2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
10/20/2023
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: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

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

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

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 7.71 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.50 ft — Elevation of Water Level: 445.69 ft./MSL

Sampling Depth: 33 ft — Volume of Water Column: 42.28 gal

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

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 7/17/2023 — Sample Collection Time: 10:10

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis:

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

Lab Accreditation Number(s):

Lab Sample Number(s): 3313363001 — Final Lab Analysis CompletionDate: 7/27/2023

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

Comments:

I.D. No	100008
Monitoring Point No.	CWMP007W
Sample Date	7/17/2023

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	0.196	EPA 350.3
BICARBONATE	11	SM18-2321
CALCIUM, TOTAL	21.7	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	78.2	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	67 ND	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	11.3	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	8.8	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	10.1	EPA 300.0
pH-FIELD (SU)	5.15	FIELD
pH-LAB (SU)	6.86	EPA 150.1
POTASSIUM, TOTAL	2	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	34	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	423	FIELD
SPEC. COND., LAB (umhos/cm)	407	EPA 120.1
SULFATE	17.2	EPA 300.0
ALKALINITY	11	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	292	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SM18-5310B
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	100008
Monitoring Point No.	CWMP007W
Sample Date	7/17/2023

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 (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

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

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

X Upgradient/Upstream ___ Downgradient/Downstream

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

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

Depth to Water Level: 29.15 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.23 ft — Elevation of Water Level: 485.98 ft./MSL

Sampling Depth: 57 ft — Volume of Water Column: 54.56 gal

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

Well Purged: X Yes ___ No — Well Volumes Purged: 2.0

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 7/17/2023 — Sample Collection Time: 11:34

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis:

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

Lab Accreditation Number(s):

Lab Sample Number(s): 3313363002 — Final Lab Analysis CompletionDate: 7/27/2023

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

Comments:

I.D. No	100008
Monitoring Point No.	CWMP001W
Sample Date	7/17/2023

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	4.16	EPA 350.3
BICARBONATE	6	SM18-2321
CALCIUM, TOTAL	16.1	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	26.8	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	1700	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	11.1	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	66	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	18.1	EPA 300.0
pH-FIELD (SU)	5.21	FIELD
pH-LAB (SU)	6.76	EPA 150.1
POTASSIUM, TOTAL	2.1	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	13.2	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	270	FIELD
SPEC. COND., LAB (umhos/cm)	262	EPA 120.1
SULFATE	3.4	EPA 300.0
ALKALINITY	6	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	240	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	37	SM 2130B

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

I.D. No	100008
Monitoring Point No.	CWMP001W
Sample Date	7/17/2023

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 (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

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

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

X Upgradient/Upstream ___ Downgradient/Downstream

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

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

Depth to Water Level: 44.02 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: -0.37 ft — Elevation of Water Level: 469.41 ft./MSL

Sampling Depth: 130 ft — Volume of Water Column: 140.96 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): 7/17/2023 — Sample Collection Time: 13:09

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis:

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

Lab Accreditation Number(s):

Lab Sample Number(s): 3313363003 — Final Lab Analysis CompletionDate: 7/27/2023

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

Comments:

I.D. No	100008
Monitoring Point No.	CWMP005W
Sample Date	7/17/2023

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	EPA 350.3
BICARBONATE	5 ND	SM18-2321
CALCIUM, TOTAL	15.8	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	66.6	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	67 ND	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	8.2	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	47	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	8.1	EPA 300.0
pH-FIELD (SU)	5.22	FIELD
pH-LAB (SU)	6.93	EPA 150.1
POTASSIUM, TOTAL	1.8	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	31.1	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	347	FIELD
SPEC. COND., LAB (umhos/cm)	334	EPA 120.1
SULFATE	5.5	EPA 300.0
ALKALINITY	5 ND	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	248	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.59	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	1.3	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	100008
Monitoring Point No.	CWMP005W
Sample Date	7/17/2023

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 (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

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

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

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 12.39 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.53 ft — Elevation of Water Level: 299.58 ft./MSL

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

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

Well Purged: X Yes ___ No — Well Volumes Purged: 2.4

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 7/19/2023 — Sample Collection Time: 12:26

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis:

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

Lab Accreditation Number(s):

Lab Sample Number(s): 3313771001 — Final Lab Analysis CompletionDate: 7/29/2023

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

Comments:

I.D. No	100008
Monitoring Point No.	CWMP016W
Sample Date	7/19/2023

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	0.556	EPA 350.3
BICARBONATE	9	SM18-2321
CALCIUM, TOTAL	7.9	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	2.9	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	430	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	1.6	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	15	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	1.6	EPA 300.0
pH-FIELD (SU)	5.74	FIELD
pH-LAB (SU)	7.23	EPA 150.1
POTASSIUM, TOTAL	0.56 ND	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	3.5	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	82	FIELD
SPEC. COND., LAB (umhos/cm)	65	EPA 120.1
SULFATE	9.6	EPA 300.0
ALKALINITY	9	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	50	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	6.5	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	100008
Monitoring Point No.	CWMP016W
Sample Date	7/19/2023

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 (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
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Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

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

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

___ Upgradient/Upstream X Downgradient/Downstream

Location (County): Lancaster County — Municipality: Manor

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

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

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

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

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

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 7/20/2023 — Sample Collection Time: 9:32

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis:

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

Lab Accreditation Number(s):

Lab Sample Number(s): 3314037001 — Final Lab Analysis CompletionDate: 8/7/2023

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

Comments:

I.D. No	100008
Monitoring Point No.	CWMP018S
Sample Date	7/20/2023

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	EPA 350.3
BICARBONATE	388	SM18-2321
CALCIUM, TOTAL	114	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	77	EPA 410.4
CHLORIDE	653	EPA 300.0
FLUORIDE	0.5 ND	EPA 300.0
IRON, TOTAL (ug/l)	74	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	71.8	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	15	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	17.7	EPA 300.0
pH-FIELD (SU)	8.31	FIELD
pH-LAB (SU)	8.53	EPA 150.1
POTASSIUM, TOTAL	30	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	324	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	3935	FIELD
SPEC. COND., LAB (umhos/cm)	3230	EPA 120.1
SULFATE	57.7	EPA 300.0
ALKALINITY	388	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	1690	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	8.8	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	0.75	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	100008
Monitoring Point No.	CWMP018S
Sample Date	7/20/2023

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 (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
10/20/2023
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: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

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

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

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 8.73 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.10 ft — Elevation of Water Level: 352.17 ft./MSL

Sampling Depth: 17 ft — Volume of Water Column: 7.10 gal

Total Well Depth: 19.6 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): 7/20/2023 — Sample Collection Time: 9:56

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis:

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

Lab Accreditation Number(s):

Lab Sample Number(s): 3314037002 — Final Lab Analysis CompletionDate: 8/2/2023

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

Comments:

I.D. No	100008
Monitoring Point No.	CWMP010W
Sample Date	7/20/2023

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	EPA 350.3
BICARBONATE	168	SM18-2321
CALCIUM, TOTAL	36.1	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	53	EPA 410.4
CHLORIDE	166	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	76	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	29.2	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	66	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	6	EPA 300.0
pH-FIELD (SU)	6.38	FIELD
pH-LAB (SU)	8.08	EPA 150.1
POTASSIUM, TOTAL	6.7	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	104	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	1490	FIELD
SPEC. COND., LAB (umhos/cm)	951	EPA 120.1
SULFATE	23.4	EPA 300.0
ALKALINITY	168	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	530	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	2.5	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	0.75	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	100008
Monitoring Point No.	CWMP010W
Sample Date	7/20/2023

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 (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
10/20/2023
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: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

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

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

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 9.24 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.70 ft — Elevation of Water Level: 394.96 ft./MSL

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

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

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 7/20/2023 — Sample Collection Time: 10:26

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis:

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

Lab Accreditation Number(s):

Lab Sample Number(s): 3314037003 — Final Lab Analysis CompletionDate: 8/1/2023

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

Comments:

I.D. No	100008
Monitoring Point No.	CWMP009W
Sample Date	7/20/2023

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	33.3	EPA 350.3
BICARBONATE	535	SM18-2321
CALCIUM, TOTAL	190	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	150	EPA 410.4
CHLORIDE	693	EPA 300.0
FLUORIDE	0.5 ND	EPA 300.0
IRON, TOTAL (ug/l)	36700	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	92.5	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	13000	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	2.5 ND	EPA 300.0
pH-FIELD (SU)	6.08	FIELD
pH-LAB (SU)	7.6	EPA 150.1
POTASSIUM, TOTAL	34.9	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	197	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	4195	FIELD
SPEC. COND., LAB (umhos/cm)	3240	EPA 120.1
SULFATE	7.2	EPA 300.0
ALKALINITY	535	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	1930	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	39.3	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	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	100008
Monitoring Point No.	CWMP009W
Sample Date	7/20/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BENZENE	2.4	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
10/20/2023
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: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

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

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

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 3.52 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 2.80 ft — Elevation of Water Level: 418.78 ft./MSL

Sampling Depth: 19 ft — Volume of Water Column: 3.15 gal

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

Well Purged: X Yes ___ No — Well Volumes Purged: 6.0

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 7/20/2023 — Sample Collection Time: 11:07

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis:

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

Lab Accreditation Number(s):

Lab Sample Number(s): 3314037004 — Final Lab Analysis CompletionDate: 8/1/2023

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

Comments:

I.D. No	100008
Monitoring Point No.	CWMP008W
Sample Date	7/20/2023

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	7.3	EPA 350.3
BICARBONATE	384	SM18-2321
CALCIUM, TOTAL	69.6	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	66	EPA 410.4
CHLORIDE	41.4	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	23400	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	32.8	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	15100	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	1 ND	EPA 300.0
pH-FIELD (SU)	6.17	FIELD
pH-LAB (SU)	7.59	EPA 150.1
POTASSIUM, TOTAL	8.1	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	41.5	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	1199	FIELD
SPEC. COND., LAB (umhos/cm)	839	EPA 120.1
SULFATE	5.6	EPA 300.0
ALKALINITY	384	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	472	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	10.7	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	20	SM 2130B

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

I.D. No	100008
Monitoring Point No.	CWMP008W
Sample Date	7/20/2023

FORM 19

QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

ANALYTE	VALUE[T]	ANALYSIS METHOD NUMBER
BENZENE	1.2	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1.3	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
10/20/2023
DEP USE ONLY
Date Received

FORM 19

MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

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

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

___ Upgradient/Upstream X Downgradient/Downstream

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

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

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

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

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

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

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

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

Spring Flow Rate: _ gpm

Sample Date (mm/dd/yy): 7/20/2023 — Sample Collection Time: 11:21

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis:

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

Lab Accreditation Number(s):

Lab Sample Number(s): 3314037005 — Final Lab Analysis CompletionDate: 8/2/2023

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

Comments:

I.D. No	100008
Monitoring Point No.	CWMP017S
Sample Date	7/20/2023

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	EPA 350.3
BICARBONATE	451	SM18-2321
CALCIUM, TOTAL	89.8	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	84	EPA 410.4
CHLORIDE	685	EPA 300.0
FLUORIDE	0.5 ND	EPA 300.0
IRON, TOTAL (ug/l)	410	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	91.6	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	250	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	27.1	EPA 300.0
pH-FIELD (SU)	7.86	FIELD
pH-LAB (SU)	8.27	EPA 150.1
POTASSIUM, TOTAL	18.1	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	387	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	4800	FIELD
SPEC. COND., LAB (umhos/cm)	3560	EPA 120.1
SULFATE	58	EPA 300.0
ALKALINITY	451	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	1890	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	5.3	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	2.3	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	100008
Monitoring Point No.	CWMP017S
Sample Date	7/20/2023

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 (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
10/20/2023
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: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

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

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

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 81.39 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: -1.19 ft — Elevation of Water Level: 444.42 ft./MSL

Sampling Depth: 85 ft — Volume of Water Column: 27.33 gal

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

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 7/21/2023 — Sample Collection Time: 10:23

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis:

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

Lab Accreditation Number(s):

Lab Sample Number(s): 3314306001 — Final Lab Analysis CompletionDate: 8/4/2023

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

Comments:

