2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP018W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 27.61 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.46 ft — Elevation of Water Level: 444.59 ft./MSL

Sampling Depth: 40 ft — Volume of Water Column: 15.55 gal

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

Well Purged: X Yes ___ No — Well Volumes Purged: 4.6

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/6/2023 — Sample Collection Time: 10:42

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3331427001 — Final Lab Analysis CompletionDate: 11/18/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP018W
Sample Date	11/6/2023

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	0.158	D6919-09
BICARBONATE ALKALINITY	19	SM20-2320B
CALCIUM, TOTAL	36.4	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	142	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	21.3	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	250	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	4.5	EPA 300
pH-FIELD (SU)	5.01	FIELD
pH-LAB (SU)	6.77	SM20-4500HB
POTASSIUM, TOTAL	3.9	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	41.9	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	852	FIELD
SPEC. COND., LAB (umhos/cm)	603	SW846 9050A
SULFATE	38.1	EPA 300
ALKALINITY	19	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	372	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.62	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	0.45	SM 2130B

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

I.D. No	101389
Monitoring Point No.	FFMP018W
Sample Date	11/6/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP019W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 28.34 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.79 ft — Elevation of Water Level: 443.61 ft./MSL

Sampling Depth: 49 ft — Volume of Water Column: 68.18 gal

Total Well Depth: 132.79 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.9

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/6/2023 — Sample Collection Time: 11:39

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3331427002 — Final Lab Analysis CompletionDate: 11/18/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP019W
Sample Date	11/6/2023

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	0.138	D6919-09
BICARBONATE ALKALINITY	69	SM20-2320B
CALCIUM, TOTAL	67.5	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	97.3	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	6.7	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	5.9	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	1 ND	EPA 300
pH-FIELD (SU)	6.5	FIELD
pH-LAB (SU)	7.75	SM20-4500HB
POTASSIUM, TOTAL	1	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	12	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	684	FIELD
SPEC. COND., LAB (umhos/cm)	476	SW846 9050A
SULFATE	17.4	EPA 300
ALKALINITY	69	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	348	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.6	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	0.3 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	11/6/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP029W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 39.59 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.00 ft — Elevation of Water Level: 437.71 ft./MSL

Sampling Depth: 55 ft — Volume of Water Column: 27.77 gal

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

Well Purged: X Yes ___ No — Well Volumes Purged: 4.4

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/7/2023 — Sample Collection Time: 9:47

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3331664001 — Final Lab Analysis CompletionDate: 11/22/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP029W
Sample Date	11/7/2023

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	0.132	D6919-09
BICARBONATE ALKALINITY	12	SM20-2320B
CALCIUM, TOTAL	18.9	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	89.9	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	12.6	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	47	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	3.8	EPA 300
pH-FIELD (SU)	5.17	FIELD
pH-LAB (SU)	6.59	SM20-4500HB
POTASSIUM, TOTAL	2.6	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	27.2	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	495	FIELD
SPEC. COND., LAB (umhos/cm)	374	SW846 9050A
SULFATE	9.4	EPA 300
ALKALINITY	12	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	214	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	0.3	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	11/7/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP005W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 74.86 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.70 ft — Elevation of Water Level: 462.54 ft./MSL

Sampling Depth: 135 ft — Volume of Water Column: 110.35 gal

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

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/7/2023 — Sample Collection Time: 11:56

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3331664002 — Final Lab Analysis CompletionDate: 11/22/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP005W
Sample Date	11/7/2023

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	0.14	D6919-09
BICARBONATE ALKALINITY	59	SM20-2320B
CALCIUM, TOTAL	80.1	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	185	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	19.8	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	170	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	1.7	EPA 300
pH-FIELD (SU)	5.58	FIELD
pH-LAB (SU)	7.46	SM20-4500HB
POTASSIUM, TOTAL	3	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	50.2	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1151	FIELD
SPEC. COND., LAB (umhos/cm)	857	SW846 9050A
SULFATE	68.9	EPA 300
ALKALINITY	59	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	512	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.1	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	0.3 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	11/7/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP26RW — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 87.22 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 3.30 ft — Elevation of Water Level: 460.18 ft./MSL

Sampling Depth: 105 ft — Volume of Water Column: 39.33 gal

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

Well Purged: X Yes ___ No — Well Volumes Purged: 2.1

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/7/2023 — Sample Collection Time: 13:22

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3331664003 — Final Lab Analysis CompletionDate: 11/21/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP26RW
Sample Date	11/7/2023

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	63	SM20-2320B
CALCIUM, TOTAL	73.5	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	177	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	20	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	700	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	1.2	EPA 300
pH-FIELD (SU)	5.52	FIELD
pH-LAB (SU)	7.42	SM20-4500HB
POTASSIUM, TOTAL	6.8	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	61.1	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1180	FIELD
SPEC. COND., LAB (umhos/cm)	883	SW846 9050A
SULFATE	91.6	EPA 300
ALKALINITY	63	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	532	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.5	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	1	SM 2130B

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

I.D. No	101389
Monitoring Point No.	FFMP26RW
Sample Date	11/7/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP03AW — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 54.31 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.20 ft — Elevation of Water Level: 536.59 ft./MSL

Sampling Depth: 130 ft — Volume of Water Column: 136.42 gal

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

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/7/2023 — Sample Collection Time: 14:30

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3331664004 — Final Lab Analysis CompletionDate: 11/21/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP03AW
Sample Date	11/7/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

ANALYTES

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

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
AMMONIA-NITROGEN	0.1 ND	D6919-09
BICARBONATE ALKALINITY	14	SM20-2320B
CALCIUM, TOTAL	21.8	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	40.8	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)	430	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	23.8 E	EPA 300
pH-FIELD (SU)	4.99	FIELD
pH-LAB (SU)	6.91	SM20-4500HB
POTASSIUM, TOTAL	1.6	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	15.5	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	492	FIELD
SPEC. COND., LAB (umhos/cm)	369	SW846 9050A
SULFATE	3.6	EPA 300
ALKALINITY	14	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	244	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	0.3 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	11/7/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP017W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 42.66 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.00 ft — Elevation of Water Level: 438.04 ft./MSL

Sampling Depth: 135 ft — Volume of Water Column: 158.38 gal

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

Well Purged: X Yes ___ No — Well Volumes Purged: 0.5

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/8/2023 — Sample Collection Time: 9:48

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3331939001 — Final Lab Analysis CompletionDate: 11/22/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP017W
Sample Date	11/8/2023

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	0.116	D6919-09
BICARBONATE ALKALINITY	123	SM20-2320B
CALCIUM, TOTAL	102	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	259	EPA 300
FLUORIDE	0.5 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	38.7	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	700	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	2.8	EPA 300
pH-FIELD (SU)	5.86	FIELD
pH-LAB (SU)	7.74	SM20-4500HB
POTASSIUM, TOTAL	4.9	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	91.6	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1654	FIELD
SPEC. COND., LAB (umhos/cm)	1220	SW846 9050A
SULFATE	83.5	EPA 300
ALKALINITY	123	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	696	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	2.7	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	0.4	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.	FFMP017W
Sample Date	11/8/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP30RW — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 37.43 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.20 ft — Elevation of Water Level: 524.87 ft./MSL

Sampling Depth: 85 ft — Volume of Water Column: 77.21 gal

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

Well Purged: X Yes ___ No — Well Volumes Purged: 2.9

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/8/2023 — Sample Collection Time: 12:16

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3331939002 — Final Lab Analysis CompletionDate: 11/22/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP30RW
Sample Date	11/8/2023

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	0.133	D6919-09
BICARBONATE ALKALINITY	67	SM20-2320B
CALCIUM, TOTAL	87.2	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	323	EPA 300
FLUORIDE	0.5 ND	EPA 300
IRON, TOTAL (ug/l)	1300	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	21.5	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	3700	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	4.3	EPA 300
pH-FIELD (SU)	6.02	FIELD
pH-LAB (SU)	7.59	SM20-4500HB
POTASSIUM, TOTAL	9.5	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	139	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1844	FIELD
SPEC. COND., LAB (umhos/cm)	1310	SW846 9050A
SULFATE	62.2	EPA 300
ALKALINITY	67	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	800	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.9	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	18	SM 2130B

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

I.D. No	101389
Monitoring Point No.	FFMP30RW
Sample Date	11/8/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP04AW — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 38.78 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.52 ft — Elevation of Water Level: 521.94 ft./MSL

Sampling Depth: 146 ft — Volume of Water Column: 385.87 gal

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

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/8/2023 — Sample Collection Time: 13:31

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3331939003 — Final Lab Analysis CompletionDate: 11/22/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP04AW
Sample Date	11/8/2023

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	196	SM20-2320B
CALCIUM, TOTAL	173	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	326	EPA 300
FLUORIDE	0.5 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	28.6	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	400	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	2.5 ND	EPA 300
pH-FIELD (SU)	6.95	FIELD
pH-LAB (SU)	8.13	SM20-4500HB
POTASSIUM, TOTAL	2.8	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	93.6	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1981	FIELD
SPEC. COND., LAB (umhos/cm)	1470	SW846 9050A
SULFATE	54	EPA 300
ALKALINITY	196	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	904	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.71	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	0.5	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.	FFMP04AW
Sample Date	11/8/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP015W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 64.51 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.90 ft — Elevation of Water Level: 511.89 ft./MSL

Sampling Depth: 135 ft — Volume of Water Column: 123.94 gal

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

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/9/2023 — Sample Collection Time: 9:57

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3332235001 — Final Lab Analysis CompletionDate: 11/27/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP015W
Sample Date	11/9/2023

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	28	SM20-2320B
CALCIUM, TOTAL	33.8	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	37.9	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	27.8	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	12	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	34.2	EPA 300
pH-FIELD (SU)	5.52	FIELD
pH-LAB (SU)	7.3	SM20-4500HB
POTASSIUM, TOTAL	2.5	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	22.1	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	752	FIELD
SPEC. COND., LAB (umhos/cm)	518	SW846 9050A
SULFATE	26.8	EPA 300
ALKALINITY	28	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	348	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	0.35	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	11/9/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP033W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: MANOR TOWNSHIP

Sampling Point — Latitude: 39 ° 57 ' 31.09 " — Longitude: 76 ° 27 ' 4.98 "

Depth to Water Level: 20.89 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 0.49 ft — Elevation of Water Level: 495.63 ft./MSL

Sampling Depth: 79 ft — Volume of Water Column: 110.31 gal

Total Well Depth: 96 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

Well Purged: X Yes ___ No — Well Volumes Purged: 1.9

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/9/2023 — Sample Collection Time: 12:44

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3332235002 — Final Lab Analysis CompletionDate: 11/27/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP033W
Sample Date	11/9/2023

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	0.22	D6919-09
BICARBONATE ALKALINITY	28	SM20-2320B
CALCIUM, TOTAL	39.2	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	80.7	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	10700	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	14.1	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	260	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	11.5	EPA 300
pH-FIELD (SU)	5.46	FIELD
pH-LAB (SU)	7.16	SM20-4500HB
POTASSIUM, TOTAL	2	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	19.6	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	639	FIELD
SPEC. COND., LAB (umhos/cm)	439	SW846 9050A
SULFATE	12.1	EPA 300
ALKALINITY	28	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	304	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	55	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	11/9/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP034W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: ___

Sampling Point — Latitude: ___ ° ___ ' ___ " — Longitude: ___ ° ___ ' ___ "

Depth to Water Level: 10.87 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: ___ ft — Elevation of Water Level: 462.01 ft./MSL

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

Total Well Depth: 121 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/9/2023 — Sample Collection Time: 14:26

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3332235003 — Final Lab Analysis CompletionDate: 11/27/2023

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

Comments: ___

I.D. No	101389
Monitoring Point No.	FFMP034W
Sample Date	11/9/2023

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	0.18	D6919-09
BICARBONATE ALKALINITY	38	SM20-2320B
CALCIUM, TOTAL	65	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	171	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	1100	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	24	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	95	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	11	EPA 300
pH-FIELD (SU)	5.64	FIELD
pH-LAB (SU)	7.54	SM20-4500HB
POTASSIUM, TOTAL	2.8	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	46.8	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1139	FIELD
SPEC. COND., LAB (umhos/cm)	786	SW846 9050A
SULFATE	30.9	EPA 300
ALKALINITY	38	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	498	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.62	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	14	SM 2130B

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

I.D. No	101389
Monitoring Point No.	FFMP034W
Sample Date	11/9/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP036W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: MANOR TOWNSHIP

Sampling Point — Latitude: 39 ° 57 ' 16.03 " — Longitude: 76 ° 26 ' 57.28 "

Depth to Water Level: 47.36 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.91 ft — Elevation of Water Level: 430.87 ft./MSL

Sampling Depth: 135 ft — Volume of Water Column: 136.06 gal

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

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/9/2023 — Sample Collection Time: 15:43

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3332235004 — Final Lab Analysis CompletionDate: 11/27/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP036W
Sample Date	11/9/2023

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	0.146	D6919-09
BICARBONATE ALKALINITY	81	SM20-2320B
CALCIUM, TOTAL	40.9	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	34.3	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	1200	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	4.5	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	110	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	1 ND	EPA 300
pH-FIELD (SU)	8.27	FIELD
pH-LAB (SU)	8.22	SM20-4500HB
POTASSIUM, TOTAL	1.2	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	17.2	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	389	FIELD
SPEC. COND., LAB (umhos/cm)	307	SW846 9050A
SULFATE	18.8	EPA 300
ALKALINITY	81	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	182	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.52	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	9.6	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.	FFMP036W
Sample Date	11/9/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP035W — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: MANOR TOWNSHIP

Sampling Point — Latitude: 39 ° 57 ' 15.95 " — Longitude: 76 ° 26 ' 57.26 "

Depth to Water Level: 43.27 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.45 ft — Elevation of Water Level: 434.29 ft./MSL

Sampling Depth: 65 ft — Volume of Water Column: 39.26 gal

Total Well Depth: 70 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/10/2023 — Sample Collection Time: 10:06

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3332549001 — Final Lab Analysis CompletionDate: 11/28/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP035W
Sample Date	11/10/2023

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	0.129	D6919-09
BICARBONATE ALKALINITY	136	SM20-2320B
CALCIUM, TOTAL	103	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	140	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	68	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	16.4	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	5.6 ND	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	5.6	EPA 300
pH-FIELD (SU)	6.43	FIELD
pH-LAB (SU)	8.15	SM20-4500HB
POTASSIUM, TOTAL	2.6	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	39.1	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	1009	FIELD
SPEC. COND., LAB (umhos/cm)	808	SW846 9050A
SULFATE	49.7	EPA 300
ALKALINITY	136	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	560	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.66	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	1.4	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.	FFMP035W
Sample Date	11/10/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP02DW — X Well ___ Spring ___ Stream ___ Other

___ Upgradient/Upstream X 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: 27.49 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: ___ ft — Elevation of Water Level: 482.11 ft./MSL

Sampling Depth: 120 ft — Volume of Water Column: ___ gal

Total Well Depth: 152 ft — Sampling Method: X Pumped ___ Bailed ___ Grab

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/10/2023 — Sample Collection Time: 13:08

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3332549002 — Final Lab Analysis CompletionDate: 11/28/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP02DW
Sample Date	11/10/2023

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	0.215	D6919-09
BICARBONATE ALKALINITY	124	SM20-2320B
CALCIUM, TOTAL	152	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	459	EPA 300
FLUORIDE	0.5 ND	EPA 300
IRON, TOTAL (ug/l)	980	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	23.6	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	530	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	6.8	EPA 300
pH-FIELD (SU)	6.97	FIELD
pH-LAB (SU)	8.09	SM20-4500HB
POTASSIUM, TOTAL	1.4	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	161	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	2411	FIELD
SPEC. COND., LAB (umhos/cm)	1740	SW846 9050A
SULFATE	45.4	EPA 300
ALKALINITY	124	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	1240	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.86	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	13	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	11/10/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP002W — X Well ___ Spring ___ Stream ___ Other

X Upgradient/Upstream ___ Downgradient/Downstream

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

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

Depth to Water Level: 69.81 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.60 ft — Elevation of Water Level: 543.39 ft./MSL

Sampling Depth: 85 ft — Volume of Water Column: 146.56 gal

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

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/10/2023 — Sample Collection Time: 14:09

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3332549003 — Final Lab Analysis CompletionDate: 11/28/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP002W
Sample Date	11/10/2023

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	0.153	D6919-09
BICARBONATE ALKALINITY	7	SM20-2320B
CALCIUM, TOTAL	19.6	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	17.4	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	580	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	7.9	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	270	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	17.2	EPA 300
pH-FIELD (SU)	4.62	FIELD
pH-LAB (SU)	6.69	SM20-4500HB
POTASSIUM, TOTAL	6	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	15.8	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	357	FIELD
SPEC. COND., LAB (umhos/cm)	272	SW846 9050A
SULFATE	25	EPA 300
ALKALINITY	7	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	424	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 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.	FFMP002W
Sample Date	11/10/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP031W — X Well ___ Spring ___ Stream ___ Other

X 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: 69.88 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.38 ft — Elevation of Water Level: 542.78 ft./MSL

Sampling Depth: 130 ft — Volume of Water Column: 102.98 gal

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

Well Purged: X Yes ___ No — Well Volumes Purged: 1.6

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/10/2023 — Sample Collection Time: 16:19

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3332549004 — Final Lab Analysis CompletionDate: 11/28/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP031W
Sample Date	11/10/2023

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	0.181	D6919-09
BICARBONATE ALKALINITY	71	SM20-2320B
CALCIUM, TOTAL	60.5	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	20	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	3500	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	4.4	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	310	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	1 ND	EPA 300
pH-FIELD (SU)	7.98	FIELD
pH-LAB (SU)	8.08	SM20-4500HB
POTASSIUM, TOTAL	1.6	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	9.6	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	386	FIELD
SPEC. COND., LAB (umhos/cm)	301	SW846 9050A
SULFATE	46	EPA 300
ALKALINITY	71	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	199	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	65	SM 2130B

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

I.D. No	101389
Monitoring Point No.	FFMP031W
Sample Date	11/10/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: FFMP032W — X Well ___ Spring ___ Stream ___ Other

X 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: 51.22 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.06 ft — Elevation of Water Level: 542.87 ft./MSL

Sampling Depth: 62 ft — Volume of Water Column: 34.92 gal

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

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/27/2023 — Sample Collection Time: 11:58

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3334569001 — Final Lab Analysis CompletionDate: 12/12/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP032W
Sample Date	11/27/2023

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	0.787	D6919-09
BICARBONATE ALKALINITY	69	SM20-2320B
CALCIUM, TOTAL	17.4	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	21.9	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	7000	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	6.3	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	690	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	1 ND	EPA 300
pH-FIELD (SU)	6.69	FIELD
pH-LAB (SU)	7.86	SM20-4500HB
POTASSIUM, TOTAL	1.6	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	13.8	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	275	FIELD
SPEC. COND., LAB (umhos/cm)	199	SW846 9050A
SULFATE	2 ND	EPA 300
ALKALINITY	69	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	101	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	0.64	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	75	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	11/27/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
12/29/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Frey Farm Landfill

Facitlity ID (as issued by DEP): 101389

SECTION B. FACILITY INFORMATION

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

Monitoring Point Number: 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: 15.61 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: ___ ft — Elevation of Water Level: 494.29 ft./MSL

Sampling Depth: 18 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: 1.1

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 11/28/2023 — Sample Collection Time: 10:03

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 X No If yes, please explain in comments field.

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3334725001 — Final Lab Analysis CompletionDate: 12/13/2023

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

Comments:

I.D. No	101389
Monitoring Point No.	FFMP02SW
Sample Date	11/28/2023

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	1.44	D6919-09
BICARBONATE ALKALINITY	108	SM20-2320B
CALCIUM, TOTAL	86.1	SW846 6010C
CALCIUM, DISSOLVED		SW846 6010C
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	64.8	EPA 300
FLUORIDE	0.2 ND	EPA 300
IRON, TOTAL (ug/l)	67 ND	SW846 6010C
IRON, DISSOLVED (ug/l)		SW846 6010C
MAGNESIUM, TOTAL	21.4	SW846 6010C
MAGNESIUM, DISSOLVED		SW846 6010C
MANGANESE, TOTAL (ug/l)	5600	SW846 6010C
MANGANESE, DISSOLVED (ug/l)		SW846 6010C
NITRATE-NITROGEN	4.7	EPA 300
pH-FIELD (SU)	5.35	FIELD
pH-LAB (SU)	8.08	SM20-4500HB
POTASSIUM, TOTAL	7	SW846 6010C
POTASSIUM, DISSOLVED		SW846 6010C
SODIUM, TOTAL	66	SW846 6010C
SODIUM, DISSOLVED		SW846 6010C
SPEC. COND., FIELD (umhos/cm)	496	FIELD
SPEC. COND., LAB (umhos/cm)	957	SW846 9050A
SULFATE	24.7	EPA 300
ALKALINITY	108	SM20-2320B
TDS (TOT. DISSOLVED SOLIDS)	590	SM20-2540C
TOC (TOTAL ORGANIC CARBON)	1.5	SW846 9060A
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	1.6	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.	FFMP02SW
Sample Date	11/28/2023

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.

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

Analytical Results Report For **Lancaster County Solid Waste Authority**

Project 4th QTR 2023 GWMP-FORM 19Q
Workorder 3331427
Report ID 283818 on 11/20/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Nov 06, 2023.

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 Susan Scherer (Project Coordinator) at (717) 944-5541.

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

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Jordan Bigler - Lancaster County Solid Waste Authority
Ashley Gichuki - Lancaster County Solid Waste Authority
Daniel Brown - Lancaster County Solid Waste Authority
Jeff Musser - Lancaster County Solid Waste Authority

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

Susan Scherer

Susan Scherer *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3331427001	FFMP018W	Ground Water	11/06/2023 10:42	11/06/2023 16:25	BGS	Analytical Laboratory Service
3331427002	FFMP019W	Ground Water	11/06/2023 11:39	11/06/2023 16:25	BGS	Analytical Laboratory Service
3331427003	FFMP039W	Ground Water	11/06/2023 13:16	11/06/2023 16:25	BGS	Analytical Laboratory Service
3331427004	FFMP038W	Ground Water	11/06/2023 15:08	11/06/2023 16:25	BGS	Analytical Laboratory Service

Reference

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).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136, including but not limited to the following EPA Method reference revisions:
  EPA 300.1 Rev. 1.0-1997
  EPA 300.0 Rev. 2.1-1993
  EPA 353.2 Rev. 2.0-1993
  EPA 410.4 Rev. 1.0-1993
  EPA 420.4 Rev. 1.0-1993
  EPA 365.1 Rev. 2.0-1993
  EPA 200.7 Rev. 4.4-1994
  EPA 200.8 Rev. 5.4-1994
  EPA 245.1 Rev. 3.0-1994
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the 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.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
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
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID

Result Notations

Notation Ref.	
1	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.
2	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.
3	The QC sample type MS for method SW846 6010C was outside the control limits for the analyte Calcium, Total. The % Recovery was reported as 6.96 and the control limits were 75 to 125.

