.66	C	Vol		Field			2/15/21 12:20	BGS	C



Ms. Susan J Scherer

Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3158045 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158045003**

Date Collected: 2/15/2021 13:50

Matrix: Ground Water

Sample ID: **FFMP005W**

Date Received: 2/15/2021 16:11

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:21	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:21	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:21	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:21	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:21	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:21	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:21	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:21	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:21	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:21	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:21	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/17/21 02:21	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:21	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:21	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:21	PDK	G
<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)	96.2	C	%	62 - 133	SW846 8260B			2/17/21 02:21	PDK	G
4-Bromofluorobenzene (S)	103	C	%	79 - 114	SW846 8260B			2/17/21 02:21	PDK	G
Dibromofluoromethane (S)	92.7	C	%	78 - 116	SW846 8260B			2/17/21 02:21	PDK	G
Toluene-d8 (S)	90.6	C	%	76 - 127	SW846 8260B			2/17/21 02:21	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	58	C	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	B
Alkalinity, Total	58	C,3	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			2/19/21 07:45	JXL	A
Chemical Oxygen Demand (COD)	29	C	mg/L	15	EPA 410.4			3/9/21 16:00	AK	A
Chloride	181	C	mg/L	2.0	EPA 300.0			2/16/21 06:41	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/16/21 06:41	MBW	B
Nitrate-N	1.3	C	mg/L	0.20	EPA 300.0			2/16/21 06:41	MBW	B
pH	6.05	C,1	pH_Units		S4500HB-11			2/19/21 02:20	LXZ	B
Phenolics	ND	C,4	mg/L	0.005	SW846 9066	2/17/21 01:00	VXF	2/24/21 20:25	VXF	F
Specific Conductance	959	C,2	umhos/cm	1	SW846 9050A			2/19/21 02:20	LXZ	B
Sulfate	73.0	C	mg/L	2.0	EPA 300.0			2/16/21 06:41	MBW	B
Total Dissolved Solids	558	C	mg/L	25	S2540C-11			2/20/21 06:51	KMM	B
Total Organic Carbon (TOC)	1.7	C	mg/L	0.50	SW846 9060A			2/16/21 20:27	PAG	D
Turbidity	ND	C	NTU	0.10	SM2130B-2011			2/17/21 12:44	R2B	B

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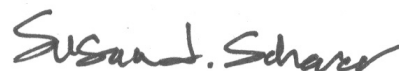
ANALYTICAL RESULTS

Workorder: 3158045 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158045003**
Sample ID: **FFMP005W**

Date Collected: 2/15/2021 13:50 Matrix: Ground Water
Date Received: 2/15/2021 16:11

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	73.5	C	mg/L	0.11	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:24	SRT	J1
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:24	SRT	J1
Magnesium, Total	18.4	C	mg/L	0.11	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:24	SRT	J1
Manganese, Total	0.11	C	mg/L	0.0056	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:24	SRT	J1
Potassium, Total	4.1	C	mg/L	0.56	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:24	SRT	J1
Sodium, Total	50.5	C	mg/L	0.56	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:24	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	52.04	C	Feet		Field			2/15/21 13:50	BGS	C
Elev Top MW Casing above MSL	537.40	C	Feet		Field			2/15/21 13:50	BGS	C
Flow Rate	2.13	C	gal/min		Field			2/15/21 13:50	BGS	C
Ground Water Elevation	485.36	C	ft/MSL		Field			2/15/21 13:50	BGS	C
pH, Field (SM4500B)	5.44	C	pH_Units		Field			2/15/21 13:50	BGS	C
Sample Depth	135.00	C	Feet		Field			2/15/21 13:50	BGS	C
Specific Conductance, Field	991	C	umhos/cm	1	Field			2/15/21 13:50	BGS	C
Temperature	13.04	C	Deg. C		Field			2/15/21 13:50	BGS	C
Total Well Depth	149.70	C	Feet		Field			2/15/21 13:50	BGS	C
Volume in Water Column	143.56	C	Gallons		Field			2/15/21 13:50	BGS	C
Water Level After Purge	78.91	C	Feet		Field			2/15/21 13:50	BGS	C
Well Volumes Purged	1.04	C	Vol		Field			2/15/21 13:50	BGS	C



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ANALYTICAL RESULTS

Workorder: 3158045 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158045004**
Sample ID: **FFMP26RW**

Date Collected: 2/15/2021 15:10 Matrix: Ground Water
Date Received: 2/15/2021 16:11

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:44	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:44	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:44	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:44	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:44	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:44	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:44	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:44	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:44	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:44	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:44	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/17/21 02:44	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:44	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:44	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/17/21 02:44	PDK	G
<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)	96	C	%	62 - 133	SW846 8260B			2/17/21 02:44	PDK	G
4-Bromofluorobenzene (S)	102	C	%	79 - 114	SW846 8260B			2/17/21 02:44	PDK	G
Dibromofluoromethane (S)	93.8	C	%	78 - 116	SW846 8260B			2/17/21 02:44	PDK	G
Toluene-d8 (S)	91.1	C	%	76 - 127	SW846 8260B			2/17/21 02:44	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	64	C	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	B
Alkalinity, Total	64	C,4	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	I
Ammonia-N	0.117	C	mg/L	0.100	ASTM D6919-09			2/19/21 07:59	JXL	A
Chemical Oxygen Demand (COD)	27	C	mg/L	15	EPA 410.4			3/9/21 16:00	AK	A
Chloride	121	C	mg/L	2.0	EPA 300.0			2/16/21 07:01	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/16/21 07:01	MBW	B
Nitrate-N	0.56	C	mg/L	0.20	EPA 300.0			2/16/21 07:01	MBW	B
pH	6.09	C,2	pH_Units		S4500HB-11			2/19/21 02:20	LXZ	B
Phenolics	0.006	C	mg/L	0.005	SW846 9066	2/17/21 01:00	VXF	2/24/21 20:25	VXF	F
Specific Conductance	815	C,3	umhos/cm	1	SW846 9050A			2/19/21 02:20	LXZ	B
Sulfate	101	C,1	mg/L	2.0	EPA 300.0			2/16/21 07:01	MBW	B
Total Dissolved Solids	468	C	mg/L	25	S2540C-11			2/20/21 06:51	KMM	B
Total Organic Carbon (TOC)	2.2	C	mg/L	0.50	SW846 9060A			2/16/21 20:27	PAG	D
Turbidity	0.20	C	NTU	0.10	SM2130B-2011			2/17/21 12:44	R2B	B

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ANALYTICAL RESULTS

Workorder: 3158045 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158045004**
Sample ID: **FFMP26RW**

Date Collected: 2/15/2021 15:10 Matrix: Ground Water
Date Received: 2/15/2021 16:11

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	63.2	C	mg/L	0.11	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:10	SRT	J1
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:10	SRT	J1
Magnesium, Total	14.1	C	mg/L	0.11	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:10	SRT	J1
Manganese, Total	0.66	C	mg/L	0.0056	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:10	SRT	J1
Potassium, Total	9.3	C	mg/L	0.56	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:10	SRT	J1
Sodium, Total	43.4	C	mg/L	0.56	SW846 6010C	2/16/21 18:05	SXC	2/17/21 14:10	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	62.88	C	Feet		Field			2/15/21 15:10	BGS	C
Elev Top MW Casing above MSL	547.40	C	Feet		Field			2/15/21 15:10	BGS	C
Flow Rate	2.23	C	gal/min		Field			2/15/21 15:10	BGS	C
Ground Water Elevation	484.52	C	ft/MSL		Field			2/15/21 15:10	BGS	C
pH, Field (SM4500B)	5.51	C	pH_Units		Field			2/15/21 15:10	BGS	C
Sample Depth	105.00	C	Feet		Field			2/15/21 15:10	BGS	C
Specific Conductance, Field	851	C	umhos/cm	1	Field			2/15/21 15:10	BGS	C
Temperature	13.82	C	Deg. C		Field			2/15/21 15:10	BGS	C
Total Well Depth	118.30	C	Feet		Field			2/15/21 15:10	BGS	C
Volume in Water Column	81.47	C	Gallons		Field			2/15/21 15:10	BGS	C
Water Level After Purge	88.57	C	Feet		Field			2/15/21 15:10	BGS	C
Well Volumes Purged	1.64	C	Vol		Field			2/15/21 15:10	BGS	C



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ANALYTICAL RESULTS

Workorder: 3158045 1ST QTR 2021 GWMP-FORM 19Q

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3158045001	1	FFMP30RW	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158045001	2	FFMP30RW	SW846 9050A	Specific Conductance
The Method Blank for method SM2510B-2011 reported a value greater than the reporting level for the analyte Specific Conductance. The reported result was 3.5 umhos/cm				
3158045001	3	FFMP30RW	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3158045002	1	FFMP04AW	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158045002	2	FFMP04AW	SW846 9050A	Specific Conductance
The Method Blank for method SM2510B-2011 reported a value greater than the reporting level for the analyte Specific Conductance. The reported result was 3.5 umhos/cm				
3158045002	3	FFMP04AW	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3158045003	1	FFMP005W	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158045003	2	FFMP005W	SW846 9050A	Specific Conductance
The Method Blank for method SM2510B-2011 reported a value greater than the reporting level for the analyte Specific Conductance. The reported result was 3.5 umhos/cm				
3158045003	3	FFMP005W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				
3158045003	4	FFMP005W	SW846 9066	Phenolics
The QC sample type MS for method 420.4/9066 was outside the control limits for the analyte Phenolics. The % Recovery was reported as 87 and the control limits were 90 to 110.				
3158045004	1	FFMP26RW	EPA 300.0	Sulfate
The QC sample type MS for method EPA 300.0 was outside the control limits for the analyte Sulfate. The % Recovery was reported as 122 and the control limits were 80 to 120.				
3158045004	2	FFMP26RW	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158045004	3	FFMP26RW	SW846 9050A	Specific Conductance
The Method Blank for method SM2510B-2011 reported a value greater than the reporting level for the analyte Specific Conductance. The reported result was 3.5 umhos/cm				
3158045004	4	FFMP26RW	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3158045 1ST QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3158045001	FFMP30RW	ASTM D6919-09		
3158045001	FFMP30RW	EPA 300.0		
3158045001	FFMP30RW	EPA 410.4		
3158045001	FFMP30RW	Field		
3158045001	FFMP30RW	S2540C-11		
3158045001	FFMP30RW	S4500HB-11		
3158045001	FFMP30RW	SM2130B-2011		
3158045001	FFMP30RW	SM2320B-2011		
3158045001	FFMP30RW	SW846 6010C	SW846 3015	
3158045001	FFMP30RW	SW846 8260B		
3158045001	FFMP30RW	SW846 9050A		
3158045001	FFMP30RW	SW846 9060A		
3158045001	FFMP30RW	SW846 9066	420.4/9066	
3158045002	FFMP04AW	ASTM D6919-09		
3158045002	FFMP04AW	EPA 300.0		
3158045002	FFMP04AW	EPA 410.4		
3158045002	FFMP04AW	Field		
3158045002	FFMP04AW	S2540C-11		
3158045002	FFMP04AW	S4500HB-11		
3158045002	FFMP04AW	SM2130B-2011		
3158045002	FFMP04AW	SM2320B-2011		
3158045002	FFMP04AW	SW846 6010C	SW846 3015	
3158045002	FFMP04AW	SW846 8260B		
3158045002	FFMP04AW	SW846 9050A		
3158045002	FFMP04AW	SW846 9060A		
3158045002	FFMP04AW	SW846 9066	420.4/9066	
3158045003	FFMP005W	ASTM D6919-09		
3158045003	FFMP005W	EPA 300.0		
3158045003	FFMP005W	EPA 410.4		
3158045003	FFMP005W	Field		
3158045003	FFMP005W	S2540C-11		
3158045003	FFMP005W	S4500HB-11		
3158045003	FFMP005W	SM2130B-2011		
3158045003	FFMP005W	SM2320B-2011		
3158045003	FFMP005W	SW846 6010C	SW846 3015	
3158045003	FFMP005W	SW846 8260B		
3158045003	FFMP005W	SW846 9050A		
3158045003	FFMP005W	SW846 9060A		
3158045003	FFMP005W	SW846 9066	420.4/9066	
3158045004	FFMP26RW	ASTM D6919-09		
3158045004	FFMP26RW	EPA 300.0		
3158045004	FFMP26RW	EPA 410.4		
3158045004	FFMP26RW	Field		
3158045004	FFMP26RW	S2540C-11		
3158045004	FFMP26RW	S4500HB-11		
3158045004	FFMP26RW	SM2130B-2011		

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3158045 1ST QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3158045004	FFMP26RW	SM2320B-2011		
3158045004	FFMP26RW	SW846 6010C	SW846 3015	
3158045004	FFMP26RW	SW846 8260B		
3158045004	FFMP26RW	SW846 9050A		
3158045004	FFMP26RW	SW846 9060A		
3158045004	FFMP26RW	SW846 9066	420.4/9066	

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

COC #: **3158045**

1 of 1

Client Name: Lancaster County Solid Waste MA
Address: 1299 Harrisburg Pike, P.O. Box 4424
Lancaster, PA 17604

Contact: Dan Brown
Phone#: (717) 735-0193
Project Name#: Frey Farm Quarterly (GWMP)
Bill To: Lancaster County Solid Waste MA

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

Date Required: _____ Approved By: _____
Email? ☒ X-Y mreider@LCSWMA.com
Fax? ☒ X-Y No: (717) 397-9973