I.D. No	100008
Monitoring Point No.	CWMP002W
Sample Date	7/21/2023

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	0.244	EPA 350.3
BICARBONATE	86	SM18-2321
CALCIUM, TOTAL	52.7	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15	EPA 410.4
CHLORIDE	90.3	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	430	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	14.8	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	610	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	5.5	EPA 300.0
pH-FIELD (SU)	5.55	FIELD
pH-LAB (SU)	7.87	EPA 150.1
POTASSIUM, TOTAL	2.4	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	26.8	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	740	FIELD
SPEC. COND., LAB (umhos/cm)	534	EPA 120.1
SULFATE	19.3	EPA 300.0
ALKALINITY	86	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	376	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	2.9	SM18-5310B
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	100008
Monitoring Point No.	CWMP002W
Sample Date	7/21/2023

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 (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	4.7	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

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Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

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

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

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 93.26 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: -1.29 ft — Elevation of Water Level: 430.95 ft./MSL

Sampling Depth: 100 ft — Volume of Water Column: -26.82 gal

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

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 7/21/2023 — Sample Collection Time: 10:46

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis:

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

Lab Accreditation Number(s):

Lab Sample Number(s): 3314306002 — Final Lab Analysis CompletionDate: 8/4/2023

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

Comments:

I.D. No	100008
Monitoring Point No.	CWMP003W
Sample Date	7/21/2023

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	0.157	EPA 350.3
BICARBONATE	24	SM18-2321
CALCIUM, TOTAL	26.4	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	74.6	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	67 ND	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	9.3	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	5.6 ND	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	6.5	EPA 300.0
pH-FIELD (SU)	5.36	FIELD
pH-LAB (SU)	7.57	EPA 150.1
POTASSIUM, TOTAL	1.6	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	22.5	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	497	FIELD
SPEC. COND., LAB (umhos/cm)	362	EPA 120.1
SULFATE	6.3	EPA 300.0
ALKALINITY	24	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	290	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.54	SM18-5310B
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	100008
Monitoring Point No.	CWMP003W
Sample Date	7/21/2023

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 (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1.1	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

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

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

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 102.13 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: -1.37 ft — Elevation of Water Level: 427.40 ft./MSL

Sampling Depth: 130 ft — Volume of Water Column: 55.62 gal

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

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 7/21/2023 — Sample Collection Time: 11:00

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis:

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

Lab Accreditation Number(s):

Lab Sample Number(s): 3314306003 — Final Lab Analysis CompletionDate: 8/4/2023

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

Comments:

I.D. No	100008
Monitoring Point No.	CWMP004W
Sample Date	7/21/2023

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	0.24	EPA 350.3
BICARBONATE	27	SM18-2321
CALCIUM, TOTAL	22.2	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	52.3	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	67 ND	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	7.5	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	11	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	5.8	EPA 300.0
pH-FIELD (SU)	5.5	FIELD
pH-LAB (SU)	7.66	EPA 150.1
POTASSIUM, TOTAL	1.4	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	17.6	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	401	FIELD
SPEC. COND., LAB (umhos/cm)	292	EPA 120.1
SULFATE	6.9	EPA 300.0
ALKALINITY	27	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	119	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.54	SM18-5310B
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	100008
Monitoring Point No.	CWMP004W
Sample Date	7/21/2023

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 (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

2540-FM-BWM0041 Rev. 6/2005

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
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SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facitlity ID (as issued by DEP): 100008

SECTION B. FACILITY INFORMATION

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

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

___ Upgradient/Upstream X Downgradient/Downstream

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

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

Depth to Water Level: 68.59 ft — Measured from: ___ Land Surface X TOC

Casing Stickup: 1.90 ft — Elevation of Water Level: 314.11 ft./MSL

Sampling Depth: 0 ft — Volume of Water Column: 48.92 gal

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

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

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

Spring Flow Rate: ___ gpm

Sample Date (mm/dd/yy): 9/22/2023 — Sample Collection Time: 9:35

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis:

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

Lab Accreditation Number(s):

Lab Sample Number(s): 3324602001 — Final Lab Analysis CompletionDate: 10/5/2023

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

Comments:

I.D. No	100008
Monitoring Point No.	CWMP012W
Sample Date	9/22/2023

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	EPA 350.3
BICARBONATE	78	SM18-2321
CALCIUM, TOTAL	33	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	32.3	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	6900	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	8.9	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	390	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	8.2	EPA 300.0
pH-FIELD (SU)	7.11	FIELD
pH-LAB (SU)	7.16	EPA 150.1
POTASSIUM, TOTAL	1.4	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	13.8	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	304	FIELD
SPEC. COND., LAB (umhos/cm)	311	EPA 120.1
SULFATE	5.2	EPA 300.0
ALKALINITY	78	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	216	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	2.1	SM18-5310B
TOTAL PHENOLICS (ug/l)	20	SW846 9066
TURBIDITY (N.T.U.)	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	100008
Monitoring Point No.	CWMP012W
Sample Date	9/22/2023

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 (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1 ND	SW846 8260B
1,1-DICHLOROETHENE	1 ND	SW846 8260B
1,2-DICHLOROETHANE	1 ND	SW846 8260B
cis 1,2-DICHLOROETHENE	1 ND	SW846 8260B
trans 1,2-DICHLOROETHENE	1 ND	SW846 8260B
ETHYLBENZENE	1 ND	SW846 8260B
METHYLENE CHLORIDE	1 ND	SW846 8260B
TETRACHLOROETHENE	1 ND	SW846 8260B
TOLUENE	1 ND	SW846 8260B
1,1,1-TRICHLOROETHANE	1 ND	SW846 8260B
TRICHLOROETHENE	1 ND	SW846 8260B
VINYL CHLORIDE	1 ND	SW846 8260B
XYLENES (TOTAL)	3 ND	SW846 8260B

T Please indicate detection limit if analyte is not detected.

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 3rd QTR 2023 GWMP-FORM 19Q
Workorder 3313363
Report ID 261040 on 7/31/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jul 17, 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
3313363001	CWMP007W	Ground Water	07/17/2023 10:10	07/17/2023 14:30	BGS	Analytical Laboratory Service
3313363002	CWMP001W	Ground Water	07/17/2023 11:34	07/17/2023 14:30	BGS	Analytical Laboratory Service
3313363003	CWMP005W	Ground Water	07/17/2023 13:09	07/17/2023 14:30	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 Method Blank for method SW846 6010C reported a value greater than the reporting level for the analyte Calcium, Total. The concentration was 0.12 mg/L. Sample concentration was greater than 10 times the method blank.
4	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	CWMP007W	Collected	07/17/2023 10:10
Lab Sample ID	3313363001	Lab Receipt	07/17/2023 14:30

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	7.71	Feet		Field	#
Dissolved Oxygen	5.25	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	453.40	Feet		Field	#
Flow Rate	1.63	gal/min		Field	#
Ground Water Elevation	445.69	ft/MSL		Field	#
Oxidation-Reduction Potential	316	mV		Field	#
pH, Field (SM4500B)	5.15	pH_Units		Field	#
Sample Depth	33.00	Feet		Field	#
Specific Conductance, Field	423	umhos/cm	1	Field	#
Temperature	13.06	Deg. C		Field	#
Total Well Depth	36.50	Feet		Field	#
Volume in Water Column	42.32	Gallons		Field	#
Water Level After Purge	8.36	Feet		Field	#
Well Volumes Purged	2.31	Vol		Field	#
METALS					
Calcium, Total	21.7	mg/L	0.11	SW846 6010C	#
Magnesium, Total	11.3	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.0088	mg/L	0.0056	SW846 6010C	#
Potassium, Total	2.0	mg/L	0.56	SW846 6010C	#
Sodium, Total	34.0	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	11	mg/L	5	SM2320B-2011	#
Alkalinity, Total	11	mg/L	5	SM2320B-2011	#
Ammonia-N	0.196	mg/L	0.100	ASTM D6919-17	#
Chloride	78.2	mg/L	2.0	EPA 300.0	#
Nitrate-N	10.1	mg/L	1.0	EPA 300.0	#
pH	6.86	pH_Units		S4500HB-11	#
Specific Conductance	407	umhos/cm	5	SW846 9050A	#
Sulfate	17.2	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	292	mg/L	25	SM2540C-15	#

Detected Results Summary

Client Sample ID	CWMP001W	Collected	07/17/2023 11:34
Lab Sample ID	3313363002	Lab Receipt	07/17/2023 14:30

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	29.15	Feet		Field	#
Dissolved Oxygen	8.97	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	515.13	Feet		Field	#
Flow Rate	1.85	gal/min		Field	#
Ground Water Elevation	485.98	ft/MSL		Field	#
Oxidation-Reduction Potential	326	mV		Field	#
pH, Field (SM4500B)	5.21	pH_Units		Field	#
Sample Depth	57.00	Feet		Field	#
Specific Conductance, Field	270	umhos/cm	1	Field	#
Temperature	14.39	Deg. C		Field	#
Total Well Depth	66.30	Feet		Field	#
Turbidity, Field	41	NTU	1	Field	#
Volume in Water Column	54.61	Gallons		Field	#
Water Level After Purge	51.88	Feet		Field	#
Well Volumes Purged	2.03	Vol		Field	#
METALS					
Calcium, Total	16.1	mg/L	0.11	SW846 6010C	#
Iron, Total	1.7	mg/L	0.067	SW846 6010C	#
Magnesium, Total	11.1	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.066	mg/L	0.0056	SW846 6010C	#
Potassium, Total	2.1	mg/L	0.56	SW846 6010C	#
Sodium, Total	13.2	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	6	mg/L	5	SM2320B-2011	#
Alkalinity, Total	6	mg/L	5	SM2320B-2011	#
Ammonia-N	4.16	mg/L	0.100	ASTM D6919-17	#
Chloride	26.8	mg/L	2.0	EPA 300.0	#
Nitrate-N	18.1	mg/L	1.0	EPA 300.0	#
pH	6.76	pH_Units		S4500HB-11	#
Specific Conductance	262	umhos/cm	5	SW846 9050A	#
Sulfate	3.4	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	240	mg/L	25	SM2540C-15	#
Turbidity	37	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	CWMP005W	Collected	07/17/2023 13:09
Lab Sample ID	3313363003	Lab Receipt	07/17/2023 14:30

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	44.02	Feet		Field	#
Dissolved Oxygen	7.01	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	513.43	Feet		Field	#
Flow Rate	3.38	gal/min		Field	#
Ground Water Elevation	469.41	ft/MSL		Field	#
Oxidation-Reduction Potential	316	mV		Field	#
pH, Field (SM4500B)	5.22	pH_Units		Field	#
Sample Depth	130.00	Feet		Field	#
Specific Conductance, Field	347	umhos/cm	1	Field	#
Temperature	13.44	Deg. C		Field	#
Total Well Depth	138.92	Feet		Field	#
Turbidity, Field	2	NTU	1	Field	#
Volume in Water Column	139.50	Gallons		Field	#
Water Level After Purge	55.94	Feet		Field	#
Well Volumes Purged	1.45	Vol		Field	#
METALS					
Calcium, Total	15.8	mg/L	0.11	SW846 6010C	#
Magnesium, Total	8.2	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.047	mg/L	0.0056	SW846 6010C	#
Potassium, Total	1.8	mg/L	0.56	SW846 6010C	#
Sodium, Total	31.1	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Chloride	66.6	mg/L	2.0	EPA 300.0	#
Nitrate-N	8.1	mg/L	1.0	EPA 300.0	#
pH	6.93	pH_Units		S4500HB-11	#
Specific Conductance	334	umhos/cm	5	SW846 9050A	#
Sulfate	5.5	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	248	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	0.59	mg/L	0.50	SW846 9060A	#
Turbidity	1.3	NTU	0.30	SM2130B-2011	#

Results

Client Sample ID	CWMP007W	Collected	07/17/2023 10:10
Lab Sample ID	3313363001	Lab Receipt	07/17/2023 14:30