Detected Results Summary

Client Sample ID	FFMP018W	Collected	11/06/2023 10:42
Lab Sample ID	3331427001	Lab Receipt	11/06/2023 16:25

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	27.61	Feet		Field	#
Dissolved Oxygen	3.23	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	472.20	Feet		Field	#
Flow Rate	3.56	gal/min		Field	#
Ground Water Elevation	444.59	ft/MSL		Field	#
Oxidation-Reduction Potential	229	mV		Field	#
pH, Field (SM4500B)	5.01	pH_Units		Field	#
Sample Depth	40.00	Feet		Field	#
Specific Conductance, Field	852	umhos/cm	1	Field	#
Temperature	15.16	Deg. C		Field	#
Total Well Depth	51.46	Feet		Field	#
Volume in Water Column	15.50	Gallons		Field	#
Water Level After Purge	29.49	Feet		Field	#
Well Volumes Purged	4.59	Vol		Field	#
METALS					
Calcium, Total	36.4	mg/L	0.11	SW846 6010C	#
Magnesium, Total	21.3	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.25	mg/L	0.0056	SW846 6010C	#
Potassium, Total	3.9	mg/L	0.56	SW846 6010C	#
Sodium, Total	41.9	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	19	mg/L	5	SM2320B-2011	#
Alkalinity, Total	19	mg/L	5	SM2320B-2011	#
Ammonia-N	0.158	mg/L	0.100	ASTM D6919-17	#
Chloride	142	mg/L	2.0	EPA 300.0	#
Nitrate-N	4.5	mg/L	1.0	EPA 300.0	#
pH	6.77	pH_Units		S4500HB-11	#
Specific Conductance	603	umhos/cm	5	SW846 9050A	#
Sulfate	38.1	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	372	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	0.62	mg/L	0.50	SW846 9060A	#
Turbidity	0.45	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	FFMP019W	Collected	11/06/2023 11:39
Lab Sample ID	3331427002	Lab Receipt	11/06/2023 16:25

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	28.34	Feet		Field	#
Dissolved Oxygen	0.10	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	471.95	Feet		Field	#
Flow Rate	3.29	gal/min		Field	#
Ground Water Elevation	443.61	ft/MSL		Field	#
Oxidation-Reduction Potential	63	mV		Field	#
pH, Field (SM4500B)	6.50	pH_Units		Field	#
Sample Depth	49.00	Feet		Field	#
Specific Conductance, Field	684	umhos/cm	1	Field	#
Temperature	14.17	Deg. C		Field	#
Total Well Depth	132.79	Feet		Field	#
Volume in Water Column	67.89	Gallons		Field	#
Water Level After Purge	37.61	Feet		Field	#
Well Volumes Purged	1.94	Vol		Field	#
METALS					
Calcium, Total	67.5	mg/L	0.11	SW846 6010C	#
Magnesium, Total	6.7	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.0059	mg/L	0.0056	SW846 6010C	#
Potassium, Total	1.0	mg/L	0.56	SW846 6010C	#
Sodium, Total	12.0	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	69	mg/L	5	SM2320B-2011	#
Alkalinity, Total	69	mg/L	5	SM2320B-2011	#
Ammonia-N	0.138	mg/L	0.100	ASTM D6919-17	#
Chloride	97.3	mg/L	2.0	EPA 300.0	#
pH	7.75	pH_Units		S4500HB-11	#
Specific Conductance	476	umhos/cm	5	SW846 9050A	#
Sulfate	17.4	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	348	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	0.60	mg/L	0.50	SW846 9060A	#

Detected Results Summary

Client Sample ID	FFMP039W	Collected	11/06/2023 13:16
Lab Sample ID	3331427003	Lab Receipt	11/06/2023 16:25

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	14.32	Feet		Field	#
Elev Top MW Casing above MSL	454.05	Feet		Field	#
Flow Rate	0.96	gal/min		Field	#
Ground Water Elevation	439.73	ft/MSL		Field	#
Oxidation-Reduction Potential	94	mV		Field	#
pH, Field (SM4500B)	5.79	pH_Units		Field	#
Sample Depth	46.00	Feet		Field	#
Specific Conductance, Field	1160	umhos/cm	1	Field	#
Temperature	14.36	Deg. C		Field	#
Total Well Depth	52.00	Feet		Field	#
Turbidity, Field	9	NTU	1	Field	#
Volume in Water Column	55.39	Gallons		Field	#
Water Level After Purge	16.78	Feet		Field	#
Well Volumes Purged	1.47	Vol		Field	#
METALS					
Calcium, Total	20.8	mg/L	0.11	SW846 6010C	#
Iron, Total	9.0	mg/L	0.067	SW846 6010C	#
Magnesium, Total	2.7	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.095	mg/L	0.0056	SW846 6010C	#
Potassium, Total	1.8	mg/L	0.56	SW846 6010C	#
Sodium, Total	17.4	mg/L	0.56	SW846 6010C	#
VOLATILE ORGANICS					
Toluene	1.5	ug/L	1.0	SW846 8260B	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	14	mg/L	5	SM2320B-2011	#
Alkalinity, Total	14	mg/L	5	SM2320B-2011	#
Ammonia-N	0.158	mg/L	0.100	ASTM D6919-17	#
Chloride	63.2	mg/L	2.0	EPA 300.0	#
pH	7.48	pH_Units		S4500HB-11	#
Specific Conductance	235	umhos/cm	5	SW846 9050A	#
Total Dissolved Solids	136	mg/L	25	SM2540C-15	#
Turbidity	16	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	FFMP038W	Collected	11/06/2023 15:08
Lab Sample ID	3331427004	Lab Receipt	11/06/2023 16:25

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	20.52	Feet		Field	#
Elev Top MW Casing above MSL	455.65	Feet		Field	#
Flow Rate	2.01	gal/min		Field	#
Ground Water Elevation	435.13	ft/MSL		Field	#
Oxidation-Reduction Potential	-427	mV		Field	#
pH, Field (SM4500B)	9.07	pH_Units		Field	#
Sample Depth	118.00	Feet		Field	#
Specific Conductance, Field	334	umhos/cm	1	Field	#
Temperature	15.10	Deg. C		Field	#
Total Well Depth	131.50	Feet		Field	#
Turbidity, Field	38	NTU	1	Field	#
Volume in Water Column	163.14	Gallons		Field	#
Water Level After Purge	72.82	Feet		Field	#
Well Volumes Purged	0.83	Vol		Field	#
METALS					
Calcium, Total	54.9	mg/L	0.11	SW846 6010C	#
Iron, Total	3.6	mg/L	0.067	SW846 6010C	#
Magnesium, Total	20.4	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.68	mg/L	0.0056	SW846 6010C	#
Potassium, Total	5.8	mg/L	0.56	SW846 6010C	#
Sodium, Total	62.6	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	53	mg/L	5	SM2320B-2011	#
Alkalinity, Total	53	mg/L	5	SM2320B-2011	#
Ammonia-N	0.454	mg/L	0.100	ASTM D6919-17	#
Chloride	187	mg/L	2.0	EPA 300.0	#
Nitrate-N	2.8	mg/L	1.0	EPA 300.0	#
pH	7.21	pH_Units		S4500HB-11	#
Specific Conductance	813	umhos/cm	5	SW846 9050A	#
Sulfate	34.6	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	488	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	1.1	mg/L	0.50	SW846 9060A	#
Turbidity	26	NTU	0.30	SM2130B-2011	#

Results

Client Sample ID	FFMP018W	Collected	11/06/2023 10:42
Lab Sample ID	3331427001	Lab Receipt	11/06/2023 16:25

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	27.61		Feet		Field	1	11/06/2023 10:42	BGS	D
Dissolved Oxygen	3.23		mg/L	0.01	Field	1	11/06/2023 10:42	BGS	D
Elev Top MW Casing above MSL	472.20		Feet		Field	1	11/06/2023 10:42	BGS	D
Flow Rate	3.56		gal/min		Field	1	11/06/2023 10:42	BGS	D
Ground Water Elevation	444.59		ft/MSL		Field	1	11/06/2023 10:42	BGS	D
Oxidation-Reduction Potential	229		mV		Field	1	11/06/2023 10:42	BGS	D
pH, Field (SM4500B)	5.01		pH_Units		Field	1	11/06/2023 10:42	BGS	D
Sample Depth	40.00		Feet		Field	1	11/06/2023 10:42	BGS	D
Specific Conductance, Field	852		umhos/cm	1	Field	1	11/06/2023 10:42	BGS	D
Temperature	15.16		Deg. C		Field	1	11/06/2023 10:42	BGS	D
Total Well Depth	51.46		Feet		Field	1	11/06/2023 10:42	BGS	D
Turbidity, Field	ND	ND	NTU	1	Field	1	11/06/2023 10:42	BGS	D
Volume in Water Column	15.50		Gallons		Field	1	11/06/2023 10:42	BGS	D
Water Level After Purge	29.49		Feet		Field	1	11/06/2023 10:42	BGS	D
Well Volumes Purged	4.59		Vol		Field	1	11/06/2023 10:42	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	36.4		mg/L	0.11	SW846 6010C	1	11/13/2023 10:55	HTO	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	11/13/2023 10:55	HTO	J1
Magnesium, Total	21.3		mg/L	0.11	SW846 6010C	1	11/13/2023 10:55	HTO	J1
Manganese, Total	0.25		mg/L	0.0056	SW846 6010C	1	11/13/2023 10:55	HTO	J1
Potassium, Total	3.9		mg/L	0.56	SW846 6010C	1	11/13/2023 10:55	HTO	J1
Sodium, Total	41.9		mg/L	0.56	SW846 6010C	1	11/13/2023 10:55	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 14:49	TMP	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 14:49	TMP	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 14:49	TMP	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 14:49	TMP	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 14:49	TMP	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 14:49	TMP	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 14:49	TMP	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 14:49	TMP	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 14:49	TMP	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 14:49	TMP	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 14:49	TMP	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/18/2023 14:49	TMP	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 14:49	TMP	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 14:49	TMP	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 14:49	TMP	H

Results

Client Sample ID	FFMP018W	Collected	11/06/2023 10:42
Lab Sample ID	3331427001	Lab Receipt	11/06/2023 16:25

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	105%	62 – 133	11/18/2023 14:49	
4-Bromofluorobenzene	460-00-4	91.7%	79 – 114	11/18/2023 14:49	
Dibromofluoromethane	1868-53-7	97.3%	78 – 116	11/18/2023 14:49	
Toluene-d8	2037-26-5	95.8%	76 – 127	11/18/2023 14:49	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	19		mg/L	5	SM2320B-2011	1	11/10/2023 13:24	JMS	B
Alkalinity, Total	19	1	mg/L	5	SM2320B-2011	1	11/10/2023 13:24	JMS	B
Ammonia-N	0.158		mg/L	0.100	ASTM D6919-17	10	11/10/2023 18:24	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/08/2023 11:20	KMS	A
Chloride	142		mg/L	2.0	EPA 300.0	2	11/07/2023 11:20	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/07/2023 11:20	J1W	B
Nitrate-N	4.5		mg/L	1.0	EPA 300.0	2	11/07/2023 11:20	J1W	B
pH	6.77	2	pH_Units		S4500HB-11	1	11/10/2023 13:24	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/10/2023 18:36	AKH	G
Specific Conductance	603		umhos/cm	5	SW846 9050A	1	11/09/2023 10:46	JXL	B
Sulfate	38.1		mg/L	2.0	EPA 300.0	2	11/07/2023 11:20	J1W	B
Total Dissolved Solids	372		mg/L	25	SM2540C-15	1	11/08/2023 11:48	RAG	B
Total Organic Carbon (TOC)	0.62		mg/L	0.50	SW846 9060A	1	11/09/2023 03:52	PAG	E
Turbidity	0.45		NTU	0.30	SM2130B-2011	1	11/06/2023 23:15	NRB	B

Results

Client Sample ID	FFMP019W	Collected	11/06/2023 11:39
Lab Sample ID	3331427002	Lab Receipt	11/06/2023 16:25

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	28.34		Feet		Field	1	11/06/2023 11:39	BGS	D
Dissolved Oxygen	0.10		mg/L	0.01	Field	1	11/06/2023 11:39	BGS	D
Elev Top MW Casing above MSL	471.95		Feet		Field	1	11/06/2023 11:39	BGS	D
Flow Rate	3.29		gal/min		Field	1	11/06/2023 11:39	BGS	D
Ground Water Elevation	443.61		ft/MSL		Field	1	11/06/2023 11:39	BGS	D
Oxidation-Reduction Potential	63		mV		Field	1	11/06/2023 11:39	BGS	D
pH, Field (SM4500B)	6.50		pH_Units		Field	1	11/06/2023 11:39	BGS	D
Sample Depth	49.00		Feet		Field	1	11/06/2023 11:39	BGS	D
Specific Conductance, Field	684		umhos/cm	1	Field	1	11/06/2023 11:39	BGS	D
Temperature	14.17		Deg. C		Field	1	11/06/2023 11:39	BGS	D
Total Well Depth	132.79		Feet		Field	1	11/06/2023 11:39	BGS	D
Turbidity, Field	ND	ND	NTU	1	Field	1	11/06/2023 11:39	BGS	D
Volume in Water Column	67.89		Gallons		Field	1	11/06/2023 11:39	BGS	D
Water Level After Purge	37.61		Feet		Field	1	11/06/2023 11:39	BGS	D
Well Volumes Purged	1.94		Vol		Field	1	11/06/2023 11:39	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	67.5	3	mg/L	0.11	SW846 6010C	1	11/13/2023 10:56	HTO	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	11/13/2023 10:56	HTO	J1
Magnesium, Total	6.7		mg/L	0.11	SW846 6010C	1	11/13/2023 10:56	HTO	J1
Manganese, Total	0.0059		mg/L	0.0056	SW846 6010C	1	11/13/2023 10:56	HTO	J1
Potassium, Total	1.0		mg/L	0.56	SW846 6010C	1	11/13/2023 10:56	HTO	J1
Sodium, Total	12.0		mg/L	0.56	SW846 6010C	1	11/13/2023 10:56	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:09	TMP	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:09	TMP	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:09	TMP	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:09	TMP	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:09	TMP	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:09	TMP	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:09	TMP	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:09	TMP	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:09	TMP	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:09	TMP	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:09	TMP	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/18/2023 15:09	TMP	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:09	TMP	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:09	TMP	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:09	TMP	H

Results

Client Sample ID	FFMP019W	Collected	11/06/2023 11:39
Lab Sample ID	3331427002	Lab Receipt	11/06/2023 16:25

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	62 – 133	11/18/2023 15:09	
4-Bromofluorobenzene	460-00-4	100%	79 – 114	11/18/2023 15:09	
Dibromofluoromethane	1868-53-7	96.9%	78 – 116	11/18/2023 15:09	
Toluene-d8	2037-26-5	101%	76 – 127	11/18/2023 15:09	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	69		mg/L	5	SM2320B-2011	1	11/10/2023 13:35	JMS	B
Alkalinity, Total	69	1	mg/L	5	SM2320B-2011	1	11/10/2023 13:35	JMS	B
Ammonia-N	0.138		mg/L	0.100	ASTM D6919-17	10	11/10/2023 20:00	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/08/2023 11:20	KMS	A
Chloride	97.3		mg/L	2.0	EPA 300.0	2	11/07/2023 11:32	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/07/2023 11:32	J1W	B
Nitrate-N	ND	ND	mg/L	1.0	EPA 300.0	2	11/07/2023 11:32	J1W	B
pH	7.75	2	pH_Units		S4500HB-11	1	11/10/2023 13:35	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/10/2023 18:32	AKH	G
Specific Conductance	476		umhos/cm	5	SW846 9050A	1	11/09/2023 10:46	JXL	B
Sulfate	17.4		mg/L	2.0	EPA 300.0	2	11/07/2023 11:32	J1W	B
Total Dissolved Solids	348		mg/L	25	SM2540C-15	1	11/08/2023 13:52	RAG	B
Total Organic Carbon (TOC)	0.60		mg/L	0.50	SW846 9060A	1	11/09/2023 03:52	PAG	E
Turbidity	ND	ND	NTU	0.30	SM2130B-2011	1	11/06/2023 23:15	NRB	B

Results

Client Sample ID	FFMP039W	Collected	11/06/2023 13:16
Lab Sample ID	3331427003	Lab Receipt	11/06/2023 16:25

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	14.32		Feet		Field	1	11/06/2023 15:08	BGS	D
Dissolved Oxygen	ND	ND	mg/L	0.01	Field	1	11/06/2023 15:08	BGS	D
Elev Top MW Casing above MSL	454.05		Feet		Field	1	11/06/2023 15:08	BGS	D
Flow Rate	0.96		gal/min		Field	1	11/06/2023 15:08	BGS	D
Ground Water Elevation	439.73		ft/MSL		Field	1	11/06/2023 15:08	BGS	D
Oxidation-Reduction Potential	94		mV		Field	1	11/06/2023 15:08	BGS	D
pH, Field (SM4500B)	5.79		pH_Units		Field	1	11/06/2023 15:08	BGS	D
Sample Depth	46.00		Feet		Field	1	11/06/2023 15:08	BGS	D
Specific Conductance, Field	1160		umhos/cm	1	Field	1	11/06/2023 15:08	BGS	D
Temperature	14.36		Deg. C		Field	1	11/06/2023 15:08	BGS	D
Total Well Depth	52.00		Feet		Field	1	11/06/2023 15:08	BGS	D
Turbidity, Field	9		NTU	1	Field	1	11/06/2023 15:08	BGS	D
Volume in Water Column	55.39		Gallons		Field	1	11/06/2023 15:08	BGS	D
Water Level After Purge	16.78		Feet		Field	1	11/06/2023 15:08	BGS	D
Well Volumes Purged	1.47		Vol		Field	1	11/06/2023 15:08	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	20.8		mg/L	0.11	SW846 6010C	1	11/13/2023 11:01	HTO	J1
Iron, Total	9.0		mg/L	0.067	SW846 6010C	1	11/13/2023 11:01	HTO	J1
Magnesium, Total	2.7		mg/L	0.11	SW846 6010C	1	11/13/2023 11:01	HTO	J1
Manganese, Total	0.095		mg/L	0.0056	SW846 6010C	1	11/13/2023 11:01	HTO	J1
Potassium, Total	1.8		mg/L	0.56	SW846 6010C	1	11/13/2023 11:01	HTO	J1
Sodium, Total	17.4		mg/L	0.56	SW846 6010C	1	11/13/2023 11:01	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:29	TMP	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:29	TMP	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:29	TMP	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:29	TMP	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:29	TMP	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:29	TMP	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:29	TMP	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:29	TMP	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:29	TMP	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:29	TMP	H
Toluene	1.5		ug/L	1.0	SW846 8260B	1	11/18/2023 15:29	TMP	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/18/2023 15:29	TMP	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:29	TMP	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:29	TMP	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:29	TMP	H

Results

Client Sample ID	FFMP039W	Collected	11/06/2023 13:16
Lab Sample ID	3331427003	Lab Receipt	11/06/2023 16:25

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	100%	62 – 133	11/18/2023 15:29	
4-Bromofluorobenzene	460-00-4	91.4%	79 – 114	11/18/2023 15:29	
Dibromofluoromethane	1868-53-7	93%	78 – 116	11/18/2023 15:29	
Toluene-d8	2037-26-5	93.3%	76 – 127	11/18/2023 15:29	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	14		mg/L	5	SM2320B-2011	1	11/10/2023 13:47	JMS	B
Alkalinity, Total	14	1	mg/L	5	SM2320B-2011	1	11/10/2023 13:47	JMS	B
Ammonia-N	0.158		mg/L	0.100	ASTM D6919-17	10	11/10/2023 18:11	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/08/2023 11:20	KMS	A
Chloride	63.2		mg/L	2.0	EPA 300.0	2	11/07/2023 11:43	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/07/2023 11:43	J1W	B
Nitrate-N	ND	ND	mg/L	1.0	EPA 300.0	2	11/07/2023 11:43	J1W	B
pH	7.48	2	pH_Units		S4500HB-11	1	11/10/2023 13:47	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/10/2023 18:28	AKH	G
Specific Conductance	235		umhos/cm	5	SW846 9050A	1	11/09/2023 10:46	JXL	B
Sulfate	ND	ND	mg/L	2.0	EPA 300.0	2	11/07/2023 11:43	J1W	B
Total Dissolved Solids	136		mg/L	25	SM2540C-15	1	11/08/2023 13:52	RAG	B
Total Organic Carbon (TOC)	ND	ND	mg/L	0.50	SW846 9060A	1	11/09/2023 03:52	PAG	E
Turbidity	16		NTU	0.30	SM2130B-2011	1	11/06/2023 23:15	NRB	B

Results

Client Sample ID	FFMP038W	Collected	11/06/2023 15:08
Lab Sample ID	3331427004	Lab Receipt	11/06/2023 16:25

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	20.52		Feet		Field	1	11/06/2023 13:16	BGS	D
Dissolved Oxygen	ND	ND	mg/L	0.01	Field	1	11/06/2023 13:16	BGS	D
Elev Top MW Casing above MSL	455.65		Feet		Field	1	11/06/2023 13:16	BGS	D
Flow Rate	2.01		gal/min		Field	1	11/06/2023 13:16	BGS	D
Ground Water Elevation	435.13		ft/MSL		Field	1	11/06/2023 13:16	BGS	D
Oxidation-Reduction Potential	-427		mV		Field	1	11/06/2023 13:16	BGS	D
pH, Field (SM4500B)	9.07		pH_Units		Field	1	11/06/2023 13:16	BGS	D
Sample Depth	118.00		Feet		Field	1	11/06/2023 13:16	BGS	D
Specific Conductance, Field	334		umhos/cm	1	Field	1	11/06/2023 13:16	BGS	D
Temperature	15.10		Deg. C		Field	1	11/06/2023 13:16	BGS	D
Total Well Depth	131.50		Feet		Field	1	11/06/2023 13:16	BGS	D
Turbidity, Field	38		NTU	1	Field	1	11/06/2023 13:16	BGS	D
Volume in Water Column	163.14		Gallons		Field	1	11/06/2023 13:16	BGS	D
Water Level After Purge	72.82		Feet		Field	1	11/06/2023 13:16	BGS	D
Well Volumes Purged	0.83		Vol		Field	1	11/06/2023 13:16	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	54.9		mg/L	0.11	SW846 6010C	1	11/13/2023 11:02	HTO	J1
Iron, Total	3.6		mg/L	0.067	SW846 6010C	1	11/13/2023 11:02	HTO	J1
Magnesium, Total	20.4		mg/L	0.11	SW846 6010C	1	11/13/2023 11:02	HTO	J1
Manganese, Total	0.68		mg/L	0.0056	SW846 6010C	1	11/13/2023 11:02	HTO	J1
Potassium, Total	5.8		mg/L	0.56	SW846 6010C	1	11/13/2023 11:02	HTO	J1
Sodium, Total	62.6		mg/L	0.56	SW846 6010C	1	11/13/2023 11:02	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:50	TMP	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:50	TMP	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:50	TMP	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:50	TMP	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:50	TMP	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:50	TMP	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:50	TMP	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:50	TMP	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:50	TMP	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:50	TMP	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:50	TMP	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/18/2023 15:50	TMP	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:50	TMP	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:50	TMP	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 15:50	TMP	H

Results

Client Sample ID	FFMP038W	Collected	11/06/2023 15:08
Lab Sample ID	3331427004	Lab Receipt	11/06/2023 16:25

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	105%	62 – 133	11/18/2023 15:50	
4-Bromofluorobenzene	460-00-4	98.3%	79 – 114	11/18/2023 15:50	
Dibromofluoromethane	1868-53-7	97.1%	78 – 116	11/18/2023 15:50	
Toluene-d8	2037-26-5	102%	76 – 127	11/18/2023 15:50	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	53		mg/L	5	SM2320B-2011	1	11/10/2023 13:59	JMS	B
Alkalinity, Total	53	1	mg/L	5	SM2320B-2011	1	11/10/2023 13:59	JMS	B
Ammonia-N	0.454		mg/L	0.100	ASTM D6919-17	10	11/10/2023 20:14	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/08/2023 11:20	KMS	A
Chloride	187		mg/L	2.0	EPA 300.0	2	11/07/2023 11:55	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/07/2023 11:55	J1W	B
Nitrate-N	2.8		mg/L	1.0	EPA 300.0	2	11/07/2023 11:55	J1W	B
pH	7.21	2	pH_Units		S4500HB-11	1	11/10/2023 13:59	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/10/2023 18:24	AKH	G
Specific Conductance	813		umhos/cm	5	SW846 9050A	1	11/09/2023 10:46	JXL	B
Sulfate	34.6		mg/L	2.0	EPA 300.0	2	11/07/2023 11:55	J1W	B
Total Dissolved Solids	488		mg/L	25	SM2540C-15	1	11/08/2023 13:52	RAG	B
Total Organic Carbon (TOC)	1.1		mg/L	0.50	SW846 9060A	1	11/09/2023 03:52	PAG	E
Turbidity	26		NTU	0.30	SM2130B-2011	1	11/06/2023 23:15	NRB	B

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3331427001	FFMP018W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	
3331427002	FFMP019W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	
3331427003	FFMP039W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	
3331427004	FFMP038W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3331427001	FFMP018W	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1084589	11/08/2023 01:45	ANN	SW846 6010C	1088830
		N/A	N/A	N/A		SW846 8260B	1090886
		N/A	N/A	N/A		ASTM D6919-17	1085902
		N/A	N/A	N/A		EPA 300.0	1084412
		N/A	N/A	N/A		EPA 410.4	1085147
		N/A	N/A	N/A		S4500HB-11	1086508
		N/A	N/A	N/A		SM2130B-2011	1084201
		N/A	N/A	N/A		SM2320B-2011	1086508
		N/A	N/A	N/A		SM2540C-15	1085150
		N/A	N/A	N/A		SW846 9050A	1085894
		N/A	N/A	N/A		SW846 9060A	1085297
		SW846 9066	1085283	11/10/2023 09:28	AKH	SW846 9066	1086405
3331427002	FFMP019W	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1084589	11/08/2023 01:45	ANN	SW846 6010C	1088830
		N/A	N/A	N/A		SW846 8260B	1090886
		N/A	N/A	N/A		ASTM D6919-17	1085906
		N/A	N/A	N/A		EPA 300.0	1084412
		N/A	N/A	N/A		EPA 410.4	1085147
		N/A	N/A	N/A		S4500HB-11	1086508
		N/A	N/A	N/A		SM2130B-2011	1084201
		N/A	N/A	N/A		SM2320B-2011	1086508
		N/A	N/A	N/A		SM2540C-15	1085219
		N/A	N/A	N/A		SW846 9050A	1085894
		N/A	N/A	N/A		SW846 9060A	1085297
		SW846 9066	1085283	11/10/2023 09:28	AKH	SW846 9066	1086405
3331427003	FFMP039W	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1084589	11/08/2023 01:45	ANN	SW846 6010C	1088830
		N/A	N/A	N/A		SW846 8260B	1090886
		N/A	N/A	N/A		ASTM D6919-17	1085902
		N/A	N/A	N/A		EPA 300.0	1084412
		N/A	N/A	N/A		EPA 410.4	1085147
		N/A	N/A	N/A		S4500HB-11	1086508
		N/A	N/A	N/A		SM2130B-2011	1084201
		N/A	N/A	N/A		SM2320B-2011	1086508
		N/A	N/A	N/A		SM2540C-15	1085219
		N/A	N/A	N/A		SW846 9050A	1085894
		N/A	N/A	N/A		SW846 9060A	1085297
		SW846 9066	1085283	11/10/2023 09:28	AKH	SW846 9066	1086405
3331427004	FFMP038W	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1084589	11/08/2023 01:45	ANN	SW846 6010C	1088830
		N/A	N/A	N/A		SW846 8260B	1090886
		N/A	N/A	N/A		ASTM D6919-17	1085906
		N/A	N/A	N/A		EPA 300.0	1084412
		N/A	N/A	N/A		EPA 410.4	1085147
		N/A	N/A	N/A		S4500HB-11	1086508
		N/A	N/A	N/A		SM2130B-2011	1084201
		N/A	N/A	N/A		SM2320B-2011	1086508
		N/A	N/A	N/A		SM2540C-15	1085219
		N/A	N/A	N/A		SW846 9050A	1085894
		N/A	N/A	N/A		SW846 9060A	1085297
		SW846 9066	1085283	11/10/2023 09:28	AKH	SW846 9066	1086405

301 Fulling Mill Road • Middletown, PA 17057 • 717.944.5541 • Fax: 717.944.1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALS

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

COC

ALS

3331427

Logged By: KSB

PM: SJB

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

Date Required: 11-13-23 Approved By:

Email? [X] -Y dbrown@LCSWMA.com

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

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	TOC	O-OH	VOC - Form 19Q	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Metals: Fe, Mn, Na, Ca, K, Mg	pH, Cl, SpC, F, SO4, TDS, NO3, Turb.	Alkalinity Bicarbonate	
Container Type					AG	AW	CG	---	---	PL	PL	PL	PL	
Container Size					40 ml	125 ml	40 ml	---	---	250 ml	125 ml	500 ml	250 ml	
Preservative					HCl	H2SO4	HCl	---	---	H2SO4	HNO3	None	None	
					ANALYSES/METHOD REQUESTED									
1. FFMP018W	11/06/23	1042	G	GW	2	1	2	x	x	1	2	1	1	
2. FFMP019W	11/06/23	1139	G	GW	2	1	2	x	x	1	2	1	1	
3. FFMP039W	11/06/23	1316	G	GW	2	1	2	x	x	1	2	1	1	
4. FFMP038W	11/06/23	1508	G	GW	2	1	2	x	x	1	2	1	1	
5					Enter Number of Containers Per Sample or Field Results Below.									
6														
7														
8														
9														
10														

Project Comments:

LOGGED BY(signature): DATE: TIME:

REVIEWED BY(signature): DATE: TIME:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [signature] ALS	11.6.23	1600	2 [signature]	11.06.23	1625
3			4		
5			6		
7			8		
9			10		

* G=Grab; C=Composite

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

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

Cooler Temp: 7 Therm ID: 576

No. of Coolers:

	Y	N	Initial
Custody Seals Present?			
(if present) Seals Intact?			
Received on Ice?			