Container Type: AG 40 ml
Container Size: HCl
Preservative: HCl

Field Measurements: VOC - Form 190
Sample Depth for AUX Data: NH3-N, COD
Metals: Fe, Mn, Na, Ca, K, Mg
pH, Cl, SPC, F, SO4, TDS, NO3, Turb.
Alkalinity Bicarbonate

Analyses/Method Requested

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	Matrix	TOC	O-H	VOC - Form 190	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Metals: Fe, Mn, Na, Ca, K, Mg	pH, Cl, SPC, F, SO4, TDS, NO3, Turb.	Alkalinity Bicarbonate
1. FFMP30RW	02/15/21	1104	G GW	2	1	2	X	X	1	1	1	1
2. FFMP04AW	02/15/21	1220	G GW	2	1	2	X	X	1	1	1	1
3. FFMP005W	02/15/21	1350	G GW	2	1	2	X	X	1	1	1	1
4. FFMP26RW	02/15/21	1510	G GW	2	1	2	X	X	1	1	1	1
5												
6												
7												
8												
9												
10												

Project Comments:

Relinquished By/ Company Name: *[Signature]* Date: 02-15-21 Time: 1611
Received By/ Company Name: *[Signature]* Date: 02-15-21 Time: 1611

LOGGED BY (signature): _____
REVIEWED BY (signature): _____

State Samples Collected In: ☐ NY ☐ NJ ☒ PA ☐ NC

Special Processing: ☐ USACE ☐ Navy ☐ Lab ☒ Special

Reportable to PADEP? ☐ Yes ☐ No PWSID #: _____ EDDS: Format Type: _____



301 Fulling Mill Road
Middletown, PA 17057
P: (717) 944-5541
F: (717) 944-1430

Condition of Sample Receipt Form

Client: World

3158045

Initials: W

Date: 2/10/21

Lancaster County Solid Waste
Authority

- | | | | |
|---|-------------|-----|-----------|
| 1. Were airbills / tracking numbers present and
Tracking # _____ | <u>NONE</u> | YES | NO |
| 2. Are Custody Seals on shipping containers intact? | <u>NONE</u> | YES | NO |
| 3. Are Custody Seals on sample containers intact? | <u>NONE</u> | YES | NO |
| 4. Is there a COC (Chain-of-Custody) present? | <u>8</u> | YES | NO |
| 5. Are the COC and bottle labels complete, legible and in agreement? | | YES | NO |
| 5a. Does the COC contain sample locations? | | YES | NO |
| 5b. Does the COC contain date and time of sample collection for all samples? | | YES | NO |
| 5c. Does the COC contain sample collectors name? | | YES | NO |
| 5d. Does the COC note the type(s) of preservation for all bottles? | | YES | NO |
| 5e. Does the COC note the number of bottles submitted for each sample? | | YES | NO |
| 5f. Does the COC note the type of sample, composite or grab? | | YES | NO |
| 5g. Does the COC note the matrix of the sample(s)? | | YES | NO |
| 6. Are all aqueous samples requiring preservation preserved correctly? ¹ | <u>N/A</u> | YES | NO |
| 7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume? | | YES | NO |
| 8. Are all samples within holding times for the requested analyses? | | YES | NO |
| 9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.) | | YES | NO |
| 10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)? | <u>N/A</u> | YES | NO |
| 11. Were the samples received on ice? | <u>0</u> | YES | NO |
| 12. Were sample temperatures measured at 0.0-6.0°C | | YES | NO |
| 13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below | | YES | <u>NO</u> |
| 13a. Are the samples required for SDWA compliance reporting? | <u>N/A</u> | YES | NO |
| 13b. Did the client provide a SDWA PWS ID#? | <u>N/A</u> | YES | NO |
| 13c. Are all aqueous unpreserved SDWA samples pH 5-9? | <u>N/A</u> | YES | NO |
| 13d. Did the client provide the SDWA sample location ID/Description? | <u>N/A</u> | YES | NO |
| 13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)? | <u>N/A</u> | YES | NO |

Cooler #: _____

Temperature (°C): 5

Thermometer ID: 44

Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

¹Final determination of correct preservation for analysis such as volatiles, microbiology, and oil and grease is made in the analytical department at the time of or following the analysis

March 12, 2021

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

Certificate of Analysis

Project Name:	FREY FARM	Workorder:	3158480
Purchase Order:	PO-1000371	Workorder ID:	1ST QTR 2021 GWMP-FORM 19Q

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Wednesday, February 17, 2021.

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: Ms. Ashley Gichuki , Ms. Jordan Gallagher , 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

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**SAMPLE SUMMARY**

Workorder: 3158480 1ST QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3158480001	FFMP03AW	Ground Water	2/17/2021 10:24	2/17/2021 17:00	Mr. Brian G Shade
3158480002	FFMP02SW	Ground Water	2/17/2021 10:50	2/17/2021 17:00	Mr. Brian G Shade
3158480003	FFMP02DW	Ground Water	2/17/2021 12:06	2/17/2021 17:00	Mr. Brian G Shade
3158480004	FFMP017W	Ground Water	2/17/2021 13:46	2/17/2021 17:00	Mr. Brian G Shade
3158480005	FFMP018W	Ground Water	2/17/2021 14:20	2/17/2021 17:00	Mr. Brian G Shade
3158480006	FFMP019W	Ground Water	2/17/2021 15:13	2/17/2021 17:00	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3158480 1ST QTR 2021 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.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

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

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PROJECT SUMMARY

Workorder: 3158480 1ST QTR 2021 GWMP-FORM 19Q

Workorder Comments

Temperature of sample taken at time of sample receipt in the laboratory. See chain of custody for actual temperature.

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ANALYTICAL RESULTS

Workorder: 3158480 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158480001**

Date Collected: 2/17/2021 10:24

Matrix: Ground Water

Sample ID: **FFMP03AW**

Date Received: 2/17/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:27	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:27	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:27	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:27	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:27	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:27	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:27	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:27	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:27	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:27	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:27	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/19/21 02:27	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:27	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:27	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:27	PDK	G
<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)	86.4	C	%	62 - 133	SW846 8260B			2/19/21 02:27	PDK	G
4-Bromofluorobenzene (S)	82.4	C	%	79 - 114	SW846 8260B			2/19/21 02:27	PDK	G
Dibromofluoromethane (S)	88.7	C	%	78 - 116	SW846 8260B			2/19/21 02:27	PDK	G
Toluene-d8 (S)	85	C	%	76 - 127	SW846 8260B			2/19/21 02:27	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	17	C	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	B
Alkalinity, Total	17	C,3	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			2/19/21 20:21	JXL	A
Chemical Oxygen Demand (COD)	18	C	mg/L	15	EPA 410.4			2/27/21 20:30	JAM	A
Chloride	28.2	C	mg/L	2.0	EPA 300.0			2/18/21 11:46	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/18/21 11:46	MBW	B
Nitrate-N	19.9	C	mg/L	0.20	EPA 300.0			2/18/21 11:46	MBW	B
pH	6.21	C,1	pH_Units		S4500HB-11			2/19/21 02:20	LXZ	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	2/22/21 00:30	VXF	2/24/21 20:25	VXF	F
Specific Conductance	330	C,2	umhos/cm	1	SW846 9050A			2/19/21 02:20	LXZ	B
Sulfate	2.9	C	mg/L	2.0	EPA 300.0			2/18/21 11:46	MBW	B
Total Dissolved Solids	212	C	mg/L	25	S2540C-11			2/23/21 12:19	KMM	B
Total Organic Carbon (TOC)	0.90	C	mg/L	0.50	SW846 9060A			2/23/21 03:08	PAG	D
Turbidity	ND	C	NTU	0.10	SM2130B-2011			2/18/21 09:52	R2B	B

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ANALYTICAL RESULTS

Workorder: 3158480 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158480001**
Sample ID: **FFMP03AW**

Date Collected: 2/17/2021 10:24 Matrix: Ground Water
Date Received: 2/17/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	19.1	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 12:45	SRT	J1
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	2/20/21 15:55	AHI	2/22/21 12:45	SRT	J1
Magnesium, Total	14.8	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 12:45	SRT	J1
Manganese, Total	0.33	C	mg/L	0.0056	SW846 6010C	2/20/21 15:55	AHI	2/22/21 12:45	SRT	J1
Potassium, Total	1.6	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 12:45	SRT	J1
Sodium, Total	13.4	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 12:45	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	51.92	C	Feet		Field			2/17/21 10:24	BGS	C
Elev Top MW Casing above MSL	590.90	C	Feet		Field			2/17/21 10:24	BGS	C
Flow Rate	1.70	C	gal/min		Field			2/17/21 10:24	BGS	C
Ground Water Elevation	538.98	C	ft/MSL		Field			2/17/21 10:24	BGS	C
pH, Field (SM4500B)	4.83	C	pH_Units		Field			2/17/21 10:24	BGS	C
Sample Depth	130.00	C	Feet		Field			2/17/21 10:24	BGS	C
Specific Conductance, Field	460	C	umhos/cm	1	Field			2/17/21 10:24	BGS	C
Temperature	13.35	C	Deg. C		Field			2/17/21 10:24	BGS	C
Total Well Depth	148.40	C	Feet		Field			2/17/21 10:24	BGS	C
Volume in Water Column	141.83	C	Gallons		Field			2/17/21 10:24	BGS	C
Water Level After Purge	82.98	C	Feet		Field			2/17/21 10:24	BGS	C
Well Volumes Purged	0.72	C	Vol		Field			2/17/21 10:24	BGS	C



Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3158480 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158480002**

Date Collected: 2/17/2021 10:50

Matrix: Ground Water

Sample ID: **FFMP02SW**

Date Received: 2/17/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:50	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:50	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:50	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:50	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:50	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:50	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:50	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:50	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:50	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:50	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:50	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/19/21 02:50	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:50	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:50	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/19/21 02:50	PDK	G
<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)	85.9	C	%	62 - 133	SW846 8260B			2/19/21 02:50	PDK	G
4-Bromofluorobenzene (S)	81.2	C	%	79 - 114	SW846 8260B			2/19/21 02:50	PDK	G
Dibromofluoromethane (S)	89.8	C	%	78 - 116	SW846 8260B			2/19/21 02:50	PDK	G
Toluene-d8 (S)	86.2	C	%	76 - 127	SW846 8260B			2/19/21 02:50	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	10	C	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	B
Alkalinity, Total	10	C,3	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	I
Ammonia-N	0.102	C	mg/L	0.100	ASTM D6919-09			2/19/21 20:35	JXL	A
Chemical Oxygen Demand (COD)	28	C	mg/L	15	EPA 410.4			2/27/21 20:30	JAM	A
Chloride	32.7	C	mg/L	2.0	EPA 300.0			2/18/21 12:00	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/18/21 12:00	MBW	B
Nitrate-N	16.1	C	mg/L	0.20	EPA 300.0			2/18/21 12:00	MBW	B
pH	6.41	C,1	pH_Units		S4500HB-11			2/19/21 02:20	LXZ	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	2/22/21 00:30	VXF	2/24/21 20:25	VXF	F
Specific Conductance	347	C,2	umhos/cm	1	SW846 9050A			2/19/21 02:20	LXZ	B
Sulfate	23.4	C	mg/L	2.0	EPA 300.0			2/18/21 12:00	MBW	B
Total Dissolved Solids	216	C	mg/L	25	S2540C-11			2/23/21 12:19	KMM	B
Total Organic Carbon (TOC)	4.3	C	mg/L	0.50	SW846 9060A			2/23/21 03:08	PAG	D
Turbidity	75.8	C	NTU	0.50	SM2130B-2011			2/18/21 09:52	R2B	B

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Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey

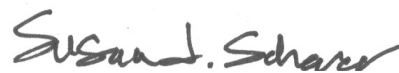
ANALYTICAL RESULTS

Workorder: 3158480 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158480002**
Sample ID: **FFMP02SW**

Date Collected: 2/17/2021 10:50 Matrix: Ground Water
Date Received: 2/17/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	16.5	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 12:49	SRT	J1
Iron, Total	2.7	C	mg/L	0.067	SW846 6010C	2/20/21 15:55	AHI	2/22/21 12:49	SRT	J1
Magnesium, Total	6.9	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 12:49	SRT	J1
Manganese, Total	0.034	C	mg/L	0.0056	SW846 6010C	2/20/21 15:55	AHI	2/22/21 12:49	SRT	J1
Potassium, Total	5.8	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 12:49	SRT	J1
Sodium, Total	36.2	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 12:49	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	13.69	C	Feet		Field			2/17/21 10:50	BGS	C
Elev Top MW Casing above MSL	509.90	C	Feet		Field			2/17/21 10:50	BGS	C
Flow Rate	1.00	C	gal/min		Field			2/17/21 10:50	BGS	C
Ground Water Elevation	509.90	C	ft/MSL		Field			2/17/21 10:50	BGS	C
pH, Field (SM4500B)	5.66	C	pH_Units		Field			2/17/21 10:50	BGS	C
Sample Depth	19.00	C	Feet		Field			2/17/21 10:50	BGS	C
Specific Conductance, Field	435	C	umhos/cm	1	Field			2/17/21 10:50	BGS	C
Temperature	13.42	C	Deg. C		Field			2/17/21 10:50	BGS	C
Total Well Depth	22.70	C	Feet		Field			2/17/21 10:50	BGS	C
Volume in Water Column	14.76	C	Gallons		Field			2/17/21 10:50	BGS	C
Water Level After Purge	18.86	C	Feet		Field			2/17/21 10:50	BGS	C
Well Volumes Purged	0.27	C	Vol		Field			2/17/21 10:50	BGS	C



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Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3158480 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158480003**