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	7.71		Feet		Field	1	07/17/2023 10:10	BGS	D
Dissolved Oxygen	5.25		mg/L	0.01	Field	1	07/17/2023 10:10	BGS	D
Elev Top MW Casing above MSL	453.40		Feet		Field	1	07/17/2023 10:10	BGS	D
Flow Rate	1.63		gal/min		Field	1	07/17/2023 10:10	BGS	D
Ground Water Elevation	445.69		ft/MSL		Field	1	07/17/2023 10:10	BGS	D
Oxidation-Reduction Potential	316		mV		Field	1	07/17/2023 10:10	BGS	D
pH, Field (SM4500B)	5.15		pH_Units		Field	1	07/17/2023 10:10	BGS	D
Sample Depth	33.00		Feet		Field	1	07/17/2023 10:10	BGS	D
Specific Conductance, Field	423		umhos/cm	1	Field	1	07/17/2023 10:10	BGS	D
Temperature	13.06		Deg. C		Field	1	07/17/2023 10:10	BGS	D
Total Well Depth	36.50		Feet		Field	1	07/17/2023 10:10	BGS	D
Turbidity, Field	ND	ND	NTU	1	Field	1	07/17/2023 10:10	BGS	D
Volume in Water Column	42.32		Gallons		Field	1	07/17/2023 10:10	BGS	D
Water Level After Purge	8.36		Feet		Field	1	07/17/2023 10:10	BGS	D
Well Volumes Purged	2.31		Vol		Field	1	07/17/2023 10:10	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	21.7	3	mg/L	0.11	SW846 6010C	1	07/23/2023 10:52	AXW	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	07/23/2023 10:52	AXW	J1
Magnesium, Total	11.3		mg/L	0.11	SW846 6010C	1	07/23/2023 10:52	AXW	J1
Manganese, Total	0.0088		mg/L	0.0056	SW846 6010C	1	07/23/2023 10:52	AXW	J1
Potassium, Total	2.0		mg/L	0.56	SW846 6010C	1	07/23/2023 10:52	AXW	J1
Sodium, Total	34.0		mg/L	0.56	SW846 6010C	1	07/23/2023 10:52	AXW	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	07/27/2023 01:39	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 01:39	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 01:39	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 01:39	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 01:39	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 01:39	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 01:39	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 01:39	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 01:39	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 01:39	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 01:39	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/27/2023 01:39	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 01:39	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 01:39	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 01:39	PDK	H

Results

Client Sample ID	CWMP007W	Collected	07/17/2023 10:10
Lab Sample ID	3313363001	Lab Receipt	07/17/2023 14:30

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	91%	62 – 133	07/27/2023 01:39	
4-Bromofluorobenzene	460-00-4	109%	79 – 114	07/27/2023 01:39	
Dibromofluoromethane	1868-53-7	103%	78 – 116	07/27/2023 01:39	
Toluene-d8	2037-26-5	105%	76 – 127	07/27/2023 01:39	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	11		mg/L	5	SM2320B-2011	1	07/19/2023 11:24	JMS	B
Alkalinity, Total	11	1	mg/L	5	SM2320B-2011	1	07/19/2023 11:24	JMS	B
Ammonia-N	0.196		mg/L	0.100	ASTM D6919-17	10	07/27/2023 17:12	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	07/20/2023 11:06	KMS	A
Chloride	78.2		mg/L	2.0	EPA 300.0	2	07/18/2023 08:05	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/18/2023 08:05	J1W	B
Nitrate-N	10.1		mg/L	1.0	EPA 300.0	2	07/18/2023 08:05	J1W	B
pH	6.86	2	pH_Units		S4500HB-11	1	07/19/2023 11:24	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	07/27/2023 15:23	AKH	G
Specific Conductance	407		umhos/cm	5	SW846 9050A	1	07/19/2023 13:20	JXL	B
Sulfate	17.2		mg/L	2.0	EPA 300.0	2	07/18/2023 08:05	J1W	B
Total Dissolved Solids	292		mg/L	25	SM2540C-15	1	07/24/2023 14:32	AKH	B
Total Organic Carbon (TOC)	ND	ND	mg/L	0.50	SW846 9060A	1	07/20/2023 03:18	PAG	E
Turbidity	ND	ND	NTU	0.30	SM2130B-2011	1	07/17/2023 23:30	NRB	B

Results

Client Sample ID	CWMP001W	Collected	07/17/2023 11:34
Lab Sample ID	3313363002	Lab Receipt	07/17/2023 14:30

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	29.15		Feet		Field	1	07/17/2023 11:34	BGS	D
Dissolved Oxygen	8.97		mg/L	0.01	Field	1	07/17/2023 11:34	BGS	D
Elev Top MW Casing above MSL	515.13		Feet		Field	1	07/17/2023 11:34	BGS	D
Flow Rate	1.85		gal/min		Field	1	07/17/2023 11:34	BGS	D
Ground Water Elevation	485.98		ft/MSL		Field	1	07/17/2023 11:34	BGS	D
Oxidation-Reduction Potential	326		mV		Field	1	07/17/2023 11:34	BGS	D
pH, Field (SM4500B)	5.21		pH_Units		Field	1	07/17/2023 11:34	BGS	D
Sample Depth	57.00		Feet		Field	1	07/17/2023 11:34	BGS	D
Specific Conductance, Field	270		umhos/cm	1	Field	1	07/17/2023 11:34	BGS	D
Temperature	14.39		Deg. C		Field	1	07/17/2023 11:34	BGS	D
Total Well Depth	66.30		Feet		Field	1	07/17/2023 11:34	BGS	D
Turbidity, Field	41		NTU	1	Field	1	07/17/2023 11:34	BGS	D
Volume in Water Column	54.61		Gallons		Field	1	07/17/2023 11:34	BGS	D
Water Level After Purge	51.88		Feet		Field	1	07/17/2023 11:34	BGS	D
Well Volumes Purged	2.03		Vol		Field	1	07/17/2023 11:34	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	16.1	3	mg/L	0.11	SW846 6010C	1	07/23/2023 10:53	AXW	J1
Iron, Total	1.7		mg/L	0.067	SW846 6010C	1	07/23/2023 10:53	AXW	J1
Magnesium, Total	11.1		mg/L	0.11	SW846 6010C	1	07/23/2023 10:53	AXW	J1
Manganese, Total	0.066		mg/L	0.0056	SW846 6010C	1	07/23/2023 10:53	AXW	J1
Potassium, Total	2.1		mg/L	0.56	SW846 6010C	1	07/23/2023 10:53	AXW	J1
Sodium, Total	13.2		mg/L	0.56	SW846 6010C	1	07/23/2023 10:53	AXW	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	07/27/2023 02:02	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:02	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:02	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:02	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:02	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:02	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:02	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:02	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:02	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:02	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:02	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/27/2023 02:02	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:02	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:02	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:02	PDK	H

Results

Client Sample ID	CWMP001W	Collected	07/17/2023 11:34
Lab Sample ID	3313363002	Lab Receipt	07/17/2023 14:30

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	90.2%	62 – 133	07/27/2023 02:02	
4-Bromofluorobenzene	460-00-4	109%	79 – 114	07/27/2023 02:02	
Dibromofluoromethane	1868-53-7	101%	78 – 116	07/27/2023 02:02	
Toluene-d8	2037-26-5	104%	76 – 127	07/27/2023 02:02	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	6		mg/L	5	SM2320B-2011	1	07/19/2023 11:36	JMS	B
Alkalinity, Total	6	1	mg/L	5	SM2320B-2011	1	07/19/2023 11:36	JMS	B
Ammonia-N	4.16		mg/L	0.100	ASTM D6919-17	10	07/27/2023 16:44	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	07/20/2023 11:06	KMS	A
Chloride	26.8		mg/L	2.0	EPA 300.0	2	07/18/2023 08:15	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/18/2023 08:15	J1W	B
Nitrate-N	18.1		mg/L	1.0	EPA 300.0	2	07/18/2023 08:15	J1W	B
pH	6.76	2	pH_Units		S4500HB-11	1	07/19/2023 11:36	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	07/27/2023 17:06	AKH	G
Specific Conductance	262		umhos/cm	5	SW846 9050A	1	07/19/2023 13:20	JXL	B
Sulfate	3.4		mg/L	2.0	EPA 300.0	2	07/18/2023 08:15	J1W	B
Total Dissolved Solids	240		mg/L	25	SM2540C-15	1	07/24/2023 14:32	AKH	B
Total Organic Carbon (TOC)	ND	ND	mg/L	0.50	SW846 9060A	1	07/20/2023 03:18	PAG	E
Turbidity	37		NTU	0.30	SM2130B-2011	1	07/17/2023 23:30	NRB	B

Results

Client Sample ID	CWMP005W	Collected	07/17/2023 13:09
Lab Sample ID	3313363003	Lab Receipt	07/17/2023 14:30

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	44.02		Feet		Field	1	07/17/2023 13:09	BGS	D
Dissolved Oxygen	7.01		mg/L	0.01	Field	1	07/17/2023 13:09	BGS	D
Elev Top MW Casing above MSL	513.43		Feet		Field	1	07/17/2023 13:09	BGS	D
Flow Rate	3.38		gal/min		Field	1	07/17/2023 13:09	BGS	D
Ground Water Elevation	469.41		ft/MSL		Field	1	07/17/2023 13:09	BGS	D
Oxidation-Reduction Potential	316		mV		Field	1	07/17/2023 13:09	BGS	D
pH, Field (SM4500B)	5.22		pH_Units		Field	1	07/17/2023 13:09	BGS	D
Sample Depth	130.00		Feet		Field	1	07/17/2023 13:09	BGS	D
Specific Conductance, Field	347		umhos/cm	1	Field	1	07/17/2023 13:09	BGS	D
Temperature	13.44		Deg. C		Field	1	07/17/2023 13:09	BGS	D
Total Well Depth	138.92		Feet		Field	1	07/17/2023 13:09	BGS	D
Turbidity, Field	2		NTU	1	Field	1	07/17/2023 13:09	BGS	D
Volume in Water Column	139.50		Gallons		Field	1	07/17/2023 13:09	BGS	D
Water Level After Purge	55.94		Feet		Field	1	07/17/2023 13:09	BGS	D
Well Volumes Purged	1.45		Vol		Field	1	07/17/2023 13:09	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	15.8	3,4	mg/L	0.11	SW846 6010C	1	07/23/2023 10:54	AXW	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	07/23/2023 10:54	AXW	J1
Magnesium, Total	8.2		mg/L	0.11	SW846 6010C	1	07/23/2023 10:54	AXW	J1
Manganese, Total	0.047		mg/L	0.0056	SW846 6010C	1	07/23/2023 10:54	AXW	J1
Potassium, Total	1.8		mg/L	0.56	SW846 6010C	1	07/23/2023 10:54	AXW	J1
Sodium, Total	31.1		mg/L	0.56	SW846 6010C	1	07/23/2023 10:54	AXW	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	07/27/2023 02:25	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:25	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:25	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:25	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:25	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:25	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:25	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:25	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:25	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:25	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:25	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/27/2023 02:25	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:25	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:25	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/27/2023 02:25	PDK	H

Results

Client Sample ID	CWMP005W	Collected	07/17/2023 13:09
Lab Sample ID	3313363003	Lab Receipt	07/17/2023 14:30

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	90.8%	62 – 133	07/27/2023 02:25	
4-Bromofluorobenzene	460-00-4	104%	79 – 114	07/27/2023 02:25	
Dibromofluoromethane	1868-53-7	102%	78 – 116	07/27/2023 02:25	
Toluene-d8	2037-26-5	105%	76 – 127	07/27/2023 02:25	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	ND	ND	mg/L	5	SM2320B-2011	1	07/19/2023 11:41	JMS	B
Alkalinity, Total	ND	ND,1	mg/L	5	SM2320B-2011	1	07/19/2023 11:41	JMS	B
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-17	10	07/27/2023 16:58	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	07/20/2023 11:06	KMS	A
Chloride	66.6		mg/L	2.0	EPA 300.0	2	07/18/2023 08:25	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/18/2023 08:25	J1W	B
Nitrate-N	8.1		mg/L	1.0	EPA 300.0	2	07/18/2023 08:25	J1W	B
pH	6.93	2	pH_Units		S4500HB-11	1	07/19/2023 11:41	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	07/27/2023 17:00	AKH	G
Specific Conductance	334		umhos/cm	5	SW846 9050A	1	07/19/2023 13:20	JXL	B
Sulfate	5.5		mg/L	2.0	EPA 300.0	2	07/18/2023 08:25	J1W	B
Total Dissolved Solids	248		mg/L	25	SM2540C-15	1	07/24/2023 14:32	AKH	B
Total Organic Carbon (TOC)	0.59		mg/L	0.50	SW846 9060A	1	07/20/2023 03:18	PAG	E
Turbidity	1.3		NTU	0.30	SM2130B-2011	1	07/17/2023 23:30	NRB	B