COC/I

Temp By: RW | WO Temp (°C) 7c | Therm ID 570

Courier/

Receipt Info Completed By: RW

Cooler Custody Seal Intact	Y N	NA
Sample Custody Seal Intact	Y N	NA
Received on Ice	Y N	NA
Cooler & Samples Intact	Y N	
Correct Containers Provided	Y N	
Sample Label/COC Agree	Y N	
Adequate Sample Volumes	Y N	
CR6 Samples Filtered	Y N	NA
OP Samples Filtered	Y N	NA
VOA Trip Blank	Y N	NA
NJ≤ 4 Days?	Y N	NA
Rad Screen (uCi)		
Courier/Tracking #:		

SDWA Compliance

PWSID

WV Containers 0-6°C Y N NA

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

Data Deliverables: ☐Standard ☐CLP-like ☐USACE ☐

Special Processing: USACE ☐ Navy ☐ ☐

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

Reportable to PADEP? Yes ☐

PWSID #

Sample Disposal: Lab [X] Special ☐

EDDS: Format Type-

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

Analytical Results Report For **Lancaster County Solid Waste Authority**

Project 4th QTR 2023 GWMP-FORM 19Q
Workorder 3331664
Report ID 284678 on 11/22/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Nov 07, 2023.

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 Susan Scherer (Project Coordinator) at (717) 944-5541.

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

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Jordan Bigler - Lancaster County Solid Waste Authority
Ashley Gichuki - Lancaster County Solid Waste Authority
Daniel Brown - Lancaster County Solid Waste Authority
Jeff Musser - Lancaster County Solid Waste Authority

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

Susan Scherer

Susan Scherer *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3331664001	FFMP029W	Ground Water	11/07/2023 09:47	11/07/2023 16:00	BGS	Analytical Laboratory Service
3331664002	FFMP005W	Ground Water	11/07/2023 11:56	11/07/2023 16:00	BGS	Analytical Laboratory Service
3331664003	FFMP26RW	Ground Water	11/07/2023 13:22	11/07/2023 16:00	BGS	Analytical Laboratory Service
3331664004	FFMP03AW	Ground Water	11/07/2023 14:30	11/07/2023 16:00	BGS	Analytical Laboratory Service

Reference

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).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136, including but not limited to the following EPA Method reference revisions:
  EPA 300.1 Rev. 1.0-1997
  EPA 300.0 Rev. 2.1-1993
  EPA 353.2 Rev. 2.0-1993
  EPA 410.4 Rev. 1.0-1993
  EPA 420.4 Rev. 1.0-1993
  EPA 365.1 Rev. 2.0-1993
  EPA 200.7 Rev. 4.4-1994
  EPA 200.8 Rev. 5.4-1994
  EPA 245.1 Rev. 3.0-1994
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the 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.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
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
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID

Result Notations

Notation Ref.	
E	Result reported exceeds instrument calibration
1	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.
2	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.
3	The sample was originally run within hold time, but required further analysis that exceeded hold time.
4	This sample was reran out of hold within the instrument's calibration range, for the analyte Nitrate/Nitrite -N, and confirms the initial in-hold reported result.

Detected Results Summary

Client Sample ID	FFMP029W	Collected	11/07/2023 09:47
Lab Sample ID	3331664001	Lab Receipt	11/07/2023 16:00

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	39.59	Feet		Field	#
Dissolved Oxygen	5.17	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	477.30	Feet		Field	#
Flow Rate	2.26	gal/min		Field	#
Ground Water Elevation	437.71	ft/MSL		Field	#
Oxidation-Reduction Potential	300	mV		Field	#
pH, Field (SM4500B)	5.17	pH_Units		Field	#
Sample Depth	55.00	Feet		Field	#
Specific Conductance, Field	495	umhos/cm	1	Field	#
Temperature	14.62	Deg. C		Field	#
Total Well Depth	60.50	Feet		Field	#
Volume in Water Column	30.74	Gallons		Field	#
Water Level After Purge	46.55	Feet		Field	#
Well Volumes Purged	4.42	Vol		Field	#
METALS					
Calcium, Total	18.9	mg/L	0.11	SW846 6010C	#
Magnesium, Total	12.6	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.047	mg/L	0.0056	SW846 6010C	#
Potassium, Total	2.6	mg/L	0.56	SW846 6010C	#
Sodium, Total	27.2	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	12	mg/L	5	SM2320B-2011	#
Alkalinity, Total	12	mg/L	5	SM2320B-2011	#
Ammonia-N	0.132	mg/L	0.100	ASTM D6919-17	#
Chloride	89.9	mg/L	2.0	EPA 300.0	#
Nitrate-N	3.8	mg/L	1.0	EPA 300.0	#
pH	6.59	pH_Units		S4500HB-11	#
Specific Conductance	374	umhos/cm	5	SW846 9050A	#
Sulfate	9.4	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	214	mg/L	25	SM2540C-15	#
Turbidity	0.30	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	FFMP005W	Collected	11/07/2023 11:56
Lab Sample ID	3331664002	Lab Receipt	11/07/2023 16:00

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	74.86	Feet		Field	#
Dissolved Oxygen	0.00	mg/L		Field	#
Elev Top MW Casing above MSL	537.40	Feet		Field	#
Flow Rate	1.75	gal/min		Field	#
Ground Water Elevation	462.54	ft/MSL		Field	#
Oxidation-Reduction Potential	516	mV		Field	#
pH, Field (SM4500B)	5.58	pH_Units		Field	#
Sample Depth	135.00	Feet		Field	#
Specific Conductance, Field	1151	umhos/cm		Field	#
Temperature	13.90	Deg. C		Field	#
Total Well Depth	149.70	Feet		Field	#
Turbidity, Field	0	NTU		Field	#
Volume in Water Column	110.01	Gallons		Field	#
Water Level After Purge	96.62	Feet		Field	#
Well Volumes Purged	1.00	Vol		Field	#
METALS					
Calcium, Total	80.1	mg/L	0.11	SW846 6010C	#
Magnesium, Total	19.8	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.17	mg/L	0.0056	SW846 6010C	#
Potassium, Total	3.0	mg/L	0.56	SW846 6010C	#
Sodium, Total	50.2	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	59	mg/L	5	SM2320B-2011	#
Alkalinity, Total	59	mg/L	5	SM2320B-2011	#
Ammonia-N	0.140	mg/L	0.100	ASTM D6919-17	#
Chloride	185	mg/L	2.0	EPA 300.0	#
Nitrate-N	1.7	mg/L	1.0	EPA 300.0	#
pH	7.46	pH_Units		S4500HB-11	#
Specific Conductance	857	umhos/cm	5	SW846 9050A	#
Sulfate	68.9	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	512	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	1.1	mg/L	0.50	SW846 9060A	#

Detected Results Summary

Client Sample ID	FFMP26RW	Collected	11/07/2023 13:22
Lab Sample ID	3331664003	Lab Receipt	11/07/2023 16:00

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	87.22	Feet		Field	#
Elev Top MW Casing above MSL	547.40	Feet		Field	#
Flow Rate	1.77	gal/min		Field	#
Ground Water Elevation	460.18	ft/MSL		Field	#
Oxidation-Reduction Potential	330	mV		Field	#
pH, Field (SM4500B)	5.52	pH_Units		Field	#
Sample Depth	105.00	Feet		Field	#
Specific Conductance, Field	1180	umhos/cm	1	Field	#
Temperature	15.13	Deg. C		Field	#
Total Well Depth	118.30	Feet		Field	#
Volume in Water Column	45.69	Gallons		Field	#
Water Level After Purge	102.38	Feet		Field	#
Well Volumes Purged	2.13	Vol		Field	#
METALS					
Calcium, Total	73.5	mg/L	0.11	SW846 6010C	#
Magnesium, Total	20.0	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.70	mg/L	0.0056	SW846 6010C	#
Potassium, Total	6.8	mg/L	0.56	SW846 6010C	#
Sodium, Total	61.1	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	63	mg/L	5	SM2320B-2011	#
Alkalinity, Total	63	mg/L	5	SM2320B-2011	#
Chloride	177	mg/L	2.0	EPA 300.0	#
Nitrate-N	1.2	mg/L	1.0	EPA 300.0	#
pH	7.42	pH_Units		S4500HB-11	#
Specific Conductance	883	umhos/cm	5	SW846 9050A	#
Sulfate	91.6	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	532	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	1.5	mg/L	0.50	SW846 9060A	#
Turbidity	1.0	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	FFMP03AW	Collected	11/07/2023 14:30
Lab Sample ID	3331664004	Lab Receipt	11/07/2023 16:00

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	54.31	Feet		Field	#
Dissolved Oxygen	1.24	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	590.90	Feet		Field	#
Flow Rate	1.63	gal/min		Field	#
Ground Water Elevation	536.59	ft/MSL		Field	#
Oxidation-Reduction Potential	346	mV		Field	#
pH, Field (SM4500B)	4.99	pH_Units		Field	#
Sample Depth	130.00	Feet		Field	#
Specific Conductance, Field	492	umhos/cm	1	Field	#
Temperature	14.10	Deg. C		Field	#
Total Well Depth	148.40	Feet		Field	#
Volume in Water Column	138.31	Gallons		Field	#
Water Level After Purge	81.52	Feet		Field	#
Well Volumes Purged	1.00	Vol		Field	#
METALS					
Calcium, Total	21.8	mg/L	0.11	SW846 6010C	#
Magnesium, Total	17.4	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.43	mg/L	0.0056	SW846 6010C	#
Potassium, Total	1.6	mg/L	0.56	SW846 6010C	#
Sodium, Total	15.5	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	14	mg/L	5	SM2320B-2011	#
Alkalinity, Total	14	mg/L	5	SM2320B-2011	#
Chloride	40.8	mg/L	2.0	EPA 300.0	#
Nitrate-N	23.8	mg/L	1.0	EPA 300.0	#
pH	6.91	pH_Units		S4500HB-11	#
Specific Conductance	369	umhos/cm	5	SW846 9050A	#
Sulfate	3.6	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	244	mg/L	25	SM2540C-15	#

Results

Client Sample ID	FFMP029W	Collected	11/07/2023 09:47
Lab Sample ID	3331664001	Lab Receipt	11/07/2023 16:00

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	39.59		Feet		Field	1	11/07/2023 09:47	BGS	D
Dissolved Oxygen	5.17		mg/L	0.01	Field	1	11/07/2023 09:47	BGS	D
Elev Top MW Casing above MSL	477.30		Feet		Field	1	11/07/2023 09:47	BGS	D
Flow Rate	2.26		gal/min		Field	1	11/07/2023 09:47	BGS	D
Ground Water Elevation	437.71		ft/MSL		Field	1	11/07/2023 09:47	BGS	D
Oxidation-Reduction Potential	300		mV		Field	1	11/07/2023 09:47	BGS	D
pH, Field (SM4500B)	5.17		pH_Units		Field	1	11/07/2023 09:47	BGS	D
Sample Depth	55.00		Feet		Field	1	11/07/2023 09:47	BGS	D
Specific Conductance, Field	495		umhos/cm	1	Field	1	11/07/2023 09:47	BGS	D
Temperature	14.62		Deg. C		Field	1	11/07/2023 09:47	BGS	D
Total Well Depth	60.50		Feet		Field	1	11/07/2023 09:47	BGS	D
Turbidity, Field	ND	ND	NTU	1	Field	1	11/07/2023 09:47	BGS	D
Volume in Water Column	30.74		Gallons		Field	1	11/07/2023 09:47	BGS	D
Water Level After Purge	46.55		Feet		Field	1	11/07/2023 09:47	BGS	D
Well Volumes Purged	4.42		Vol		Field	1	11/07/2023 09:47	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	18.9		mg/L	0.11	SW846 6010C	1	11/15/2023 12:17	HTO	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	11/15/2023 12:17	HTO	J1
Magnesium, Total	12.6		mg/L	0.11	SW846 6010C	1	11/15/2023 12:17	HTO	J1
Manganese, Total	0.047		mg/L	0.0056	SW846 6010C	1	11/15/2023 12:17	HTO	J1
Potassium, Total	2.6		mg/L	0.56	SW846 6010C	1	11/15/2023 12:17	HTO	J1
Sodium, Total	27.2		mg/L	0.56	SW846 6010C	1	11/15/2023 12:17	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:10	TMP	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:10	TMP	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:10	TMP	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:10	TMP	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:10	TMP	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:10	TMP	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:10	TMP	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:10	TMP	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:10	TMP	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:10	TMP	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:10	TMP	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/18/2023 16:10	TMP	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:10	TMP	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:10	TMP	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:10	TMP	H

Results

Client Sample ID	FFMP029W	Collected	11/07/2023 09:47
Lab Sample ID	3331664001	Lab Receipt	11/07/2023 16:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	62 – 133	11/18/2023 16:10	
4-Bromofluorobenzene	460-00-4	87.1%	79 – 114	11/18/2023 16:10	
Dibromofluoromethane	1868-53-7	95.8%	78 – 116	11/18/2023 16:10	
Toluene-d8	2037-26-5	94.4%	76 – 127	11/18/2023 16:10	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	12		mg/L	5	SM2320B-2011	1	11/14/2023 18:01	JMS	B
Alkalinity, Total	12	1	mg/L	5	SM2320B-2011	1	11/14/2023 18:01	JMS	B
Ammonia-N	0.132		mg/L	0.100	ASTM D6919-17	10	11/16/2023 10:36	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/09/2023 11:55	KMS	A
Chloride	89.9		mg/L	2.0	EPA 300.0	2	11/08/2023 17:33	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/08/2023 17:33	J1W	B
Nitrate-N	3.8		mg/L	1.0	EPA 300.0	2	11/08/2023 17:33	J1W	B
pH	6.59	2	pH_Units		S4500HB-11	1	11/10/2023 16:39	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/21/2023 17:39	AKH	G
Specific Conductance	374		umhos/cm	5	SW846 9050A	1	11/22/2023 09:30	JXL	B
Sulfate	9.4		mg/L	2.0	EPA 300.0	2	11/08/2023 17:33	J1W	B
Total Dissolved Solids	214		mg/L	25	SM2540C-15	1	11/09/2023 07:10	KRS	B
Total Organic Carbon (TOC)	ND	ND	mg/L	0.50	SW846 9060A	1	11/10/2023 00:31	PAG	E
Turbidity	0.30		NTU	0.30	SM2130B-2011	1	11/07/2023 22:46	NRB	B

Results

Client Sample ID	FFMP005W	Collected	11/07/2023 11:56
Lab Sample ID	3331664002	Lab Receipt	11/07/2023 16:00

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	74.86		Feet		Field	1	11/07/2002 11:56	BGS	D
Dissolved Oxygen	0.00		mg/L		Field	1	11/07/2002 11:56	BGS	D
Elev Top MW Casing above MSL	537.40		Feet		Field	1	11/07/2002 11:56	BGS	D
Flow Rate	1.75		gal/min		Field	1	11/07/2002 11:56	BGS	D
Ground Water Elevation	462.54		ft/MSL		Field	1	11/07/2002 11:56	BGS	D
Oxidation-Reduction Potential	516		mV		Field	1	11/07/2002 11:56	BGS	D
pH, Field (SM4500B)	5.58		pH_Units		Field	1	11/07/2002 11:56	BGS	D
Sample Depth	135.00		Feet		Field	1	11/07/2002 11:56	BGS	D
Specific Conductance, Field	1151		umhos/cm		Field	1	11/07/2002 11:56	BGS	D
Temperature	13.90		Deg. C		Field	1	11/07/2002 11:56	BGS	D
Total Well Depth	149.70		Feet		Field	1	11/07/2002 11:56	BGS	D
Turbidity, Field	0		NTU		Field	1	11/07/2002 11:56	BGS	D
Volume in Water Column	110.01		Gallons		Field	1	11/07/2002 11:56	BGS	D
Water Level After Purge	96.62		Feet		Field	1	11/07/2002 11:56	BGS	D
Well Volumes Purged	1.00		Vol		Field	1	11/07/2002 11:56	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	80.1		mg/L	0.11	SW846 6010C	1	11/15/2023 12:19	HTO	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	11/15/2023 12:19	HTO	J1
Magnesium, Total	19.8		mg/L	0.11	SW846 6010C	1	11/15/2023 12:19	HTO	J1
Manganese, Total	0.17		mg/L	0.0056	SW846 6010C	1	11/15/2023 12:19	HTO	J1
Potassium, Total	3.0		mg/L	0.56	SW846 6010C	1	11/15/2023 12:19	HTO	J1
Sodium, Total	50.2		mg/L	0.56	SW846 6010C	1	11/15/2023 12:19	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:31	TMP	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:31	TMP	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:31	TMP	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:31	TMP	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:31	TMP	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:31	TMP	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:31	TMP	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:31	TMP	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:31	TMP	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:31	TMP	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:31	TMP	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/18/2023 16:31	TMP	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:31	TMP	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:31	TMP	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:31	TMP	H

Results

Client Sample ID	FFMP005W	Collected	11/07/2023 11:56
Lab Sample ID	3331664002	Lab Receipt	11/07/2023 16:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	107%	62 – 133	11/18/2023 16:31	
4-Bromofluorobenzene	460-00-4	97.7%	79 – 114	11/18/2023 16:31	
Dibromofluoromethane	1868-53-7	98.3%	78 – 116	11/18/2023 16:31	
Toluene-d8	2037-26-5	99.4%	76 – 127	11/18/2023 16:31	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	59		mg/L	5	SM2320B-2011	1	11/10/2023 21:47	JMS	B
Alkalinity, Total	59	1	mg/L	5	SM2320B-2011	1	11/10/2023 21:47	JMS	B
Ammonia-N	0.140		mg/L	0.100	ASTM D6919-17	10	11/16/2023 10:49	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/09/2023 11:55	KMS	A
Chloride	185		mg/L	2.0	EPA 300.0	2	11/08/2023 17:44	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/08/2023 17:44	J1W	B
Nitrate-N	1.7		mg/L	1.0	EPA 300.0	2	11/08/2023 17:44	J1W	B
pH	7.46	2	pH_Units		S4500HB-11	1	11/10/2023 21:47	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/21/2023 17:31	AKH	G
Specific Conductance	857		umhos/cm	5	SW846 9050A	1	11/22/2023 09:30	JXL	B
Sulfate	68.9		mg/L	2.0	EPA 300.0	2	11/08/2023 17:44	J1W	B
Total Dissolved Solids	512		mg/L	25	SM2540C-15	1	11/09/2023 07:10	KRS	B
Total Organic Carbon (TOC)	1.1		mg/L	0.50	SW846 9060A	1	11/10/2023 00:31	PAG	E
Turbidity	ND	ND	NTU	0.30	SM2130B-2011	1	11/07/2023 22:46	NRB	B

Results

Client Sample ID	FFMP26RW	Collected	11/07/2023 13:22
Lab Sample ID	3331664003	Lab Receipt	11/07/2023 16:00

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	87.22		Feet		Field	1	11/07/2023 13:22	BGS	D
Dissolved Oxygen	ND	ND	mg/L	0.01	Field	1	11/07/2023 13:22	BGS	D
Elev Top MW Casing above MSL	547.40		Feet		Field	1	11/07/2023 13:22	BGS	D
Flow Rate	1.77		gal/min		Field	1	11/07/2023 13:22	BGS	D
Ground Water Elevation	460.18		ft/MSL		Field	1	11/07/2023 13:22	BGS	D
Oxidation-Reduction Potential	330		mV		Field	1	11/07/2023 13:22	BGS	D
pH, Field (SM4500B)	5.52		pH_Units		Field	1	11/07/2023 13:22	BGS	D
Sample Depth	105.00		Feet		Field	1	11/07/2023 13:22	BGS	D
Specific Conductance, Field	1180		umhos/cm	1	Field	1	11/07/2023 13:22	BGS	D
Temperature	15.13		Deg. C		Field	1	11/07/2023 13:22	BGS	D
Total Well Depth	118.30		Feet		Field	1	11/07/2023 13:22	BGS	D
Turbidity, Field	ND	ND	NTU	1	Field	1	11/07/2023 13:22	BGS	D
Volume in Water Column	45.69		Gallons		Field	1	11/07/2023 13:22	BGS	D
Water Level After Purge	102.38		Feet		Field	1	11/07/2023 13:22	BGS	D
Well Volumes Purged	2.13		Vol		Field	1	11/07/2023 13:22	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	73.5		mg/L	0.11	SW846 6010C	1	11/15/2023 12:20	HTO	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	11/15/2023 12:20	HTO	J1
Magnesium, Total	20.0		mg/L	0.11	SW846 6010C	1	11/15/2023 12:20	HTO	J1
Manganese, Total	0.70		mg/L	0.0056	SW846 6010C	1	11/15/2023 12:20	HTO	J1
Potassium, Total	6.8		mg/L	0.56	SW846 6010C	1	11/15/2023 12:20	HTO	J1
Sodium, Total	61.1		mg/L	0.56	SW846 6010C	1	11/15/2023 12:20	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:51	TMP	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:51	TMP	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:51	TMP	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:51	TMP	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:51	TMP	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:51	TMP	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:51	TMP	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:51	TMP	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:51	TMP	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:51	TMP	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:51	TMP	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/18/2023 16:51	TMP	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:51	TMP	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:51	TMP	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 16:51	TMP	H

Results

Client Sample ID	FFMP26RW	Collected	11/07/2023 13:22
Lab Sample ID	3331664003	Lab Receipt	11/07/2023 16:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	107%	62 – 133	11/18/2023 16:51	
4-Bromofluorobenzene	460-00-4	104%	79 – 114	11/18/2023 16:51	
Dibromofluoromethane	1868-53-7	96.9%	78 – 116	11/18/2023 16:51	
Toluene-d8	2037-26-5	102%	76 – 127	11/18/2023 16:51	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	63		mg/L	5	SM2320B-2011	1	11/10/2023 21:59	JMS	B
Alkalinity, Total	63	1	mg/L	5	SM2320B-2011	1	11/10/2023 21:59	JMS	B
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-17	10	11/20/2023 12:59	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/09/2023 11:55	KMS	A
Chloride	177		mg/L	2.0	EPA 300.0	2	11/08/2023 17:54	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/08/2023 17:54	J1W	B
Nitrate-N	1.2		mg/L	1.0	EPA 300.0	2	11/08/2023 17:54	J1W	B
pH	7.42	2	pH_Units		S4500HB-11	1	11/10/2023 21:59	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/21/2023 17:35	AKH	G
Specific Conductance	883		umhos/cm	5	SW846 9050A	1	11/20/2023 15:30	J1W	B
Sulfate	91.6		mg/L	2.0	EPA 300.0	2	11/08/2023 17:54	J1W	B
Total Dissolved Solids	532		mg/L	25	SM2540C-15	1	11/09/2023 13:30	RAG	B
Total Organic Carbon (TOC)	1.5		mg/L	0.50	SW846 9060A	1	11/10/2023 00:31	PAG	E
Turbidity	1.0		NTU	0.30	SM2130B-2011	1	11/07/2023 22:46	NRB	B

Results

Client Sample ID	FFMP03AW	Collected	11/07/2023 14:30
Lab Sample ID	3331664004	Lab Receipt	11/07/2023 16:00

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	54.31		Feet		Field	1	11/07/2023 14:30	BGS	D
Dissolved Oxygen	1.24		mg/L	0.01	Field	1	11/07/2023 14:30	BGS	D
Elev Top MW Casing above MSL	590.90		Feet		Field	1	11/07/2023 14:30	BGS	D
Flow Rate	1.63		gal/min		Field	1	11/07/2023 14:30	BGS	D
Ground Water Elevation	536.59		ft/MSL		Field	1	11/07/2023 14:30	BGS	D
Oxidation-Reduction Potential	346		mV		Field	1	11/07/2023 14:30	BGS	D
pH, Field (SM4500B)	4.99		pH_Units		Field	1	11/07/2023 14:30	BGS	D
Sample Depth	130.00		Feet		Field	1	11/07/2023 14:30	BGS	D
Specific Conductance, Field	492		umhos/cm	1	Field	1	11/07/2023 14:30	BGS	D
Temperature	14.10		Deg. C		Field	1	11/07/2023 14:30	BGS	D
Total Well Depth	148.40		Feet		Field	1	11/07/2023 14:30	BGS	D
Turbidity, Field	ND	ND	NTU	1	Field	1	11/07/2023 14:30	BGS	D
Volume in Water Column	138.31		Gallons		Field	1	11/07/2023 14:30	BGS	D
Water Level After Purge	81.52		Feet		Field	1	11/07/2023 14:30	BGS	D
Well Volumes Purged	1.00		Vol		Field	1	11/07/2023 14:30	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	21.8		mg/L	0.11	SW846 6010C	1	11/15/2023 12:21	HTO	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	11/15/2023 12:21	HTO	J1
Magnesium, Total	17.4		mg/L	0.11	SW846 6010C	1	11/15/2023 12:21	HTO	J1
Manganese, Total	0.43		mg/L	0.0056	SW846 6010C	1	11/15/2023 12:21	HTO	J1
Potassium, Total	1.6		mg/L	0.56	SW846 6010C	1	11/15/2023 12:21	HTO	J1
Sodium, Total	15.5		mg/L	0.56	SW846 6010C	1	11/15/2023 12:21	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 17:11	TMP	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 17:11	TMP	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 17:11	TMP	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 17:11	TMP	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 17:11	TMP	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 17:11	TMP	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 17:11	TMP	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 17:11	TMP	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 17:11	TMP	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 17:11	TMP	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 17:11	TMP	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/18/2023 17:11	TMP	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 17:11	TMP	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 17:11	TMP	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/18/2023 17:11	TMP	H