Date Collected: 2/17/2021 12:06

Matrix: Ground Water

Sample ID: **FFMP02DW**

Date Received: 2/17/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:14	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:14	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:14	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:14	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:14	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:14	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:14	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:14	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:14	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:14	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:14	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/19/21 03:14	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:14	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:14	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:14	PDK	G
<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)	86.9	C	%	62 - 133	SW846 8260B			2/19/21 03:14	PDK	G
4-Bromofluorobenzene (S)	83	C	%	79 - 114	SW846 8260B			2/19/21 03:14	PDK	G
Dibromofluoromethane (S)	89.8	C	%	78 - 116	SW846 8260B			2/19/21 03:14	PDK	G
Toluene-d8 (S)	85.5	C	%	76 - 127	SW846 8260B			2/19/21 03:14	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	112	C	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	B
Alkalinity, Total	112	C,3	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			2/19/21 20:49	JXL	A
Chemical Oxygen Demand (COD)	18	C	mg/L	15	EPA 410.4			2/25/21 16:00	AK	A
Chloride	387	C	mg/L	10.0	EPA 300.0			2/23/21 07:43	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/18/21 12:14	MBW	B
Nitrate-N	8.5	C	mg/L	0.20	EPA 300.0			2/18/21 12:14	MBW	B
pH	7.71	C,1	pH_Units		S4500HB-11			2/19/21 02:20	LXZ	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	2/22/21 00:30	VXF	2/26/21 11:39	VXF	F
Specific Conductance	1690	C,2	umhos/cm	1	SW846 9050A			2/19/21 02:20	LXZ	B
Sulfate	33.3	C	mg/L	2.0	EPA 300.0			2/18/21 12:14	MBW	B
Total Dissolved Solids	998	C	mg/L	25	S2540C-11			2/23/21 12:19	KMM	B
Total Organic Carbon (TOC)	0.92	C	mg/L	0.50	SW846 9060A			2/23/21 03:08	PAG	D
Turbidity	13.4	C	NTU	0.10	SM2130B-2011			2/18/21 09:52	R2B	B

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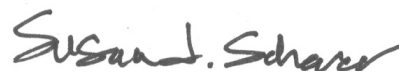
ANALYTICAL RESULTS

Workorder: 3158480 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158480003**
Sample ID: **FFMP02DW**

Date Collected: 2/17/2021 12:06 Matrix: Ground Water
Date Received: 2/17/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	130	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:00	SRT	J1
Iron, Total	1.0	C	mg/L	0.067	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:00	SRT	J1
Magnesium, Total	23.0	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:00	SRT	J1
Manganese, Total	0.49	C	mg/L	0.0056	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:00	SRT	J1
Potassium, Total	2.3	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:00	SRT	J1
Sodium, Total	135	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:00	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	23.42	C	Feet		Field			2/17/21 12:06	BGS	C
Elev Top MW Casing above MSL	509.60	C	Feet		Field			2/17/21 12:06	BGS	C
Flow Rate	1.61	C	gal/min		Field			2/17/21 12:06	BGS	C
Ground Water Elevation	486.18	C	ft/MSL		Field			2/17/21 12:06	BGS	C
pH, Field (SM4500B)	7.23	C	pH_Units		Field			2/17/21 12:06	BGS	C
Sample Depth	120.00	C	Feet		Field			2/17/21 12:06	BGS	C
Specific Conductance, Field	2312	C	umhos/cm	1	Field			2/17/21 12:06	BGS	C
Temperature	12.34	C	Deg. C		Field			2/17/21 12:06	BGS	C
Total Well Depth	153.00	C	Feet		Field			2/17/21 12:06	BGS	C
Volume in Water Column	190.48	C	Gallons		Field			2/17/21 12:06	BGS	C
Water Level After Purge	47.97	C	Feet		Field			2/17/21 12:06	BGS	C
Well Volumes Purged	0.51	C	Vol		Field			2/17/21 12:06	BGS	C



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ANALYTICAL RESULTS

Workorder: 3158480 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158480004**

Date Collected: 2/17/2021 13:46

Matrix: Ground Water

Sample ID: **FFMP017W**

Date Received: 2/17/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:37	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:37	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:37	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:37	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:37	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:37	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:37	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:37	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:37	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:37	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:37	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/19/21 03:37	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:37	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:37	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/19/21 03:37	PDK	G
<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)	85.6	C	%	62 - 133	SW846 8260B			2/19/21 03:37	PDK	G
4-Bromofluorobenzene (S)	81.3	C	%	79 - 114	SW846 8260B			2/19/21 03:37	PDK	G
Dibromofluoromethane (S)	87.7	C	%	78 - 116	SW846 8260B			2/19/21 03:37	PDK	G
Toluene-d8 (S)	84.2	C	%	76 - 127	SW846 8260B			2/19/21 03:37	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	70	C	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	B
Alkalinity, Total	70	C,2	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	I
Ammonia-N	0.243	C	mg/L	0.100	ASTM D6919-09			2/22/21 17:19	JXL	A
Chemical Oxygen Demand (COD)	24	C	mg/L	15	EPA 410.4			3/9/21 16:00	AK	A
Chloride	369	C	mg/L	10.0	EPA 300.0			2/23/21 07:59	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/18/21 12:28	MBW	B
Nitrate-N	3.3	C	mg/L	0.20	EPA 300.0			2/18/21 12:28	MBW	B
pH	6.81	C,1	pH_Units		S4500HB-11			2/19/21 02:20	LXZ	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	2/22/21 00:30	VXF	2/26/21 11:39	VXF	F
Specific Conductance	1540	C	umhos/cm	1	SW846 9050A			2/20/21 01:10	LXZ	B
Sulfate	72.2	C	mg/L	2.0	EPA 300.0			2/18/21 12:28	MBW	B
Total Dissolved Solids	892	C	mg/L	25	S2540C-11			2/23/21 12:19	KMM	B
Total Organic Carbon (TOC)	2.8	C	mg/L	0.50	SW846 9060A			2/23/21 03:08	PAG	D
Turbidity	0.21	C	NTU	0.10	SM2130B-2011			2/18/21 09:52	R2B	B

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ANALYTICAL RESULTS

Workorder: 3158480 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158480004**
Sample ID: **FFMP017W**

Date Collected: 2/17/2021 13:46 Matrix: Ground Water
Date Received: 2/17/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	99.1	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:04	SRT	J1
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:04	SRT	J1
Magnesium, Total	46.5	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:04	SRT	J1
Manganese, Total	1.4	C	mg/L	0.0056	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:04	SRT	J1
Potassium, Total	9.4	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:04	SRT	J1
Sodium, Total	108	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:04	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	37.72	C	Feet		Field			2/17/21 13:46	BGS	C
Elev Top MW Casing above MSL	480.70	C	Feet		Field			2/17/21 13:46	BGS	C
Flow Rate	2.05	C	gal/min		Field			2/17/21 13:46	BGS	C
Ground Water Elevation	442.98	C	ft/MSL		Field			2/17/21 13:46	BGS	C
pH, Field (SM4500B)	5.82	C	pH_Units		Field			2/17/21 13:46	BGS	C
Sample Depth	135.00	C	Feet		Field			2/17/21 13:46	BGS	C
Specific Conductance, Field	2138	C	umhos/cm	1	Field			2/17/21 13:46	BGS	C
Temperature	12.59	C	Deg. C		Field			2/17/21 13:46	BGS	C
Total Well Depth	150.50	C	Feet		Field			2/17/21 13:46	BGS	C
Volume in Water Column	165.79	C	Gallons		Field			2/17/21 13:46	BGS	C
Water Level After Purge	45.56	C	Feet		Field			2/17/21 13:46	BGS	C
Well Volumes Purged	0.86	C	Vol		Field			2/17/21 13:46	BGS	C



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ANALYTICAL RESULTS

Workorder: 3158480 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158480005**

Date Collected: 2/17/2021 14:20

Matrix: Ground Water

Sample ID: **FFMP018W**

Date Received: 2/17/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:01	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:01	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:01	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:01	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:01	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:01	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:01	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:01	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:01	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:01	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:01	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/19/21 04:01	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:01	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:01	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:01	PDK	G
<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)	87.5	C	%	62 - 133	SW846 8260B			2/19/21 04:01	PDK	G
4-Bromofluorobenzene (S)	82.4	C	%	79 - 114	SW846 8260B			2/19/21 04:01	PDK	G
Dibromofluoromethane (S)	90.3	C	%	78 - 116	SW846 8260B			2/19/21 04:01	PDK	G
Toluene-d8 (S)	86.3	C	%	76 - 127	SW846 8260B			2/19/21 04:01	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	26	C	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	B
Alkalinity, Total	26	C,2	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			2/22/21 17:33	JXL	A
Chemical Oxygen Demand (COD)	17	C	mg/L	15	EPA 410.4			2/25/21 16:00	AK	A
Chloride	92.5	C	mg/L	2.0	EPA 300.0			2/18/21 12:42	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/18/21 12:42	MBW	B
Nitrate-N	4.0	C	mg/L	0.20	EPA 300.0			2/18/21 12:42	MBW	B
pH	6.65	C,1	pH_Units		S4500HB-11			2/19/21 02:20	LXZ	B
Phenolics	ND	C,3	mg/L	0.005	SW846 9066	2/22/21 00:30	VXF	2/26/21 11:39	VXF	F
Specific Conductance	521	C	umhos/cm	1	SW846 9050A			2/20/21 01:10	LXZ	B
Sulfate	38.1	C	mg/L	2.0	EPA 300.0			2/18/21 12:42	MBW	B
Total Dissolved Solids	302	C	mg/L	25	S2540C-11			2/23/21 12:19	KMM	B
Total Organic Carbon (TOC)	1.1	C	mg/L	0.50	SW846 9060A			2/23/21 03:08	PAG	D
Turbidity	ND	C	NTU	0.10	SM2130B-2011			2/18/21 09:52	R2B	B

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ANALYTICAL RESULTS

Workorder: 3158480 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158480005**

Date Collected: 2/17/2021 14:20

Matrix: Ground Water

Sample ID: **FFMP018W**

Date Received: 2/17/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	31.1	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:07	SRT	J1
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:07	SRT	J1
Magnesium, Total	16.2	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:07	SRT	J1
Manganese, Total	0.21	C	mg/L	0.0056	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:07	SRT	J1
Potassium, Total	5.2	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:07	SRT	J1
Sodium, Total	35.2	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:07	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	24.85	C	Feet		Field			2/17/21 14:20	BGS	C
Elev Top MW Casing above MSL	472.20	C	Feet		Field			2/17/21 14:20	BGS	C
Flow Rate	3.69	C	gal/min		Field			2/17/21 14:20	BGS	C
Ground Water Elevation	447.35	C	ft/MSL		Field			2/17/21 14:20	BGS	C
pH, Field (SM4500B)	5.26	C	pH_Units		Field			2/17/21 14:20	BGS	C
Sample Depth	40.00	C	Feet		Field			2/17/21 14:20	BGS	C
Specific Conductance, Field	720	C	umhos/cm	1	Field			2/17/21 14:20	BGS	C
Temperature	15.44	C	Deg. C		Field			2/17/21 14:20	BGS	C
Total Well Depth	51.46	C	Feet		Field			2/17/21 14:20	BGS	C
Volume in Water Column	17.30	C	Gallons		Field			2/17/21 14:20	BGS	C
Water Level After Purge	28.01	C	Feet		Field			2/17/21 14:20	BGS	C
Well Volumes Purged	2.99	C	Vol		Field			2/17/21 14:20	BGS	C



Ms. Susan J Scherer

Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3158480 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158480006**

Date Collected: 2/17/2021 15:13

Matrix: Ground Water

Sample ID: **FFMP019W**

Date Received: 2/17/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:24	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:24	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:24	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:24	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:24	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:24	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:24	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:24	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:24	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:24	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:24	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/19/21 04:24	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:24	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:24	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/19/21 04:24	PDK	G
<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)	87.4	C	%	62 - 133	SW846 8260B			2/19/21 04:24	PDK	G
4-Bromofluorobenzene (S)	83.5	C	%	79 - 114	SW846 8260B			2/19/21 04:24	PDK	G
Dibromofluoromethane (S)	90.6	C	%	78 - 116	SW846 8260B			2/19/21 04:24	PDK	G
Toluene-d8 (S)	85.6	C	%	76 - 127	SW846 8260B			2/19/21 04:24	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	68	C	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	B
Alkalinity, Total	68	C,2	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			2/22/21 17:47	JXL	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			2/25/21 16:00	AK	A
Chloride	83.1	C	mg/L	2.0	EPA 300.0			2/18/21 13:24	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/18/21 13:24	MBW	B
Nitrate-N	ND	C	mg/L	0.20	EPA 300.0			2/18/21 13:24	MBW	B
pH	7.50	C,1	pH_Units		S4500HB-11			2/19/21 02:20	LXZ	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	2/22/21 00:30	VXF	2/26/21 11:39	VXF	F
Specific Conductance	470	C	umhos/cm	1	SW846 9050A			2/20/21 01:10	LXZ	B
Sulfate	14.9	C	mg/L	2.0	EPA 300.0			2/18/21 13:24	MBW	B
Total Dissolved Solids	336	C	mg/L	25	S2540C-11			2/23/21 12:19	KMM	B
Total Organic Carbon (TOC)	1.1	C	mg/L	0.50	SW846 9060A			2/23/21 08:09	PAG	D
Turbidity	ND	C	NTU	0.10	SM2130B-2011			2/18/21 09:52	R2B	B