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3313363001	CWMP007W	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	
3313363002	CWMP001W	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	
3313363003	CWMP005W	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
3313363001	CWMP007W	N/A	N/A	N/A		Field	1030805
		SW846 3015A	1027349	07/21/2023 03:08	ANN	SW846 6010C	1029140
		N/A	N/A	N/A		SW846 8260B	1030559
		N/A	N/A	N/A		ASTM D6919-17	1029786
		N/A	N/A	N/A		EPA 300.0	1026339
		N/A	N/A	N/A		EPA 410.4	1027650
		N/A	N/A	N/A		S4500HB-11	1027071
		N/A	N/A	N/A		SM2130B-2011	1026154
		N/A	N/A	N/A		SM2320B-2011	1027071
		N/A	N/A	N/A		SM2540C-15	1029677
		N/A	N/A	N/A		SW846 9050A	1027171
		N/A	N/A	N/A		SW846 9060A	1027190
		SW846 9066	1030155	07/27/2023 08:30	AKH	SW846 9066	1030767
3313363002	CWMP001W	N/A	N/A	N/A		Field	1030805
		SW846 3015A	1027349	07/21/2023 03:08	ANN	SW846 6010C	1029140
		N/A	N/A	N/A		SW846 8260B	1030559
		N/A	N/A	N/A		ASTM D6919-17	1029786
		N/A	N/A	N/A		EPA 300.0	1026339
		N/A	N/A	N/A		EPA 410.4	1027650
		N/A	N/A	N/A		S4500HB-11	1027071
		N/A	N/A	N/A		SM2130B-2011	1026154
		N/A	N/A	N/A		SM2320B-2011	1027071
		N/A	N/A	N/A		SM2540C-15	1029677
		N/A	N/A	N/A		SW846 9050A	1027171
		N/A	N/A	N/A		SW846 9060A	1027190
		SW846 9066	1030155	07/27/2023 08:30	AKH	SW846 9066	1030767
3313363003	CWMP005W	N/A	N/A	N/A		Field	1030805
		SW846 3015A	1027349	07/21/2023 03:08	ANN	SW846 6010C	1029140
		N/A	N/A	N/A		SW846 8260B	1030559
		N/A	N/A	N/A		ASTM D6919-17	1029786
		N/A	N/A	N/A		EPA 300.0	1026339
		N/A	N/A	N/A		EPA 410.4	1027650
		N/A	N/A	N/A		S4500HB-11	1027071
		N/A	N/A	N/A		SM2130B-2011	1026154
		N/A	N/A	N/A		SM2320B-2011	1027071
		N/A	N/A	N/A		SM2540C-15	1029677
		N/A	N/A	N/A		SW846 9050A	1027171
		N/A	N/A	N/A		SW846 9060A	1027190
		SW846 9066	1030155	07/27/2023 08:30	AKH	SW846 9066	1030767

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 A

3313363
Logged By: SLS
PM: SJB

3 | 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/#: Creswell/GWMP Form 19Q Wells
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	AN	CG	----	----	PL	PL	PL	
Container Size	40 ml	125 ml	40 ml	----	----	250 ml	125 ml	500 ml	500 ml
Preservative	HCl	H2SO4	HCl	----	----	H2SO4	HNO3	None	None

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	TOC	O-OH	8260 VOCs - Form 19Q	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Total Metals: Ca, Fe, Mn, Mg, K, Na	pH, NO3, Cl, F, SpC, SO4, Turb, TDS	Alkalinity, HCO3	
					Enter Number of Containers Per Sample or Field Results Below.									
1. CWMP007W	07/17/23	1010	G	GW	2	1	2	X	X	1	2	1	1	
2. CWMP001W	07/17/23	1134	G	GW	2	1	2	X	X	1	2	1	1	
3. CWMP005W	07/17/23	1309	G	GW	2	1	2	X	X	1	2	1	1	
4														
5														
6														
7														
8														
9														
10														

(completed by Receiving Lab)

Cooler Temp: 10° Therm ID: 573
No. of Coolers: _____

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

CO
Temp By: DD | WO Temp (°C): 10 | Therm ID: 573 DAG

Cour

Receipt Info Completed By:			
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 Bob Shank BY ALS	7-17-23	1430	2 DD/ALS	7/17/23	1430
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

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

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 3rd QTR 2023 GWMP-FORM 19Q
Workorder 3313771
Report ID 261044 on 7/31/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jul 19, 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
3313771001	CWMP016W	Ground Water	07/19/2023 12:26	07/19/2023 15:10	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 Method Blank for method SW846 6010C reported a value greater than the reporting level for the analyte Calcium, Total. The concentration was 0.12 mg/L. Sample concentration was greater than 10 times the method blank.

Detected Results Summary

Client Sample ID	CWMP016W	Collected	07/19/2023 12:26
Lab Sample ID	3313771001	Lab Receipt	07/19/2023 15:10

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	12.39	Feet		Field	#
Dissolved Oxygen	9.05	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	311.97	Feet		Field	#
Flow Rate	2.31	gal/min		Field	#
Ground Water Elevation	299.58	ft/MSL		Field	#
Oxidation-Reduction Potential	242	mV		Field	#
pH, Field (SM4500B)	5.74	pH_Units		Field	#
Sample Depth	71.00	Feet		Field	#
Specific Conductance, Field	82	umhos/cm	1	Field	#
Temperature	12.51	Deg. C		Field	#
Total Well Depth	73.52	Feet		Field	#
Turbidity, Field	6	NTU	1	Field	#
Volume in Water Column	89.86	Gallons		Field	#
Water Level After Purge	21.94	Feet		Field	#
Well Volumes Purged	2.44	Vol		Field	#
METALS					
Calcium, Total	7.9	mg/L	0.11	SW846 6010C	#
Iron, Total	0.43	mg/L	0.067	SW846 6010C	#
Magnesium, Total	1.6	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.015	mg/L	0.0056	SW846 6010C	#
Sodium, Total	3.5	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	9	mg/L	5	SM2320B-2011	#
Alkalinity, Total	9	mg/L	5	SM2320B-2011	#
Ammonia-N	0.556	mg/L	0.100	ASTM D6919-17	#
Chloride	2.9	mg/L	2.0	EPA 300.0	#
Nitrate-N	1.6	mg/L	1.0	EPA 300.0	#
pH	7.23	pH_Units		S4500HB-11	#
Specific Conductance	65	umhos/cm	5	SW846 9050A	#
Sulfate	9.6	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	50	mg/L	25	SM2540C-15	#
Turbidity	6.5	NTU	0.30	SM2130B-2011	#

Results

Client Sample ID	CWMP016W	Collected	07/19/2023 12:26
Lab Sample ID	3313771001	Lab Receipt	07/19/2023 15:10

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	12.39		Feet		Field	1	07/19/2023 12:26	BGS	D
Dissolved Oxygen	9.05		mg/L	0.01	Field	1	07/19/2023 12:26	BGS	D
Elev Top MW Casing above MSL	311.97		Feet		Field	1	07/19/2023 12:26	BGS	D
Flow Rate	2.31		gal/min		Field	1	07/19/2023 12:26	BGS	D
Ground Water Elevation	299.58		ft/MSL		Field	1	07/19/2023 12:26	BGS	D
Oxidation-Reduction Potential	242		mV		Field	1	07/19/2023 12:26	BGS	D
pH, Field (SM4500B)	5.74		pH_Units		Field	1	07/19/2023 12:26	BGS	D
Sample Depth	71.00		Feet		Field	1	07/19/2023 12:26	BGS	D
Specific Conductance, Field	82		umhos/cm	1	Field	1	07/19/2023 12:26	BGS	D
Temperature	12.51		Deg. C		Field	1	07/19/2023 12:26	BGS	D
Total Well Depth	73.52		Feet		Field	1	07/19/2023 12:26	BGS	D
Turbidity, Field	6		NTU	1	Field	1	07/19/2023 12:26	BGS	D
Volume in Water Column	89.86		Gallons		Field	1	07/19/2023 12:26	BGS	D
Water Level After Purge	21.94		Feet		Field	1	07/19/2023 12:26	BGS	D
Well Volumes Purged	2.44		Vol		Field	1	07/19/2023 12:26	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	7.9	3	mg/L	0.11	SW846 6010C	1	07/23/2023 11:29	AXW	J1
Iron, Total	0.43		mg/L	0.067	SW846 6010C	1	07/23/2023 11:29	AXW	J1
Magnesium, Total	1.6		mg/L	0.11	SW846 6010C	1	07/23/2023 11:29	AXW	J1
Manganese, Total	0.015		mg/L	0.0056	SW846 6010C	1	07/23/2023 11:29	AXW	J1
Potassium, Total	ND	ND	mg/L	0.56	SW846 6010C	1	07/23/2023 11:29	AXW	J1
Sodium, Total	3.5		mg/L	0.56	SW846 6010C	1	07/23/2023 11:29	AXW	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	07/28/2023 05:19	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:19	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:19	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:19	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:19	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:19	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:19	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:19	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:19	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:19	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:19	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/28/2023 05:19	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:19	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:19	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:19	PDK	H

Results

Client Sample ID	CWMP016W	Collected	07/19/2023 12:26
Lab Sample ID	3313771001	Lab Receipt	07/19/2023 15:10

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	97.8%	62 – 133	07/28/2023 05:19	
4-Bromofluorobenzene	460-00-4	108%	79 – 114	07/28/2023 05:19	
Dibromofluoromethane	1868-53-7	101%	78 – 116	07/28/2023 05:19	
Toluene-d8	2037-26-5	104%	76 – 127	07/28/2023 05:19	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	9		mg/L	5	SM2320B-2011	1	07/25/2023 18:21	JMS	B
Alkalinity, Total	9	1	mg/L	5	SM2320B-2011	1	07/25/2023 18:21	JMS	B
Ammonia-N	0.556		mg/L	0.100	ASTM D6919-17	10	07/29/2023 16:33	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	07/21/2023 11:10	KMS	A
Chloride	2.9		mg/L	2.0	EPA 300.0	2	07/20/2023 11:01	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/20/2023 11:01	J1W	B
Nitrate-N	1.6		mg/L	1.0	EPA 300.0	2	07/20/2023 11:01	J1W	B
pH	7.23	2	pH_Units		S4500HB-11	1	07/25/2023 18:21	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	07/27/2023 19:16	AKH	G
Specific Conductance	65		umhos/cm	5	SW846 9050A	1	07/25/2023 09:55	JXL	B
Sulfate	9.6		mg/L	2.0	EPA 300.0	2	07/20/2023 11:01	J1W	B
Total Dissolved Solids	50		mg/L	25	SM2540C-15	1	07/25/2023 17:20	GJB	B
Total Organic Carbon (TOC)	ND	ND	mg/L	0.50	SW846 9060A	1	07/20/2023 21:48	PAG	E
Turbidity	6.5		NTU	0.30	SM2130B-2011	1	07/20/2023 01:00	NRB	B

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3313771001	CWMP016W	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
3313771001	CWMP016W	N/A	N/A	N/A		Field	1030805
		SW846 3015A	1027349	07/21/2023 03:08	ANN	SW846 6010C	1029140
		N/A	N/A	N/A		SW846 8260B	1030816
		N/A	N/A	N/A		ASTM D6919-17	1030771
		N/A	N/A	N/A		EPA 300.0	1027642
		N/A	N/A	N/A		EPA 410.4	1028144
		N/A	N/A	N/A		S4500HB-11	1028149
		N/A	N/A	N/A		SM2130B-2011	1027441
		N/A	N/A	N/A		SM2320B-2011	1028149
		N/A	N/A	N/A		SM2540C-15	1030095
		N/A	N/A	N/A		SW846 9050A	1030080
		N/A	N/A	N/A		SW846 9060A	1027778
		SW846 9066	1030155	07/27/2023 08:30	AKH	SW846 9066	1030767

ALS Environmental

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

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Generated by ALS

3313771

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/#: Creswell/GWMP Form 19Q Wells

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	8260 VOCs - Form 19Q	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Total Metals: Ca, Fe, Mn, Mg, K, Na	pH, NO3, Cl, F, SpC, SO4, Turb, TDS	Alkalinity, HCO3
					AG	AN	CG	----	----	PL	PL	PL	PL			
					40 ml	125 ml	40 ml	----	----	250 ml	125 ml	500 ml	500 ml			
					HCl	H2SO4	HCl	----	----	H2SO4	HNO3	None	None			
					ANALYSES/METHOD REQUESTED											
					Enter Number of Containers Per Sample or Field Results Below.											
1. CWMP016W	07/19/23	1226	G	GW	2	1	2	x	x	1	2	1	1			
2											RW	7-19-23				
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

(completed by Receiving Lab)

Cooler Temp: _____ Therm ID: _____

No. of Coolers: _____

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

Courier/Tracking #:

Sample/COC Comments

Temp By: RW | WO Temp (°C) 3.c | Therm ID 524

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

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	7-19-23	1510	2 [signature] ALS	7/19/23	1510
3			4		
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standa [ ] CLP-lik [ ] USACE [ ]

Reportable to PADEP? Yes [ ] PWSID #

Sample Disposal: Lab [X] Special [ ]

EDDS: Format Type-

[ ] NJ [X] PA [ ] NC

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 3rd QTR 2023 GWMP-FORM 19Q
Workorder 3314037
Report ID 262675 on 8/8/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jul 20, 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
3314037001	CWMP018S	Ground Water	07/20/2023 09:32	07/20/2023 14:40	BGS	Analytical Laboratory Service
3314037002	CWMP010W	Ground Water	07/20/2023 09:56	07/20/2023 14:40	BGS	Analytical Laboratory Service
3314037003	CWMP009W	Ground Water	07/20/2023 10:26	07/20/2023 14:40	BGS	Analytical Laboratory Service
3314037004	CWMP008W	Ground Water	07/20/2023 11:07	07/20/2023 14:40	BGS	Analytical Laboratory Service
3314037005	CWMP017S	Ground Water	07/20/2023 11:21	07/20/2023 14:40	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 Method Blank for method SW846 6010C reported a value greater than the reporting level for the analyte Calcium, Total. The concentration was 0.12 mg/L. Sample concentration was greater than 10 times the method blank.