Results

Client Sample ID	FFMP03AW	Collected	11/07/2023 14:30
Lab Sample ID	3331664004	Lab Receipt	11/07/2023 16:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	62 – 133	11/18/2023 17:11	
4-Bromofluorobenzene	460-00-4	92%	79 – 114	11/18/2023 17:11	
Dibromofluoromethane	1868-53-7	94.2%	78 – 116	11/18/2023 17:11	
Toluene-d8	2037-26-5	91.5%	76 – 127	11/18/2023 17:11	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	14		mg/L	5	SM2320B-2011	1	11/10/2023 22:13	JMS	B
Alkalinity, Total	14	1	mg/L	5	SM2320B-2011	1	11/10/2023 22:13	JMS	B
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-17	10	11/20/2023 14:35	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/09/2023 11:55	KMS	A
Chloride	40.8		mg/L	2.0	EPA 300.0	2	11/08/2023 18:04	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/08/2023 18:04	J1W	B
Nitrate-N	23.8	E,3,4	mg/L	1.0	EPA 300.0	2	11/08/2023 18:04	J1W	B
pH	6.91	2	pH_Units		S4500HB-11	1	11/10/2023 22:13	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/21/2023 17:27	AKH	G
Specific Conductance	369		umhos/cm	5	SW846 9050A	1	11/20/2023 15:30	J1W	B
Sulfate	3.6		mg/L	2.0	EPA 300.0	2	11/08/2023 18:04	J1W	B
Total Dissolved Solids	244		mg/L	25	SM2540C-15	1	11/09/2023 13:30	RAG	B
Total Organic Carbon (TOC)	ND	ND	mg/L	0.50	SW846 9060A	1	11/10/2023 00:31	PAG	E
Turbidity	ND	ND	NTU	0.30	SM2130B-2011	1	11/07/2023 22:46	NRB	B

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3331664001	FFMP029W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	
3331664002	FFMP005W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	
3331664003	FFMP26RW	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	
3331664004	FFMP03AW	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3331664001	FFMP029W	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1084590	11/08/2023 04:05	ANN	SW846 6010C	1089384
		N/A	N/A	N/A		SW846 8260B	1090886
		N/A	N/A	N/A		ASTM D6919-17	1089388
		N/A	N/A	N/A		EPA 300.0	1085108
		N/A	N/A	N/A		EPA 410.4	1085835
		N/A	N/A	N/A		S4500HB-11	1086508
		N/A	N/A	N/A		SM2130B-2011	1084705
		N/A	N/A	N/A		SM2320B-2011	1089113
		N/A	N/A	N/A		SM2540C-15	1085299
		N/A	N/A	N/A		SW846 9050A	1092790
		N/A	N/A	N/A		SW846 9060A	1085982
		SW846 9066	1092708	11/21/2023 10:31	AKH	SW846 9066	1092710
3331664002	FFMP005W	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1084590	11/08/2023 04:05	ANN	SW846 6010C	1089384
		N/A	N/A	N/A		SW846 8260B	1090886
		N/A	N/A	N/A		ASTM D6919-17	1089388
		N/A	N/A	N/A		EPA 300.0	1085108
		N/A	N/A	N/A		EPA 410.4	1085835
		N/A	N/A	N/A		S4500HB-11	1086508
		N/A	N/A	N/A		SM2130B-2011	1084705
		N/A	N/A	N/A		SM2320B-2011	1086508
		N/A	N/A	N/A		SM2540C-15	1085299
		N/A	N/A	N/A		SW846 9050A	1092790
		N/A	N/A	N/A		SW846 9060A	1085982
		SW846 9066	1092708	11/21/2023 10:31	AKH	SW846 9066	1092710
3331664003	FFMP26RW	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1084590	11/08/2023 04:05	ANN	SW846 6010C	1089384
		N/A	N/A	N/A		SW846 8260B	1090886
		N/A	N/A	N/A		ASTM D6919-17	1092260
		N/A	N/A	N/A		EPA 300.0	1085108
		N/A	N/A	N/A		EPA 410.4	1085835
		N/A	N/A	N/A		S4500HB-11	1086508
		N/A	N/A	N/A		SM2130B-2011	1084705
		N/A	N/A	N/A		SM2320B-2011	1086508
		N/A	N/A	N/A		SM2540C-15	1085915
		N/A	N/A	N/A		SW846 9050A	1092376
		N/A	N/A	N/A		SW846 9060A	1085982
		SW846 9066	1092708	11/21/2023 10:31	AKH	SW846 9066	1092710
3331664004	FFMP03AW	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1084590	11/08/2023 04:05	ANN	SW846 6010C	1089384
		N/A	N/A	N/A		SW846 8260B	1090886
		N/A	N/A	N/A		ASTM D6919-17	1092260
		N/A	N/A	N/A		EPA 300.0	1085108
		N/A	N/A	N/A		EPA 410.4	1085835
		N/A	N/A	N/A		S4500HB-11	1086508
		N/A	N/A	N/A		SM2130B-2011	1084705
		N/A	N/A	N/A		SM2320B-2011	1086508
		N/A	N/A	N/A		SM2540C-15	1085915
		N/A	N/A	N/A		SW846 9050A	1092376
		N/A	N/A	N/A		SW846 9060A	1085982
		SW846 9066	1092708	11/21/2023 10:31	AKH	SW846 9066	1092710

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

301 Fulling Mill Road • Middletown, PA 17057 • 717.944.5541 • Fax: 717.944.1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALS

3331664
Logged By: SLS
PM: SJB

4 | 1 of 1

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

Client Name: Lancaster County Solid Waste MA

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

Contact: Dan Brown

Phone#: (717) 735-0193

Project Name/#: Frey Farm Quarterly (GWMP)

Bill To: Lancaster County Solid Waste MA

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

Date Required: _____ **Approved By:** _____

Email? [X]-Y dbrown@LCSWMA.com

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

Container Type	AG	AW	CG	---	---	PL	PL	PL	
Container Size	40 ml	125 ml	40 ml	---	---	250 ml	125 ml	500 ml	250 ml
Preservative	HCl	H2SO4	HCl	---	---	H2SO4	HNO3	None	None

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	TOC	O-OH	VOC - Form 19Q	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Metals: Fe, Mn, Na, Ca, K, Mg	pH, Cl, SpC, F, SO4, TDS, NO3, Turb.	Alkalinity Bicarbonate	
					Enter Number of Containers Per Sample or Field Results Below.									
1. FFMP029W	11/07/23	0947	G	GW	2	1	2	x	x	1	2	1	1	
2. FFMP005W	11/07/23	1156	G	GW	2	1	2	x	x	1	2	1	1	
3. FFMP26RW	11/07/23	1322	G	GW	2	1	2	x	x	1	2	1	1	
4. FFMP03AW	11/07/23	1430	G	GW	2	1	2	x	x	1	2	1	1	
5														
6														
7														
8														
9														
10														

Project Comments:

(pleted by Receiving Lab)

Cooler Temp: _____ Therm ID: _____
No. of Coolers: _____

	Y	N	Initial
Custody Seals Present?			
(if present) Seals Intact?			
Received on Ice?			
COC/Labels Complete/Ac...			

Temp By: RW | WQ Temp (°C): 3c | Therm ID: 520

Receipt Info Completed By:		RW
Cooler Custody Seal Intact	Y N NA	
Sample Custody Seal Intact	Y N NA	
Received on Ice	Y N NA	
Cooler & Samples Intact	Y N	
Correct Containers Provided	Y N	
Sample Label/COC Agree	Y N	
Adequate Sample Volumes	Y N	
CR6 Samples Filtered	Y N NA	
OP Samples Filtered	Y N NA	
VOA Trip Blank	Y N NA	
NJ≤ 4 Days?		
Rad Screen (uCi)		
Courier/Tracking #:		
SDWA Compliance	Y N	
PWSID		
WV Containers 0-6°C	Y N NA	

LOGGED BY(signature): _____ DATE _____ TIME _____

REVIEWED BY(signature): _____ DATE _____ TIME _____

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

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
[illegible]	11-7-23	1607	2		
			4	11-7-23	1607
			6		
			8		
			10		

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

Special Processing: USACE [ ] Navy [ ]

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

Reportable to PADEP? Yes [ ]

PWSID # _____

Sample Disposal: Lab [X] Special [ ]

EDDS: Format Type- _____

* G=Grab; C=Composite

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

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

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

Analytical Results Report For **Lancaster County Solid Waste Authority**

Project 4th QTR 2023 GWMP-FORM 19Q
Workorder 3331939
Report ID 285502 on 11/28/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Nov 08, 2023.

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 Susan Scherer (Project Coordinator) at (717) 944-5541.

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

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Jordan Bigler - Lancaster County Solid Waste Authority
Ashley Gichuki - Lancaster County Solid Waste Authority
Daniel Brown - Lancaster County Solid Waste Authority
Jeff Musser - Lancaster County Solid Waste Authority

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

Susan Scherer

Susan Scherer *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3331939001	FFMP017W	Ground Water	11/08/2023 09:48	11/08/2023 15:00	BGS	Analytical Laboratory Service
3331939002	FFMP30RW	Ground Water	11/08/2023 12:16	11/08/2023 15:00	BGS	Analytical Laboratory Service
3331939003	FFMP04AW	Ground Water	11/08/2023 13:31	11/08/2023 15:00	BGS	Analytical Laboratory Service

Reference

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).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136, including but not limited to the following EPA Method reference revisions:
  EPA 300.1 Rev. 1.0-1997
  EPA 300.0 Rev. 2.1-1993
  EPA 353.2 Rev. 2.0-1993
  EPA 410.4 Rev. 1.0-1993
  EPA 420.4 Rev. 1.0-1993
  EPA 365.1 Rev. 2.0-1993
  EPA 200.7 Rev. 4.4-1994
  EPA 200.8 Rev. 5.4-1994
  EPA 245.1 Rev. 3.0-1994
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the 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.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
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
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID

Result Notations

Notation Ref.	
1	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.
2	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.
3	The concentration of this analyte was greater than 4 times the concentration of the spike added to the matrix spike. According to protocol, the calculation for percent recovery of the matrix spike is not valid.

Detected Results Summary

Client Sample ID	FFMP017W	Collected	11/08/2023 09:48
Lab Sample ID	3331939001	Lab Receipt	11/08/2023 15:00

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	42.66	Feet		Field	#
Elev Top MW Casing above MSL	480.70	Feet		Field	#
Flow Rate	2.09	gal/min		Field	#
Ground Water Elevation	438.04	ft/MSL		Field	#
Oxidation-Reduction Potential	219	mV		Field	#
pH, Field (SM4500B)	5.86	pH_Units		Field	#
Sample Depth	135.00	Feet		Field	#
Specific Conductance, Field	1654	umhos/cm	1	Field	#
Temperature	13.01	Deg. C		Field	#
Total Well Depth	150.50	Feet		Field	#
Volume in Water Column	158.52	Gallons		Field	#
Water Level After Purge	51.01	Feet		Field	#
Well Volumes Purged	0.46	Vol		Field	#
METALS					
Calcium, Total	102	mg/L	0.11	SW846 6010C	#
Magnesium, Total	38.7	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.70	mg/L	0.0056	SW846 6010C	#
Potassium, Total	4.9	mg/L	0.56	SW846 6010C	#
Sodium, Total	91.6	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	123	mg/L	5	SM2320B-2011	#
Alkalinity, Total	123	mg/L	5	SM2320B-2011	#
Ammonia-N	0.116	mg/L	0.100	ASTM D6919-17	#
Chloride	259	mg/L	5.0	EPA 300.0	#
Nitrate-N	2.8	mg/L	2.5	EPA 300.0	#
pH	7.74	pH_Units		S4500HB-11	#
Specific Conductance	1220	umhos/cm	5	SW846 9050A	#
Sulfate	83.5	mg/L	5.0	EPA 300.0	#
Total Dissolved Solids	696	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	2.7	mg/L	0.50	SW846 9060A	#
Turbidity	0.40	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	FFMP30RW	Collected	11/08/2023 12:16
Lab Sample ID	3331939002	Lab Receipt	11/08/2023 15:00

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	37.43	Feet		Field	#
Dissolved Oxygen	4.75	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	562.30	Feet		Field	#
Flow Rate	2.04	gal/min		Field	#
Ground Water Elevation	524.87	ft/MSL		Field	#
Oxidation-Reduction Potential	226	mV		Field	#
pH, Field (SM4500B)	6.02	pH_Units		Field	#
Sample Depth	85.00	Feet		Field	#
Specific Conductance, Field	1844	umhos/cm	1	Field	#
Temperature	15.03	Deg. C		Field	#
Total Well Depth	94.20	Feet		Field	#
Turbidity, Field	14	NTU	1	Field	#
Volume in Water Column	83.45	Gallons		Field	#
Water Level After Purge	81.30	Feet		Field	#
Well Volumes Purged	2.93	Vol		Field	#
METALS					
Calcium, Total	87.2	mg/L	0.11	SW846 6010C	#
Iron, Total	1.3	mg/L	0.067	SW846 6010C	#
Magnesium, Total	21.5	mg/L	0.11	SW846 6010C	#
Manganese, Total	3.7	mg/L	0.0056	SW846 6010C	#
Potassium, Total	9.5	mg/L	0.56	SW846 6010C	#
Sodium, Total	139	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	67	mg/L	5	SM2320B-2011	#
Alkalinity, Total	67	mg/L	5	SM2320B-2011	#
Ammonia-N	0.133	mg/L	0.100	ASTM D6919-17	#
Chloride	323	mg/L	5.0	EPA 300.0	#
Nitrate-N	4.3	mg/L	2.5	EPA 300.0	#
pH	7.59	pH_Units		S4500HB-11	#
Specific Conductance	1310	umhos/cm	5	SW846 9050A	#
Sulfate	62.2	mg/L	5.0	EPA 300.0	#
Total Dissolved Solids	800	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	0.90	mg/L	0.50	SW846 9060A	#
Turbidity	18	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	FFMP04AW	Collected	11/08/2023 13:31
Lab Sample ID	3331939003	Lab Receipt	11/08/2023 15:00

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	38.78	Feet		Field	#
Elev Top MW Casing above MSL	560.72	Feet		Field	#
Flow Rate	1.89	gal/min		Field	#
Ground Water Elevation	521.94	ft/MSL		Field	#
Oxidation-Reduction Potential	109	mV		Field	#
pH, Field (SM4500B)	6.95	pH_Units		Field	#
Sample Depth	146.00	Feet		Field	#
Specific Conductance, Field	1981	umhos/cm	1	Field	#
Temperature	13.95	Deg. C		Field	#
Total Well Depth	148.50	Feet		Field	#
Volume in Water Column	161.29	Gallons		Field	#
Water Level After Purge	81.98	Feet		Field	#
Well Volumes Purged	1.00	Vol		Field	#
METALS					
Calcium, Total	173	mg/L	0.11	SW846 6010C	#
Magnesium, Total	28.6	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.40	mg/L	0.0056	SW846 6010C	#
Potassium, Total	2.8	mg/L	0.56	SW846 6010C	#
Sodium, Total	93.6	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	196	mg/L	5	SM2320B-2011	#
Alkalinity, Total	196	mg/L	5	SM2320B-2011	#
Chloride	326	mg/L	5.0	EPA 300.0	#
pH	8.13	pH_Units		S4500HB-11	#
Specific Conductance	1470	umhos/cm	5	SW846 9050A	#
Sulfate	54.0	mg/L	5.0	EPA 300.0	#
Total Dissolved Solids	904	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	0.71	mg/L	0.50	SW846 9060A	#
Turbidity	0.50	NTU	0.30	SM2130B-2011	#

Results

Client Sample ID	FFMP017W	Collected	11/08/2023 09:48
Lab Sample ID	3331939001	Lab Receipt	11/08/2023 15:00

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	42.66		Feet		Field	1	11/08/2023 09:48	BGS	D
Dissolved Oxygen	ND	ND	mg/L	0.01	Field	1	11/08/2023 09:48	BGS	D
Elev Top MW Casing above MSL	480.70		Feet		Field	1	11/08/2023 09:48	BGS	D
Flow Rate	2.09		gal/min		Field	1	11/08/2023 09:48	BGS	D
Ground Water Elevation	438.04		ft/MSL		Field	1	11/08/2023 09:48	BGS	D
Oxidation-Reduction Potential	219		mV		Field	1	11/08/2023 09:48	BGS	D
pH, Field (SM4500B)	5.86		pH_Units		Field	1	11/08/2023 09:48	BGS	D
Sample Depth	135.00		Feet		Field	1	11/08/2023 09:48	BGS	D
Specific Conductance, Field	1654		umhos/cm	1	Field	1	11/08/2023 09:48	BGS	D
Temperature	13.01		Deg. C		Field	1	11/08/2023 09:48	BGS	D
Total Well Depth	150.50		Feet		Field	1	11/08/2023 09:48	BGS	D
Turbidity, Field	ND	ND	NTU	1	Field	1	11/08/2023 09:48	BGS	D
Volume in Water Column	158.52		Gallons		Field	1	11/08/2023 09:48	BGS	D
Water Level After Purge	51.01		Feet		Field	1	11/08/2023 09:48	BGS	D
Well Volumes Purged	0.46		Vol		Field	1	11/08/2023 09:48	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	102		mg/L	0.11	SW846 6010C	1	11/17/2023 12:16	HTO	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	11/17/2023 12:16	HTO	J1
Magnesium, Total	38.7		mg/L	0.11	SW846 6010C	1	11/17/2023 12:16	HTO	J1
Manganese, Total	0.70		mg/L	0.0056	SW846 6010C	1	11/17/2023 12:16	HTO	J1
Potassium, Total	4.9		mg/L	0.56	SW846 6010C	1	11/17/2023 12:16	HTO	J1
Sodium, Total	91.6		mg/L	0.56	SW846 6010C	1	11/17/2023 12:16	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 15:42	ILY	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 15:42	ILY	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 15:42	ILY	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 15:42	ILY	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 15:42	ILY	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 15:42	ILY	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 15:42	ILY	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 15:42	ILY	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 15:42	ILY	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 15:42	ILY	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 15:42	ILY	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/21/2023 15:42	ILY	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 15:42	ILY	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 15:42	ILY	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 15:42	ILY	H

Results

Client Sample ID	FFMP017W	Collected	11/08/2023 09:48
Lab Sample ID	3331939001	Lab Receipt	11/08/2023 15:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	83.7%	62 – 133	11/21/2023 15:42	
4-Bromofluorobenzene	460-00-4	96%	79 – 114	11/21/2023 15:42	
Dibromofluoromethane	1868-53-7	85.3%	78 – 116	11/21/2023 15:42	
Toluene-d8	2037-26-5	97.7%	76 – 127	11/21/2023 15:42	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	123		mg/L	5	SM2320B-2011	1	11/10/2023 20:02	JMS	B
Alkalinity, Total	123	1	mg/L	5	SM2320B-2011	1	11/10/2023 20:02	JMS	B
Ammonia-N	0.116		mg/L	0.100	ASTM D6919-17	10	11/21/2023 01:10	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/10/2023 11:50	KMS	A
Chloride	259		mg/L	5.0	EPA 300.0	5	11/09/2023 12:14	J1W	B
Fluoride	ND	ND	mg/L	0.50	EPA 300.0	5	11/09/2023 12:14	J1W	B
Nitrate-N	2.8		mg/L	2.5	EPA 300.0	5	11/09/2023 12:14	J1W	B
pH	7.74	2	pH_Units		S4500HB-11	1	11/10/2023 20:02	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/21/2023 18:52	AKH	G
Specific Conductance	1220		umhos/cm	5	SW846 9050A	1	11/22/2023 09:30	JXL	B
Sulfate	83.5		mg/L	5.0	EPA 300.0	5	11/09/2023 12:14	J1W	B
Total Dissolved Solids	696		mg/L	25	SM2540C-15	1	11/13/2023 14:43	RAG	B
Total Organic Carbon (TOC)	2.7		mg/L	0.50	SW846 9060A	1	11/10/2023 00:31	PAG	E
Turbidity	0.40		NTU	0.30	SM2130B-2011	1	11/08/2023 22:20	NRB	B

Results

Client Sample ID	FFMP30RW	Collected	11/08/2023 12:16
Lab Sample ID	3331939002	Lab Receipt	11/08/2023 15:00

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	37.43		Feet		Field	1	11/08/2023 12:16	BGS	D
Dissolved Oxygen	4.75		mg/L	0.01	Field	1	11/08/2023 12:16	BGS	D
Elev Top MW Casing above MSL	562.30		Feet		Field	1	11/08/2023 12:16	BGS	D
Flow Rate	2.04		gal/min		Field	1	11/08/2023 12:16	BGS	D
Ground Water Elevation	524.87		ft/MSL		Field	1	11/08/2023 12:16	BGS	D
Oxidation-Reduction Potential	226		mV		Field	1	11/08/2023 12:16	BGS	D
pH, Field (SM4500B)	6.02		pH_Units		Field	1	11/08/2023 12:16	BGS	D
Sample Depth	85.00		Feet		Field	1	11/08/2023 12:16	BGS	D
Specific Conductance, Field	1844		umhos/cm	1	Field	1	11/08/2023 12:16	BGS	D
Temperature	15.03		Deg. C		Field	1	11/08/2023 12:16	BGS	D
Total Well Depth	94.20		Feet		Field	1	11/08/2023 12:16	BGS	D
Turbidity, Field	14		NTU	1	Field	1	11/08/2023 12:16	BGS	D
Volume in Water Column	83.45		Gallons		Field	1	11/08/2023 12:16	BGS	D
Water Level After Purge	81.30		Feet		Field	1	11/08/2023 12:16	BGS	D
Well Volumes Purged	2.93		Vol		Field	1	11/08/2023 12:16	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	87.2	3	mg/L	0.11	SW846 6010C	1	11/17/2023 12:17	HTO	J1
Iron, Total	1.3		mg/L	0.067	SW846 6010C	1	11/17/2023 12:17	HTO	J1
Magnesium, Total	21.5		mg/L	0.11	SW846 6010C	1	11/17/2023 12:17	HTO	J1
Manganese, Total	3.7	3	mg/L	0.0056	SW846 6010C	1	11/17/2023 12:17	HTO	J1
Potassium, Total	9.5		mg/L	0.56	SW846 6010C	1	11/17/2023 12:17	HTO	J1
Sodium, Total	139		mg/L	0.56	SW846 6010C	1	11/17/2023 12:17	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:02	ILY	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:02	ILY	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:02	ILY	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:02	ILY	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:02	ILY	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:02	ILY	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:02	ILY	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:02	ILY	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:02	ILY	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:02	ILY	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:02	ILY	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/21/2023 16:02	ILY	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:02	ILY	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:02	ILY	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:02	ILY	H

Results

Client Sample ID	FFMP30RW	Collected	11/08/2023 12:16
Lab Sample ID	3331939002	Lab Receipt	11/08/2023 15:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	80.7%	62 – 133	11/21/2023 16:02	
4-Bromofluorobenzene	460-00-4	103%	79 – 114	11/21/2023 16:02	
Dibromofluoromethane	1868-53-7	82.5%	78 – 116	11/21/2023 16:02	
Toluene-d8	2037-26-5	98.6%	76 – 127	11/21/2023 16:02	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	67		mg/L	5	SM2320B-2011	1	11/10/2023 19:35	JMS	B
Alkalinity, Total	67	1	mg/L	5	SM2320B-2011	1	11/10/2023 19:35	JMS	B
Ammonia-N	0.133		mg/L	0.100	ASTM D6919-17	10	11/21/2023 02:45	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/10/2023 11:50	KMS	A
Chloride	323		mg/L	5.0	EPA 300.0	5	11/09/2023 12:24	J1W	B
Fluoride	ND	ND	mg/L	0.50	EPA 300.0	5	11/09/2023 12:24	J1W	B
Nitrate-N	4.3		mg/L	2.5	EPA 300.0	5	11/09/2023 12:24	J1W	B
pH	7.59	2	pH_Units		S4500HB-11	1	11/10/2023 19:35	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/21/2023 18:48	AKH	G
Specific Conductance	1310		umhos/cm	5	SW846 9050A	1	11/22/2023 09:30	JXL	B
Sulfate	62.2		mg/L	5.0	EPA 300.0	5	11/09/2023 12:24	J1W	B
Total Dissolved Solids	800		mg/L	25	SM2540C-15	1	11/13/2023 14:43	RAG	B
Total Organic Carbon (TOC)	0.90		mg/L	0.50	SW846 9060A	1	11/10/2023 00:31	PAG	E
Turbidity	18		NTU	0.30	SM2130B-2011	1	11/08/2023 22:20	NRB	B

Results

Client Sample ID	FFMP04AW	Collected	11/08/2023 13:31
Lab Sample ID	3331939003	Lab Receipt	11/08/2023 15:00