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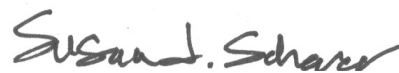
ANALYTICAL RESULTS

Workorder: 3158480 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158480006**
Sample ID: **FFMP019W**

Date Collected: 2/17/2021 15:13 Matrix: Ground Water
Date Received: 2/17/2021 17:00

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	60.7	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:11	SRT	J1
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:11	SRT	J1
Magnesium, Total	6.2	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:11	SRT	J1
Manganese, Total	0.0067	C	mg/L	0.0056	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:11	SRT	J1
Potassium, Total	1.0	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:11	SRT	J1
Sodium, Total	11.2	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 13:11	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	25.81	C	Feet		Field			2/17/21 15:13	BGS	C
Elev Top MW Casing above MSL	471.95	C	Feet		Field			2/17/21 15:13	BGS	C
Flow Rate	4.56	C	gal/min		Field			2/17/21 15:13	BGS	C
Ground Water Elevation	446.14	C	ft/MSL		Field			2/17/21 15:13	BGS	C
pH, Field (SM4500B)	6.58	C	pH_Units		Field			2/17/21 15:13	BGS	C
Sample Depth	49.00	C	Feet		Field			2/17/21 15:13	BGS	C
Specific Conductance, Field	652	C	umhos/cm	1	Field			2/17/21 15:13	BGS	C
Temperature	13.31	C	Deg. C		Field			2/17/21 15:13	BGS	C
Total Well Depth	132.79	C	Feet		Field			2/17/21 15:13	BGS	C
Volume in Water Column	69.54	C	Gallons		Field			2/17/21 15:13	BGS	C
Water Level After Purge	36.82	C	Feet		Field			2/17/21 15:13	BGS	C
Well Volumes Purged	2.62	C	Vol		Field			2/17/21 15:13	BGS	C



Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3158480 1ST QTR 2021 GWMP-FORM 19Q

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3158480001	1	FFMP03AW	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158480001	2	FFMP03AW	SW846 9050A	Specific Conductance
The Method Blank for method SM2510B-2011 reported a value greater than the reporting level for the analyte Specific Conductance. The reported result was 1.6 umhos/cm				
3158480001	3	FFMP03AW	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3158480002	1	FFMP02SW	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158480002	2	FFMP02SW	SW846 9050A	Specific Conductance
The Method Blank for method SM2510B-2011 reported a value greater than the reporting level for the analyte Specific Conductance. The reported result was 1.6 umhos/cm				
3158480002	3	FFMP02SW	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3158480003	1	FFMP02DW	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158480003	2	FFMP02DW	SW846 9050A	Specific Conductance
The Method Blank for method SM2510B-2011 reported a value greater than the reporting level for the analyte Specific Conductance. The reported result was 1.6 umhos/cm				
3158480003	3	FFMP02DW	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3158480004	1	FFMP017W	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158480004	2	FFMP017W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3158480005	1	FFMP018W	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158480005	2	FFMP018W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3158480005	3	FFMP018W	SW846 9066	Phenolics
The QC sample type MS for method 420.4/9066 was outside the control limits for the analyte Phenolics. The % Recovery was reported as 70.9 and the control limits were 90 to 110.				
3158480006	1	FFMP019W	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158480006	2	FFMP019W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3158480 1ST QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3158480001	FFMP03AW	ASTM D6919-09		
3158480001	FFMP03AW	EPA 300.0		
3158480001	FFMP03AW	EPA 410.4		
3158480001	FFMP03AW	Field		
3158480001	FFMP03AW	S2540C-11		
3158480001	FFMP03AW	S4500HB-11		
3158480001	FFMP03AW	SM2130B-2011		
3158480001	FFMP03AW	SM2320B-2011		
3158480001	FFMP03AW	SW846 6010C	SW846 3015	
3158480001	FFMP03AW	SW846 8260B		
3158480001	FFMP03AW	SW846 9050A		
3158480001	FFMP03AW	SW846 9060A		
3158480001	FFMP03AW	SW846 9066	420.4/9066	
3158480002	FFMP02SW	ASTM D6919-09		
3158480002	FFMP02SW	EPA 300.0		
3158480002	FFMP02SW	EPA 410.4		
3158480002	FFMP02SW	Field		
3158480002	FFMP02SW	S2540C-11		
3158480002	FFMP02SW	S4500HB-11		
3158480002	FFMP02SW	SM2130B-2011		
3158480002	FFMP02SW	SM2320B-2011		
3158480002	FFMP02SW	SW846 6010C	SW846 3015	
3158480002	FFMP02SW	SW846 8260B		
3158480002	FFMP02SW	SW846 9050A		
3158480002	FFMP02SW	SW846 9060A		
3158480002	FFMP02SW	SW846 9066	420.4/9066	
3158480003	FFMP02DW	ASTM D6919-09		
3158480003	FFMP02DW	EPA 300.0		
3158480003	FFMP02DW	EPA 410.4		
3158480003	FFMP02DW	Field		
3158480003	FFMP02DW	S2540C-11		
3158480003	FFMP02DW	S4500HB-11		
3158480003	FFMP02DW	SM2130B-2011		
3158480003	FFMP02DW	SM2320B-2011		
3158480003	FFMP02DW	SW846 6010C	SW846 3015	
3158480003	FFMP02DW	SW846 8260B		
3158480003	FFMP02DW	SW846 9050A		
3158480003	FFMP02DW	SW846 9060A		
3158480003	FFMP02DW	SW846 9066	420.4/9066	
3158480004	FFMP017W	ASTM D6919-09		
3158480004	FFMP017W	EPA 300.0		
3158480004	FFMP017W	EPA 410.4		
3158480004	FFMP017W	Field		
3158480004	FFMP017W	S2540C-11		
3158480004	FFMP017W	S4500HB-11		
3158480004	FFMP017W	SM2130B-2011		

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3158480 1ST QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3158480004	FFMP017W	SM2320B-2011		
3158480004	FFMP017W	SW846 6010C	SW846 3015	
3158480004	FFMP017W	SW846 8260B		
3158480004	FFMP017W	SW846 9050A		
3158480004	FFMP017W	SW846 9060A		
3158480004	FFMP017W	SW846 9066	420.4/9066	
3158480005	FFMP018W	ASTM D6919-09		
3158480005	FFMP018W	EPA 300.0		
3158480005	FFMP018W	EPA 410.4		
3158480005	FFMP018W	Field		
3158480005	FFMP018W	S2540C-11		
3158480005	FFMP018W	S4500HB-11		
3158480005	FFMP018W	SM2130B-2011		
3158480005	FFMP018W	SM2320B-2011		
3158480005	FFMP018W	SW846 6010C	SW846 3015	
3158480005	FFMP018W	SW846 8260B		
3158480005	FFMP018W	SW846 9050A		
3158480005	FFMP018W	SW846 9060A		
3158480005	FFMP018W	SW846 9066	420.4/9066	
3158480006	FFMP019W	ASTM D6919-09		
3158480006	FFMP019W	EPA 300.0		
3158480006	FFMP019W	EPA 410.4		
3158480006	FFMP019W	Field		
3158480006	FFMP019W	S2540C-11		
3158480006	FFMP019W	S4500HB-11		
3158480006	FFMP019W	SM2130B-2011		
3158480006	FFMP019W	SM2320B-2011		
3158480006	FFMP019W	SW846 6010C	SW846 3015	
3158480006	FFMP019W	SW846 8260B		
3158480006	FFMP019W	SW846 9050A		
3158480006	FFMP019W	SW846 9060A		
3158480006	FFMP019W	SW846 9066	420.4/9066	

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301 Fulling Mill Road
Middletown, PA 17057
P: (717) 944-5541
F: (717) 944-1430

3158480

on of Sample Receipt Form

Client: _____ Work: _____ Authority: Lancaster County Solid Waste
Initials: JS Date: 2/8/21

1. Were airbills / tracking numbers present and recorded? NONE YES NO
Tracking number: _____
2. Are Custody Seals on shipping containers intact? NONE YES NO
3. Are Custody Seals on sample containers intact? NONE YES NO
4. Is there a COC (Chain-of-Custody) present? YES YES NO
5. Are the COC and bottle labels complete, legible and in agreement? YES YES NO
 - 5a. Does the COC contain sample locations? YES YES NO
 - 5b. Does the COC contain date and time of sample collection for all samples? YES YES NO
 - 5c. Does the COC contain sample collectors name? YES YES NO
 - 5d. Does the COC note the type(s) of preservation for all bottles? YES YES NO
 - 5e. Does the COC note the number of bottles submitted for each sample? YES YES NO
 - 5f. Does the COC note the type of sample, composite or grab? YES YES NO
 - 5g. Does the COC note the matrix of the sample(s)? YES YES NO
6. Are all aqueous samples requiring preservation preserved correctly? N/A YES NO
7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume? YES YES NO
8. Are all samples within holding times for the requested analyses? YES YES NO
9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.) YES YES NO
10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)? N/A YES NO
11. Were the samples received on ice? YES YES NO
12. Were sample temperatures measured at 0.0-6.0°C? YES YES NO
13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below YES YES NO
 - 13a. Are the samples required for SDWA compliance reporting? N/A YES NO
 - 13b. Did the client provide a SDWA PWS ID#? N/A YES NO
 - 13c. Are all aqueous unpreserved SDWA samples pH 5-9? N/A YES NO
 - 13d. Did the client provide the SDWA sample location ID/Description? N/A YES NO
 - 13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)? N/A YES NO

Cooler #: _____
Temperature (°C): 1 _____
Thermometer ID: 524 _____
Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

¹Final determination of correct preservation for analysis such as volatiles, microbiology, and oil and grease is made in the analytical department at the time of or following the analysis

March 18, 2021

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

Certificate of Analysis

Project Name:	FREY FARM	Workorder:	3158904
Purchase Order:	PO-1000371	Workorder ID:	1ST QTR 2021 GWMP-FORM 19Q

Dear Mr. Brown:

Enclosed are the analytical results for samples received by the laboratory on Friday, February 19, 2021.

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.

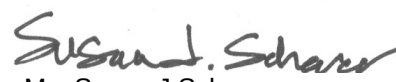
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications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

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

CC: Ms. Ashley Gichuki , Ms. Jordan Gallagher , 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

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**SAMPLE SUMMARY**

Workorder: 3158904 1ST QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3158904001	FFMP031W	Ground Water	2/19/2021 10:43	2/19/2021 16:36	Mr. Brian G Shade
3158904002	FFMP002W	Ground Water	2/19/2021 11:21	2/19/2021 16:36	Mr. Brian G Shade
3158904003	FFMP032W	Ground Water	2/19/2021 14:32	2/19/2021 16:36	Mr. Brian G Shade
3158904004	FFMP016W	Ground Water	2/19/2021 14:48	2/19/2021 16:36	Mr. Brian G Shade
3158904005	FIELD BLANK	Water	2/19/2021 15:35	2/19/2021 16:36	Mr. Brian G Shade
3158904006	TRIP BLANK	Water	2/19/2021 16:36	2/19/2021 16:36	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3158904 1ST QTR 2021 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.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

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

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: PJLA 74618
State Certifications: FL E871113 , WA C999 , MD 128 , VA 460157 , WV DW 9961-C , WV 343

PROJECT SUMMARY

Workorder: 3158904 1ST QTR 2021 GWMP-FORM 19Q

Workorder Comments

Temperature of sample taken at time of sample receipt in the laboratory. See chain of custody for actual temperature.

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ANALYTICAL RESULTS

Workorder: 3158904 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158904001**
Sample ID: **FFMP031W**

Date Collected: 2/19/2021 10:43 Matrix: Ground Water
Date Received: 2/19/2021 16:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:48	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:48	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:48	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:48	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:48	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:48	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:48	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:48	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:48	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:48	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:48	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/24/21 03:48	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:48	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:48	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:48	PDK	G
<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)	106	C	%	62 - 133	SW846 8260B			2/24/21 03:48	PDK	G
4-Bromofluorobenzene (S)	91.6	C	%	79 - 114	SW846 8260B			2/24/21 03:48	PDK	G
Dibromofluoromethane (S)	104	C	%	78 - 116	SW846 8260B			2/24/21 03:48	PDK	G
Toluene-d8 (S)	95.5	C	%	76 - 127	SW846 8260B			2/24/21 03:48	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	61	C	mg/L	5	SM2320B-2011			2/28/21 01:37	LXZ	B
Alkalinity, Total	61	C,2	mg/L	5	SM2320B-2011			2/28/21 01:37	LXZ	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			2/23/21 19:26	JXL	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			2/28/21 02:30	JAM	A
Chloride	22.6	C	mg/L	2.0	EPA 300.0			2/20/21 10:35	MBW	B
Fluoride	0.28	C	mg/L	0.20	EPA 300.0			2/20/21 10:35	MBW	B
Nitrate-N	ND	C	mg/L	0.20	EPA 300.0			2/20/21 10:35	MBW	B
pH	7.85	C,1	pH_Units		S4500HB-11			2/24/21 18:15	LXZ	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	2/22/21 00:30	VXF	2/26/21 11:39	VXF	F
Specific Conductance	252	C	umhos/cm	1	SW846 9050A			2/28/21 01:37	LXZ	B
Sulfate	41.2	C	mg/L	2.0	EPA 300.0			2/20/21 10:35	MBW	B
Total Dissolved Solids	164	C	mg/L	25	S2540C-11			2/23/21 14:47	KMM	B
Total Organic Carbon (TOC)	ND	C	mg/L	0.50	SW846 9060A			2/23/21 08:09	PAG	D
Turbidity	64.6	C	NTU	0.10	SM2130B-2011			2/20/21 07:20	MBW	B