Detected Results Summary

Client Sample ID	CWMP018S	Collected	07/20/2023 09:32
Lab Sample ID	3314037001	Lab Receipt	07/20/2023 14:40

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Dissolved Oxygen	8.40	mg/L	0.01	Field	#
pH, Field (SM4500B)	8.31	pH_Units		Field	#
Specific Conductance, Field	3935	umhos/cm	1	Field	#
Temperature	22.93	Deg. C		Field	#
METALS					
Calcium, Total	114	mg/L	0.11	SW846 6010C	#
Iron, Total	0.074	mg/L	0.067	SW846 6010C	#
Magnesium, Total	71.8	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.015	mg/L	0.0056	SW846 6010C	#
Potassium, Total	30.0	mg/L	0.56	SW846 6010C	#
Sodium, Total	324	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	388	mg/L	50	SM2320B-2011	#
Alkalinity, Total	388	mg/L	50	SM2320B-2011	#
Chemical Oxygen Demand (COD)	77	mg/L	15	EPA 410.4	#
Chloride	653	mg/L	20.0	EPA 300.0	#
Nitrate-N	17.7	mg/L	2.5	EPA 300.0	#
pH	8.53	pH_Units		S4500HB-11	#
Specific Conductance	3230	umhos/cm	50	SW846 9050A	#
Sulfate	57.7	mg/L	5.0	EPA 300.0	#
Total Dissolved Solids	1690	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	8.8	mg/L	0.50	SW846 9060A	#
Turbidity	0.75	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	CWMP010W	Collected	07/20/2023 09:56
Lab Sample ID	3314037002	Lab Receipt	07/20/2023 14:40

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	8.73	Feet		Field	#
Dissolved Oxygen	5.12	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	360.90	Feet		Field	#
Flow Rate	0.86	gal/min		Field	#
Ground Water Elevation	352.17	ft/MSL		Field	#
Oxidation-Reduction Potential	155	mV		Field	#
pH, Field (SM4500B)	6.38	pH_Units		Field	#
Sample Depth	17.00	Feet		Field	#
Specific Conductance, Field	1490	umhos/cm	1	Field	#
Temperature	16.25	Deg. C		Field	#
Total Well Depth	19.60	Feet		Field	#
Turbidity, Field	3	NTU	1	Field	#
Volume in Water Column	7.07	Gallons		Field	#
Water Level After Purge	16.49	Feet		Field	#
Well Volumes Purged	1.22	Vol		Field	#
METALS					
Calcium, Total	36.1	mg/L	0.11	SW846 6010C	#
Iron, Total	0.076	mg/L	0.067	SW846 6010C	#
Magnesium, Total	29.2	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.066	mg/L	0.0056	SW846 6010C	#
Potassium, Total	6.7	mg/L	0.56	SW846 6010C	#
Sodium, Total	104	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	168	mg/L	5	SM2320B-2011	#
Alkalinity, Total	168	mg/L	5	SM2320B-2011	#
Chemical Oxygen Demand (COD)	53	mg/L	15	EPA 410.4	#
Chloride	166	mg/L	2.0	EPA 300.0	#
Nitrate-N	6.0	mg/L	1.0	EPA 300.0	#
pH	8.08	pH_Units		S4500HB-11	#
Specific Conductance	951	umhos/cm	5	SW846 9050A	#
Sulfate	23.4	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	530	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	2.5	mg/L	0.50	SW846 9060A	#
Turbidity	0.75	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	CWMP009W	Collected	07/20/2023 10:26
Lab Sample ID	3314037003	Lab Receipt	07/20/2023 14:40

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	9.24	Feet		Field	#
Dissolved Oxygen	0.06	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	404.20	Feet		Field	#
Flow Rate	1.51	gal/min		Field	#
Ground Water Elevation	394.96	ft/MSL		Field	#
Oxidation-Reduction Potential	-48	mV		Field	#
pH, Field (SM4500B)	6.08	pH_Units		Field	#
Sample Depth	16.00	Feet		Field	#
Specific Conductance, Field	4195	umhos/cm	1	Field	#
Temperature	15.23	Deg. C		Field	#
Total Well Depth	19.70	Feet		Field	#
Volume in Water Column	6.80	Gallons		Field	#
Water Level After Purge	11.14	Feet		Field	#
Well Volumes Purged	4.44	Vol		Field	#
METALS					
Calcium, Total	190	mg/L	0.11	SW846 6010C	#
Iron, Total	36.7	mg/L	0.067	SW846 6010C	#
Magnesium, Total	92.5	mg/L	0.11	SW846 6010C	#
Manganese, Total	13.0	mg/L	0.0056	SW846 6010C	#
Potassium, Total	34.9	mg/L	0.56	SW846 6010C	#
Sodium, Total	197	mg/L	0.56	SW846 6010C	#
VOLATILE ORGANICS					
Benzene	2.4	ug/L	1.0	SW846 8260B	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	535	mg/L	50	SM2320B-2011	#
Alkalinity, Total	535	mg/L	50	SM2320B-2011	#
Ammonia-N	33.3	mg/L	0.100	ASTM D6919-17	#
Chemical Oxygen Demand (COD)	150	mg/L	15	EPA 410.4	#
Chloride	693	mg/L	20.0	EPA 300.0	#
pH	7.60	pH_Units		S4500HB-11	#
Specific Conductance	3240	umhos/cm	50	SW846 9050A	#
Sulfate	7.2	mg/L	5.0	EPA 300.0	#
Total Dissolved Solids	1930	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	39.3	mg/L	5.0	SW846 9060A	#
Turbidity	45	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	CWMP008W	Collected	07/20/2023 11:07
Lab Sample ID	3314037004	Lab Receipt	07/20/2023 14:40

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	3.52	Feet		Field	#
Dissolved Oxygen	0.27	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	422.30	Feet		Field	#
Flow Rate	0.92	gal/min		Field	#
Ground Water Elevation	418.78	ft/MSL		Field	#
Oxidation-Reduction Potential	-34	mV		Field	#
pH, Field (SM4500B)	6.17	pH_Units		Field	#
Sample Depth	19.00	Feet		Field	#
Specific Conductance, Field	1199	umhos/cm	1	Field	#
Temperature	15.45	Deg. C		Field	#
Total Well Depth	22.80	Feet		Field	#
Volume in Water Column	3.08	Gallons		Field	#
Water Level After Purge	14.33	Feet		Field	#
Well Volumes Purged	5.96	Vol		Field	#
METALS					
Calcium, Total	69.6	mg/L	0.11	SW846 6010C	#
Iron, Total	23.4	mg/L	0.067	SW846 6010C	#
Magnesium, Total	32.8	mg/L	0.11	SW846 6010C	#
Manganese, Total	15.1	mg/L	0.0056	SW846 6010C	#
Potassium, Total	8.1	mg/L	0.56	SW846 6010C	#
Sodium, Total	41.5	mg/L	0.56	SW846 6010C	#
VOLATILE ORGANICS					
1,1-Dichloroethane	1.3	ug/L	1.0	SW846 8260B	#
Benzene	1.2	ug/L	1.0	SW846 8260B	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	384	mg/L	5	SM2320B-2011	#
Alkalinity, Total	384	mg/L	5	SM2320B-2011	#
Ammonia-N	7.30	mg/L	0.100	ASTM D6919-17	#
Chemical Oxygen Demand (COD)	66	mg/L	15	EPA 410.4	#
Chloride	41.4	mg/L	2.0	EPA 300.0	#
pH	7.59	pH_Units		S4500HB-11	#
Specific Conductance	839	umhos/cm	5	SW846 9050A	#
Sulfate	5.6	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	472	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	10.7	mg/L	5.0	SW846 9060A	#
Turbidity	20	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	CWMP017S	Collected	07/20/2023 11:21
Lab Sample ID	3314037005	Lab Receipt	07/20/2023 14:40

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Dissolved Oxygen	7.72	mg/L	0.01	Field	#
pH, Field (SM4500B)	7.86	pH_Units		Field	#
Specific Conductance, Field	4800	umhos/cm	1	Field	#
Temperature	25.43	Deg. C		Field	#
METALS					
Calcium, Total	89.8	mg/L	0.11	SW846 6010C	#
Iron, Total	0.41	mg/L	0.067	SW846 6010C	#
Magnesium, Total	91.6	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.25	mg/L	0.0056	SW846 6010C	#
Potassium, Total	18.1	mg/L	0.56	SW846 6010C	#
Sodium, Total	387	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	451	mg/L	50	SM2320B-2011	#
Alkalinity, Total	451	mg/L	50	SM2320B-2011	#
Chemical Oxygen Demand (COD)	84	mg/L	15	EPA 410.4	#
Chloride	685	mg/L	20.0	EPA 300.0	#
Nitrate-N	27.1	mg/L	2.5	EPA 300.0	#
pH	8.27	pH_Units		S4500HB-11	#
Specific Conductance	3560	umhos/cm	50	SW846 9050A	#
Sulfate	58.0	mg/L	5.0	EPA 300.0	#
Total Dissolved Solids	1890	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	5.3	mg/L	0.50	SW846 9060A	#
Turbidity	2.3	NTU	0.30	SM2130B-2011	#

Results

Client Sample ID	CWMP018S	Collected	07/20/2023 09:32
Lab Sample ID	3314037001	Lab Receipt	07/20/2023 14:40

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Dissolved Oxygen	8.40		mg/L	0.01	Field	1	07/20/2023 09:32	BGS	D
pH, Field (SM4500B)	8.31		pH_Units		Field	1	07/20/2023 09:32	BGS	D
Specific Conductance, Field	3935		umhos/cm	1	Field	1	07/20/2023 09:32	BGS	D
Temperature	22.93		Deg. C		Field	1	07/20/2023 09:32	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	114	3	mg/L	0.11	SW846 6010C	1	07/23/2023 11:31	AXW	J
Iron, Total	0.074		mg/L	0.067	SW846 6010C	1	07/23/2023 11:31	AXW	J
Magnesium, Total	71.8		mg/L	0.11	SW846 6010C	1	07/23/2023 11:31	AXW	J
Manganese, Total	0.015		mg/L	0.0056	SW846 6010C	1	07/23/2023 11:31	AXW	J
Potassium, Total	30.0		mg/L	0.56	SW846 6010C	1	07/23/2023 11:31	AXW	J
Sodium, Total	324		mg/L	0.56	SW846 6010C	1	07/23/2023 11:31	AXW	J

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	07/28/2023 05:42	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:42	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:42	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:42	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:42	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:42	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:42	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:42	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:42	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:42	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:42	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/28/2023 05:42	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:42	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:42	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 05:42	PDK	H

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	97.4%	62 – 133	07/28/2023 05:42	
4-Bromofluorobenzene	460-00-4	106%	79 – 114	07/28/2023 05:42	
Dibromofluoromethane	1868-53-7	99.2%	78 – 116	07/28/2023 05:42	
Toluene-d8	2037-26-5	104%	76 – 127	07/28/2023 05:42	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	388		mg/L	50	SM2320B-2011	10	08/07/2023 12:22	JMS	B

Results

Client Sample ID	CWMP018S	Collected	07/20/2023 09:32
Lab Sample ID	3314037001	Lab Receipt	07/20/2023 14:40