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	38.78		Feet		Field	1	11/08/2023 13:31	BGS	D
Dissolved Oxygen	ND	ND	mg/L	0.01	Field	1	11/08/2023 13:31	BGS	D
Elev Top MW Casing above MSL	560.72		Feet		Field	1	11/08/2023 13:31	BGS	D
Flow Rate	1.89		gal/min		Field	1	11/08/2023 13:31	BGS	D
Ground Water Elevation	521.94		ft/MSL		Field	1	11/08/2023 13:31	BGS	D
Oxidation-Reduction Potential	109		mV		Field	1	11/08/2023 13:31	BGS	D
pH, Field (SM4500B)	6.95		pH_Units		Field	1	11/08/2023 13:31	BGS	D
Sample Depth	146.00		Feet		Field	1	11/08/2023 13:31	BGS	D
Specific Conductance, Field	1981		umhos/cm	1	Field	1	11/08/2023 13:31	BGS	D
Temperature	13.95		Deg. C		Field	1	11/08/2023 13:31	BGS	D
Total Well Depth	148.50		Feet		Field	1	11/08/2023 13:31	BGS	D
Turbidity, Field	ND	ND	NTU	1	Field	1	11/08/2023 13:31	BGS	D
Volume in Water Column	161.29		Gallons		Field	1	11/08/2023 13:31	BGS	D
Water Level After Purge	81.98		Feet		Field	1	11/08/2023 13:31	BGS	D
Well Volumes Purged	1.00		Vol		Field	1	11/08/2023 13:31	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	173		mg/L	0.11	SW846 6010C	1	11/17/2023 12:29	HTO	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	11/17/2023 12:29	HTO	J1
Magnesium, Total	28.6		mg/L	0.11	SW846 6010C	1	11/17/2023 12:29	HTO	J1
Manganese, Total	0.40		mg/L	0.0056	SW846 6010C	1	11/17/2023 12:29	HTO	J1
Potassium, Total	2.8		mg/L	0.56	SW846 6010C	1	11/17/2023 12:29	HTO	J1
Sodium, Total	93.6		mg/L	0.56	SW846 6010C	1	11/17/2023 12:29	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:21	ILY	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:21	ILY	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:21	ILY	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:21	ILY	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:21	ILY	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:21	ILY	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:21	ILY	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:21	ILY	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:21	ILY	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:21	ILY	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:21	ILY	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/21/2023 16:21	ILY	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:21	ILY	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:21	ILY	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/21/2023 16:21	ILY	H

Results

Client Sample ID	FFMP04AW	Collected	11/08/2023 13:31
Lab Sample ID	3331939003	Lab Receipt	11/08/2023 15:00

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	83.2%	62 – 133	11/21/2023 16:21	
4-Bromofluorobenzene	460-00-4	101%	79 – 114	11/21/2023 16:21	
Dibromofluoromethane	1868-53-7	82.9%	78 – 116	11/21/2023 16:21	
Toluene-d8	2037-26-5	96.3%	76 – 127	11/21/2023 16:21	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	196		mg/L	5	SM2320B-2011	1	11/10/2023 20:14	JMS	B
Alkalinity, Total	196	1	mg/L	5	SM2320B-2011	1	11/10/2023 20:14	JMS	B
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-17	10	11/21/2023 02:59	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/10/2023 11:50	KMS	A
Chloride	326		mg/L	5.0	EPA 300.0	5	11/09/2023 12:35	J1W	B
Fluoride	ND	ND	mg/L	0.50	EPA 300.0	5	11/09/2023 12:35	J1W	B
Nitrate-N	ND	ND	mg/L	2.5	EPA 300.0	5	11/09/2023 12:35	J1W	B
pH	8.13	2	pH_Units		S4500HB-11	1	11/10/2023 20:14	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/21/2023 18:25	AKH	G
Specific Conductance	1470		umhos/cm	5	SW846 9050A	1	11/22/2023 09:30	JXL	B
Sulfate	54.0		mg/L	5.0	EPA 300.0	5	11/09/2023 12:35	J1W	B
Total Dissolved Solids	904		mg/L	25	SM2540C-15	1	11/10/2023 11:30	RAG	B
Total Organic Carbon (TOC)	0.71		mg/L	0.50	SW846 9060A	1	11/10/2023 00:31	PAG	E
Turbidity	0.50		NTU	0.30	SM2130B-2011	1	11/08/2023 22:20	NRB	B

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3331939001	FFMP017W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	
3331939002	FFMP30RW	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	
3331939003	FFMP04AW	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3331939001	FFMP017W	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1085330	11/09/2023 02:32	ANN	SW846 6010C	1091386
		N/A	N/A	N/A		SW846 8260B	1092729
		N/A	N/A	N/A		ASTM D6919-17	1092262
		N/A	N/A	N/A		EPA 300.0	1085825
		N/A	N/A	N/A		EPA 410.4	1086120
		N/A	N/A	N/A		S4500HB-11	1086508
		N/A	N/A	N/A		SM2130B-2011	1085502
		N/A	N/A	N/A		SM2320B-2011	1086508
		N/A	N/A	N/A		SM2540C-15	1088883
		N/A	N/A	N/A		SW846 9050A	1092790
		N/A	N/A	N/A		SW846 9060A	1085984
		SW846 9066	1092708	11/21/2023 10:31	AKH	SW846 9066	1092710
3331939002	FFMP30RW	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1085330	11/09/2023 02:32	ANN	SW846 6010C	1091386
		N/A	N/A	N/A		SW846 8260B	1092729
		N/A	N/A	N/A		ASTM D6919-17	1092264
		N/A	N/A	N/A		EPA 300.0	1085825
		N/A	N/A	N/A		EPA 410.4	1086120
		N/A	N/A	N/A		S4500HB-11	1086508
		N/A	N/A	N/A		SM2130B-2011	1085502
		N/A	N/A	N/A		SM2320B-2011	1086508
		N/A	N/A	N/A		SM2540C-15	1088883
		N/A	N/A	N/A		SW846 9050A	1092790
		N/A	N/A	N/A		SW846 9060A	1085984
		SW846 9066	1092708	11/21/2023 10:31	AKH	SW846 9066	1092710
3331939003	FFMP04AW	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1085330	11/09/2023 02:32	ANN	SW846 6010C	1091386
		N/A	N/A	N/A		SW846 8260B	1092729
		N/A	N/A	N/A		ASTM D6919-17	1092264
		N/A	N/A	N/A		EPA 300.0	1085825
		N/A	N/A	N/A		EPA 410.4	1086120
		N/A	N/A	N/A		S4500HB-11	1086508
		N/A	N/A	N/A		SM2130B-2011	1085502
		N/A	N/A	N/A		SM2320B-2011	1086508
		N/A	N/A	N/A		SM2540C-15	1086309
		N/A	N/A	N/A		SW846 9050A	1092790
		N/A	N/A	N/A		SW846 9060A	1085984
		SW846 9066	1092708	11/21/2023 10:31	AKH	SW846 9066	1092710

11/28/2023 7:18 PM

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALS

3331939

Logged By: DXB
PM: SJB

1 of 1

ALS Environmental
34 Dogwood Lane • Middletown, PA 17057 • Phone: 717-944-5541 • Fax: 717-944-1430 • www.alsglobal.com
301 Fulling Mill Road • Middletown, PA 17057 • 717.944.5541 • Fax: 717.944.1430

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

Client Name: Lancaster County Solid Waste MA
Address: 1299 Harrisburg Pike, P.O. Box 4424
Lancaster, PA 17604
Contact: Dan Brown
Phone#: (717) 735-0193
Project Name/#: Frey Farm Quarterly (GWMP)
Bill To: Lancaster County Solid Waste MA

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

Container Type	AG	AW	CG	—	—	PL	PL	PL	PL	
Container Size	40 ml	125 ml	40 ml	—	—	250 ml	125 ml	500 ml	250 ml	
Preservative	HCl	H2SO4	HCl	—	—	H2SO4	HNO3	None	None	

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	TOC	O-OH	VOC - Form 19Q	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Metals: Fe, Mn, Na, Ca, K, Mg	pH, Cl, SpC, F, SO4, TDS, NO3, Turb.	Alkalinity Bicarbonate	
					Enter Number of Containers Per Sample or Field Results Below.									
1. FFMP017W	11/08/23	0948	G	GW	2	1	2	X	X	1	2	1	1	
2. FFMP30RW	11/08/23	1216	G	GW	2	1	2	X	X	1	2	1	1	
3. FFMP04AW	11/08/23	1331	G	GW	2	1	2	X	X	1	2	1	1	
4														
5														
6														
7														
8														
9														
10														

(Receiving Lab)

Cooler Temp: 1 Therm ID:
No. of Coolers: _____

	Y	N	Initial
Custody Seals Present?			
(if present) Seals Intact?			
Received on Ice?			
COC/Labels Complete/Accurate?			

Temp By: DAG | WO Temp (°C): 1 | Therm ID: 570

Receipt Info Completed By: DAG
Cooler Custody Seal Intact Y N NA
Sample Custody Seal Intact Y N NA
Received on Ice Y N NA
Cooler & Samples Intact Y N
Correct Containers Provided Y N
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
CR6 Samples Filtered Y N NA
OP Samples Filtered Y N NA
VOA Trip Blank Y N NA
NJ≤ 4 Days? Y N
Rad Screen (uCi) —
Courier/Tracking #: —

SDWA Compliance Y N
PWSID
WV Containers 0-6°C Y N NA

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

Project Comments:

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

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [signature] FJ BY ALS	11-8-23	1500	2 [signature]	11/8/23	1500
3			4		
5			6		
7			8		
9			10		

Data Deliverables: ☐Standard ☐CLP-like ☐USACE ☐

Special Processing: USACE ☐ Navy ☐ ☐

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

Reportable to PADEP? Yes ☐
PWSID # _____

Sample Disposal: Lab [X] Special ☐

EDDS: Format Type-

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

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

Analytical Results Report For **Lancaster County Solid Waste Authority**

Project 4th QTR 2023 GWMP-FORM 19Q
Workorder 3332235
Report ID 285503 on 11/28/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Nov 09, 2023.

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 Susan Scherer (Project Coordinator) at (717) 944-5541.

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

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Jordan Bigler - Lancaster County Solid Waste Authority
Ashley Gichuki - Lancaster County Solid Waste Authority
Daniel Brown - Lancaster County Solid Waste Authority
Jeff Musser - Lancaster County Solid Waste Authority

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

Susan Scherer

Susan Scherer *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3332235001	FFMP015W	Ground Water	11/09/2023 09:57	11/09/2023 16:50	BGS	Analytical Laboratory Service
3332235002	FFMP033W	Ground Water	11/09/2023 12:44	11/09/2023 16:50	BGS	Analytical Laboratory Service
3332235003	FFMP034W	Ground Water	11/09/2023 14:26	11/09/2023 16:50	BGS	Analytical Laboratory Service
3332235004	FFMP036W	Ground Water	11/09/2023 15:43	11/09/2023 16:50	BGS	Analytical Laboratory Service

Reference

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).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136, including but not limited to the following EPA Method reference revisions:
  EPA 300.1 Rev. 1.0-1997
  EPA 300.0 Rev. 2.1-1993
  EPA 353.2 Rev. 2.0-1993
  EPA 410.4 Rev. 1.0-1993
  EPA 420.4 Rev. 1.0-1993
  EPA 365.1 Rev. 2.0-1993
  EPA 200.7 Rev. 4.4-1994
  EPA 200.8 Rev. 5.4-1994
  EPA 245.1 Rev. 3.0-1994
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the 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.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
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
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID

Result Notations

Notation Ref.	
E	Result reported exceeds instrument calibration
1	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.
2	The sample was originally run within hold time, but required further analysis that exceeded hold time.
3	This sample was reran out of hold within the instrument's calibration range, for the analyte Nitrate/Nitrite -N, and confirms the initial in-hold reported result.
4	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.

Detected Results Summary

Client Sample ID	FFMP015W	Collected	11/09/2023 09:57
Lab Sample ID	3332235001	Lab Receipt	11/09/2023 16:50

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	64.51	Feet		Field	#
Dissolved Oxygen	7.70	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	576.40	Feet		Field	#
Flow Rate	1.78	gal/min		Field	#
Ground Water Elevation	511.89	ft/MSL		Field	#
Oxidation-Reduction Potential	291	mV		Field	#
pH, Field (SM4500B)	5.52	pH_Units		Field	#
Sample Depth	135.00	Feet		Field	#
Specific Conductance, Field	752	umhos/cm	1	Field	#
Temperature	15.20	Deg. C		Field	#
Total Well Depth	149.90	Feet		Field	#
Volume in Water Column	125.52	Gallons		Field	#
Water Level After Purge	107.95	Feet		Field	#
Well Volumes Purged	0.99	Vol		Field	#
METALS					
Calcium, Total	33.8	mg/L	0.11	SW846 6010C	#
Magnesium, Total	27.8	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.012	mg/L	0.0056	SW846 6010C	#
Potassium, Total	2.5	mg/L	0.56	SW846 6010C	#
Sodium, Total	22.1	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	28	mg/L	5	SM2320B-2011	#
Alkalinity, Total	28	mg/L	5	SM2320B-2011	#
Chloride	37.9	mg/L	2.0	EPA 300.0	#
Nitrate-N	34.2	mg/L	1.0	EPA 300.0	#
pH	7.30	pH_Units		S4500HB-11	#
Specific Conductance	518	umhos/cm	5	SW846 9050A	#
Sulfate	26.8	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	348	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	1.0	mg/L	0.50	SW846 9060A	#
Turbidity	0.35	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	FFMP033W	Collected	11/09/2023 12:44
Lab Sample ID	3332235002	Lab Receipt	11/09/2023 16:50

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	20.89	Feet		Field	#
Dissolved Oxygen	1.24	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	516.52	Feet		Field	#
Flow Rate	1.86	gal/min		Field	#
Ground Water Elevation	495.63	ft/MSL		Field	#
Oxidation-Reduction Potential	126	mV		Field	#
pH, Field (SM4500B)	5.46	pH_Units		Field	#
Sample Depth	79.00	Feet		Field	#
Specific Conductance, Field	639	umhos/cm	1	Field	#
Temperature	15.42	Deg. C		Field	#
Total Well Depth	100.00	Feet		Field	#
Turbidity, Field	1	NTU	1	Field	#
Volume in Water Column	116.29	Gallons		Field	#
Water Level After Purge	38.41	Feet		Field	#
Well Volumes Purged	1.92	Vol		Field	#
METALS					
Calcium, Total	39.2	mg/L	0.11	SW846 6010C	#
Iron, Total	10.7	mg/L	0.067	SW846 6010C	#
Magnesium, Total	14.1	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.26	mg/L	0.0056	SW846 6010C	#
Potassium, Total	2.0	mg/L	0.56	SW846 6010C	#
Sodium, Total	19.6	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	28	mg/L	5	SM2320B-2011	#
Alkalinity, Total	28	mg/L	5	SM2320B-2011	#
Ammonia-N	0.220	mg/L	0.100	ASTM D6919-17	#
Chloride	80.7	mg/L	2.0	EPA 300.0	#
Nitrate-N	11.5	mg/L	1.0	EPA 300.0	#
pH	7.16	pH_Units		S4500HB-11	#
Specific Conductance	439	umhos/cm	5	SW846 9050A	#
Sulfate	12.1	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	304	mg/L	25	SM2540C-15	#
Turbidity	55	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	FFMP034W	Collected	11/09/2023 14:26
Lab Sample ID	3332235003	Lab Receipt	11/09/2023 16:50

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	10.87	Feet		Field	#
Dissolved Oxygen	1.54	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	472.88	Feet		Field	#
Flow Rate	1.56	gal/min		Field	#
Ground Water Elevation	462.01	ft/MSL		Field	#
Oxidation-Reduction Potential	171	mV		Field	#
pH, Field (SM4500B)	5.64	pH_Units		Field	#
Sample Depth	25.85	Feet		Field	#
Specific Conductance, Field	1139	umhos/cm	1	Field	#
Temperature	14.80	Deg. C		Field	#
Total Well Depth	121.00	Feet		Field	#
Turbidity, Field	5	NTU	1	Field	#
Volume in Water Column	161.89	Gallons		Field	#
Water Level After Purge	19.62	Feet		Field	#
Well Volumes Purged	1.21	Vol		Field	#
METALS					
Calcium, Total	65.0	mg/L	0.11	SW846 6010C	#
Iron, Total	1.1	mg/L	0.067	SW846 6010C	#
Magnesium, Total	24.0	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.095	mg/L	0.0056	SW846 6010C	#
Potassium, Total	2.8	mg/L	0.56	SW846 6010C	#
Sodium, Total	46.8	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	38	mg/L	5	SM2320B-2011	#
Alkalinity, Total	38	mg/L	5	SM2320B-2011	#
Ammonia-N	0.180	mg/L	0.100	ASTM D6919-17	#
Chloride	171	mg/L	2.0	EPA 300.0	#
Nitrate-N	11.0	mg/L	1.0	EPA 300.0	#
pH	7.54	pH_Units		S4500HB-11	#
Specific Conductance	786	umhos/cm	5	SW846 9050A	#
Sulfate	30.9	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	498	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	0.62	mg/L	0.50	SW846 9060A	#
Turbidity	14	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	FFMP036W	Collected	11/09/2023 15:43
Lab Sample ID	3332235004	Lab Receipt	11/09/2023 16:50

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	47.36	Feet		Field	#
Dissolved Oxygen	0.02	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	478.23	Feet		Field	#
Flow Rate	1.61	gal/min		Field	#
Ground Water Elevation	430.87	ft/MSL		Field	#
Oxidation-Reduction Potential	-223	mV		Field	#
pH, Field (SM4500B)	8.27	pH_Units		Field	#
Sample Depth	135.00	Feet		Field	#
Specific Conductance, Field	389	umhos/cm	1	Field	#
Temperature	15.73	Deg. C		Field	#
Total Well Depth	142.60	Feet		Field	#
Turbidity, Field	6	NTU	1	Field	#
Volume in Water Column	140.00	Gallons		Field	#
Water Level After Purge	86.17	Feet		Field	#
Well Volumes Purged	1.49	Vol		Field	#
METALS					
Calcium, Total	40.9	mg/L	0.11	SW846 6010C	#
Iron, Total	1.2	mg/L	0.067	SW846 6010C	#
Magnesium, Total	4.5	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.11	mg/L	0.0056	SW846 6010C	#
Potassium, Total	1.2	mg/L	0.56	SW846 6010C	#
Sodium, Total	17.2	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	81	mg/L	5	SM2320B-2011	#
Alkalinity, Total	81	mg/L	5	SM2320B-2011	#
Ammonia-N	0.146	mg/L	0.100	ASTM D6919-17	#
Chloride	34.3	mg/L	2.0	EPA 300.0	#
pH	8.22	pH_Units		S4500HB-11	#
Specific Conductance	307	umhos/cm	5	SW846 9050A	#
Sulfate	18.8	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	182	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	0.52	mg/L	0.50	SW846 9060A	#
Turbidity	9.6	NTU	0.30	SM2130B-2011	#

Results

Client Sample ID	FFMP015W	Collected	11/09/2023 09:57
Lab Sample ID	3332235001	Lab Receipt	11/09/2023 16:50

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	64.51		Feet		Field	1	11/09/2023 08:57	BGS	D
Dissolved Oxygen	7.70		mg/L	0.01	Field	1	11/09/2023 08:57	BGS	D
Elev Top MW Casing above MSL	576.40		Feet		Field	1	11/09/2023 08:57	BGS	D
Flow Rate	1.78		gal/min		Field	1	11/09/2023 08:57	BGS	D
Ground Water Elevation	511.89		ft/MSL		Field	1	11/09/2023 08:57	BGS	D
Oxidation-Reduction Potential	291		mV		Field	1	11/09/2023 08:57	BGS	D
pH, Field (SM4500B)	5.52		pH_Units		Field	1	11/09/2023 08:57	BGS	D
Sample Depth	135.00		Feet		Field	1	11/09/2023 08:57	BGS	D
Specific Conductance, Field	752		umhos/cm	1	Field	1	11/09/2023 08:57	BGS	D
Temperature	15.20		Deg. C		Field	1	11/09/2023 08:57	BGS	D
Total Well Depth	149.90		Feet		Field	1	11/09/2023 08:57	BGS	D
Turbidity, Field	ND	ND	NTU	1	Field	1	11/09/2023 08:57	BGS	D
Volume in Water Column	125.52		Gallons		Field	1	11/09/2023 08:57	BGS	D
Water Level After Purge	107.95		Feet		Field	1	11/09/2023 08:57	BGS	D
Well Volumes Purged	0.99		Vol		Field	1	11/09/2023 08:57	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	33.8		mg/L	0.11	SW846 6010C	1	11/17/2023 11:31	HTO	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	11/17/2023 11:31	HTO	J1
Magnesium, Total	27.8		mg/L	0.11	SW846 6010C	1	11/17/2023 11:31	HTO	J1
Manganese, Total	0.012		mg/L	0.0056	SW846 6010C	1	11/17/2023 11:31	HTO	J1
Potassium, Total	2.5		mg/L	0.56	SW846 6010C	1	11/17/2023 11:31	HTO	J1
Sodium, Total	22.1		mg/L	0.56	SW846 6010C	1	11/17/2023 11:31	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:30	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:30	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:30	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:30	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:30	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:30	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:30	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:30	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:30	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:30	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:30	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/22/2023 01:30	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:30	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:30	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:30	PDK	H

Results

Client Sample ID	FFMP015W	Collected	11/09/2023 09:57
Lab Sample ID	3332235001	Lab Receipt	11/09/2023 16:50

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	105%	62 – 133	11/22/2023 01:30	
4-Bromofluorobenzene	460-00-4	104%	79 – 114	11/22/2023 01:30	
Dibromofluoromethane	1868-53-7	96.9%	78 – 116	11/22/2023 01:30	
Toluene-d8	2037-26-5	103%	76 – 127	11/22/2023 01:30	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	28		mg/L	5	SM2320B-2011	1	11/15/2023 03:12	JMS	B
Alkalinity, Total	28	1	mg/L	5	SM2320B-2011	1	11/15/2023 03:12	JMS	B
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-17	10	11/21/2023 09:52	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/13/2023 10:45	KMS	A
Chloride	37.9		mg/L	2.0	EPA 300.0	2	11/10/2023 13:41	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/10/2023 13:41	J1W	B
Nitrate-N	34.2	E,2,3	mg/L	1.0	EPA 300.0	2	11/10/2023 13:41	J1W	B
pH	7.30	4	pH_Units		S4500HB-11	1	11/13/2023 19:04	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/21/2023 20:50	AKH	G
Specific Conductance	518		umhos/cm	5	SW846 9050A	1	11/27/2023 10:40	JXL	B
Sulfate	26.8		mg/L	2.0	EPA 300.0	2	11/10/2023 13:41	J1W	B
Total Dissolved Solids	348		mg/L	25	SM2540C-15	1	11/13/2023 09:50	RAG	B
Total Organic Carbon (TOC)	1.0		mg/L	0.50	SW846 9060A	1	11/10/2023 18:08	PAG	E
Turbidity	0.35		NTU	0.30	SM2130B-2011	1	11/09/2023 23:45	NRB	B

Results

Client Sample ID	FFMP033W	Collected	11/09/2023 12:44
Lab Sample ID	3332235002	Lab Receipt	11/09/2023 16:50

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	20.89		Feet		Field	1	11/09/2023 11:44	BGS	D
Dissolved Oxygen	1.24		mg/L	0.01	Field	1	11/09/2023 11:44	BGS	D
Elev Top MW Casing above MSL	516.52		Feet		Field	1	11/09/2023 11:44	BGS	D
Flow Rate	1.86		gal/min		Field	1	11/09/2023 11:44	BGS	D
Ground Water Elevation	495.63		ft/MSL		Field	1	11/09/2023 11:44	BGS	D
Oxidation-Reduction Potential	126		mV		Field	1	11/09/2023 11:44	BGS	D
pH, Field (SM4500B)	5.46		pH_Units		Field	1	11/09/2023 11:44	BGS	D
Sample Depth	79.00		Feet		Field	1	11/09/2023 11:44	BGS	D
Specific Conductance, Field	639		umhos/cm	1	Field	1	11/09/2023 11:44	BGS	D
Temperature	15.42		Deg. C		Field	1	11/09/2023 11:44	BGS	D
Total Well Depth	100.00		Feet		Field	1	11/09/2023 11:44	BGS	D
Turbidity, Field	1		NTU	1	Field	1	11/09/2023 11:44	BGS	D
Volume in Water Column	116.29		Gallons		Field	1	11/09/2023 11:44	BGS	D
Water Level After Purge	38.41		Feet		Field	1	11/09/2023 11:44	BGS	D
Well Volumes Purged	1.92		Vol		Field	1	11/09/2023 11:44	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	39.2		mg/L	0.11	SW846 6010C	1	11/17/2023 11:32	HTO	J1
Iron, Total	10.7		mg/L	0.067	SW846 6010C	1	11/17/2023 11:32	HTO	J1
Magnesium, Total	14.1		mg/L	0.11	SW846 6010C	1	11/17/2023 11:32	HTO	J1
Manganese, Total	0.26		mg/L	0.0056	SW846 6010C	1	11/17/2023 11:32	HTO	J1
Potassium, Total	2.0		mg/L	0.56	SW846 6010C	1	11/17/2023 11:32	HTO	J1
Sodium, Total	19.6		mg/L	0.56	SW846 6010C	1	11/17/2023 11:32	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:53	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:53	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:53	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:53	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:53	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:53	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:53	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:53	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:53	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:53	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:53	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/22/2023 01:53	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:53	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:53	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 01:53	PDK	H

Results

Client Sample ID	FFMP033W	Collected	11/09/2023 12:44
Lab Sample ID	3332235002	Lab Receipt	11/09/2023 16:50

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	62 – 133	11/22/2023 01:53	
4-Bromofluorobenzene	460-00-4	104%	79 – 114	11/22/2023 01:53	
Dibromofluoromethane	1868-53-7	95.9%	78 – 116	11/22/2023 01:53	
Toluene-d8	2037-26-5	101%	76 – 127	11/22/2023 01:53	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	28		mg/L	5	SM2320B-2011	1	11/15/2023 03:25	JMS	B
Alkalinity, Total	28	1	mg/L	5	SM2320B-2011	1	11/15/2023 03:25	JMS	B
Ammonia-N	0.220		mg/L	0.100	ASTM D6919-17	10	11/21/2023 10:05	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/13/2023 10:45	KMS	A
Chloride	80.7		mg/L	2.0	EPA 300.0	2	11/10/2023 13:52	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/10/2023 13:52	J1W	B
Nitrate-N	11.5		mg/L	1.0	EPA 300.0	2	11/10/2023 13:52	J1W	B
pH	7.16	4	pH_Units		S4500HB-11	1	11/13/2023 18:51	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/21/2023 20:27	AKH	G
Specific Conductance	439		umhos/cm	5	SW846 9050A	1	11/27/2023 10:40	JXL	B
Sulfate	12.1		mg/L	2.0	EPA 300.0	2	11/10/2023 13:52	J1W	B
Total Dissolved Solids	304		mg/L	25	SM2540C-15	1	11/13/2023 09:50	RAG	B
Total Organic Carbon (TOC)	ND	ND	mg/L	0.50	SW846 9060A	1	11/10/2023 18:08	PAG	E
Turbidity	55		NTU	0.30	SM2130B-2011	1	11/09/2023 23:45	NRB	B