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ANALYTICAL RESULTS

Workorder: 3158904 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158904001**

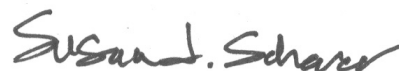
Date Collected: 2/19/2021 10:43

Matrix: Ground Water

Sample ID: **FFMP031W**

Date Received: 2/19/2021 16:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	33.9	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:36	SRT	J1
Iron, Total	6.2	C	mg/L	0.067	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:36	SRT	J1
Magnesium, Total	4.0	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:36	SRT	J1
Manganese, Total	0.28	C	mg/L	0.0056	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:36	SRT	J1
Potassium, Total	1.6	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:36	SRT	J1
Sodium, Total	11.8	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:36	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	65.81	C	Feet		Field			2/19/21 10:43	BGS	C
Elev Top MW Casing above MSL	612.66	C	Feet		Field			2/19/21 10:43	BGS	C
Flow Rate	2.19	C	gal/min		Field			2/19/21 10:43	BGS	C
Ground Water Elevation	546.85	C	ft/MSL		Field			2/19/21 10:43	BGS	C
pH, Field (SM4500B)	7.98	C	pH_Units		Field			2/19/21 10:43	BGS	C
Sample Depth	130.00	C	Feet		Field			2/19/21 10:43	BGS	C
Specific Conductance, Field	450	C	umhos/cm	1	Field			2/19/21 10:43	BGS	C
Temperature	13.54	C	Deg. C		Field			2/19/21 10:43	BGS	C
Total Well Depth	142.70	C	Feet		Field			2/19/21 10:43	BGS	C
Volume in Water Column	113.03	C	Gallons		Field			2/19/21 10:43	BGS	C
Water Level After Purge	123.98	C	Feet		Field			2/19/21 10:43	BGS	C
Well Volumes Purged	1.16	C	Vol		Field			2/19/21 10:43	BGS	C



Ms. Susan J Scherer

Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3158904 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158904002**
Sample ID: **FFMP002W**

Date Collected: 2/19/2021 11:21 Matrix: Ground Water
Date Received: 2/19/2021 16:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:11	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:11	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:11	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:11	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:11	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:11	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:11	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:11	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:11	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:11	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:11	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/24/21 04:11	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:11	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:11	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:11	PDK	G
<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)	109	C	%	62 - 133	SW846 8260B			2/24/21 04:11	PDK	G
4-Bromofluorobenzene (S)	89.6	C	%	79 - 114	SW846 8260B			2/24/21 04:11	PDK	G
Dibromofluoromethane (S)	106	C	%	78 - 116	SW846 8260B			2/24/21 04:11	PDK	G
Toluene-d8 (S)	96	C	%	76 - 127	SW846 8260B			2/24/21 04:11	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	ND	C	mg/L	5	SM2320B-2011			2/28/21 01:37	LXZ	B
Alkalinity, Total	ND	C,2	mg/L	5	SM2320B-2011			2/28/21 01:37	LXZ	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			2/23/21 19:40	JXL	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			2/28/21 02:30	JAM	A
Chloride	21.0	C	mg/L	2.0	EPA 300.0			2/20/21 10:49	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/20/21 10:49	MBW	B
Nitrate-N	21.3	C,3	mg/L	0.50	EPA 300.0			2/26/21 05:13	MBW	B
pH	5.13	C,1	pH_Units		S4500HB-11			2/24/21 18:15	LXZ	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	2/22/21 00:30	VXF	2/26/21 11:39	VXF	F
Specific Conductance	251	C	umhos/cm	1	SW846 9050A			2/28/21 01:37	LXZ	B
Sulfate	11.5	C	mg/L	2.0	EPA 300.0			2/20/21 10:49	MBW	B
Total Dissolved Solids	134	C	mg/L	25	S2540C-11			2/23/21 14:47	KMM	B
Total Organic Carbon (TOC)	0.52	C	mg/L	0.50	SW846 9060A			2/23/21 08:09	PAG	D
Turbidity	ND	C	NTU	0.10	SM2130B-2011			2/20/21 07:20	MBW	B

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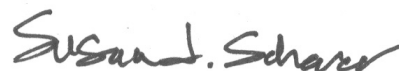
ANALYTICAL RESULTS

Workorder: 3158904 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158904002**
Sample ID: **FFMP002W**

Date Collected: 2/19/2021 11:21 Matrix: Ground Water
Date Received: 2/19/2021 16:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	15.2	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:40	SRT	J1
Iron, Total	7.8	C	mg/L	0.067	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:40	SRT	J1
Magnesium, Total	5.9	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:40	SRT	J1
Manganese, Total	0.57	C	mg/L	0.0056	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:40	SRT	J1
Potassium, Total	1.5	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:40	SRT	J1
Sodium, Total	13.7	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:40	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	62.40	C	Feet		Field			2/19/21 11:21	BGS	C
Elev Top MW Casing above MSL	613.20	C	Feet		Field			2/19/21 11:21	BGS	C
Flow Rate	1.19	C	gal/min		Field			2/19/21 11:21	BGS	C
Ground Water Elevation	550.80	C	ft/MSL		Field			2/19/21 11:21	BGS	C
pH, Field (SM4500B)	4.51	C	pH_Units		Field			2/19/21 11:21	BGS	C
Sample Depth	85.00	C	Feet		Field			2/19/21 11:21	BGS	C
Specific Conductance, Field	437	C	umhos/cm	1	Field			2/19/21 11:21	BGS	C
Temperature	13.27	C	Deg. C		Field			2/19/21 11:21	BGS	C
Total Well Depth	90.02	C	Feet		Field			2/19/21 11:21	BGS	C
Volume in Water Column	40.60	C	Gallons		Field			2/19/21 11:21	BGS	C
Water Level After Purge	76.08	C	Feet		Field			2/19/21 11:21	BGS	C
Well Volumes Purged	0.59	C	Vol		Field			2/19/21 11:21	BGS	C



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ANALYTICAL RESULTS

Workorder: 3158904 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158904003**

Date Collected: 2/19/2021 14:32

Matrix: Ground Water

Sample ID: **FFMP032W**

Date Received: 2/19/2021 16:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:33	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:33	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:33	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:33	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:33	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:33	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:33	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:33	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:33	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:33	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:33	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/24/21 04:33	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:33	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:33	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/24/21 04:33	PDK	G
<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)	108	C	%	62 - 133	SW846 8260B			2/24/21 04:33	PDK	G
4-Bromofluorobenzene (S)	89.4	C	%	79 - 114	SW846 8260B			2/24/21 04:33	PDK	G
Dibromofluoromethane (S)	107	C	%	78 - 116	SW846 8260B			2/24/21 04:33	PDK	G
Toluene-d8 (S)	95.6	C	%	76 - 127	SW846 8260B			2/24/21 04:33	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	68	C	mg/L	5	SM2320B-2011			2/28/21 01:37	LXZ	B
Alkalinity, Total	68	C,2	mg/L	5	SM2320B-2011			2/28/21 01:37	LXZ	I
Ammonia-N	0.944	C	mg/L	0.100	ASTM D6919-09			2/23/21 19:54	JXL	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			2/28/21 02:30	JAM	A
Chloride	23.0	C	mg/L	2.0	EPA 300.0			2/20/21 11:04	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/20/21 11:04	MBW	B
Nitrate-N	ND	C	mg/L	0.20	EPA 300.0			2/20/21 11:04	MBW	B
pH	7.45	C,1	pH_Units		S4500HB-11			2/24/21 18:15	LXZ	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	2/22/21 00:30	VXF	2/26/21 11:39	VXF	F
Specific Conductance	185	C	umhos/cm	1	SW846 9050A			2/28/21 01:37	LXZ	B
Sulfate	ND	C	mg/L	2.0	EPA 300.0			2/20/21 11:04	MBW	B
Total Dissolved Solids	84	C	mg/L	25	S2540C-11			2/23/21 14:47	KMM	B
Total Organic Carbon (TOC)	0.56	C	mg/L	0.50	SW846 9060A			2/23/21 08:09	PAG	D
Turbidity	151	C	NTU	0.10	SM2130B-2011			2/20/21 07:20	MBW	B

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ANALYTICAL RESULTS

Workorder: 3158904 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158904003**

Date Collected: 2/19/2021 14:32

Matrix: Ground Water

Sample ID: **FFMP032W**

Date Received: 2/19/2021 16:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	18.5	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:51	SRT	J1
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:51	SRT	J1
Magnesium, Total	8.3	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:51	SRT	J1
Manganese, Total	0.23	C	mg/L	0.0056	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:51	SRT	J1
Potassium, Total	1.5	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:51	SRT	J1
Sodium, Total	14.4	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:51	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	50.30	C	Feet		Field			2/19/21 14:32	BGS	C
Elev Top MW Casing above MSL	594.09	C	Feet		Field			2/19/21 14:32	BGS	C
Flow Rate	0.83	C	gal/min		Field			2/19/21 14:32	BGS	C
Ground Water Elevation	543.79	C	ft/MSL		Field			2/19/21 14:32	BGS	C
pH, Field (SM4500B)	6.89	C	pH_Units		Field			2/19/21 14:32	BGS	C
Sample Depth	62.00	C	Feet		Field			2/19/21 14:32	BGS	C
Specific Conductance, Field	328	C	umhos/cm	1	Field			2/19/21 14:32	BGS	C
Temperature	13.15	C	Deg. C		Field			2/19/21 14:32	BGS	C
Total Well Depth	77.60	C	Feet		Field			2/19/21 14:32	BGS	C
Volume in Water Column	40.13	C	Gallons		Field			2/19/21 14:32	BGS	C
Water Level After Purge	53.04	C	Feet		Field			2/19/21 14:32	BGS	C
Well Volumes Purged	0.04	C	Vol		Field			2/19/21 14:32	BGS	C



Ms. Susan J Scherer

Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3158904 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158904004**
Sample ID: **FFMP016W**

Date Collected: 2/19/2021 14:48 Matrix: Ground Water
Date Received: 2/19/2021 16:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:03	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:03	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:03	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:03	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:03	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:03	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:03	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:03	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:03	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:03	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:03	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/24/21 03:03	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:03	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:03	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/24/21 03:03	PDK	G
<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)	109	C	%	62 - 133	SW846 8260B			2/24/21 03:03	PDK	G
4-Bromofluorobenzene (S)	90.1	C	%	79 - 114	SW846 8260B			2/24/21 03:03	PDK	G
Dibromofluoromethane (S)	104	C	%	78 - 116	SW846 8260B			2/24/21 03:03	PDK	G
Toluene-d8 (S)	95.5	C	%	76 - 127	SW846 8260B			2/24/21 03:03	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	29	C	mg/L	5	SM2320B-2011			2/28/21 01:37	LXZ	B
Alkalinity, Total	29	C,2	mg/L	5	SM2320B-2011			2/28/21 01:37	LXZ	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			2/23/21 20:07	JXL	A
Chemical Oxygen Demand (COD)	19	C	mg/L	15	EPA 410.4			2/28/21 02:30	JAM	A
Chloride	279	C	mg/L	5.0	EPA 300.0			2/26/21 05:28	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/20/21 11:19	MBW	B
Nitrate-N	7.7	C	mg/L	0.20	EPA 300.0			2/20/21 11:19	MBW	B
pH	6.34	C,1	pH_Units		S4500HB-11			2/24/21 18:15	LXZ	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	2/22/21 00:30	VXF	3/2/21 16:56	VXF	F
Specific Conductance	1000	C	umhos/cm	1	SW846 9050A			2/28/21 01:37	LXZ	B
Sulfate	43.0	C	mg/L	2.0	EPA 300.0			2/20/21 11:19	MBW	B
Total Dissolved Solids	640	C	mg/L	25	S2540C-11			2/23/21 14:47	KMM	B
Total Organic Carbon (TOC)	1.6	C	mg/L	0.50	SW846 9060A			2/23/21 08:09	PAG	D
Turbidity	ND	C	NTU	0.10	SM2130B-2011			2/20/21 07:20	MBW	B

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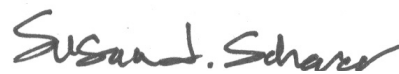
ANALYTICAL RESULTS

Workorder: 3158904 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158904004**
Sample ID: **FFMP016W**

Date Collected: 2/19/2021 14:48 Matrix: Ground Water
Date Received: 2/19/2021 16:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	73.7	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:55	SRT	J1
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:55	SRT	J1
Magnesium, Total	30.5	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:55	SRT	J1
Manganese, Total	0.33	C	mg/L	0.0056	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:55	SRT	J1
Potassium, Total	5.7	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:55	SRT	J1
Sodium, Total	69.4	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:55	SRT	J1
FIELD PARAMETERS										
Elev Top MW Casing above MSL	474.60	C	Feet		Field			2/19/21 14:48	BGS	C
Ground Water Elevation	474.60	C	ft/MSL		Field			2/19/21 14:48	BGS	C
pH, Field (SM4500B)	563.00	C	pH_Units		Field			2/19/21 14:48	BGS	C
Sample Depth	135.00	C	Feet		Field			2/19/21 14:48	BGS	C
Specific Conductance, Field	1686	C	umhos/cm	1	Field			2/19/21 14:48	BGS	C
Temperature	7.31	C	Deg. C		Field			2/19/21 14:48	BGS	C
Total Well Depth	149.80	C	Feet		Field			2/19/21 14:48	BGS	C
Volume in Water Column	0.00	C	Gallons		Field			2/19/21 14:48	BGS	C