WET CHEMISTRY (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Total	388	1	mg/L	50	SM2320B-2011	10	08/07/2023 12:22	JMS	B
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-17	10	08/02/2023 01:00	NML	A
Chemical Oxygen Demand (COD)	77		mg/L	15	EPA 410.4	1	07/24/2023 10:40	KMS	A
Chloride	653		mg/L	20.0	EPA 300.0	20	07/25/2023 15:30	J1W	B
Fluoride	ND	ND	mg/L	0.50	EPA 300.0	5	07/21/2023 10:16	J1W	B
Nitrate-N	17.7		mg/L	2.5	EPA 300.0	5	07/21/2023 10:16	J1W	B
pH	8.53	2	pH_Units		S4500HB-11	1	08/01/2023 15:40	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	07/27/2023 19:36	AKH	G
Specific Conductance	3230		umhos/cm	50	SW846 9050A	10	07/26/2023 11:00	JXL	B
Sulfate	57.7		mg/L	5.0	EPA 300.0	5	07/21/2023 10:16	J1W	B
Total Dissolved Solids	1690		mg/L	25	SM2540C-15	1	07/26/2023 15:51	ACA	B
Total Organic Carbon (TOC)	8.8		mg/L	0.50	SW846 9060A	1	07/26/2023 04:37	PAG	E
Turbidity	0.75		NTU	0.30	SM2130B-2011	1	07/21/2023 00:05	NRB	B

Results

Client Sample ID	CWMP010W	Collected	07/20/2023 09:56
Lab Sample ID	3314037002	Lab Receipt	07/20/2023 14:40

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	8.73		Feet		Field	1	07/20/2023 09:56	BGS	D
Dissolved Oxygen	5.12		mg/L	0.01	Field	1	07/20/2023 09:56	BGS	D
Elev Top MW Casing above MSL	360.90		Feet		Field	1	07/20/2023 09:56	BGS	D
Flow Rate	0.86		gal/min		Field	1	07/20/2023 09:56	BGS	D
Ground Water Elevation	352.17		ft/MSL		Field	1	07/20/2023 09:56	BGS	D
Oxidation-Reduction Potential	155		mV		Field	1	07/20/2023 09:56	BGS	D
pH, Field (SM4500B)	6.38		pH_Units		Field	1	07/20/2023 09:56	BGS	D
Sample Depth	17.00		Feet		Field	1	07/20/2023 09:56	BGS	D
Specific Conductance, Field	1490		umhos/cm	1	Field	1	07/20/2023 09:56	BGS	D
Temperature	16.25		Deg. C		Field	1	07/20/2023 09:56	BGS	D
Total Well Depth	19.60		Feet		Field	1	07/20/2023 09:56	BGS	D
Turbidity, Field	3		NTU	1	Field	1	07/20/2023 09:56	BGS	D
Volume in Water Column	7.07		Gallons		Field	1	07/20/2023 09:56	BGS	D
Water Level After Purge	16.49		Feet		Field	1	07/20/2023 09:56	BGS	D
Well Volumes Purged	1.22		Vol		Field	1	07/20/2023 09:56	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	36.1	3	mg/L	0.11	SW846 6010C	1	07/23/2023 11:33	AXW	J
Iron, Total	0.076		mg/L	0.067	SW846 6010C	1	07/23/2023 11:33	AXW	J
Magnesium, Total	29.2		mg/L	0.11	SW846 6010C	1	07/23/2023 11:33	AXW	J
Manganese, Total	0.066		mg/L	0.0056	SW846 6010C	1	07/23/2023 11:33	AXW	J
Potassium, Total	6.7		mg/L	0.56	SW846 6010C	1	07/23/2023 11:33	AXW	J
Sodium, Total	104		mg/L	0.56	SW846 6010C	1	07/23/2023 11:33	AXW	J

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	07/28/2023 06:05	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:05	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:05	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:05	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:05	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:05	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:05	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:05	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:05	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:05	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:05	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/28/2023 06:05	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:05	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:05	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:05	PDK	H

Results

Client Sample ID	CWMP010W	Collected	07/20/2023 09:56
Lab Sample ID	3314037002	Lab Receipt	07/20/2023 14:40

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	96.3%	62 – 133	07/28/2023 06:05	
4-Bromofluorobenzene	460-00-4	108%	79 – 114	07/28/2023 06:05	
Dibromofluoromethane	1868-53-7	99.1%	78 – 116	07/28/2023 06:05	
Toluene-d8	2037-26-5	103%	76 – 127	07/28/2023 06:05	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	168		mg/L	5	SM2320B-2011	1	08/01/2023 15:52	JMS	B
Alkalinity, Total	168	1	mg/L	5	SM2320B-2011	1	08/01/2023 15:52	JMS	B
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-17	10	08/02/2023 00:46	NML	A
Chemical Oxygen Demand (COD)	53		mg/L	15	EPA 410.4	1	07/24/2023 10:40	KMS	A
Chloride	166		mg/L	2.0	EPA 300.0	2	07/21/2023 10:27	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/21/2023 10:27	J1W	B
Nitrate-N	6.0		mg/L	1.0	EPA 300.0	2	07/21/2023 10:27	J1W	B
pH	8.08	2	pH_Units		S4500HB-11	1	08/01/2023 15:52	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	07/27/2023 19:40	AKH	G
Specific Conductance	951		umhos/cm	5	SW846 9050A	1	07/26/2023 11:00	JXL	B
Sulfate	23.4		mg/L	2.0	EPA 300.0	2	07/21/2023 10:27	J1W	B
Total Dissolved Solids	530		mg/L	25	SM2540C-15	1	07/26/2023 17:22	GJB	B
Total Organic Carbon (TOC)	2.5		mg/L	0.50	SW846 9060A	1	07/26/2023 04:37	PAG	E
Turbidity	0.75		NTU	0.30	SM2130B-2011	1	07/21/2023 00:05	NRB	B

Results

Client Sample ID	CWMP009W	Collected	07/20/2023 10:26
Lab Sample ID	3314037003	Lab Receipt	07/20/2023 14:40

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	9.24		Feet		Field	1	07/20/2023 10:29	BGS	D
Dissolved Oxygen	0.06		mg/L	0.01	Field	1	07/20/2023 10:29	BGS	D
Elev Top MW Casing above MSL	404.20		Feet		Field	1	07/20/2023 10:29	BGS	D
Flow Rate	1.51		gal/min		Field	1	07/20/2023 10:29	BGS	D
Ground Water Elevation	394.96		ft/MSL		Field	1	07/20/2023 10:29	BGS	D
Oxidation-Reduction Potential	-48		mV		Field	1	07/20/2023 10:29	BGS	D
pH, Field (SM4500B)	6.08		pH_Units		Field	1	07/20/2023 10:29	BGS	D
Sample Depth	16.00		Feet		Field	1	07/20/2023 10:29	BGS	D
Specific Conductance, Field	4195		umhos/cm	1	Field	1	07/20/2023 10:29	BGS	D
Temperature	15.23		Deg. C		Field	1	07/20/2023 10:29	BGS	D
Total Well Depth	19.70		Feet		Field	1	07/20/2023 10:29	BGS	D
Turbidity, Field	ND	ND	NTU	1	Field	1	07/20/2023 10:29	BGS	D
Volume in Water Column	6.80		Gallons		Field	1	07/20/2023 10:29	BGS	D
Water Level After Purge	11.14		Feet		Field	1	07/20/2023 10:29	BGS	D
Well Volumes Purged	4.44		Vol		Field	1	07/20/2023 10:29	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	190	3	mg/L	0.11	SW846 6010C	1	07/23/2023 11:34	AXW	J
Iron, Total	36.7		mg/L	0.067	SW846 6010C	1	07/23/2023 11:34	AXW	J
Magnesium, Total	92.5		mg/L	0.11	SW846 6010C	1	07/23/2023 11:34	AXW	J
Manganese, Total	13.0		mg/L	0.0056	SW846 6010C	1	07/23/2023 11:34	AXW	J
Potassium, Total	34.9		mg/L	0.56	SW846 6010C	1	07/23/2023 11:34	AXW	J
Sodium, Total	197		mg/L	0.56	SW846 6010C	1	07/23/2023 11:34	AXW	J

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	07/28/2023 06:28	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:28	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:28	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:28	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:28	PDK	H
Benzene	2.4		ug/L	1.0	SW846 8260B	1	07/28/2023 06:28	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:28	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:28	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:28	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:28	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:28	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/28/2023 06:28	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:28	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:28	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:28	PDK	H

Results

Client Sample ID	CWMP009W	Collected	07/20/2023 10:26
Lab Sample ID	3314037003	Lab Receipt	07/20/2023 14:40

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	96.7%	62 – 133	07/28/2023 06:28	
4-Bromofluorobenzene	460-00-4	107%	79 – 114	07/28/2023 06:28	
Dibromofluoromethane	1868-53-7	98.4%	78 – 116	07/28/2023 06:28	
Toluene-d8	2037-26-5	104%	76 – 127	07/28/2023 06:28	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	535		mg/L	50	SM2320B-2011	10	08/01/2023 16:43	JMS	B
Alkalinity, Total	535	1	mg/L	50	SM2320B-2011	10	08/01/2023 16:43	JMS	B
Ammonia-N	33.3		mg/L	0.100	ASTM D6919-17	10	08/01/2023 23:50	NML	A
Chemical Oxygen Demand (COD)	150		mg/L	15	EPA 410.4	1	07/24/2023 10:40	KMS	A
Chloride	693		mg/L	20.0	EPA 300.0	20	07/25/2023 15:41	J1W	B
Fluoride	ND	ND	mg/L	0.50	EPA 300.0	5	07/21/2023 10:37	J1W	B
Nitrate-N	ND	ND	mg/L	2.5	EPA 300.0	5	07/21/2023 10:37	J1W	B
pH	7.60	2	pH_Units		S4500HB-11	1	07/27/2023 15:02	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	07/27/2023 20:10	AKH	G
Specific Conductance	3240		umhos/cm	50	SW846 9050A	10	07/26/2023 11:00	JXL	B
Sulfate	7.2		mg/L	5.0	EPA 300.0	5	07/21/2023 10:37	J1W	B
Total Dissolved Solids	1930		mg/L	25	SM2540C-15	1	07/26/2023 17:22	GJB	B
Total Organic Carbon (TOC)	39.3		mg/L	5.0	SW846 9060A	10	07/26/2023 04:37	PAG	E
Turbidity	45		NTU	0.30	SM2130B-2011	1	07/21/2023 00:05	NRB	B

Results

Client Sample ID	CWMP008W	Collected	07/20/2023 11:07
Lab Sample ID	3314037004	Lab Receipt	07/20/2023 14:40

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	3.52		Feet		Field	1	07/20/2023 11:07	BGS	D
Dissolved Oxygen	0.27		mg/L	0.01	Field	1	07/20/2023 11:07	BGS	D
Elev Top MW Casing above MSL	422.30		Feet		Field	1	07/20/2023 11:07	BGS	D
Flow Rate	0.92		gal/min		Field	1	07/20/2023 11:07	BGS	D
Ground Water Elevation	418.78		ft/MSL		Field	1	07/20/2023 11:07	BGS	D
Oxidation-Reduction Potential	-34		mV		Field	1	07/20/2023 11:07	BGS	D
pH, Field (SM4500B)	6.17		pH_Units		Field	1	07/20/2023 11:07	BGS	D
Sample Depth	19.00		Feet		Field	1	07/20/2023 11:07	BGS	D
Specific Conductance, Field	1199		umhos/cm	1	Field	1	07/20/2023 11:07	BGS	D
Temperature	15.45		Deg. C		Field	1	07/20/2023 11:07	BGS	D
Total Well Depth	22.80		Feet		Field	1	07/20/2023 11:07	BGS	D
Turbidity, Field	ND	ND	NTU	1	Field	1	07/20/2023 11:07	BGS	D
Volume in Water Column	3.08		Gallons		Field	1	07/20/2023 11:07	BGS	D
Water Level After Purge	14.33		Feet		Field	1	07/20/2023 11:07	BGS	D
Well Volumes Purged	5.96		Vol		Field	1	07/20/2023 11:07	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	69.6	3	mg/L	0.11	SW846 6010C	1	07/23/2023 11:50	AXW	J
Iron, Total	23.4		mg/L	0.067	SW846 6010C	1	07/23/2023 11:50	AXW	J
Magnesium, Total	32.8		mg/L	0.11	SW846 6010C	1	07/23/2023 11:50	AXW	J
Manganese, Total	15.1		mg/L	0.0056	SW846 6010C	1	07/23/2023 11:50	AXW	J
Potassium, Total	8.1		mg/L	0.56	SW846 6010C	1	07/23/2023 11:50	AXW	J
Sodium, Total	41.5		mg/L	0.56	SW846 6010C	1	07/23/2023 11:50	AXW	J