Results

Client Sample ID	FFMP034W	Collected	11/09/2023 14:26
Lab Sample ID	3332235003	Lab Receipt	11/09/2023 16:50

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	10.87		Feet		Field	1	11/09/2023 14:25	BGS	D
Dissolved Oxygen	1.54		mg/L	0.01	Field	1	11/09/2023 14:25	BGS	D
Elev Top MW Casing above MSL	472.88		Feet		Field	1	11/09/2023 14:25	BGS	D
Flow Rate	1.56		gal/min		Field	1	11/09/2023 14:25	BGS	D
Ground Water Elevation	462.01		ft/MSL		Field	1	11/09/2023 14:25	BGS	D
Oxidation-Reduction Potential	171		mV		Field	1	11/09/2023 14:25	BGS	D
pH, Field (SM4500B)	5.64		pH_Units		Field	1	11/09/2023 14:25	BGS	D
Sample Depth	25.85		Feet		Field	1	11/09/2023 14:25	BGS	D
Specific Conductance, Field	1139		umhos/cm	1	Field	1	11/09/2023 14:25	BGS	D
Temperature	14.80		Deg. C		Field	1	11/09/2023 14:25	BGS	D
Total Well Depth	121.00		Feet		Field	1	11/09/2023 14:25	BGS	D
Turbidity, Field	5		NTU	1	Field	1	11/09/2023 14:25	BGS	D
Volume in Water Column	161.89		Gallons		Field	1	11/09/2023 14:25	BGS	D
Water Level After Purge	19.62		Feet		Field	1	11/09/2023 14:25	BGS	D
Well Volumes Purged	1.21		Vol		Field	1	11/09/2023 14:25	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	65.0		mg/L	0.11	SW846 6010C	1	11/17/2023 11:33	HTO	J1
Iron, Total	1.1		mg/L	0.067	SW846 6010C	1	11/17/2023 11:33	HTO	J1
Magnesium, Total	24.0		mg/L	0.11	SW846 6010C	1	11/17/2023 11:33	HTO	J1
Manganese, Total	0.095		mg/L	0.0056	SW846 6010C	1	11/17/2023 11:33	HTO	J1
Potassium, Total	2.8		mg/L	0.56	SW846 6010C	1	11/17/2023 11:33	HTO	J1
Sodium, Total	46.8		mg/L	0.56	SW846 6010C	1	11/17/2023 11:33	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:17	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:17	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:17	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:17	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:17	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:17	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:17	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:17	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:17	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:17	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:17	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/22/2023 02:17	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:17	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:17	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:17	PDK	H

Results

Client Sample ID	FFMP034W	Collected	11/09/2023 14:26
Lab Sample ID	3332235003	Lab Receipt	11/09/2023 16:50

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	105%	62 – 133	11/22/2023 02:17	
4-Bromofluorobenzene	460-00-4	103%	79 – 114	11/22/2023 02:17	
Dibromofluoromethane	1868-53-7	97.1%	78 – 116	11/22/2023 02:17	
Toluene-d8	2037-26-5	102%	76 – 127	11/22/2023 02:17	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	38		mg/L	5	SM2320B-2011	1	11/15/2023 03:37	JMS	B
Alkalinity, Total	38	1	mg/L	5	SM2320B-2011	1	11/15/2023 03:37	JMS	B
Ammonia-N	0.180		mg/L	0.100	ASTM D6919-17	10	11/21/2023 10:19	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/13/2023 10:45	KMS	A
Chloride	171		mg/L	2.0	EPA 300.0	2	11/10/2023 14:02	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/10/2023 14:02	J1W	B
Nitrate-N	11.0		mg/L	1.0	EPA 300.0	2	11/10/2023 14:02	J1W	B
pH	7.54	4	pH_Units		S4500HB-11	1	11/13/2023 18:28	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/21/2023 21:44	AKH	G
Specific Conductance	786		umhos/cm	5	SW846 9050A	1	11/27/2023 10:40	JXL	B
Sulfate	30.9		mg/L	2.0	EPA 300.0	2	11/10/2023 14:02	J1W	B
Total Dissolved Solids	498		mg/L	25	SM2540C-15	1	11/13/2023 09:50	RAG	B
Total Organic Carbon (TOC)	0.62		mg/L	0.50	SW846 9060A	1	11/10/2023 18:08	PAG	E
Turbidity	14		NTU	0.30	SM2130B-2011	1	11/09/2023 23:45	NRB	B

Results

Client Sample ID	FFMP036W	Collected	11/09/2023 15:43
Lab Sample ID	3332235004	Lab Receipt	11/09/2023 16:50

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	47.36		Feet		Field	1	11/09/2023 15:43	BGS	D
Dissolved Oxygen	0.02		mg/L	0.01	Field	1	11/09/2023 15:43	BGS	D
Elev Top MW Casing above MSL	478.23		Feet		Field	1	11/09/2023 15:43	BGS	D
Flow Rate	1.61		gal/min		Field	1	11/09/2023 15:43	BGS	D
Ground Water Elevation	430.87		ft/MSL		Field	1	11/09/2023 15:43	BGS	D
Oxidation-Reduction Potential	-223		mV		Field	1	11/09/2023 15:43	BGS	D
pH, Field (SM4500B)	8.27		pH_Units		Field	1	11/09/2023 15:43	BGS	D
Sample Depth	135.00		Feet		Field	1	11/09/2023 15:43	BGS	D
Specific Conductance, Field	389		umhos/cm	1	Field	1	11/09/2023 15:43	BGS	D
Temperature	15.73		Deg. C		Field	1	11/09/2023 15:43	BGS	D
Total Well Depth	142.60		Feet		Field	1	11/09/2023 15:43	BGS	D
Turbidity, Field	6		NTU	1	Field	1	11/09/2023 15:43	BGS	D
Volume in Water Column	140.00		Gallons		Field	1	11/09/2023 15:43	BGS	D
Water Level After Purge	86.17		Feet		Field	1	11/09/2023 15:43	BGS	D
Well Volumes Purged	1.49		Vol		Field	1	11/09/2023 15:43	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	40.9		mg/L	0.11	SW846 6010C	1	11/17/2023 11:35	HTO	J1
Iron, Total	1.2		mg/L	0.067	SW846 6010C	1	11/17/2023 11:35	HTO	J1
Magnesium, Total	4.5		mg/L	0.11	SW846 6010C	1	11/17/2023 11:35	HTO	J1
Manganese, Total	0.11		mg/L	0.0056	SW846 6010C	1	11/17/2023 11:35	HTO	J1
Potassium, Total	1.2		mg/L	0.56	SW846 6010C	1	11/17/2023 11:35	HTO	J1
Sodium, Total	17.2		mg/L	0.56	SW846 6010C	1	11/17/2023 11:35	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:40	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:40	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:40	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:40	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:40	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:40	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:40	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:40	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:40	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:40	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:40	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/22/2023 02:40	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:40	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:40	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/22/2023 02:40	PDK	H

Results

Client Sample ID	FFMP036W	Collected	11/09/2023 15:43
Lab Sample ID	3332235004	Lab Receipt	11/09/2023 16:50

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	105%	62 – 133	11/22/2023 02:40	
4-Bromofluorobenzene	460-00-4	103%	79 – 114	11/22/2023 02:40	
Dibromofluoromethane	1868-53-7	99.5%	78 – 116	11/22/2023 02:40	
Toluene-d8	2037-26-5	104%	76 – 127	11/22/2023 02:40	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	81		mg/L	5	SM2320B-2011	1	11/15/2023 03:47	JMS	B
Alkalinity, Total	81	1	mg/L	5	SM2320B-2011	1	11/15/2023 03:47	JMS	B
Ammonia-N	0.146		mg/L	0.100	ASTM D6919-17	10	11/21/2023 10:33	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/13/2023 10:45	KMS	A
Chloride	34.3		mg/L	2.0	EPA 300.0	2	11/10/2023 14:13	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/10/2023 14:13	J1W	B
Nitrate-N	ND	ND	mg/L	1.0	EPA 300.0	2	11/10/2023 14:13	J1W	B
pH	8.22	4	pH_Units		S4500HB-11	1	11/13/2023 18:39	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/21/2023 20:54	AKH	G
Specific Conductance	307		umhos/cm	5	SW846 9050A	1	11/27/2023 10:40	JXL	B
Sulfate	18.8		mg/L	2.0	EPA 300.0	2	11/10/2023 14:13	J1W	B
Total Dissolved Solids	182		mg/L	25	SM2540C-15	1	11/13/2023 09:50	RAG	B
Total Organic Carbon (TOC)	0.52		mg/L	0.50	SW846 9060A	1	11/10/2023 18:08	PAG	E
Turbidity	9.6		NTU	0.30	SM2130B-2011	1	11/09/2023 23:45	NRB	B

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3332235001	FFMP015W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	
3332235002	FFMP033W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	
3332235003	FFMP034W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	
3332235004	FFMP036W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3332235001	FFMP015W	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1088508	11/13/2023 03:04	ANN	SW846 6010C	1091385
		N/A	N/A	N/A		SW846 8260B	1092861
		N/A	N/A	N/A		ASTM D6919-17	1092275
		N/A	N/A	N/A		EPA 300.0	1086104
		N/A	N/A	N/A		EPA 410.4	1088712
		N/A	N/A	N/A		S4500HB-11	1088806
		N/A	N/A	N/A		SM2130B-2011	1086069
		N/A	N/A	N/A		SM2320B-2011	1089113
		N/A	N/A	N/A		SM2540C-15	1088701
		N/A	N/A	N/A		SW846 9050A	1093436
		N/A	N/A	N/A		SW846 9060A	1086801
		SW846 9066	1092708	11/21/2023 10:31	AKH	SW846 9066	1092710
3332235002	FFMP033W	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1088508	11/13/2023 03:04	ANN	SW846 6010C	1091385
		N/A	N/A	N/A		SW846 8260B	1092861
		N/A	N/A	N/A		ASTM D6919-17	1092275
		N/A	N/A	N/A		EPA 300.0	1086104
		N/A	N/A	N/A		EPA 410.4	1088712
		N/A	N/A	N/A		S4500HB-11	1088806
		N/A	N/A	N/A		SM2130B-2011	1086069
		N/A	N/A	N/A		SM2320B-2011	1089113
		N/A	N/A	N/A		SM2540C-15	1088701
		N/A	N/A	N/A		SW846 9050A	1093436
		N/A	N/A	N/A		SW846 9060A	1086801
		SW846 9066	1092708	11/21/2023 10:31	AKH	SW846 9066	1092710
3332235003	FFMP034W	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1088508	11/13/2023 03:04	ANN	SW846 6010C	1091385
		N/A	N/A	N/A		SW846 8260B	1092861
		N/A	N/A	N/A		ASTM D6919-17	1092275
		N/A	N/A	N/A		EPA 300.0	1086104
		N/A	N/A	N/A		EPA 410.4	1088712
		N/A	N/A	N/A		S4500HB-11	1088806
		N/A	N/A	N/A		SM2130B-2011	1086069
		N/A	N/A	N/A		SM2320B-2011	1089113
		N/A	N/A	N/A		SM2540C-15	1088701
		N/A	N/A	N/A		SW846 9050A	1093436
		N/A	N/A	N/A		SW846 9060A	1086801
		SW846 9066	1092708	11/21/2023 10:31	AKH	SW846 9066	1092710
3332235004	FFMP036W	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1088508	11/13/2023 03:04	ANN	SW846 6010C	1091385
		N/A	N/A	N/A		SW846 8260B	1092861
		N/A	N/A	N/A		ASTM D6919-17	1092275
		N/A	N/A	N/A		EPA 300.0	1086104
		N/A	N/A	N/A		EPA 410.4	1088712
		N/A	N/A	N/A		S4500HB-11	1088806
		N/A	N/A	N/A		SM2130B-2011	1086069
		N/A	N/A	N/A		SM2320B-2011	1089113
		N/A	N/A	N/A		SM2540C-15	1088701
		N/A	N/A	N/A		SW846 9050A	1093436
		N/A	N/A	N/A		SW846 9060A	1086801
		SW846 9066	1092708	11/21/2023 10:31	AKH	SW846 9066	1092710

ALS Environmental

34 Dogwood Lane • Middletown, PA 17057 • Phone: 717-944-5541 • Fax: 717-944-1430 • www.alsglobal.com
323 Fulling Mill Road • Middletown, PA 17057 • 717.944.5541 • Fax: 717.944.1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALS

3332235
Logged By: DXB
PM: SJB

1 of 1

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

Client Name: Lancaster County Solid Waste MA
Address: 1299 Harrisburg Pike, P.O. Box 4424
Lancaster, PA 17604
Contact: Dan Brown
Phone#: (717) 735-0193
Project Name/#: Frey Farm Quarterly (GWMP)
Bill To: Lancaster County Solid Waste MA

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

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	Container Type	Container Size	Preservative	TOC	O-OH	VOC - Form 19Q	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Metals: Fe, Mn, Na, Ca, K, Mg	pH, Cl, SpC, F, SO4, TDS, NO3, Turb.	Alkalinity Bicarbonate	
					AG	AW	CG	---	---	PL	PL	PL	PL				
					40 ml	125 ml	40 ml	---	---	250 ml	125 ml	500 ml	250 ml				
					HCl	H2SO4	HCl	---	---	H2SO4	HNO3	None	None				
					ANALYSES/METHOD REQUESTED												
					Enter Number of Containers Per Sample or Field Results Below.												
FFMP015W	11/09/23	0957	G	GW	2	1	2	X	X	1	2	1	1				
FFMP033W	11/09/23	1244	G	GW	2	1	2	X	X	1	2	1	1				
FFMP034W	11/09/23	1426	G	GW	2	1	2	X	X	1	2	1	1				
FFMP036W	11/09/23	1543	G	GW	2	1	2	X	X	1	2	1	1				
0																	

Project Comments:

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

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
	11-9-23	1650	2 DAG / ALS	11/9/23	1650
			4		
			6		
			8		
			10		

(Lab Use Only - Receiving Lab)

Cooler Temp: 0 Therm ID: _____
No. of Coolers: _____

	Y	N	Initial
Custody Seals Present?			
(if present) Seals Intact?			
Received on Ice?			

Temp By: DAG | WO Temp (°C): 0 | Therm ID: 570

Receipt Info Completed By:	DAG
Cooler Custody Seal Intact	Y N NA
Sample Custody Seal Intact	Y N NA
Received on Ice	Y N NA
Cooler & Samples Intact	Y N
Correct Containers Provided	Y N
Sample Label/COC Agree	Y N
Adequate Sample Volumes	Y N
CR6 Samples Filtered	Y N NA
OP Samples Filtered	Y N NA
VOA Trip Blank	Y N NA
NJ≤ 4 Days?	Y N
Rad Screen (uCi)	
Courier/Tracking #:	
SDWA Compliance	Y N
PWSID	
WV Containers 0-6°C	Y N NA

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

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

Special Processing: USACE [ ] Navy [ ]

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

Reportable to PADEP? Yes [ ]

Sample Disposal: Lab [X] Special [ ]

PWSID #

EDDS: Format Type-

* G=Grab; C=Composite

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

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

Rev 8/04

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

Analytical Results Report For **Lancaster County Solid Waste Authority**

Project 4th QTR 2023 GWMP-FORM 19Q
Workorder 3332549
Report ID 286241 on 11/30/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Nov 10, 2023.

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 Susan Scherer (Project Coordinator) at (717) 944-5541.

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

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Jordan Bigler - Lancaster County Solid Waste Authority
Ashley Gichuki - Lancaster County Solid Waste Authority
Daniel Brown - Lancaster County Solid Waste Authority
Jeff Musser - Lancaster County Solid Waste Authority

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

Susan Scherer

Susan Scherer *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3332549001	FFMP035W	Ground Water	11/10/2023 10:06	11/10/2023 18:25	BGS	Analytical Laboratory Service
3332549002	FFMP02DW	Ground Water	11/10/2023 13:08	11/10/2023 18:25	BGS	Analytical Laboratory Service
3332549003	FFMP002W	Ground Water	11/10/2023 14:09	11/10/2023 18:25	BGS	Analytical Laboratory Service
3332549004	FFMP031W	Ground Water	11/10/2023 16:19	11/10/2023 18:25	BGS	Analytical Laboratory Service

Reference

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).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136, including but not limited to the following EPA Method reference revisions:
  EPA 300.1 Rev. 1.0-1997
  EPA 300.0 Rev. 2.1-1993
  EPA 353.2 Rev. 2.0-1993
  EPA 410.4 Rev. 1.0-1993
  EPA 420.4 Rev. 1.0-1993
  EPA 365.1 Rev. 2.0-1993
  EPA 200.7 Rev. 4.4-1994
  EPA 200.8 Rev. 5.4-1994
  EPA 245.1 Rev. 3.0-1994
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the 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.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
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
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID

Result Notations

Notation Ref.	
1	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.
2	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.

Detected Results Summary

Client Sample ID	FFMP035W	Collected	11/10/2023 10:06
Lab Sample ID	3332549001	Lab Receipt	11/10/2023 18:25

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	43.27	Feet		Field	#
Dissolved Oxygen	2.29	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	477.56	Feet		Field	#
Flow Rate	0.54	gal/min		Field	#
Ground Water Elevation	434.29	ft/MSL		Field	#
Oxidation-Reduction Potential	94	mV		Field	#
pH, Field (SM4500B)	6.43	pH_Units		Field	#
Sample Depth	65.00	Feet		Field	#
Specific Conductance, Field	1009	umhos/cm	1	Field	#
Temperature	13.22	Deg. C		Field	#
Total Well Depth	71.80	Feet		Field	#
Volume in Water Column	41.94	Gallons		Field	#
Water Level After Purge	48.46	Feet		Field	#
Well Volumes Purged	0.77	Vol		Field	#
METALS					
Calcium, Total	103	mg/L	0.11	SW846 6010C	#
Iron, Total	0.068	mg/L	0.067	SW846 6010C	#
Magnesium, Total	16.4	mg/L	0.11	SW846 6010C	#
Potassium, Total	2.6	mg/L	0.56	SW846 6010C	#
Sodium, Total	39.1	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	136	mg/L	5	SM2320B-2011	#
Alkalinity, Total	136	mg/L	5	SM2320B-2011	#
Ammonia-N	0.129	mg/L	0.100	ASTM D6919-17	#
Chloride	140	mg/L	2.0	EPA 300.0	#
Nitrate-N	5.6	mg/L	1.0	EPA 300.0	#
pH	8.15	pH_Units		S4500HB-11	#
Specific Conductance	808	umhos/cm	5	SW846 9050A	#
Sulfate	49.7	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	560	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	0.66	mg/L	0.50	SW846 9060A	#
Turbidity	1.4	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	FFMP02DW	Collected	11/10/2023 13:08
Lab Sample ID	3332549002	Lab Receipt	11/10/2023 18:25

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	27.49	Feet		Field	#
Dissolved Oxygen	0.03	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	509.60	Feet		Field	#
Flow Rate	1.91	gal/min		Field	#
Ground Water Elevation	482.11	ft/MSL		Field	#
Oxidation-Reduction Potential	-33	mV		Field	#
pH, Field (SM4500B)	6.97	pH_Units		Field	#
Sample Depth	120.00	Feet		Field	#
Specific Conductance, Field	2411	umhos/cm	1	Field	#
Temperature	13.47	Deg. C		Field	#
Total Well Depth	153.00	Feet		Field	#
Turbidity, Field	9	NTU	1	Field	#
Volume in Water Column	184.50	Gallons		Field	#
Water Level After Purge	79.32	Feet		Field	#
Well Volumes Purged	1.00	Vol		Field	#
METALS					
Calcium, Total	152	mg/L	0.11	SW846 6010C	#
Iron, Total	0.98	mg/L	0.067	SW846 6010C	#
Magnesium, Total	23.6	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.53	mg/L	0.0056	SW846 6010C	#
Potassium, Total	1.4	mg/L	0.56	SW846 6010C	#
Sodium, Total	161	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	124	mg/L	5	SM2320B-2011	#
Alkalinity, Total	124	mg/L	5	SM2320B-2011	#
Ammonia-N	0.215	mg/L	0.100	ASTM D6919-17	#
Chloride	459	mg/L	5.0	EPA 300.0	#
Nitrate-N	6.8	mg/L	2.5	EPA 300.0	#
pH	8.09	pH_Units		S4500HB-11	#
Specific Conductance	1740	umhos/cm	5	SW846 9050A	#
Sulfate	45.4	mg/L	5.0	EPA 300.0	#
Total Dissolved Solids	1240	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	0.86	mg/L	0.50	SW846 9060A	#
Turbidity	13	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	FFMP002W	Collected	11/10/2023 14:09
Lab Sample ID	3332549003	Lab Receipt	11/10/2023 18:25

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	69.81	Feet		Field	#
Dissolved Oxygen	6.02	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	613.20	Feet		Field	#
Flow Rate	0.99	gal/min		Field	#
Ground Water Elevation	543.39	ft/MSL		Field	#
Oxidation-Reduction Potential	321	mV		Field	#
pH, Field (SM4500B)	4.62	pH_Units		Field	#
Sample Depth	85.00	Feet		Field	#
Specific Conductance, Field	357	umhos/cm	1	Field	#
Temperature	15.10	Deg. C		Field	#
Total Well Depth	90.02	Feet		Field	#
Volume in Water Column	29.71	Gallons		Field	#
Water Level After Purge	82.82	Feet		Field	#
Well Volumes Purged	1.00	Vol		Field	#
METALS					
Calcium, Total	19.6	mg/L	0.11	SW846 6010C	#
Iron, Total	0.58	mg/L	0.067	SW846 6010C	#
Magnesium, Total	7.9	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.27	mg/L	0.0056	SW846 6010C	#
Potassium, Total	6.0	mg/L	0.56	SW846 6010C	#
Sodium, Total	15.8	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	7	mg/L	5	SM2320B-2011	#
Alkalinity, Total	7	mg/L	5	SM2320B-2011	#
Ammonia-N	0.153	mg/L	0.100	ASTM D6919-17	#
Chloride	17.4	mg/L	2.0	EPA 300.0	#
Nitrate-N	17.2	mg/L	1.0	EPA 300.0	#
pH	6.69	pH_Units		S4500HB-11	#
Specific Conductance	272	umhos/cm	5	SW846 9050A	#
Sulfate	25.0	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	424	mg/L	25	SM2540C-15	#
Turbidity	3.5	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	FFMP031W	Collected	11/10/2023 16:19
Lab Sample ID	3332549004	Lab Receipt	11/10/2023 18:25

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	69.88	Feet		Field	#
Elev Top MW Casing above MSL	612.66	Feet		Field	#
Flow Rate	2.32	gal/min		Field	#
Ground Water Elevation	542.78	ft/MSL		Field	#
Oxidation-Reduction Potential	-35	mV		Field	#
pH, Field (SM4500B)	7.98	pH_Units		Field	#
Sample Depth	130.00	Feet		Field	#
Specific Conductance, Field	386	umhos/cm	1	Field	#
Temperature	15.03	Deg. C		Field	#
Total Well Depth	142.70	Feet		Field	#
Turbidity, Field	20	NTU	1	Field	#
Volume in Water Column	107.05	Gallons		Field	#
Water Level After Purge	128.78	Feet		Field	#
Well Volumes Purged	1.63	Vol		Field	#
METALS					
Calcium, Total	60.5	mg/L	0.11	SW846 6010C	#
Iron, Total	3.5	mg/L	0.067	SW846 6010C	#
Magnesium, Total	4.4	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.31	mg/L	0.0056	SW846 6010C	#
Potassium, Total	1.6	mg/L	0.56	SW846 6010C	#
Sodium, Total	9.6	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	71	mg/L	5	SM2320B-2011	#
Alkalinity, Total	71	mg/L	5	SM2320B-2011	#
Ammonia-N	0.181	mg/L	0.100	ASTM D6919-17	#
Chloride	20.0	mg/L	2.0	EPA 300.0	#
pH	8.08	pH_Units		S4500HB-11	#
Specific Conductance	301	umhos/cm	5	SW846 9050A	#
Sulfate	46.0	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	199	mg/L	25	SM2540C-15	#
Turbidity	65	NTU	0.30	SM2130B-2011	#

Results

Client Sample ID	FFMP035W	Collected	11/10/2023 10:06
Lab Sample ID	3332549001	Lab Receipt	11/10/2023 18:25