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ANALYTICAL RESULTS

Workorder: 3158904 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158904005**
Sample ID: **FIELD BLANK**

Date Collected: 2/19/2021 15:35 Matrix: Water
Date Received: 2/19/2021 16:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:54	PDK	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:54	PDK	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:54	PDK	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:54	PDK	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:54	PDK	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:54	PDK	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:54	PDK	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:54	PDK	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:54	PDK	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:54	PDK	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:54	PDK	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/23/21 22:54	PDK	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:54	PDK	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:54	PDK	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:54	PDK	G
<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)	107	C	%	62 - 133	SW846 8260B			2/23/21 22:54	PDK	G
4-Bromofluorobenzene (S)	89.8	C	%	79 - 114	SW846 8260B			2/23/21 22:54	PDK	G
Dibromofluoromethane (S)	102	C	%	78 - 116	SW846 8260B			2/23/21 22:54	PDK	G
Toluene-d8 (S)	95.6	C	%	76 - 127	SW846 8260B			2/23/21 22:54	PDK	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	ND	C	mg/L	5	SM2320B-2011			2/28/21 01:37	LXZ	B
Alkalinity, Total	ND	C,2	mg/L	5	SM2320B-2011			2/28/21 01:37	LXZ	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			2/23/21 20:21	JXL	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			2/28/21 02:30	JAM	A
Chloride	ND	C	mg/L	1.0	EPA 300.0			2/20/21 13:04	MBW	B
Fluoride	ND	C	mg/L	0.10	EPA 300.0			2/20/21 13:04	MBW	B
Nitrate-N	ND	C	mg/L	0.10	EPA 300.0			2/20/21 13:04	MBW	B
pH	5.72	C,1	pH_Units		S4500HB-11			2/24/21 18:15	LXZ	B
Phenolics	0.005	C	mg/L	0.005	SW846 9066	2/22/21 00:30	VXF	2/24/21 20:25	VXF	F
Specific Conductance	1	C	umhos/cm	1	SW846 9050A			2/28/21 01:37	LXZ	B
Sulfate	ND	C	mg/L	1.0	EPA 300.0			2/20/21 13:04	MBW	B
Total Dissolved Solids	ND	C	mg/L	25	S2540C-11			2/23/21 14:47	KMM	B
Total Organic Carbon (TOC)	ND	C	mg/L	0.50	SW846 9060A			2/23/21 08:09	PAG	D
Turbidity	ND	C	NTU	0.10	SM2130B-2011			2/20/21 07:20	MBW	B

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ANALYTICAL RESULTS

Workorder: 3158904 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158904005**
Sample ID: **FIELD BLANK**

Date Collected: 2/19/2021 15:35 Matrix: Water
Date Received: 2/19/2021 16:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	ND	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:58	SRT	J1
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:58	SRT	J1
Magnesium, Total	ND	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:58	SRT	J1
Manganese, Total	ND	C	mg/L	0.0056	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:58	SRT	J1
Potassium, Total	ND	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:58	SRT	J1
Sodium, Total	ND	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 14:58	SRT	J1

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Project Coordinator

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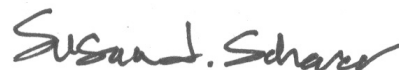
ANALYTICAL RESULTS

Workorder: 3158904 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158904006**
Sample ID: **TRIP BLANK**

Date Collected: 2/19/2021 16:36 Matrix: Water
Date Received: 2/19/2021 16:36

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:31	PDK	A
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:31	PDK	A
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:31	PDK	A
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:31	PDK	A
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:31	PDK	A
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:31	PDK	A
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:31	PDK	A
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:31	PDK	A
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:31	PDK	A
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:31	PDK	A
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:31	PDK	A
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/23/21 22:31	PDK	A
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:31	PDK	A
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:31	PDK	A
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/23/21 22:31	PDK	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)	107	C	%	62 - 133	SW846 8260B			2/23/21 22:31	PDK	A
4-Bromofluorobenzene (S)	89.9	C	%	79 - 114	SW846 8260B			2/23/21 22:31	PDK	A
Dibromofluoromethane (S)	104	C	%	78 - 116	SW846 8260B			2/23/21 22:31	PDK	A
Toluene-d8 (S)	95.6	C	%	76 - 127	SW846 8260B			2/23/21 22:31	PDK	A



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ANALYTICAL RESULTS

Workorder: 3158904 1ST QTR 2021 GWMP-FORM 19Q

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3158904001	1	FFMP031W	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158904001	2	FFMP031W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3158904002	1	FFMP002W	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158904002	2	FFMP002W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3158904002	3	FFMP002W	EPA 300.0	Nitrate-N
The sample was originally run within hold time, but required further analysis that exceeded hold time.				
3158904003	1	FFMP032W	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158904003	2	FFMP032W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3158904004	1	FFMP016W	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158904004	2	FFMP016W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3158904005	1	FIELD BLANK	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158904005	2	FIELD BLANK	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3158904 1ST QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3158904001	FFMP031W	ASTM D6919-09		
3158904001	FFMP031W	EPA 300.0		
3158904001	FFMP031W	EPA 410.4		
3158904001	FFMP031W	Field		
3158904001	FFMP031W	S2540C-11		
3158904001	FFMP031W	S4500HB-11		
3158904001	FFMP031W	SM2130B-2011		
3158904001	FFMP031W	SM2320B-2011		
3158904001	FFMP031W	SW846 6010C	SW846 3015	
3158904001	FFMP031W	SW846 8260B		
3158904001	FFMP031W	SW846 9050A		
3158904001	FFMP031W	SW846 9060A		
3158904001	FFMP031W	SW846 9066	420.4/9066	
3158904002	FFMP002W	ASTM D6919-09		
3158904002	FFMP002W	EPA 300.0		
3158904002	FFMP002W	EPA 410.4		
3158904002	FFMP002W	Field		
3158904002	FFMP002W	S2540C-11		
3158904002	FFMP002W	S4500HB-11		
3158904002	FFMP002W	SM2130B-2011		
3158904002	FFMP002W	SM2320B-2011		
3158904002	FFMP002W	SW846 6010C	SW846 3015	
3158904002	FFMP002W	SW846 8260B		
3158904002	FFMP002W	SW846 9050A		
3158904002	FFMP002W	SW846 9060A		
3158904002	FFMP002W	SW846 9066	420.4/9066	
3158904003	FFMP032W	ASTM D6919-09		
3158904003	FFMP032W	EPA 300.0		
3158904003	FFMP032W	EPA 410.4		
3158904003	FFMP032W	Field		
3158904003	FFMP032W	S2540C-11		
3158904003	FFMP032W	S4500HB-11		
3158904003	FFMP032W	SM2130B-2011		
3158904003	FFMP032W	SM2320B-2011		
3158904003	FFMP032W	SW846 6010C	SW846 3015	
3158904003	FFMP032W	SW846 8260B		
3158904003	FFMP032W	SW846 9050A		
3158904003	FFMP032W	SW846 9060A		
3158904003	FFMP032W	SW846 9066	420.4/9066	
3158904004	FFMP016W	ASTM D6919-09		
3158904004	FFMP016W	EPA 300.0		
3158904004	FFMP016W	EPA 410.4		
3158904004	FFMP016W	Field		
3158904004	FFMP016W	S2540C-11		
3158904004	FFMP016W	S4500HB-11		
3158904004	FFMP016W	SM2130B-2011		

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3158904 1ST QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3158904004	FFMP016W	SM2320B-2011		
3158904004	FFMP016W	SW846 6010C	SW846 3015	
3158904004	FFMP016W	SW846 8260B		
3158904004	FFMP016W	SW846 9050A		
3158904004	FFMP016W	SW846 9060A		
3158904004	FFMP016W	SW846 9066	420.4/9066	
3158904005	FIELD BLANK	ASTM D6919-09		
3158904005	FIELD BLANK	EPA 300.0		
3158904005	FIELD BLANK	EPA 410.4		
3158904005	FIELD BLANK	S2540C-11		
3158904005	FIELD BLANK	S4500HB-11		
3158904005	FIELD BLANK	SM2130B-2011		
3158904005	FIELD BLANK	SM2320B-2011		
3158904005	FIELD BLANK	SW846 6010C	SW846 3015	
3158904005	FIELD BLANK	SW846 8260B		
3158904005	FIELD BLANK	SW846 9050A		
3158904005	FIELD BLANK	SW846 9060A		
3158904005	FIELD BLANK	SW846 9066	420.4/9066	
3158904006	TRIP BLANK	SW846 8260B		

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301 Fulling Mill Road
Middletown, PA 17057

P: (717) 944-5511

F: (717) 944-1431

3158904

Condition of Sample Receipt Form

Client: EC SWMA

Lancaster County Solid Waste
Authority

Initials: Con

Date: 2/20/24

1. Were airbills / tracking numbers present and recorded?..... NONE YES NO
Tracking number: _____
2. Are Custody Seals on shipping containers intact?..... NONE YES NO
3. Are Custody Seals on sample containers intact?..... NONE YES NO
4. Is there a COC (Chain-of-Custody) present?..... YES NO
5. Are the COC and bottle labels complete, legible and in agreement?..... YES NO
- 5a. Does the COC contain sample locations?..... YES NO
- 5b. Does the COC contain date and time of sample collection for all samples?..... YES NO
- 5c. Does the COC contain sample collectors name?..... YES NO
- 5d. Does the COC note the type(s) of preservation for all bottles?..... YES NO
- 5e. Does the COC note the number of bottles submitted for each sample?..... YES NO
- 5f. Does the COC note the type of sample, composite or grab?..... YES NO
- 5g. Does the COC note the matrix of the sample(s)?..... YES NO
6. Are all aqueous samples requiring preservation preserved correctly?..... N/A YES NO
7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume?..... YES NO
8. Are all samples within holding times for the requested analyses?..... Placed on hold YES NO Con
9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.)..... YES NO 2/20
10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)?..... N/A YES NO
11. Were the samples received on ice?..... YES NO
12. Were sample temperatures measured at 0.0-6.0°C..... YES NO
13. Are the samples DW matrix ? If YES, fill out Reportable Drinking Water questions below..... YES NO
- 13a. Are the samples required for SDWA compliance reporting?..... N/A YES NO
- 13b. Did the client provide a SDWA PWS ID#?..... N/A YES NO
- 13c. Are all aqueous unpreserved SDWA samples pH 5-9?..... N/A YES NO
- 13d. Did the client provide the SDWA sample location ID/Description?..... N/A YES NO
- 13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)?..... N/A YES NO

Cooler #: _____

Temperature (°C): 6°

Thermometer ID: 524

Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

¹Final determination of correct preservation for analysis such as volatiles, microbiology, and oil and grease is made in the analytical department at the time of or following the analysis

March 1, 2021

Ms. Jordan Gallagher
Lancaster County Solid Waste Authority
1299 Hbg Pike, P.O. Box 4425
Lancaster, PA 17604

Certificate of Analysis

Project Name:	FREY FARM	Workorder:	3158263
Purchase Order:	PO-1000371	Workorder ID:	1ST QTR 2021 GWMP-FORM 19Q

Dear Ms. Gallagher:

Enclosed are the analytical results for samples received by the laboratory on Tuesday, February 16, 2021.

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.

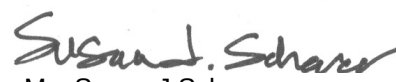
Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications 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: Ms. Ashley Gichuki , Mr. Daniel Brown , 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

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SAMPLE SUMMARY

Workorder: 3158263 1ST QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3158263001	FFMP015W	Ground Water	2/16/2021 10:43	2/16/2021 16:30	Mr. Brian G Shade
3158263002	FFMP033W	Ground Water	2/16/2021 12:08	2/16/2021 16:30	Mr. Brian G Shade
3158263003	FFMP028W	Ground Water	2/16/2021 13:36	2/16/2021 16:30	Mr. Brian G Shade
3158263004	FFMP025W	Ground Water	2/16/2021 14:24	2/16/2021 16:30	Mr. Brian G Shade
3158263005	FFMP029W	Ground Water	2/16/2021 15:32	2/16/2021 16:30	Mr. Brian G Shade

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SAMPLE SUMMARY

Workorder: 3158263 1ST QTR 2021 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.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

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

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PROJECT SUMMARY

Workorder: 3158263 1ST QTR 2021 GWMP-FORM 19Q

Workorder Comments

Temperature of sample taken at time of sample receipt in the laboratory. See chain of custody for actual temperature.