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	07/28/2023 06:51	PDK	H
1,1-Dichloroethane	1.3		ug/L	1.0	SW846 8260B	1	07/28/2023 06:51	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:51	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:51	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:51	PDK	H
Benzene	1.2		ug/L	1.0	SW846 8260B	1	07/28/2023 06:51	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:51	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:51	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:51	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:51	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:51	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/28/2023 06:51	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:51	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:51	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 06:51	PDK	H

Results

Client Sample ID	CWMP008W	Collected	07/20/2023 11:07
Lab Sample ID	3314037004	Lab Receipt	07/20/2023 14:40

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	97.4%	62 – 133	07/28/2023 06:51	
4-Bromofluorobenzene	460-00-4	106%	79 – 114	07/28/2023 06:51	
Dibromofluoromethane	1868-53-7	100%	78 – 116	07/28/2023 06:51	
Toluene-d8	2037-26-5	106%	76 – 127	07/28/2023 06:51	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	384		mg/L	5	SM2320B-2011	1	07/27/2023 15:16	JMS	B
Alkalinity, Total	384	1	mg/L	5	SM2320B-2011	1	07/27/2023 15:16	JMS	B
Ammonia-N	7.30		mg/L	0.100	ASTM D6919-17	10	08/01/2023 23:36	NML	A
Chemical Oxygen Demand (COD)	66		mg/L	15	EPA 410.4	1	07/24/2023 10:40	KMS	A
Chloride	41.4		mg/L	2.0	EPA 300.0	2	07/21/2023 10:48	J1W	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/21/2023 10:48	J1W	B
Nitrate-N	ND	ND	mg/L	1.0	EPA 300.0	2	07/21/2023 10:48	J1W	B
pH	7.59	2	pH_Units		S4500HB-11	1	07/27/2023 15:16	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	07/27/2023 20:20	AKH	G
Specific Conductance	839		umhos/cm	5	SW846 9050A	1	07/26/2023 11:00	JXL	B
Sulfate	5.6		mg/L	2.0	EPA 300.0	2	07/21/2023 10:48	J1W	B
Total Dissolved Solids	472		mg/L	25	SM2540C-15	1	07/26/2023 17:22	GJB	B
Total Organic Carbon (TOC)	10.7		mg/L	5.0	SW846 9060A	10	07/26/2023 04:37	PAG	E
Turbidity	20		NTU	0.30	SM2130B-2011	1	07/21/2023 00:05	NRB	B

Results

Client Sample ID	CWMP017S	Collected	07/20/2023 11:21
Lab Sample ID	3314037005	Lab Receipt	07/20/2023 14:40

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Dissolved Oxygen	7.72		mg/L	0.01	Field	1	07/20/2023 11:21	BGS	D
pH, Field (SM4500B)	7.86		pH_Units		Field	1	07/20/2023 11:21	BGS	D
Specific Conductance, Field	4800		umhos/cm	1	Field	1	07/20/2023 11:21	BGS	D
Temperature	25.43		Deg. C		Field	1	07/20/2023 11:21	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	89.8	3	mg/L	0.11	SW846 6010C	1	07/23/2023 11:51	AXW	J
Iron, Total	0.41		mg/L	0.067	SW846 6010C	1	07/23/2023 11:51	AXW	J
Magnesium, Total	91.6		mg/L	0.11	SW846 6010C	1	07/23/2023 11:51	AXW	J
Manganese, Total	0.25		mg/L	0.0056	SW846 6010C	1	07/23/2023 11:51	AXW	J
Potassium, Total	18.1		mg/L	0.56	SW846 6010C	1	07/23/2023 11:51	AXW	J
Sodium, Total	387		mg/L	0.56	SW846 6010C	1	07/23/2023 11:51	AXW	J

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	07/28/2023 07:14	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 07:14	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 07:14	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 07:14	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 07:14	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 07:14	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 07:14	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 07:14	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 07:14	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 07:14	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 07:14	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/28/2023 07:14	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 07:14	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 07:14	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 07:14	PDK	H

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	94.1%	62 – 133	07/28/2023 07:14	
4-Bromofluorobenzene	460-00-4	107%	79 – 114	07/28/2023 07:14	
Dibromofluoromethane	1868-53-7	101%	78 – 116	07/28/2023 07:14	
Toluene-d8	2037-26-5	104%	76 – 127	07/28/2023 07:14	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	451		mg/L	50	SM2320B-2011	10	08/01/2023 16:53	JMS	B

Results

Client Sample ID	CWMP017S	Collected	07/20/2023 11:21
Lab Sample ID	3314037005	Lab Receipt	07/20/2023 14:40

WET CHEMISTRY (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Total	451	1	mg/L	50	SM2320B-2011	10	08/01/2023 16:53	JMS	B
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-17	10	08/02/2023 01:14	NML	A
Chemical Oxygen Demand (COD)	84		mg/L	15	EPA 410.4	1	07/24/2023 10:40	KMS	A
Chloride	685		mg/L	20.0	EPA 300.0	20	07/25/2023 15:53	J1W	B
Fluoride	ND	ND	mg/L	0.50	EPA 300.0	5	07/21/2023 10:58	J1W	B
Nitrate-N	27.1		mg/L	2.5	EPA 300.0	5	07/21/2023 10:58	J1W	B
pH	8.27	2	pH_Units		S4500HB-11	1	07/27/2023 16:21	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	07/27/2023 20:06	AKH	G
Specific Conductance	3560		umhos/cm	50	SW846 9050A	10	07/26/2023 11:00	JXL	B
Sulfate	58.0		mg/L	5.0	EPA 300.0	5	07/21/2023 10:58	J1W	B
Total Dissolved Solids	1890		mg/L	25	SM2540C-15	1	07/26/2023 17:22	GJB	B
Total Organic Carbon (TOC)	5.3		mg/L	0.50	SW846 9060A	1	07/26/2023 04:37	PAG	E
Turbidity	2.3		NTU	0.30	SM2130B-2011	1	07/21/2023 00:05	NRB	B

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3314037001	CWMP018S	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	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	
3314037002	CWMP010W	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	
3314037003	CWMP009W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	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	
3314037004	CWMP008W	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	

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3314037005	CWMP017S	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-17	N/A	
		EPA 300.0	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
3314037001	CWMP018S	N/A	N/A	N/A		Field	1030805
		SW846 3015A	1027349	07/21/2023 03:08	ANN	SW846 6010C	1029140
		N/A	N/A	N/A		SW846 8260B	1030816
		N/A	N/A	N/A		ASTM D6919-17	1034457
		N/A	N/A	N/A		EPA 300.0	1028039
		N/A	N/A	N/A		EPA 300.0	1030047
		N/A	N/A	N/A		EPA 410.4	1029650
		N/A	N/A	N/A		S4500HB-11	1034501
		N/A	N/A	N/A		SM2130B-2011	1027873
		N/A	N/A	N/A		SM2320B-2011	1041081
		N/A	N/A	N/A		SM2540C-15	1030322
		N/A	N/A	N/A		SW846 9050A	1030318
		N/A	N/A	N/A		SW846 9060A	1030157
		SW846 9066	1030155	07/27/2023 08:30	AKH	SW846 9066	1030767
3314037002	CWMP010W	N/A	N/A	N/A		Field	1030805
		SW846 3015A	1027349	07/21/2023 03:08	ANN	SW846 6010C	1029140
		N/A	N/A	N/A		SW846 8260B	1030816
		N/A	N/A	N/A		ASTM D6919-17	1034457
		N/A	N/A	N/A		EPA 300.0	1028039
		N/A	N/A	N/A		EPA 410.4	1029650
		N/A	N/A	N/A		S4500HB-11	1034501
		N/A	N/A	N/A		SM2130B-2011	1027873
		N/A	N/A	N/A		SM2320B-2011	1034501
		N/A	N/A	N/A		SM2540C-15	1030324
		N/A	N/A	N/A		SW846 9050A	1030318
		N/A	N/A	N/A		SW846 9060A	1030157
		SW846 9066	1030155	07/27/2023 08:30	AKH	SW846 9066	1030767
3314037003	CWMP009W	N/A	N/A	N/A		Field	1030805
		SW846 3015A	1027349	07/21/2023 03:08	ANN	SW846 6010C	1029140
		N/A	N/A	N/A		SW846 8260B	1030816
		N/A	N/A	N/A		ASTM D6919-17	1034457
		N/A	N/A	N/A		EPA 300.0	1028039
		N/A	N/A	N/A		EPA 300.0	1030047
		N/A	N/A	N/A		EPA 410.4	1029650
		N/A	N/A	N/A		S4500HB-11	1030762
		N/A	N/A	N/A		SM2130B-2011	1027873
		N/A	N/A	N/A		SM2320B-2011	1034501
		N/A	N/A	N/A		SM2540C-15	1030324
		N/A	N/A	N/A		SW846 9050A	1030318
		N/A	N/A	N/A		SW846 9060A	1030157
		SW846 9066	1030155	07/27/2023 08:30	AKH	SW846 9066	1030767
3314037004	CWMP008W	N/A	N/A	N/A		Field	1030805
		SW846 3015A	1027349	07/21/2023 03:08	ANN	SW846 6010C	1029140
		N/A	N/A	N/A		SW846 8260B	1030816
		N/A	N/A	N/A		ASTM D6919-17	1034457
		N/A	N/A	N/A		EPA 300.0	1028039
		N/A	N/A	N/A		EPA 410.4	1029650
		N/A	N/A	N/A		S4500HB-11	1030762
		N/A	N/A	N/A		SM2130B-2011	1027873
		N/A	N/A	N/A		SM2320B-2011	1030762
		N/A	N/A	N/A		SM2540C-15	1030324
		N/A	N/A	N/A		SW846 9050A	1030318
		N/A	N/A	N/A		SW846 9060A	1030157
		SW846 9066	1030155	07/27/2023 08:30	AKH	SW846 9066	1030767

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3314037005	CWMP017S	N/A	N/A	N/A		Field	1030805
		SW846 3015A	1027349	07/21/2023 03:08	ANN	SW846 6010C	1029140
		N/A	N/A	N/A		SW846 8260B	1030816
		N/A	N/A	N/A		ASTM D6919-17	1034457
		N/A	N/A	N/A		EPA 300.0	1028039
		N/A	N/A	N/A		EPA 300.0	1030047
		N/A	N/A	N/A		EPA 410.4	1029650
		N/A	N/A	N/A		S4500HB-11	1030762
		N/A	N/A	N/A		SM2130B-2011	1027873
		N/A	N/A	N/A		SM2320B-2011	1034501
		N/A	N/A	N/A		SM2540C-15	1030324
		N/A	N/A	N/A		SW846 9050A	1030318
		N/A	N/A	N/A		SW846 9060A	1030157
		SW846 9066	1030155	07/27/2023 08:30	AKH	SW846 9066	1030767

8/8/2023 3:33 PM

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

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3314037
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/#: Creswell/GWMP Form 19Q Wells
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	AN	CG	----	----	PL	PL	PL	PL
Container Size	40 ml	125 ml	40 ml	----	----	250 ml	125 ml	500 ml	500 ml
Preservative	HCl	H2SO4	HCl	----	----	H2SO4	HNO3	None	None

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	TOC	O-OH	8260 VOCs - Form 19Q	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Total Metals: Ca, Fe, Mn, Mg, K, Na	pH, NO3, Cl, F, SpC, SO4, Turb, TDS	Alkalinity, HCO3
					Enter Number of Containers Per Sample or Field Results Below.								
1. CWMP018S	07/20/23	0932	G	GW	2	1	2	X	X	1	2	1	1
2. CWMP010W	07/20/23	0956	G	GW	2	1	2	X	X	1	2	1	1
3. CWMP009W	07/20/23	1026	G	GW	2	1	2	X	X	1	2	1	1
4. CWMP008W	07/20/23	1107	G	GW	2	1	2	X	X	1	2	1	1
5. CWMP017S	07/20/23	1121	G	GW	2	1	2	X	X	1	2	1	1
6													
7													
8													
9													
10													

(Completed by Receiving Lab)

Cooler Temp: _____ Therm ID: _____
No Y N Initial

Temp By: DAG | WO Temp (°C): 2 | Therm ID: 525

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] ALS	7/20/23	1742	2 DAG/ALS	7/20/23	1440
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