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	43.27		Feet		Field	1	11/10/2023 10:06	BGS	D
Dissolved Oxygen	2.29		mg/L	0.01	Field	1	11/10/2023 10:06	BGS	D
Elev Top MW Casing above MSL	477.56		Feet		Field	1	11/10/2023 10:06	BGS	D
Flow Rate	0.54		gal/min		Field	1	11/10/2023 10:06	BGS	D
Ground Water Elevation	434.29		ft/MSL		Field	1	11/10/2023 10:06	BGS	D
Oxidation-Reduction Potential	94		mV		Field	1	11/10/2023 10:06	BGS	D
pH, Field (SM4500B)	6.43		pH_Units		Field	1	11/10/2023 10:06	BGS	D
Sample Depth	65.00		Feet		Field	1	11/10/2023 10:06	BGS	D
Specific Conductance, Field	1009		umhos/cm	1	Field	1	11/10/2023 10:06	BGS	D
Temperature	13.22		Deg. C		Field	1	11/10/2023 10:06	BGS	D
Total Well Depth	71.80		Feet		Field	1	11/10/2023 10:06	BGS	D
Turbidity, Field	ND	ND	NTU	1	Field	1	11/10/2023 10:06	BGS	D
Volume in Water Column	41.94		Gallons		Field	1	11/10/2023 10:06	BGS	D
Water Level After Purge	48.46		Feet		Field	1	11/10/2023 10:06	BGS	D
Well Volumes Purged	0.77		Vol		Field	1	11/10/2023 10:06	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	103		mg/L	0.11	SW846 6010C	1	11/17/2023 11:36	HTO	J1
Iron, Total	0.068		mg/L	0.067	SW846 6010C	1	11/17/2023 11:36	HTO	J1
Magnesium, Total	16.4		mg/L	0.11	SW846 6010C	1	11/17/2023 11:36	HTO	J1
Manganese, Total	ND	ND	mg/L	0.0056	SW846 6010C	1	11/17/2023 11:36	HTO	J1
Potassium, Total	2.6		mg/L	0.56	SW846 6010C	1	11/17/2023 11:36	HTO	J1
Sodium, Total	39.1		mg/L	0.56	SW846 6010C	1	11/17/2023 11:36	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 01:38	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 01:38	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 01:38	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 01:38	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 01:38	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 01:38	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 01:38	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 01:38	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 01:38	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 01:38	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 01:38	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/23/2023 01:38	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 01:38	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 01:38	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 01:38	PDK	H

Results

Client Sample ID	FFMP035W	Collected	11/10/2023 10:06
Lab Sample ID	3332549001	Lab Receipt	11/10/2023 18:25

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	62 – 133	11/23/2023 01:38	
4-Bromofluorobenzene	460-00-4	103%	79 – 114	11/23/2023 01:38	
Dibromofluoromethane	1868-53-7	96.8%	78 – 116	11/23/2023 01:38	
Toluene-d8	2037-26-5	102%	76 – 127	11/23/2023 01:38	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	136		mg/L	5	SM2320B-2011	1	11/16/2023 00:55	JMS	B
Alkalinity, Total	136	1	mg/L	5	SM2320B-2011	1	11/16/2023 00:55	JMS	B
Ammonia-N	0.129		mg/L	0.100	ASTM D6919-17	10	11/22/2023 00:13	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/15/2023 13:45	KMS	A
Chloride	140		mg/L	2.0	EPA 300.0	2	11/11/2023 12:22	GMM	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/11/2023 12:22	GMM	B
Nitrate-N	5.6		mg/L	1.0	EPA 300.0	2	11/11/2023 12:22	GMM	B
pH	8.15	2	pH_Units		S4500HB-11	1	11/16/2023 00:55	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/21/2023 14:50	AKH	G
Specific Conductance	808		umhos/cm	5	SW846 9050A	1	11/28/2023 09:48	JXL	B
Sulfate	49.7		mg/L	2.0	EPA 300.0	2	11/11/2023 12:22	GMM	B
Total Dissolved Solids	560		mg/L	25	SM2540C-15	1	11/14/2023 14:11	RAG	B
Total Organic Carbon (TOC)	0.66		mg/L	0.50	SW846 9060A	1	11/13/2023 22:07	PAG	E
Turbidity	1.4		NTU	0.30	SM2130B-2011	1	11/10/2023 22:30	NRB	B

Results

Client Sample ID	FFMP02DW	Collected	11/10/2023 13:08
Lab Sample ID	3332549002	Lab Receipt	11/10/2023 18:25

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	27.49		Feet		Field	1	11/10/2023 13:08	BGS	D
Dissolved Oxygen	0.03		mg/L	0.01	Field	1	11/10/2023 13:08	BGS	D
Elev Top MW Casing above MSL	509.60		Feet		Field	1	11/10/2023 13:08	BGS	D
Flow Rate	1.91		gal/min		Field	1	11/10/2023 13:08	BGS	D
Ground Water Elevation	482.11		ft/MSL		Field	1	11/10/2023 13:08	BGS	D
Oxidation-Reduction Potential	-33		mV		Field	1	11/10/2023 13:08	BGS	D
pH, Field (SM4500B)	6.97		pH_Units		Field	1	11/10/2023 13:08	BGS	D
Sample Depth	120.00		Feet		Field	1	11/10/2023 13:08	BGS	D
Specific Conductance, Field	2411		umhos/cm	1	Field	1	11/10/2023 13:08	BGS	D
Temperature	13.47		Deg. C		Field	1	11/10/2023 13:08	BGS	D
Total Well Depth	153.00		Feet		Field	1	11/10/2023 13:08	BGS	D
Turbidity, Field	9		NTU	1	Field	1	11/10/2023 13:08	BGS	D
Volume in Water Column	184.50		Gallons		Field	1	11/10/2023 13:08	BGS	D
Water Level After Purge	79.32		Feet		Field	1	11/10/2023 13:08	BGS	D
Well Volumes Purged	1.00		Vol		Field	1	11/10/2023 13:08	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	152		mg/L	0.11	SW846 6010C	1	11/17/2023 11:37	HTO	J1
Iron, Total	0.98		mg/L	0.067	SW846 6010C	1	11/17/2023 11:37	HTO	J1
Magnesium, Total	23.6		mg/L	0.11	SW846 6010C	1	11/17/2023 11:37	HTO	J1
Manganese, Total	0.53		mg/L	0.0056	SW846 6010C	1	11/17/2023 11:37	HTO	J1
Potassium, Total	1.4		mg/L	0.56	SW846 6010C	1	11/17/2023 11:37	HTO	J1
Sodium, Total	161		mg/L	0.56	SW846 6010C	1	11/17/2023 11:37	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:02	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:02	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:02	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:02	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:02	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:02	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:02	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:02	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:02	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:02	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:02	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/23/2023 02:02	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:02	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:02	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:02	PDK	H

Results

Client Sample ID	FFMP02DW	Collected	11/10/2023 13:08
Lab Sample ID	3332549002	Lab Receipt	11/10/2023 18:25

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	62 – 133	11/23/2023 02:02	
4-Bromofluorobenzene	460-00-4	101%	79 – 114	11/23/2023 02:02	
Dibromofluoromethane	1868-53-7	96.5%	78 – 116	11/23/2023 02:02	
Toluene-d8	2037-26-5	101%	76 – 127	11/23/2023 02:02	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	124		mg/L	5	SM2320B-2011	1	11/16/2023 00:43	JMS	B
Alkalinity, Total	124	1	mg/L	5	SM2320B-2011	1	11/16/2023 00:43	JMS	B
Ammonia-N	0.215		mg/L	0.100	ASTM D6919-17	10	11/22/2023 00:26	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/15/2023 13:45	KMS	A
Chloride	459		mg/L	5.0	EPA 300.0	5	11/11/2023 12:32	GMM	B
Fluoride	ND	ND	mg/L	0.50	EPA 300.0	5	11/11/2023 12:32	GMM	B
Nitrate-N	6.8		mg/L	2.5	EPA 300.0	5	11/11/2023 12:32	GMM	B
pH	8.09	2	pH_Units		S4500HB-11	1	11/16/2023 00:43	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/21/2023 15:25	AKH	G
Specific Conductance	1740		umhos/cm	5	SW846 9050A	1	11/28/2023 09:48	JXL	B
Sulfate	45.4		mg/L	5.0	EPA 300.0	5	11/11/2023 12:32	GMM	B
Total Dissolved Solids	1240		mg/L	25	SM2540C-15	1	11/14/2023 14:11	RAG	B
Total Organic Carbon (TOC)	0.86		mg/L	0.50	SW846 9060A	1	11/13/2023 22:07	PAG	E
Turbidity	13		NTU	0.30	SM2130B-2011	1	11/10/2023 22:30	NRB	B

Results

Client Sample ID	FFMP002W	Collected	11/10/2023 14:09
Lab Sample ID	3332549003	Lab Receipt	11/10/2023 18:25

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	69.81		Feet		Field	1	11/10/2023 14:09	BGS	D
Dissolved Oxygen	6.02		mg/L	0.01	Field	1	11/10/2023 14:09	BGS	D
Elev Top MW Casing above MSL	613.20		Feet		Field	1	11/10/2023 14:09	BGS	D
Flow Rate	0.99		gal/min		Field	1	11/10/2023 14:09	BGS	D
Ground Water Elevation	543.39		ft/MSL		Field	1	11/10/2023 14:09	BGS	D
Oxidation-Reduction Potential	321		mV		Field	1	11/10/2023 14:09	BGS	D
pH, Field (SM4500B)	4.62		pH_Units		Field	1	11/10/2023 14:09	BGS	D
Sample Depth	85.00		Feet		Field	1	11/10/2023 14:09	BGS	D
Specific Conductance, Field	357		umhos/cm	1	Field	1	11/10/2023 14:09	BGS	D
Temperature	15.10		Deg. C		Field	1	11/10/2023 14:09	BGS	D
Total Well Depth	90.02		Feet		Field	1	11/10/2023 14:09	BGS	D
Turbidity, Field	ND	ND	NTU	1	Field	1	11/10/2023 14:09	BGS	D
Volume in Water Column	29.71		Gallons		Field	1	11/10/2023 14:09	BGS	D
Water Level After Purge	82.82		Feet		Field	1	11/10/2023 14:09	BGS	D
Well Volumes Purged	1.00		Vol		Field	1	11/10/2023 14:09	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	19.6		mg/L	0.11	SW846 6010C	1	11/17/2023 11:38	HTO	J1
Iron, Total	0.58		mg/L	0.067	SW846 6010C	1	11/17/2023 11:38	HTO	J1
Magnesium, Total	7.9		mg/L	0.11	SW846 6010C	1	11/17/2023 11:38	HTO	J1
Manganese, Total	0.27		mg/L	0.0056	SW846 6010C	1	11/17/2023 11:38	HTO	J1
Potassium, Total	6.0		mg/L	0.56	SW846 6010C	1	11/17/2023 11:38	HTO	J1
Sodium, Total	15.8		mg/L	0.56	SW846 6010C	1	11/17/2023 11:38	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:25	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:25	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:25	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:25	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:25	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:25	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:25	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:25	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:25	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:25	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:25	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/23/2023 02:25	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:25	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:25	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:25	PDK	H

Results

Client Sample ID	FFMP002W	Collected	11/10/2023 14:09
Lab Sample ID	3332549003	Lab Receipt	11/10/2023 18:25

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	62 – 133	11/23/2023 02:25	
4-Bromofluorobenzene	460-00-4	103%	79 – 114	11/23/2023 02:25	
Dibromofluoromethane	1868-53-7	95.9%	78 – 116	11/23/2023 02:25	
Toluene-d8	2037-26-5	102%	76 – 127	11/23/2023 02:25	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	7		mg/L	5	SM2320B-2011	1	11/16/2023 00:20	JMS	B
Alkalinity, Total	7	1	mg/L	5	SM2320B-2011	1	11/16/2023 00:20	JMS	B
Ammonia-N	0.153		mg/L	0.100	ASTM D6919-17	10	11/28/2023 18:08	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/15/2023 13:45	KMS	A
Chloride	17.4		mg/L	2.0	EPA 300.0	2	11/11/2023 12:43	GMM	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/11/2023 12:43	GMM	B
Nitrate-N	17.2		mg/L	1.0	EPA 300.0	2	11/11/2023 12:43	GMM	B
pH	6.69	2	pH_Units		S4500HB-11	1	11/16/2023 00:20	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/21/2023 15:48	AKH	G
Specific Conductance	272		umhos/cm	5	SW846 9050A	1	11/28/2023 09:48	JXL	B
Sulfate	25.0		mg/L	2.0	EPA 300.0	2	11/11/2023 12:43	GMM	B
Total Dissolved Solids	424		mg/L	25	SM2540C-15	1	11/14/2023 14:11	RAG	B
Total Organic Carbon (TOC)	ND	ND	mg/L	0.50	SW846 9060A	1	11/13/2023 22:07	PAG	E
Turbidity	3.5		NTU	0.30	SM2130B-2011	1	11/10/2023 22:30	NRB	B

Results

Client Sample ID	FFMP031W	Collected	11/10/2023 16:19
Lab Sample ID	3332549004	Lab Receipt	11/10/2023 18:25

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	69.88		Feet		Field	1	11/10/2023 16:19	BGS	D
Dissolved Oxygen	ND	ND	mg/L	0.01	Field	1	11/10/2023 16:19	BGS	D
Elev Top MW Casing above MSL	612.66		Feet		Field	1	11/10/2023 16:19	BGS	D
Flow Rate	2.32		gal/min		Field	1	11/10/2023 16:19	BGS	D
Ground Water Elevation	542.78		ft/MSL		Field	1	11/10/2023 16:19	BGS	D
Oxidation-Reduction Potential	-35		mV		Field	1	11/10/2023 16:19	BGS	D
pH, Field (SM4500B)	7.98		pH_Units		Field	1	11/10/2023 16:19	BGS	D
Sample Depth	130.00		Feet		Field	1	11/10/2023 16:19	BGS	D
Specific Conductance, Field	386		umhos/cm	1	Field	1	11/10/2023 16:19	BGS	D
Temperature	15.03		Deg. C		Field	1	11/10/2023 16:19	BGS	D
Total Well Depth	142.70		Feet		Field	1	11/10/2023 16:19	BGS	D
Turbidity, Field	20		NTU	1	Field	1	11/10/2023 16:19	BGS	D
Volume in Water Column	107.05		Gallons		Field	1	11/10/2023 16:19	BGS	D
Water Level After Purge	128.78		Feet		Field	1	11/10/2023 16:19	BGS	D
Well Volumes Purged	1.63		Vol		Field	1	11/10/2023 16:19	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	60.5		mg/L	0.11	SW846 6010C	1	11/17/2023 11:43	HTO	J1
Iron, Total	3.5		mg/L	0.067	SW846 6010C	1	11/17/2023 11:43	HTO	J1
Magnesium, Total	4.4		mg/L	0.11	SW846 6010C	1	11/17/2023 11:43	HTO	J1
Manganese, Total	0.31		mg/L	0.0056	SW846 6010C	1	11/17/2023 11:43	HTO	J1
Potassium, Total	1.6		mg/L	0.56	SW846 6010C	1	11/17/2023 11:43	HTO	J1
Sodium, Total	9.6		mg/L	0.56	SW846 6010C	1	11/17/2023 11:43	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:48	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:48	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:48	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:48	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:48	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:48	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:48	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:48	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:48	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:48	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:48	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	11/23/2023 02:48	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:48	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:48	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	11/23/2023 02:48	PDK	H

Results

Client Sample ID	FFMP031W	Collected	11/10/2023 16:19
Lab Sample ID	3332549004	Lab Receipt	11/10/2023 18:25

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	106%	62 – 133	11/23/2023 02:48	
4-Bromofluorobenzene	460-00-4	105%	79 – 114	11/23/2023 02:48	
Dibromofluoromethane	1868-53-7	97.7%	78 – 116	11/23/2023 02:48	
Toluene-d8	2037-26-5	103%	76 – 127	11/23/2023 02:48	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	71		mg/L	5	SM2320B-2011	1	11/15/2023 21:09	JMS	B
Alkalinity, Total	71	1	mg/L	5	SM2320B-2011	1	11/15/2023 21:09	JMS	B
Ammonia-N	0.181		mg/L	0.100	ASTM D6919-17	10	11/28/2023 17:54	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/15/2023 13:45	KMS	A
Chloride	20.0		mg/L	2.0	EPA 300.0	2	11/11/2023 12:53	GMM	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/11/2023 12:53	GMM	B
Nitrate-N	ND	ND	mg/L	1.0	EPA 300.0	2	11/11/2023 12:53	GMM	B
pH	8.08	2	pH_Units		S4500HB-11	1	11/15/2023 21:09	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	11/21/2023 15:51	AKH	G
Specific Conductance	301		umhos/cm	5	SW846 9050A	1	11/28/2023 09:48	JXL	B
Sulfate	46.0		mg/L	2.0	EPA 300.0	2	11/11/2023 12:53	GMM	B
Total Dissolved Solids	199		mg/L	25	SM2540C-15	1	11/14/2023 14:11	RAG	B
Total Organic Carbon (TOC)	ND	ND	mg/L	0.50	SW846 9060A	1	11/13/2023 22:07	PAG	E
Turbidity	65		NTU	0.30	SM2130B-2011	1	11/10/2023 22:30	NRB	B

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3332549001	FFMP035W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	
3332549002	FFMP02DW	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	
3332549003	FFMP002W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	
3332549004	FFMP031W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3332549001	FFMP035W	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1088508	11/13/2023 03:04	ANN	SW846 6010C	1091385
		N/A	N/A	N/A		SW846 8260B	1093534
		N/A	N/A	N/A		ASTM D6919-17	1092279
		N/A	N/A	N/A		EPA 300.0	1088310
		N/A	N/A	N/A		EPA 410.4	1089343
		N/A	N/A	N/A		S4500HB-11	1089401
		N/A	N/A	N/A		SM2130B-2011	1087901
		N/A	N/A	N/A		SM2320B-2011	1089401
		N/A	N/A	N/A		SM2540C-15	1089045
		N/A	N/A	N/A		SW846 9050A	1095092
		N/A	N/A	N/A		SW846 9060A	1088894
		SW846 9066	1092708	11/21/2023 10:31	AKH	SW846 9066	1092710
3332549002	FFMP02DW	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1088508	11/13/2023 03:04	ANN	SW846 6010C	1091385
		N/A	N/A	N/A		SW846 8260B	1093534
		N/A	N/A	N/A		ASTM D6919-17	1092279
		N/A	N/A	N/A		EPA 300.0	1088310
		N/A	N/A	N/A		EPA 410.4	1089343
		N/A	N/A	N/A		S4500HB-11	1089401
		N/A	N/A	N/A		SM2130B-2011	1087901
		N/A	N/A	N/A		SM2320B-2011	1089401
		N/A	N/A	N/A		SM2540C-15	1089045
		N/A	N/A	N/A		SW846 9050A	1095092
		N/A	N/A	N/A		SW846 9060A	1088894
		SW846 9066	1092708	11/21/2023 10:31	AKH	SW846 9066	1092710
3332549003	FFMP002W	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1088508	11/13/2023 03:04	ANN	SW846 6010C	1091385
		N/A	N/A	N/A		SW846 8260B	1093534
		N/A	N/A	N/A		ASTM D6919-17	1095246
		N/A	N/A	N/A		EPA 300.0	1088310
		N/A	N/A	N/A		EPA 410.4	1089343
		N/A	N/A	N/A		S4500HB-11	1089401
		N/A	N/A	N/A		SM2130B-2011	1087901
		N/A	N/A	N/A		SM2320B-2011	1089401
		N/A	N/A	N/A		SM2540C-15	1089045
		N/A	N/A	N/A		SW846 9050A	1095092
		N/A	N/A	N/A		SW846 9060A	1088894
		SW846 9066	1092708	11/21/2023 10:31	AKH	SW846 9066	1092710
3332549004	FFMP031W	N/A	N/A	N/A		Field	1091865
		SW846 3015A	1088508	11/13/2023 03:04	ANN	SW846 6010C	1091385
		N/A	N/A	N/A		SW846 8260B	1093534
		N/A	N/A	N/A		ASTM D6919-17	1095246
		N/A	N/A	N/A		EPA 300.0	1088310
		N/A	N/A	N/A		EPA 410.4	1089343
		N/A	N/A	N/A		S4500HB-11	1089401
		N/A	N/A	N/A		SM2130B-2011	1087901
		N/A	N/A	N/A		SM2320B-2011	1089401
		N/A	N/A	N/A		SM2540C-15	1089045
		N/A	N/A	N/A		SW846 9050A	1095092
		N/A	N/A	N/A		SW846 9060A	1088894
		SW846 9066	1092708	11/21/2023 10:31	AKH	SW846 9066	1092710

ALS Environmental

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

301 Fulling Mill Road • Middletown, PA 17057 • 717.944.5541 • Fax: 717.944.1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALS

3332549

Logged By: SLS

PM: SJB

1 of 1

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

Client Name: Lancaster County Solid Waste MA

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

Contact: Dan Brown

Phone#: (717) 735-0193

Project Name/#: Frey Farm Quarterly (GWMP)

Bill To: Lancaster County Solid Waste MA

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

Date Required: _____ **Approved By:** _____

Email? [X] -Y dbrown@LCSWMA.com

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

Container Type	AG	AW	CG	—	—	PL	PL	PL	
Container Size	40 ml	125 ml	40 ml	—	—	250 ml	125 ml	500 ml	250 ml
Preservative	HCl	H2SO4	HCl	—	—	H2SO4	HNO3	None	None

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	TOC	O-OH	VOC - Form 19Q	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Metals: Fe, Mn, Na, Ca, K, Mg	pH, Cl, SpC, F, SO4, TDS, NO3, Turb.	Alkalinity Bicarbonate	
					Enter Number of Containers Per Sample or Field Results Below.									
1. FFMP035W	11/10/23	1006	G	GW	2	1	2	X	X	1	2	1	1	
2. FFMP02DW	11/10/23	1308	G	GW	2	1	2	X	X	1	2	1	1	
3. FFMP002W	11/10/23	1409	G	GW	2	1	2	X	X	1	2	1	1	
4. FFMP031W	11/10/23	1619	G	GW	2	1	2	X	X	1	2	1	1	
5														
6														
7														
8														
9														
10														

(Completed by Receiving Lab)

Cooler Temp: _____ Therm ID: _____

No. of Coolers: _____

	Y	N	Initial
Custody Seals Present?			
(if present) Seals Intact?			
Received on Ice?			
COC/Labels Complete/Accurate?			

Cc

Temp By: RW / WO Temp (°C) 3C / Therm ID 5D

Corr

Courier/T

Receipt Info Completed By: RW
Cooler Custody Seal Intact Y N NA
Sample Custody Seal Intact Y N NA
Received on Ice Y N
Cooler & Samples Intact Y N
Correct Containers Provided Y N
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
CR6 Samples Filtered Y N NA
OP Samples Filtered Y N NA
VOA Trip Blank Y N NA
NJ≤ 4 Days? Y N
Rad Screen (uCi) Y N
Courier/Tracking #: _____

SDWA Compliance
PWSID
WV Containers 0-6°C Y N
Y N NA

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

Project Comments:

LOGGED BY(signature): DATE: TIME:

REVIEWED BY(signature): DATE: TIME:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [illegible] ALS	11/10/23	1825	2	11/10/23	1825
3			4		
5			6		
7			8		
9			10		

Data Deliverables: ☐Standard ☐CLP-like ☐USACE

Special Processing: ☐USACE ☐Navy ☐

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

Reportable to PADEP? Yes ☐ PWSID # _____

Sample Disposal: Lab ☒ Special ☐

EDDS: Format Type- _____

* G=Grab; C=Composite

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

Main Site: 301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com
Associated Site: 20 Riverside Drive | Spring City, PA 19475 | Phone: 610-948-4903 | Fax: 717-944-1430 |

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

Analytical Results Report For

Lancaster County Solid Waste Authority

Project 4th QTR 2023 GWMP-FORM 19Q
Workorder 3334569
Report ID 289669 on 12/19/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Nov 27, 2023.

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 Susan Scherer (Project Coordinator) at (717) 944-5541.

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

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Jordan Bigler - Lancaster County Solid Waste Authority
Ashley Gichuki - Lancaster County Solid Waste Authority
Daniel Brown - Lancaster County Solid Waste Authority
Jeff Musser - Lancaster County Solid Waste Authority

Susan Scherer

Susan Scherer *(ALS Digital Signature)*
Project Coordinator

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

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3334569001	FFMP032W	Ground Water	11/27/2023 11:58	11/27/2023 16:35	BGS	Analytical Laboratory Service

Reference

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).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136, including but not limited to the following EPA Method reference revisions:
  EPA 300.1 Rev. 1.0-1997
  EPA 300.0 Rev. 2.1-1993
  EPA 353.2 Rev. 2.0-1993
  EPA 410.4 Rev. 1.0-1993
  EPA 420.4 Rev. 1.0-1993
  EPA 365.1 Rev. 2.0-1993
  EPA 200.7 Rev. 4.4-1994
  EPA 200.8 Rev. 5.4-1994
  EPA 245.1 Rev. 3.0-1994
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the 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.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
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
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID

Result Notations

Notation Ref.	
1	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.
2	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.