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ANALYTICAL RESULTS

Workorder: 3158263 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158263001**

Date Collected: 2/16/2021 10:43

Matrix: Ground Water

Sample ID: **FFMP015W**

Date Received: 2/16/2021 16:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:11	VLM	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:11	VLM	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:11	VLM	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:11	VLM	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:11	VLM	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:11	VLM	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:11	VLM	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:11	VLM	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:11	VLM	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:11	VLM	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:11	VLM	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/18/21 04:11	VLM	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:11	VLM	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:11	VLM	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:11	VLM	G
<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)	102	C	%	62 - 133	SW846 8260B			2/18/21 04:11	VLM	G
4-Bromofluorobenzene (S)	92.7	C	%	79 - 114	SW846 8260B			2/18/21 04:11	VLM	G
Dibromofluoromethane (S)	96.8	C	%	78 - 116	SW846 8260B			2/18/21 04:11	VLM	G
Toluene-d8 (S)	96.5	C	%	76 - 127	SW846 8260B			2/18/21 04:11	VLM	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	27	C	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	B
Alkalinity, Total	27	C,4	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			2/19/21 05:59	JXL	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			2/27/21 22:30	JAM	A
Chloride	38.2	C	mg/L	2.0	EPA 300.0			2/17/21 07:11	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/17/21 07:11	MBW	B
Nitrate-N	39.5	C,5	mg/L	1.0	EPA 300.0			2/23/21 07:28	MBW	B
pH	6.29	C,1	pH_Units		S4500HB-11			2/19/21 02:20	LXZ	B
Phenolics	ND	C,2,3	mg/L	0.005	SW846 9066	2/22/21 00:30	VXF	2/24/21 20:25	VXF	F
Specific Conductance	538	C	umhos/cm	1	SW846 9050A			2/20/21 01:10	LXZ	B
Sulfate	23.7	C	mg/L	2.0	EPA 300.0			2/17/21 07:11	MBW	B
Total Dissolved Solids	384	C	mg/L	25	S2540C-11			2/20/21 06:51	KMM	B
Total Organic Carbon (TOC)	1.4	C	mg/L	0.50	SW846 9060A			2/23/21 21:58	PAG	D

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ANALYTICAL RESULTS

Workorder: 3158263 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158263001**

Date Collected: 2/16/2021 10:43

Matrix: Ground Water

Sample ID: **FFMP015W**

Date Received: 2/16/2021 16:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Turbidity	ND	C	NTU	0.10	SM2130B-2011			2/17/21 12:44	R2B	B
METALS										
Calcium, Total	36.2	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:33	SRT	J1
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:33	SRT	J1
Magnesium, Total	26.2	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:33	SRT	J1
Manganese, Total	0.010	C	mg/L	0.0056	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:33	SRT	J1
Potassium, Total	2.6	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:33	SRT	J1
Sodium, Total	25.3	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:33	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	62.41	C	Feet		Field			2/16/21 10:43	BGS	C
Elev Top MW Casing above MSL	576.40	C	Feet		Field			2/16/21 10:43	BGS	C
Flow Rate	1.69	C	gal/min		Field			2/16/21 10:43	BGS	C
Ground Water Elevation	513.99	C	ft/MSL		Field			2/16/21 10:43	BGS	C
pH, Field (SM4500B)	5.63	C	pH_Units		Field			2/16/21 10:43	BGS	C
Sample Depth	135.00	C	Feet		Field			2/16/21 10:43	BGS	C
Specific Conductance, Field	596	C	umhos/cm	1	Field			2/16/21 10:43	BGS	C
Temperature	13.89	C	Deg. C		Field			2/16/21 10:43	BGS	C
Total Well Depth	149.90	C	Feet		Field			2/16/21 10:43	BGS	C
Volume in Water Column	128.61	C	Gallons		Field			2/16/21 10:43	BGS	C
Water Level After Purge	106.02	C	Feet		Field			2/16/21 10:43	BGS	C
Well Volumes Purged	0.92	C	Vol		Field			2/16/21 10:43	BGS	C



Ms. Susan J Scherer

Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3158263 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158263002**

Date Collected: 2/16/2021 12:08

Matrix: Ground Water

Sample ID: **FFMP033W**

Date Received: 2/16/2021 16:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:33	VLM	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:33	VLM	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:33	VLM	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:33	VLM	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:33	VLM	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:33	VLM	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:33	VLM	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:33	VLM	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:33	VLM	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:33	VLM	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:33	VLM	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/18/21 04:33	VLM	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:33	VLM	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:33	VLM	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:33	VLM	G
<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)	103	C	%	62 - 133	SW846 8260B			2/18/21 04:33	VLM	G
4-Bromofluorobenzene (S)	92.7	C	%	79 - 114	SW846 8260B			2/18/21 04:33	VLM	G
Dibromofluoromethane (S)	96.8	C	%	78 - 116	SW846 8260B			2/18/21 04:33	VLM	G
Toluene-d8 (S)	96.4	C	%	76 - 127	SW846 8260B			2/18/21 04:33	VLM	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	43	C	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	B
Alkalinity, Total	43	C,2	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	I
Ammonia-N	0.580	C	mg/L	0.100	ASTM D6919-09			2/19/21 06:13	JXL	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			2/25/21 16:00	AK	A
Chloride	45.0	C	mg/L	2.0	EPA 300.0			2/17/21 07:31	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/17/21 07:31	MBW	B
Nitrate-N	10.6	C	mg/L	0.20	EPA 300.0			2/17/21 07:31	MBW	B
pH	6.49	C,1	pH_Units		S4500HB-11			2/19/21 02:20	LXZ	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	2/22/21 00:30	VXF	2/24/21 20:25	VXF	F
Specific Conductance	354	C	umhos/cm	1	SW846 9050A			2/20/21 01:10	LXZ	B
Sulfate	5.0	C	mg/L	2.0	EPA 300.0			2/17/21 07:31	MBW	B
Total Dissolved Solids	214	C	mg/L	25	S2540C-11			2/22/21 13:57	KMM	B
Total Organic Carbon (TOC)	0.58	C	mg/L	0.50	SW846 9060A			2/17/21 20:45	PAG	D
Turbidity	11.5	C	NTU	0.10	SM2130B-2011			2/17/21 12:44	R2B	B

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ANALYTICAL RESULTS

Workorder: 3158263 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158263002**

Date Collected: 2/16/2021 12:08

Matrix: Ground Water

Sample ID: **FFMP033W**

Date Received: 2/16/2021 16:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	28.2	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:37	SRT	J1
Iron, Total	6.1	C	mg/L	0.067	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:37	SRT	J1
Magnesium, Total	10.0	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:37	SRT	J1
Manganese, Total	0.44	C	mg/L	0.0056	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:37	SRT	J1
Potassium, Total	1.8	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:37	SRT	J1
Sodium, Total	14.4	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:37	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	18.71	C	Feet		Field			2/16/21 12:08	BGS	C
Elev Top MW Casing above MSL	516.52	C	Feet		Field			2/16/21 12:08	BGS	C
Flow Rate	1.72	C	gal/min		Field			2/16/21 12:08	BGS	C
Ground Water Elevation	497.81	C	ft/MSL		Field			2/16/21 12:08	BGS	C
pH, Field (SM4500B)	5.90	C	pH_Units		Field			2/16/21 12:08	BGS	C
Sample Depth	79.00	C	Feet		Field			2/16/21 12:08	BGS	C
Specific Conductance, Field	381	C	umhos/cm	1	Field			2/16/21 12:08	BGS	C
Temperature	14.93	C	Deg. C		Field			2/16/21 12:08	BGS	C
Total Well Depth	100.00	C	Feet		Field			2/16/21 12:08	BGS	C
Volume in Water Column	119.50	C	Gallons		Field			2/16/21 12:08	BGS	C
Water Level After Purge	31.72	C	Feet		Field			2/16/21 12:08	BGS	C
Well Volumes Purged	0.86	C	Vol		Field			2/16/21 12:08	BGS	C



Ms. Susan J Scherer

Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3158263 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158263003**

Date Collected: 2/16/2021 13:36

Matrix: Ground Water

Sample ID: **FFMP028W**

Date Received: 2/16/2021 16:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:56	VLM	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:56	VLM	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:56	VLM	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:56	VLM	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:56	VLM	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:56	VLM	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:56	VLM	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:56	VLM	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:56	VLM	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:56	VLM	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:56	VLM	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/18/21 04:56	VLM	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:56	VLM	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:56	VLM	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/18/21 04:56	VLM	G
<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)	102	C	%	62 - 133	SW846 8260B			2/18/21 04:56	VLM	G
4-Bromofluorobenzene (S)	94.7	C	%	79 - 114	SW846 8260B			2/18/21 04:56	VLM	G
Dibromofluoromethane (S)	97.8	C	%	78 - 116	SW846 8260B			2/18/21 04:56	VLM	G
Toluene-d8 (S)	96.2	C	%	76 - 127	SW846 8260B			2/18/21 04:56	VLM	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	26	C	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	B
Alkalinity, Total	26	C,2	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			2/19/21 06:28	JXL	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			2/25/21 16:00	AK	A
Chloride	87.3	C	mg/L	2.0	EPA 300.0			2/17/21 09:33	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/17/21 09:33	MBW	B
Nitrate-N	13.9	C	mg/L	0.20	EPA 300.0			2/17/21 09:33	MBW	B
pH	6.28	C,1	pH_Units		S4500HB-11			2/19/21 02:20	LXZ	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	2/22/21 00:30	VXF	2/24/21 20:25	VXF	F
Specific Conductance	541	C	umhos/cm	1	SW846 9050A			2/20/21 01:10	LXZ	B
Sulfate	23.1	C	mg/L	2.0	EPA 300.0			2/17/21 09:33	MBW	B
Total Dissolved Solids	322	C	mg/L	25	S2540C-11			2/22/21 13:57	KMM	B
Total Organic Carbon (TOC)	1.1	C	mg/L	0.50	SW846 9060A			2/17/21 20:45	PAG	D
Turbidity	0.11	C	NTU	0.10	SM2130B-2011			2/17/21 12:44	R2B	B

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ANALYTICAL RESULTS

Workorder: 3158263 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158263003**

Date Collected: 2/16/2021 13:36

Matrix: Ground Water

Sample ID: **FFMP028W**

Date Received: 2/16/2021 16:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	40.7	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:41	SRT	J1
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:41	SRT	J1
Magnesium, Total	17.4	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:41	SRT	J1
Manganese, Total	0.0060	C	mg/L	0.0056	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:41	SRT	J1
Potassium, Total	2.4	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:41	SRT	J1
Sodium, Total	27.3	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:41	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	10.71	C	Feet		Field			2/16/21 13:36	BGS	C
Elev Top MW Casing above MSL	465.00	C	Feet		Field			2/16/21 13:36	BGS	C
Flow Rate	2.55	C	gal/min		Field			2/16/21 13:36	BGS	C
Ground Water Elevation	454.29	C	ft/MSL		Field			2/16/21 13:36	BGS	C
pH, Field (SM4500B)	5.27	C	pH_Units		Field			2/16/21 13:36	BGS	C
Sample Depth	50.00	C	Feet		Field			2/16/21 13:36	BGS	C
Specific Conductance, Field	562	C	umhos/cm	1	Field			2/16/21 13:36	BGS	C
Temperature	12.96	C	Deg. C		Field			2/16/21 13:36	BGS	C
Total Well Depth	60.00	C	Feet		Field			2/16/21 13:36	BGS	C
Volume in Water Column	72.46	C	Gallons		Field			2/16/21 13:36	BGS	C
Water Level After Purge	34.63	C	Feet		Field			2/16/21 13:36	BGS	C
Well Volumes Purged	2.46	C	Vol		Field			2/16/21 13:36	BGS	C



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ANALYTICAL RESULTS

Workorder: 3158263 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158263004**

Date Collected: 2/16/2021 14:24

Matrix: Ground Water

Sample ID: **FFMP025W**

Date Received: 2/16/2021 16:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:18	VLM	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:18	VLM	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:18	VLM	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:18	VLM	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:18	VLM	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:18	VLM	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:18	VLM	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:18	VLM	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:18	VLM	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:18	VLM	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:18	VLM	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/18/21 05:18	VLM	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:18	VLM	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:18	VLM	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:18	VLM	G
<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)	105	C	%	62 - 133	SW846 8260B			2/18/21 05:18	VLM	G
4-Bromofluorobenzene (S)	95.3	C	%	79 - 114	SW846 8260B			2/18/21 05:18	VLM	G
Dibromofluoromethane (S)	97.6	C	%	78 - 116	SW846 8260B			2/18/21 05:18	VLM	G
Toluene-d8 (S)	97.6	C	%	76 - 127	SW846 8260B			2/18/21 05:18	VLM	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	23	C	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	B
Alkalinity, Total	23	C,2	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			2/19/21 06:43	JXL	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			2/25/21 16:00	AK	A
Chloride	156	C	mg/L	2.0	EPA 300.0			2/17/21 09:53	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/17/21 09:53	MBW	B
Nitrate-N	5.7	C	mg/L	0.20	EPA 300.0			2/17/21 09:53	MBW	B
pH	6.23	C,1	pH_Units		S4500HB-11			2/19/21 02:20	LXZ	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	2/22/21 00:30	VXF	2/24/21 20:25	VXF	F
Specific Conductance	722	C	umhos/cm	1	SW846 9050A			2/20/21 01:10	LXZ	B
Sulfate	26.0	C	mg/L	2.0	EPA 300.0			2/17/21 09:53	MBW	B
Total Dissolved Solids	426	C	mg/L	25	S2540C-11			2/22/21 13:57	KMM	B
Total Organic Carbon (TOC)	1.3	C	mg/L	0.50	SW846 9060A			2/17/21 20:45	PAG	D
Turbidity	0.17	C	NTU	0.10	SM2130B-2011			2/17/21 12:44	R2B	B

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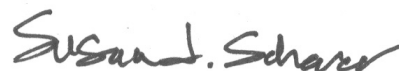
ANALYTICAL RESULTS

Workorder: 3158263 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158263004**
Sample ID: **FFMP025W**

Date Collected: 2/16/2021 14:24 Matrix: Ground Water
Date Received: 2/16/2021 16:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	46.8	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:45	SRT	J1
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:45	SRT	J1
Magnesium, Total	23.0	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:45	SRT	J1
Manganese, Total	0.0092	C	mg/L	0.0056	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:45	SRT	J1
Potassium, Total	4.1	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:45	SRT	J1
Sodium, Total	44.2	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:45	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	22.71	C	Feet		Field			2/16/21 14:24	BGS	C
Elev Top MW Casing above MSL	476.80	C	Feet		Field			2/16/21 14:24	BGS	C
Flow Rate	2.73	C	gal/min		Field			2/16/21 14:24	BGS	C
Ground Water Elevation	454.09	C	ft/MSL		Field			2/16/21 14:24	BGS	C
pH, Field (SM4500B)	5.37	C	pH_Units		Field			2/16/21 14:24	BGS	C
Sample Depth	39.00	C	Feet		Field			2/16/21 14:24	BGS	C
Specific Conductance, Field	746	C	umhos/cm	1	Field			2/16/21 14:24	BGS	C
Temperature	13.05	C	Deg. C		Field			2/16/21 14:24	BGS	C
Total Well Depth	41.50	C	Feet		Field			2/16/21 14:24	BGS	C
Volume in Water Column	27.62	C	Gallons		Field			2/16/21 14:24	BGS	C
Water Level After Purge	23.36	C	Feet		Field			2/16/21 14:24	BGS	C
Well Volumes Purged	2.47	C	Vol		Field			2/16/21 14:24	BGS	C



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ANALYTICAL RESULTS

Workorder: 3158263 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158263005**

Date Collected: 2/16/2021 15:32

Matrix: Ground Water

Sample ID: **FFMP029W**

Date Received: 2/16/2021 16:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Benzene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:41	VLM	G
1,2-Dibromoethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:41	VLM	G
1,1-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:41	VLM	G
1,2-Dichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:41	VLM	G
1,1-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:41	VLM	G
cis-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:41	VLM	G
trans-1,2-Dichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:41	VLM	G
Ethylbenzene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:41	VLM	G
Methylene Chloride	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:41	VLM	G
Tetrachloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:41	VLM	G
Toluene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:41	VLM	G
Total Xylenes	ND	C	ug/L	3.0	SW846 8260B			2/18/21 05:41	VLM	G
1,1,1-Trichloroethane	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:41	VLM	G
Trichloroethene	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:41	VLM	G
Vinyl Chloride	ND	C	ug/L	1.0	SW846 8260B			2/18/21 05:41	VLM	G
<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)	102	C	%	62 - 133	SW846 8260B			2/18/21 05:41	VLM	G
4-Bromofluorobenzene (S)	95.3	C	%	79 - 114	SW846 8260B			2/18/21 05:41	VLM	G
Dibromofluoromethane (S)	98.1	C	%	78 - 116	SW846 8260B			2/18/21 05:41	VLM	G
Toluene-d8 (S)	97.8	C	%	76 - 127	SW846 8260B			2/18/21 05:41	VLM	G
WET CHEMISTRY										
Alkalinity, Bicarbonate	11	C	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	B
Alkalinity, Total	11	C,2	mg/L	5	SM2320B-2011			2/19/21 02:20	LXZ	I
Ammonia-N	ND	C	mg/L	0.100	ASTM D6919-09			2/19/21 06:58	JXL	A
Chemical Oxygen Demand (COD)	ND	C	mg/L	15	EPA 410.4			2/25/21 16:00	AK	A
Chloride	53.7	C	mg/L	2.0	EPA 300.0			2/17/21 10:13	MBW	B
Fluoride	ND	C	mg/L	0.20	EPA 300.0			2/17/21 10:13	MBW	B
Nitrate-N	3.6	C	mg/L	0.20	EPA 300.0			2/17/21 10:13	MBW	B
pH	5.94	C,1	pH_Units		S4500HB-11			2/19/21 02:20	LXZ	B
Phenolics	ND	C	mg/L	0.005	SW846 9066	2/22/21 00:30	VXF	2/24/21 20:25	VXF	F
Specific Conductance	260	C	umhos/cm	1	SW846 9050A			2/20/21 01:10	LXZ	B
Sulfate	4.6	C	mg/L	2.0	EPA 300.0			2/17/21 10:13	MBW	B
Total Dissolved Solids	146	C	mg/L	25	S2540C-11			2/22/21 13:57	KMM	B
Total Organic Carbon (TOC)	0.60	C	mg/L	0.50	SW846 9060A			2/17/21 20:45	PAG	D
Turbidity	0.24	C	NTU	0.10	SM2130B-2011			2/17/21 12:44	R2B	B

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ANALYTICAL RESULTS

Workorder: 3158263 1ST QTR 2021 GWMP-FORM 19Q

Lab ID: **3158263005**

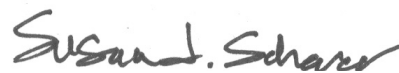
Date Collected: 2/16/2021 15:32

Matrix: Ground Water

Sample ID: **FFMP029W**

Date Received: 2/16/2021 16:30

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
METALS										
Calcium, Total	11.8	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:48	SRT	J1
Iron, Total	ND	C	mg/L	0.067	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:48	SRT	J1
Magnesium, Total	9.1	C	mg/L	0.11	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:48	SRT	J1
Manganese, Total	0.027	C	mg/L	0.0056	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:48	SRT	J1
Potassium, Total	2.3	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:48	SRT	J1
Sodium, Total	20.2	C	mg/L	0.56	SW846 6010C	2/20/21 15:55	AHI	2/22/21 11:48	SRT	J1
FIELD PARAMETERS										
Depth to Water Level	37.48	C	Feet		Field			2/16/21 15:32	BGS	C
Elev Top MW Casing above MSL	477.30	C	Feet		Field			2/16/21 15:32	BGS	C
Flow Rate	2.56	C	gal/min		Field			2/16/21 15:32	BGS	C
Ground Water Elevation	439.82	C	ft/MSL		Field			2/16/21 15:32	BGS	C
pH, Field (SM4500B)	5.02	C	pH_Units		Field			2/16/21 15:32	BGS	C
Sample Depth	55.00	C	Feet		Field			2/16/21 15:32	BGS	C
Specific Conductance, Field	279	C	umhos/cm	1	Field			2/16/21 15:32	BGS	C
Temperature	14.39	C	Deg. C		Field			2/16/21 15:32	BGS	C
Total Well Depth	60.50	C	Feet		Field			2/16/21 15:32	BGS	C
Volume in Water Column	33.84	C	Gallons		Field			2/16/21 15:32	BGS	C
Water Level After Purge	43.92	C	Feet		Field			2/16/21 15:32	BGS	C
Well Volumes Purged	3.41	C	Vol		Field			2/16/21 15:32	BGS	C



Ms. Susan J Scherer

Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3158263 1ST QTR 2021 GWMP-FORM 19Q

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3158263001	1	FFMP015W	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158263001	2	FFMP015W	SW846 9066	Phenolics
The QC sample type MS for method 9066 was outside the control limits for the analyte Phenolics. The % Recovery was reported as 86.2 and the control limits were 90 to 110.				
3158263001	3	FFMP015W	SW846 9066	Phenolics
The QC sample type MSD for method 9066 was outside the control limits for the analyte Phenolics. The % Recovery was reported as 87.3 and the control limits were 90 to 110.				
3158263001	4	FFMP015W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3158263001	5	FFMP015W	EPA 300.0	Nitrate-N
The sample was originally run within hold time, but required further analysis that exceeded hold time.				
3158263002	1	FFMP033W	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158263002	2	FFMP033W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3158263003	1	FFMP028W	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158263003	2	FFMP028W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3158263004	1	FFMP025W	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158263004	2	FFMP025W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				
3158263005	1	FFMP029W	S4500HB-11	pH
The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory.				
3158263005	2	FFMP029W	SM2320B-2011	Alkalinity, Total
The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /L.				

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3158263 1ST QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3158263001	FFMP015W	ASTM D6919-09		
3158263001	FFMP015W	EPA 300.0		
3158263001	FFMP015W	EPA 410.4		
3158263001	FFMP015W	Field		
3158263001	FFMP015W	S2540C-11		
3158263001	FFMP015W	S4500HB-11		
3158263001	FFMP015W	SM2130B-2011		
3158263001	FFMP015W	SM2320B-2011		
3158263001	FFMP015W	SW846 6010C	SW846 3015	
3158263001	FFMP015W	SW846 8260B		
3158263001	FFMP015W	SW846 9050A		
3158263001	FFMP015W	SW846 9060A		
3158263001	FFMP015W	SW846 9066	420.4/9066	
3158263002	FFMP033W	ASTM D6919-09		
3158263002	FFMP033W	EPA 300.0		
3158263002	FFMP033W	EPA 410.4		
3158263002	FFMP033W	Field		
3158263002	FFMP033W	S2540C-11		
3158263002	FFMP033W	S4500HB-11		
3158263002	FFMP033W	SM2130B-2011		
3158263002	FFMP033W	SM2320B-2011		
3158263002	FFMP033W	SW846 6010C	SW846 3015	
3158263002	FFMP033W	SW846 8260B		
3158263002	FFMP033W	SW846 9050A		
3158263002	FFMP033W	SW846 9060A		
3158263002	FFMP033W	SW846 9066	420.4/9066	
3158263003	FFMP028W	ASTM D6919-09		
3158263003	FFMP028W	EPA 300.0		
3158263003	FFMP028W	EPA 410.4		
3158263003	FFMP028W	Field		
3158263003	FFMP028W	S2540C-11		
3158263003	FFMP028W	S4500HB-11		
3158263003	FFMP028W	SM2130B-2011		
3158263003	FFMP028W	SM2320B-2011		
3158263003	FFMP028W	SW846 6010C	SW846 3015	
3158263003	FFMP028W	SW846 8260B		
3158263003	FFMP028W	SW846 9050A		
3158263003	FFMP028W	SW846 9060A		
3158263003	FFMP028W	SW846 9066	420.4/9066	
3158263004	FFMP025W	ASTM D6919-09		
3158263004	FFMP025W	EPA 300.0		
3158263004	FFMP025W	EPA 410.4		
3158263004	FFMP025W	Field		
3158263004	FFMP025W	S2540C-11		
3158263004	FFMP025W	S4500HB-11		
3158263004	FFMP025W	SM2130B-2011		

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ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3158263 1ST QTR 2021 GWMP-FORM 19Q

Lab ID	Sample ID	Analysis Method	Prep Method	Leachate Method
3158263004	FFMP025W	SM2320B-2011		
3158263004	FFMP025W	SW846 6010C	SW846 3015	
3158263004	FFMP025W	SW846 8260B		
3158263004	FFMP025W	SW846 9050A		
3158263004	FFMP025W	SW846 9060A		
3158263004	FFMP025W	SW846 9066	420.4/9066	
3158263005	FFMP029W	ASTM D6919-09		
3158263005	FFMP029W	EPA 300.0		
3158263005	FFMP029W	EPA 410.4		
3158263005	FFMP029W	Field		
3158263005	FFMP029W	S2540C-11		
3158263005	FFMP029W	S4500HB-11		
3158263005	FFMP029W	SM2130B-2011		
3158263005	FFMP029W	SM2320B-2011		
3158263005	FFMP029W	SW846 6010C	SW846 3015	
3158263005	FFMP029W	SW846 8260B		
3158263005	FFMP029W	SW846 9050A		
3158263005	FFMP029W	SW846 9060A		
3158263005	FFMP029W	SW846 9066	420.4/9066	

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301 Fulling Mill Road
Middletown, PA 17057

P: (717) 944-5541

F: (717) 944-1430

3158263

on of Sample Receipt Form

Client: LCSUMA Work

Lancaster County Solid Waste
Authority

Initials: TS

Date: 2/7/21

1. Were airbills / tracking numbers present and recorded? NONE YES NO
Tracking number: _____
2. Are Custody Seals on shipping containers intact? NONE YES NO
3. Are Custody Seals on sample containers intact? NONE YES NO
4. Is there a COC (Chain-of-Custody) present? YES YES NO
5. Are the COC and bottle labels complete, legible and in agreement? YES YES NO
- 5a. Does the COC contain sample locations? YES YES NO
- 5b. Does the COC contain date and time of sample collection for all samples? YES YES NO
- 5c. Does the COC contain sample collectors name? YES YES NO
- 5d. Does the COC note the type(s) of preservation for all bottles? YES YES NO
- 5e. Does the COC note the number of bottles submitted for each sample? YES YES NO
- 5f. Does the COC note the type of sample, composite or grab? YES YES NO
- 5g. Does the COC note the matrix of the sample(s)? YES YES NO
6. Are all aqueous samples requiring preservation preserved correctly? N/A YES NO
7. Were all samples placed in the proper containers for the requested analyses, with sufficient volume? YES YES NO
8. Are all samples within holding times for the requested analyses? YES YES NO
9. Were all sample containers received intact and headspace free when required? (not broken, leaking, frozen, etc.) YES YES NO
10. Did we receive trip blanks (applies only for methods EPA 504, EPA 524.2 and 1631E (LL Hg)? N/A YES NO
11. Were the samples received on ice? YES YES NO
12. Were sample temperatures measured at 0.0-6.0°C YES YES NO
13. Are the samples DW matrix? If YES, fill out Reportable Drinking Water questions below. YES NO
- 13a. Are the samples required for SDWA compliance reporting? N/A YES NO
- 13b. Did the client provide a SDWA PWS ID#? N/A YES NO
- 13c. Are all aqueous unpreserved SDWA samples pH 5-9? N/A YES NO
- 13d. Did the client provide the SDWA sample location ID/Description? N/A YES NO
- 13e. Did the client provide the SDWA sample type (D, E, R, C, P, S)? N/A YES NO

Cooler #: _____

Temperature (°C): 2 _____

Thermometer ID: 401 _____

Radiological (µCi): _____

COMMENTS (Required for all NO responses above and any sample non-conformance):

¹Final determination of correct preservation for analysis such as volatiles, microbiology, and oil and grease is made in the analytical department at the time of or following the analysis