Detected Results Summary

Client Sample ID	FFMP032W	Collected	11/27/2023 11:58
Lab Sample ID	3334569001	Lab Receipt	11/27/2023 16:35

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	51.22	Feet		Field	#
Dissolved Oxygen	0.13	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	594.09	Feet		Field	#
Flow Rate	0.16	gal/min		Field	#
Ground Water Elevation	542.87	ft/MSL		Field	#
Oxidation-Reduction Potential	-97	mV		Field	#
pH, Field (SM4500B)	6.69	pH_Units		Field	#
Sample Depth	62.00	Feet		Field	#
Specific Conductance, Field	275	umhos/cm	1	Field	#
Temperature	20.02	Deg. C		Field	#
Total Well Depth	77.60	Feet		Field	#
Turbidity, Field	13	NTU	1	Field	#
Volume in Water Column	38.78	Gallons		Field	#
Water Level After Purge	55.75	Feet		Field	#
Well Volumes Purged	1.00	Vol		Field	#
METALS					
Calcium, Total	17.4	mg/L	0.11	SW846 6010C	#
Iron, Total	7.0	mg/L	0.067	SW846 6010C	#
Magnesium, Total	6.3	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.69	mg/L	0.0056	SW846 6010C	#
Potassium, Total	1.6	mg/L	0.56	SW846 6010C	#
Sodium, Total	13.8	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	69	mg/L	5	SM2320B-2011	#
Alkalinity, Total	69	mg/L	5	SM2320B-2011	#
Ammonia-N	0.787	mg/L	0.100	ASTM D6919-17	#
Chloride	21.9	mg/L	2.0	EPA 300.0	#
pH	7.86	pH_Units		S4500HB-11	#
Specific Conductance	199	umhos/cm	5	SW846 9050A	#
Total Dissolved Solids	101	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	0.64	mg/L	0.50	SW846 9060A	#
Turbidity	75	NTU	0.30	SM2130B-2011	#

Results

Client Sample ID	FFMP032W	Collected	11/27/2023 11:58
Lab Sample ID	3334569001	Lab Receipt	11/27/2023 16:35

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	51.22		Feet		Field	1	11/27/2023 11:58	BGS	D
Dissolved Oxygen	0.13		mg/L	0.01	Field	1	11/27/2023 11:58	BGS	D
Elev Top MW Casing above MSL	594.09		Feet		Field	1	11/27/2023 11:58	BGS	D
Flow Rate	0.16		gal/min		Field	1	11/27/2023 11:58	BGS	D
Ground Water Elevation	542.87		ft/MSL		Field	1	11/27/2023 11:58	BGS	D
Oxidation-Reduction Potential	-97		mV		Field	1	11/27/2023 11:58	BGS	D
pH, Field (SM4500B)	6.69		pH_Units		Field	1	11/27/2023 11:58	BGS	D
Sample Depth	62.00		Feet		Field	1	11/27/2023 11:58	BGS	D
Specific Conductance, Field	275		umhos/cm	1	Field	1	11/27/2023 11:58	BGS	D
Temperature	20.02		Deg. C		Field	1	11/27/2023 11:58	BGS	D
Total Well Depth	77.60		Feet		Field	1	11/27/2023 11:58	BGS	D
Turbidity, Field	13		NTU	1	Field	1	11/27/2023 11:58	BGS	D
Volume in Water Column	38.78		Gallons		Field	1	11/27/2023 11:58	BGS	D
Water Level After Purge	55.75		Feet		Field	1	11/27/2023 11:58	BGS	D
Well Volumes Purged	1.00		Vol		Field	1	11/27/2023 11:58	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	17.4		mg/L	0.11	SW846 6010C	1	12/07/2023 10:29	HTO	J1
Iron, Total	7.0		mg/L	0.067	SW846 6010C	1	12/07/2023 10:29	HTO	J1
Magnesium, Total	6.3		mg/L	0.11	SW846 6010C	1	12/07/2023 10:29	HTO	J1
Manganese, Total	0.69		mg/L	0.0056	SW846 6010C	1	12/07/2023 10:29	HTO	J1
Potassium, Total	1.6		mg/L	0.56	SW846 6010C	1	12/07/2023 10:29	HTO	J1
Sodium, Total	13.8		mg/L	0.56	SW846 6010C	1	12/07/2023 10:29	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 16:25	ILY	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 16:25	ILY	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 16:25	ILY	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 16:25	ILY	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 16:25	ILY	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 16:25	ILY	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 16:25	ILY	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 16:25	ILY	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 16:25	ILY	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 16:25	ILY	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 16:25	ILY	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	12/04/2023 16:25	ILY	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 16:25	ILY	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 16:25	ILY	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 16:25	ILY	H

Results

Client Sample ID	FFMP032W	Collected	11/27/2023 11:58
Lab Sample ID	3334569001	Lab Receipt	11/27/2023 16:35

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	100%	62 – 133	12/04/2023 16:25	
4-Bromofluorobenzene	460-00-4	102%	79 – 114	12/04/2023 16:25	
Dibromofluoromethane	1868-53-7	107%	78 – 116	12/04/2023 16:25	
Toluene-d8	2037-26-5	103%	76 – 127	12/04/2023 16:25	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	69		mg/L	5	SM2320B-2011	1	11/30/2023 13:27	JMS	B
Alkalinity, Total	69	1	mg/L	5	SM2320B-2011	1	11/30/2023 13:27	JMS	B
Ammonia-N	0.787		mg/L	0.100	ASTM D6919-17	10	12/12/2023 19:31	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/30/2023 11:00	KMS	A
Chloride	21.9		mg/L	2.0	EPA 300.0	2	11/28/2023 11:33	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/28/2023 11:33	J1W	B
Nitrate-N	ND	ND	mg/L	1.0	EPA 300.0	2	11/28/2023 11:33	J1W	B
pH	7.86	2	pH_Units		S4500HB-11	1	11/30/2023 13:27	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	12/08/2023 16:43	AKH	G
Specific Conductance	199		umhos/cm	5	SW846 9050A	1	12/01/2023 14:48	JMS	B
Sulfate	ND	ND	mg/L	2.0	EPA 300.0	2	11/28/2023 11:33	J1W	B
Total Dissolved Solids	101		mg/L	25	SM2540C-15	1	11/30/2023 10:30	RAG	B
Total Organic Carbon (TOC)	0.64		mg/L	0.50	SW846 9060A	1	11/28/2023 23:09	PAG	E
Turbidity	75		NTU	0.30	SM2130B-2011	1	11/27/2023 23:10	NRB	B

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3334569001	FFMP032W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3334569001	FFMP032W	N/A	N/A	N/A		Field	1107110
		SW846 3015A	1095338	11/29/2023 00:55	ANN	SW846 6010C	1097797
		N/A	N/A	N/A		SW846 8260B	1096523
		N/A	N/A	N/A		ASTM D6919-17	1098575
		N/A	N/A	N/A		EPA 300.0	1095151
		N/A	N/A	N/A		EPA 410.4	1095576
		N/A	N/A	N/A		S4500HB-11	1095598
		N/A	N/A	N/A		SM2130B-2011	1095133
		N/A	N/A	N/A		SM2320B-2011	1095598
		N/A	N/A	N/A		SM2540C-15	1095595
		N/A	N/A	N/A		SW846 9050A	1095902
		N/A	N/A	N/A		SW846 9060A	1095270
		SW846 9066	1098664	12/08/2023 08:47	AKH	SW846 9066	1098665

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

301 Fulling Mill Road • Middletown, PA 17057 • 717.944.5541 • Fax: 717.944.1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated 3334569

Logged By: SLS

PM: SJB

569

1 of 1

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

(completed by Receiving Lab)

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

Date Required: _____ **Approved By:** _____

Email? [X] -Y dbrown@LCSWMA.com

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

Container Type	AG	AW	CG	----	----	PL	PL	PL	
Container Size	40 ml	125 ml	40 ml	----	----	250 ml	125 ml	500 ml	250 ml
Preservative	HCl	H2SO4	HCl	----	----	H2SO4	HNO3	None	None

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	TOC	O-OH	VOC - Form 19Q	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Metals: Fe, Mn, Na, Ca, K, Mg	pH, Cl, SpC, F, SO4, TDS, NO3, Turb.	Alkalinity Bicarbonate	
					Enter Number of Containers Per Sample or Field Results Below.									
1. FFMP032W	11/27/23	1158	G	GW	2	1	2	x	x	1	2	1	1	
2														
3														
4														
5														
6														
7														
8														
9														
10														

Cooler Temp: 6 Therm ID: _____

No. of Coolers: _____ Y N Initial

Custody Seals Present? [ ] [ ]

(if present) Seals Intact? [ ] [ ]

Temp By: DAG | WO Temp (°C): 6 | Therm ID: 573

Receipt Info Completed By: DAG

Cooler Custody Seal Intact	Y	N	NA
Sample Custody Seal Intact	Y	N	NA
Received on Ice	Y	N	NA
Cooler & Samples Intact	Y	N	
Correct Containers Provided	Y	N	
Sample Label/COC Agree	Y	N	
Adequate Sample Volumes	Y	N	
CR6 Samples Filtered	Y	N	NA
OP Samples Filtered	Y	N	NA
VOA Trip Blank	Y	N	NA
NJ≤ 4 Days?			N

Rad Screen (uCi) 7

Courier/Tracking #: -

SDWA Compliance M

PWSID

WV Containers 0-6°C Y N NA

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

Project Comments:

LOGGED BY(signature): DATE: TIME:

REVIEWED BY(signature): DATE: TIME:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [signature] ALS	11-27-23	1635	2 DAG/ALS	11/27/23	1635
3			4		
5			6		
7			8		
9			10		

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

Special Processing: USACE [ ] Navy [ ]

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

Reportable to PADEP? Yes [ ] PWSID # _____

Sample Disposal: Lab [X] Special [ ]

EDDS: Format Type- _____

* G=Grab; C=Composite

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

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

Rev 8/04

Main Site: 301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com
Associated Site: 20 Riverside Drive | Spring City, PA 19475 | Phone: 610-948-4903 | Fax: 717-944-1430 |

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

Analytical Results Report For **Lancaster County Solid Waste Authority**

Project 4th QTR 2023 GWMP-FORM 19Q
Workorder 3334725
Report ID 289829 on 12/19/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Nov 28, 2023.

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 Susan Scherer (Project Coordinator) at (717) 944-5541.

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

ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):
Jordan Bigler - Lancaster County Solid Waste Authority
Ashley Gichuki - Lancaster County Solid Waste Authority
Daniel Brown - Lancaster County Solid Waste Authority
Jeff Musser - Lancaster County Solid Waste Authority

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

Susan Scherer
Susan Scherer *(ALS Digital Signature)*
Project Coordinator

Sample Summary

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collector	Collection Company
3334725001	FFMP02SW	Ground Water	11/28/2023 10:03	11/28/2023 17:25	BGS	Analytical Laboratory Service
3334725002	FIELD BLANK	Water	11/28/2023 10:10	11/28/2023 17:25	BGS	Analytical Laboratory Service
3334725003	TRIP BLANK	Water	11/28/2023 17:25	11/28/2023 17:25	BGS	Analytical Laboratory Service

Reference

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).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136, including but not limited to the following EPA Method reference revisions:
  EPA 300.1 Rev. 1.0-1997
  EPA 300.0 Rev. 2.1-1993
  EPA 353.2 Rev. 2.0-1993
  EPA 410.4 Rev. 1.0-1993
  EPA 420.4 Rev. 1.0-1993
  EPA 365.1 Rev. 2.0-1993
  EPA 200.7 Rev. 4.4-1994
  EPA 200.8 Rev. 5.4-1994
  EPA 245.1 Rev. 3.0-1994
- Except as qualified, Safe Drinking Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 141.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
- For microbiological analyses, the "Prepared" value is the date/time into the 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.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND) above the MDL
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Practical Quantitation Limit for this Project
ND	Not Detected - indicates that the analyte was Not Detected
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
#	Please reference the result in the Results Section for analyte-level flags.

Project Notations

Sample Notations

Lab ID	Sample ID

Result Notations

Notation Ref.	
1	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L.
2	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.

Detected Results Summary

Client Sample ID	FFMP02SW	Collected	11/28/2023 10:03
Lab Sample ID	3334725001	Lab Receipt	11/28/2023 17:25

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	15.61	Feet		Field	#
Dissolved Oxygen	6.67	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	509.90	Feet		Field	#
Flow Rate	1.00	gal/min		Field	#
Ground Water Elevation	494.29	ft/MSL		Field	#
Oxidation-Reduction Potential	105	mV		Field	#
pH, Field (SM4500B)	5.35	pH_Units		Field	#
Sample Depth	18.00	Feet		Field	#
Specific Conductance, Field	496	umhos/cm	1	Field	#
Temperature	12.77	Deg. C		Field	#
Total Well Depth	22.70	Feet		Field	#
Turbidity, Field	25	NTU	1	Field	#
Volume in Water Column	4.61	Gallons		Field	#
Water Level After Purge	16.31	Feet		Field	#
Well Volumes Purged	1.08	Vol		Field	#
METALS					
Calcium, Total	86.1	mg/L	0.11	SW846 6010C	#
Magnesium, Total	21.4	mg/L	0.11	SW846 6010C	#
Manganese, Total	5.6	mg/L	0.0056	SW846 6010C	#
Potassium, Total	7.0	mg/L	0.56	SW846 6010C	#
Sodium, Total	66.0	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	108	mg/L	5	SM2320B-2011	#
Alkalinity, Total	108	mg/L	5	SM2320B-2011	#
Ammonia-N	1.44	mg/L	0.100	ASTM D6919-17	#
Chloride	64.8	mg/L	2.0	EPA 300.0	#
Nitrate-N	4.7	mg/L	1.0	EPA 300.0	#
pH	8.08	pH_Units		S4500HB-11	#
Specific Conductance	957	umhos/cm	5	SW846 9050A	#
Sulfate	24.7	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	590	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	1.5	mg/L	0.50	SW846 9060A	#
Turbidity	1.6	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	FIELD BLANK	Collected	11/28/2023 10:10
Lab Sample ID	3334725002	Lab Receipt	11/28/2023 17:25

Compound	Result	Units	RDL	Method	Flag
VOLATILE ORGANICS					
Methylene Chloride	1.3	ug/L	1.0	SW846 8260B	#
WET CHEMISTRY					
Ammonia-N	0.097	mg/L	0.010	ASTM D6919-17	#
pH	5.61	pH_Units		S4500HB-11	#
Turbidity	0.55	NTU	0.30	SM2130B-2011	#

Results

Client Sample ID	FFMP02SW	Collected	11/28/2023 10:03
Lab Sample ID	3334725001	Lab Receipt	11/28/2023 17:25

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	15.61		Feet		Field	1	11/28/2023 10:03	BGS	D
Dissolved Oxygen	6.67		mg/L	0.01	Field	1	11/28/2023 10:03	BGS	D
Elev Top MW Casing above MSL	509.90		Feet		Field	1	11/28/2023 10:03	BGS	D
Flow Rate	1.00		gal/min		Field	1	11/28/2023 10:03	BGS	D
Ground Water Elevation	494.29		ft/MSL		Field	1	11/28/2023 10:03	BGS	D
Oxidation-Reduction Potential	105		mV		Field	1	11/28/2023 10:03	BGS	D
pH, Field (SM4500B)	5.35		pH_Units		Field	1	11/28/2023 10:03	BGS	D
Sample Depth	18.00		Feet		Field	1	11/28/2023 10:03	BGS	D
Specific Conductance, Field	496		umhos/cm	1	Field	1	11/28/2023 10:03	BGS	D
Temperature	12.77		Deg. C		Field	1	11/28/2023 10:03	BGS	D
Total Well Depth	22.70		Feet		Field	1	11/28/2023 10:03	BGS	D
Turbidity, Field	25		NTU	1	Field	1	11/28/2023 10:03	BGS	D
Volume in Water Column	4.61		Gallons		Field	1	11/28/2023 10:03	BGS	D
Water Level After Purge	16.31		Feet		Field	1	11/28/2023 10:03	BGS	D
Well Volumes Purged	1.08		Vol		Field	1	11/28/2023 10:03	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	86.1		mg/L	0.11	SW846 6010C	1	12/07/2023 10:39	HTO	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	12/07/2023 10:39	HTO	J1
Magnesium, Total	21.4		mg/L	0.11	SW846 6010C	1	12/07/2023 10:39	HTO	J1
Manganese, Total	5.6		mg/L	0.0056	SW846 6010C	1	12/07/2023 10:39	HTO	J1
Potassium, Total	7.0		mg/L	0.56	SW846 6010C	1	12/07/2023 10:39	HTO	J1
Sodium, Total	66.0		mg/L	0.56	SW846 6010C	1	12/07/2023 10:39	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 16:21	ILY	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 16:21	ILY	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 16:21	ILY	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 16:21	ILY	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 16:21	ILY	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 16:21	ILY	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 16:21	ILY	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 16:21	ILY	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 16:21	ILY	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 16:21	ILY	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 16:21	ILY	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	12/01/2023 16:21	ILY	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 16:21	ILY	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 16:21	ILY	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 16:21	ILY	H

Results

Client Sample ID	FFMP02SW	Collected	11/28/2023 10:03
Lab Sample ID	3334725001	Lab Receipt	11/28/2023 17:25

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	92.2%	62 – 133	12/01/2023 16:21	
4-Bromofluorobenzene	460-00-4	89.3%	79 – 114	12/01/2023 16:21	
Dibromofluoromethane	1868-53-7	96.9%	78 – 116	12/01/2023 16:21	
Toluene-d8	2037-26-5	94.4%	76 – 127	12/01/2023 16:21	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	108		mg/L	5	SM2320B-2011	1	11/30/2023 23:05	JMS	B
Alkalinity, Total	108	1	mg/L	5	SM2320B-2011	1	11/30/2023 23:05	JMS	B
Ammonia-N	1.44		mg/L	0.100	ASTM D6919-17	10	12/13/2023 19:13	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/30/2023 11:00	KMS	A
Chloride	64.8		mg/L	2.0	EPA 300.0	2	11/29/2023 12:36	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/29/2023 12:36	J1W	B
Nitrate-N	4.7		mg/L	1.0	EPA 300.0	2	11/29/2023 12:36	J1W	B
pH	8.08	2	pH_Units		S4500HB-11	1	11/30/2023 23:05	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	12/08/2023 18:34	AKH	G
Specific Conductance	957		umhos/cm	5	SW846 9050A	1	12/01/2023 14:48	JMS	B
Sulfate	24.7		mg/L	2.0	EPA 300.0	2	11/29/2023 12:36	J1W	B
Total Dissolved Solids	590		mg/L	25	SM2540C-15	1	11/30/2023 11:30	RAG	B
Total Organic Carbon (TOC)	1.5		mg/L	0.50	SW846 9060A	1	11/30/2023 09:38	PAG	E
Turbidity	1.6		NTU	0.30	SM2130B-2011	1	11/29/2023 00:30	NRB	B

Results

Client Sample ID	FIELD BLANK	Collected	11/28/2023 10:10
Lab Sample ID	3334725002	Lab Receipt	11/28/2023 17:25

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	ND	ND	mg/L	0.11	SW846 6010C	1	12/07/2023 10:43	HTO	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	12/07/2023 10:43	HTO	J1
Magnesium, Total	ND	ND	mg/L	0.11	SW846 6010C	1	12/07/2023 10:43	HTO	J1
Manganese, Total	ND	ND	mg/L	0.0056	SW846 6010C	1	12/07/2023 10:43	HTO	J1
Potassium, Total	ND	ND	mg/L	0.56	SW846 6010C	1	12/07/2023 10:43	HTO	J1
Sodium, Total	ND	ND	mg/L	0.56	SW846 6010C	1	12/07/2023 10:43	HTO	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 12:55	ILY	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 12:55	ILY	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 12:55	ILY	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 12:55	ILY	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 12:55	ILY	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 12:55	ILY	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 12:55	ILY	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 12:55	ILY	H
Methylene Chloride	1.3		ug/L	1.0	SW846 8260B	1	12/04/2023 12:55	ILY	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 12:55	ILY	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 12:55	ILY	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	12/04/2023 12:55	ILY	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 12:55	ILY	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 12:55	ILY	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	12/04/2023 12:55	ILY	H

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	103%	62 – 133	12/04/2023 12:55	
4-Bromofluorobenzene	460-00-4	99.9%	79 – 114	12/04/2023 12:55	
Dibromofluoromethane	1868-53-7	102%	78 – 116	12/04/2023 12:55	
Toluene-d8	2037-26-5	101%	76 – 127	12/04/2023 12:55	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	ND	ND	mg/L	5	SM2320B-2011	1	11/30/2023 22:54	JMS	B
Alkalinity, Total	ND	ND,1	mg/L	5	SM2320B-2011	1	11/30/2023 22:54	JMS	B
Ammonia-N	0.097		mg/L	0.010	ASTM D6919-17	1	12/13/2023 19:27	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/30/2023 11:00	KMS	A
Chloride	ND	ND	mg/L	2.0	EPA 300.0	2	11/29/2023 12:46	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/29/2023 12:46	J1W	B
Nitrate-N	ND	ND	mg/L	1.0	EPA 300.0	2	11/29/2023 12:46	J1W	B
pH	5.61	2	pH_Units		S4500HB-11	1	11/30/2023 22:54	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	12/08/2023 18:50	AKH	G

Results

Client Sample ID	FIELD BLANK	Collected	11/28/2023 10:10
Lab Sample ID	3334725002	Lab Receipt	11/28/2023 17:25

WET CHEMISTRY (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Specific Conductance	ND	ND	umhos/cm	5	SW846 9050A	1	12/01/2023 14:48	JMS	B
Sulfate	ND	ND	mg/L	2.0	EPA 300.0	2	11/29/2023 12:46	J1W	B
Total Dissolved Solids	ND	ND	mg/L	25	SM2540C-15	1	11/30/2023 11:30	RAG	B
Total Organic Carbon (TOC)	ND	ND	mg/L	0.50	SW846 9060A	1	11/30/2023 09:38	PAG	E
Turbidity	0.55		NTU	0.30	SM2130B-2011	1	11/29/2023 00:30	NRB	B

Results

Client Sample ID	TRIP BLANK	Collected	11/28/2023 17:25
Lab Sample ID	3334725003	Lab Receipt	11/28/2023 17:25

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 13:17	ILY	A
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 13:17	ILY	A
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 13:17	ILY	A
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 13:17	ILY	A
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 13:17	ILY	A
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 13:17	ILY	A
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 13:17	ILY	A
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 13:17	ILY	A
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 13:17	ILY	A
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 13:17	ILY	A
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 13:17	ILY	A
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	12/01/2023 13:17	ILY	A
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 13:17	ILY	A
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 13:17	ILY	A
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	12/01/2023 13:17	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	93.6%	62 – 133	12/01/2023 13:17	
4-Bromofluorobenzene	460-00-4	94.4%	79 – 114	12/01/2023 13:17	
Dibromofluoromethane	1868-53-7	99%	78 – 116	12/01/2023 13:17	
Toluene-d8	2037-26-5	98.9%	76 – 127	12/01/2023 13:17	

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3334725001	FFMP02SW	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	
3334725002	FIELD BLANK	SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2540C-15	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	
3334725003	TRIP BLANK	SW846 8260B	N/A	

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3334725001	FFMP02SW	N/A	N/A	N/A		Field	1097000
		SW846 3015A	1095338	11/29/2023 00:55	ANN	SW846 6010C	1097797
		N/A	N/A	N/A		SW846 8260B	1095859
		N/A	N/A	N/A		ASTM D6919-17	1100772
		N/A	N/A	N/A		EPA 300.0	1095357
		N/A	N/A	N/A		EPA 410.4	1095576
		N/A	N/A	N/A		S4500HB-11	1095598
		N/A	N/A	N/A		SM2130B-2011	1095342
		N/A	N/A	N/A		SM2320B-2011	1095598
		N/A	N/A	N/A		SM2540C-15	1095596
		N/A	N/A	N/A		SW846 9050A	1095902
		N/A	N/A	N/A		SW846 9060A	1095453
		SW846 9066	1098664	12/08/2023 08:47	AKH	SW846 9066	1098665
3334725002	FIELD BLANK	SW846 3015A	1095338	11/29/2023 00:55	ANN	SW846 6010C	1097797
		N/A	N/A	N/A		SW846 8260B	1096523
		N/A	N/A	N/A		ASTM D6919-17	1100772
		N/A	N/A	N/A		EPA 300.0	1095357
		N/A	N/A	N/A		EPA 410.4	1095576
		N/A	N/A	N/A		S4500HB-11	1095598
		N/A	N/A	N/A		SM2130B-2011	1095342
		N/A	N/A	N/A		SM2320B-2011	1095598
		N/A	N/A	N/A		SM2540C-15	1095596
		N/A	N/A	N/A		SW846 9050A	1095902
		N/A	N/A	N/A		SW846 9060A	1095453
		SW846 9066	1098664	12/08/2023 08:47	AKH	SW846 9066	1098665
3334725003	TRIP BLANK	N/A	N/A	N/A		SW846 8260B	1095859

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

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALS

3334725

Logged By: SLS
PM: SJB

1 of 1

301 Fulling Mill Road • Middletown, PA 17057 • 717.944.5541 • Fax: 717.944.1430

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

Client Name: Lancaster County Solid Waste MA
Address: 1299 Harrisburg Pike, P.O. Box 4424, Lancaster, PA 17604
Contact: Dan Brown
Phone#: (717) 735-0193
Project Name/#: Frey Farm Quarterly (GWMP)
Bill To: Lancaster County Solid Waste MA

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

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix
1. FFMP02SW	11/28/23	1003	G	GW
2. Field Blank	11/28/23	1010	G	DI
3. Trip Blank	11/28/23	1725	G	DI
4				
5				
6				
7				
8				
9				
10				

Container Type	AG	AW	CG	---	---	PL	PL	PL	
Container Size	40 ml	125 ml	40 ml	---	---	250 ml	125 ml	500 ml	250 ml
Preservative	HCl	H2SO4	HCl	---	---	H2SO4	HNO3	None	None

ANALYSES/METHOD REQUESTED

Enter Number of Containers Per Sample or Field Results Below.

TOC	O-OH	VOC - Form 19Q	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Metals: Fe, Mn, Na, Ca, K, Mg	pH, Cl, SpC, F, SO4, TDS, NO3, Turb.	Alkalinity Bicarbonate	
2	1	2	X	X	1	2	1	1	
2	1	2			1	2	1	1	
		2							

Project Comments:

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

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
[illegible] ALS	11/28/23	1725	2	11/28/23	1725
			4		
			6		
			8		
			10		

(completed by Receiving Lab)

Cooler Temp: _____ Therm ID: _____
No. of Coolers: _____

	Y	N	Initial
Custody Seals Present?			
(if present) Seals Intact?			
Received on Ice?			
COC/Labels Complete/Accurate?			

Temp By: RW | WO Temp (°C): 4c | Therm ID: 57C

Receipt Info Completed By:	RW
Cooler Custody Seal Intact	Y N NA
Sample Custody Seal Intact	Y N NA
Received on Ice	Y N NA
Cooler & Samples Intact	Y N
Correct Containers Provided	Y N
Sample Label/COC Agree	Y N
Adequate Sample Volumes	Y N
CR6 Samples Filtered	Y N NA
OP Samples Filtered	Y N NA
VOA Trip Blank	Y N NA
NJ≤ 4 Days?	Y N
Rad Screen (uCi)	
Courier/Tracking #:	
SDWA Compliance	Y N
PWSID	
WV Containers 0-6°C	Y N NA

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

Data Deliverables: ☐Standard ☐CLP-like ☐USACE ☐

Special Processing: USACE ☐ Navy ☐ ☐

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

Reportable to PADEP? Yes ☐ PWSID #

Sample Disposal: Lab [X] Special ☐

EDDS: Format Type-

* G=Grab; C=Composite

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

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