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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 3rd QTR 2023 GWMP-FORM 19Q
Workorder 3314306
Report ID 262265 on 8/7/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Jul 21, 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
3314306001	CWMP002W	Ground Water	07/21/2023 10:23	07/21/2023 14:10	BGS	Analytical Laboratory Service
3314306002	CWMP003W	Ground Water	07/21/2023 10:46	07/21/2023 14:10	BGS	Analytical Laboratory Service
3314306003	CWMP004W	Ground Water	07/21/2023 11:00	07/21/2023 14:10	BGS	Analytical Laboratory Service
3314306004	Field Blank	Water	07/21/2023 12:00	07/21/2023 14:10	BGS	Analytical Laboratory Service
3314306005	Trip Blank	Water	07/21/2023 14:10	07/21/2023 14:10	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	CWMP002W	Collected	07/21/2023 10:23
Lab Sample ID	3314306001	Lab Receipt	07/21/2023 14:10

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	81.39	Feet		Field	#
Dissolved Oxygen	2.85	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	525.81	Feet		Field	#
Ground Water Elevation	444.42	ft/MSL		Field	#
Oxidation-Reduction Potential	178	mV		Field	#
pH, Field (SM4500B)	5.55	pH_Units		Field	#
Sample Depth	85.00	Feet		Field	#
Specific Conductance, Field	740	umhos/cm	1	Field	#
Temperature	14.76	Deg. C		Field	#
Total Well Depth	100.00	Feet		Field	#
Turbidity, Field	106	NTU	1	Field	#
METALS					
Calcium, Total	52.7	mg/L	0.11	SW846 6010C	#
Iron, Total	0.43	mg/L	0.067	SW846 6010C	#
Magnesium, Total	14.8	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.61	mg/L	0.0056	SW846 6010C	#
Potassium, Total	2.4	mg/L	0.56	SW846 6010C	#
Sodium, Total	26.8	mg/L	0.56	SW846 6010C	#
VOLATILE ORGANICS					
1,1-Dichloroethane	4.7	ug/L	1.0	SW846 8260B	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	86	mg/L	5	SM2320B-2011	#
Alkalinity, Total	86	mg/L	5	SM2320B-2011	#
Ammonia-N	0.244	mg/L	0.100	ASTM D6919-17	#
Chemical Oxygen Demand (COD)	15	mg/L	15	EPA 410.4	#
Chloride	90.3	mg/L	2.0	EPA 300.0	#
Nitrate-N	5.5	mg/L	1.0	EPA 300.0	#
pH	7.87	pH_Units		S4500HB-11	#
Specific Conductance	534	umhos/cm	5	SW846 9050A	#
Sulfate	19.3	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	376	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	2.9	mg/L	0.50	SW846 9060A	#
Turbidity	0.35	NTU	0.30	SM2130B-2011	#

Detected Results Summary

Client Sample ID	CWMP003W	Collected	07/21/2023 10:46
Lab Sample ID	3314306002	Lab Receipt	07/21/2023 14:10

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	93.26	Feet		Field	#
Dissolved Oxygen	8.86	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	524.21	Feet		Field	#
Ground Water Elevation	430.95	ft/MSL		Field	#
Oxidation-Reduction Potential	210	mV		Field	#
pH, Field (SM4500B)	5.36	pH_Units		Field	#
Sample Depth	100.00	Feet		Field	#
Specific Conductance, Field	497	umhos/cm	1	Field	#
Temperature	15.13	Deg. C		Field	#
Total Well Depth	140.00	Feet		Field	#
Turbidity, Field	1	NTU	1	Field	#
METALS					
Calcium, Total	26.4	mg/L	0.11	SW846 6010C	#
Magnesium, Total	9.3	mg/L	0.11	SW846 6010C	#
Potassium, Total	1.6	mg/L	0.56	SW846 6010C	#
Sodium, Total	22.5	mg/L	0.56	SW846 6010C	#
VOLATILE ORGANICS					
1,1-Dichloroethane	1.1	ug/L	1.0	SW846 8260B	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	24	mg/L	5	SM2320B-2011	#
Alkalinity, Total	24	mg/L	5	SM2320B-2011	#
Ammonia-N	0.157	mg/L	0.100	ASTM D6919-17	#
Chloride	74.6	mg/L	2.0	EPA 300.0	#
Nitrate-N	6.5	mg/L	1.0	EPA 300.0	#
pH	7.57	pH_Units		S4500HB-11	#
Specific Conductance	362	umhos/cm	5	SW846 9050A	#
Sulfate	6.3	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	290	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	0.54	mg/L	0.50	SW846 9060A	#

Detected Results Summary

Client Sample ID	CWMP004W	Collected	07/21/2023 11:00
Lab Sample ID	3314306003	Lab Receipt	07/21/2023 14:10

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	102.13	Feet		Field	#
Dissolved Oxygen	6.05	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	529.53	Feet		Field	#
Ground Water Elevation	427.40	ft/MSL		Field	#
Oxidation-Reduction Potential	215	mV		Field	#
pH, Field (SM4500B)	5.50	pH_Units		Field	#
Sample Depth	130.00	Feet		Field	#
Specific Conductance, Field	401	umhos/cm	1	Field	#
Temperature	14.95	Deg. C		Field	#
Total Well Depth	140.00	Feet		Field	#
METALS					
Calcium, Total	22.2	mg/L	0.11	SW846 6010C	#
Magnesium, Total	7.5	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.011	mg/L	0.0056	SW846 6010C	#
Potassium, Total	1.4	mg/L	0.56	SW846 6010C	#
Sodium, Total	17.6	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	27	mg/L	5	SM2320B-2011	#
Alkalinity, Total	27	mg/L	5	SM2320B-2011	#
Ammonia-N	0.240	mg/L	0.100	ASTM D6919-17	#
Chloride	52.3	mg/L	2.0	EPA 300.0	#
Nitrate-N	5.8	mg/L	1.0	EPA 300.0	#
pH	7.66	pH_Units		S4500HB-11	#
Specific Conductance	292	umhos/cm	5	SW846 9050A	#
Sulfate	6.9	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	119	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	0.54	mg/L	0.50	SW846 9060A	#

Detected Results Summary

Client Sample ID	Field Blank	Collected	07/21/2023 12:00
Lab Sample ID	3314306004	Lab Receipt	07/21/2023 14:10

Compound	Result	Units	RDL	Method	Flag
WET CHEMISTRY					
Ammonia-N	0.051	mg/L	0.010	ASTM D6919-17	#
pH	5.52	pH_Units		S4500HB-11	#

Results

Client Sample ID	CWMP002W	Collected	07/21/2023 10:23
Lab Sample ID	3314306001	Lab Receipt	07/21/2023 14:10

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	81.39		Feet		Field	1	07/21/2023 10:23	BGS	D
Dissolved Oxygen	2.85		mg/L	0.01	Field	1	07/21/2023 10:23	BGS	D
Elev Top MW Casing above MSL	525.81		Feet		Field	1	07/21/2023 10:23	BGS	D
Ground Water Elevation	444.42		ft/MSL		Field	1	07/21/2023 10:23	BGS	D
Oxidation-Reduction Potential	178		mV		Field	1	07/21/2023 10:23	BGS	D
pH, Field (SM4500B)	5.55		pH_Units		Field	1	07/21/2023 10:23	BGS	D
Sample Depth	85.00		Feet		Field	1	07/21/2023 10:23	BGS	D
Specific Conductance, Field	740		umhos/cm	1	Field	1	07/21/2023 10:23	BGS	D
Temperature	14.76		Deg. C		Field	1	07/21/2023 10:23	BGS	D
Total Well Depth	100.00		Feet		Field	1	07/21/2023 10:23	BGS	D
Turbidity, Field	106		NTU	1	Field	1	07/21/2023 10:23	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	52.7		mg/L	0.11	SW846 6010C	1	07/26/2023 15:06	AXW	J1
Iron, Total	0.43		mg/L	0.067	SW846 6010C	1	07/26/2023 15:06	AXW	J1
Magnesium, Total	14.8		mg/L	0.11	SW846 6010C	1	07/26/2023 15:06	AXW	J1
Manganese, Total	0.61		mg/L	0.0056	SW846 6010C	1	07/26/2023 15:06	AXW	J1
Potassium, Total	2.4		mg/L	0.56	SW846 6010C	1	07/26/2023 15:06	AXW	J1
Sodium, Total	26.8		mg/L	0.56	SW846 6010C	1	07/26/2023 15:06	AXW	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	07/28/2023 03:24	PDK	H
1,1-Dichloroethane	4.7		ug/L	1.0	SW846 8260B	1	07/28/2023 03:24	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:24	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:24	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:24	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:24	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:24	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:24	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:24	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:24	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:24	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/28/2023 03:24	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:24	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:24	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:24	PDK	H

Results

Client Sample ID	CWMP002W	Collected	07/21/2023 10:23
Lab Sample ID	3314306001	Lab Receipt	07/21/2023 14:10

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	98.9%	62 – 133	07/28/2023 03:24	
4-Bromofluorobenzene	460-00-4	107%	79 – 114	07/28/2023 03:24	
Dibromofluoromethane	1868-53-7	102%	78 – 116	07/28/2023 03:24	
Toluene-d8	2037-26-5	105%	76 – 127	07/28/2023 03:24	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	86		mg/L	5	SM2320B-2011	1	07/28/2023 01:53	JMS	B
Alkalinity, Total	86	1	mg/L	5	SM2320B-2011	1	07/28/2023 01:53	JMS	B
Ammonia-N	0.244		mg/L	0.100	ASTM D6919-17	10	08/02/2023 13:04	NML	A
Chemical Oxygen Demand (COD)	15		mg/L	15	EPA 410.4	1	07/26/2023 11:05	KMS	A
Chloride	90.3		mg/L	2.0	EPA 300.0	2	07/22/2023 10:39	GMM	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/22/2023 10:39	GMM	B
Nitrate-N	5.5		mg/L	1.0	EPA 300.0	2	07/22/2023 10:39	GMM	B
pH	7.87	2	pH_Units		S4500HB-11	1	07/28/2023 01:53	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	08/04/2023 12:52	AKH	G
Specific Conductance	534		umhos/cm	5	SW846 9050A	1	07/26/2023 11:00	JXL	B
Sulfate	19.3		mg/L	2.0	EPA 300.0	2	07/22/2023 10:39	GMM	B
Total Dissolved Solids	376		mg/L	25	SM2540C-15	1	07/27/2023 18:10	GJB	B
Total Organic Carbon (TOC)	2.9		mg/L	0.50	SW846 9060A	1	07/26/2023 04:37	PAG	E
Turbidity	0.35		NTU	0.30	SM2130B-2011	1	07/22/2023 01:25	NRB	B

Results

Client Sample ID	CWMP003W	Collected	07/21/2023 10:46
Lab Sample ID	3314306002	Lab Receipt	07/21/2023 14:10

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	93.26		Feet		Field	1	07/21/2023 10:46	BGS	D
Dissolved Oxygen	8.86		mg/L	0.01	Field	1	07/21/2023 10:46	BGS	D
Elev Top MW Casing above MSL	524.21		Feet		Field	1	07/21/2023 10:46	BGS	D
Ground Water Elevation	430.95		ft/MSL		Field	1	07/21/2023 10:46	BGS	D
Oxidation-Reduction Potential	210		mV		Field	1	07/21/2023 10:46	BGS	D
pH, Field (SM4500B)	5.36		pH_Units		Field	1	07/21/2023 10:46	BGS	D
Sample Depth	100.00		Feet		Field	1	07/21/2023 10:46	BGS	D
Specific Conductance, Field	497		umhos/cm	1	Field	1	07/21/2023 10:46	BGS	D
Temperature	15.13		Deg. C		Field	1	07/21/2023 10:46	BGS	D
Total Well Depth	140.00		Feet		Field	1	07/21/2023 10:46	BGS	D
Turbidity, Field	1		NTU	1	Field	1	07/21/2023 10:46	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	26.4	3	mg/L	0.11	SW846 6010C	1	07/26/2023 15:07	AXW	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	07/26/2023 15:07	AXW	J1
Magnesium, Total	9.3		mg/L	0.11	SW846 6010C	1	07/26/2023 15:07	AXW	J1
Manganese, Total	ND	ND	mg/L	0.0056	SW846 6010C	1	07/26/2023 15:07	AXW	J1
Potassium, Total	1.6		mg/L	0.56	SW846 6010C	1	07/26/2023 15:07	AXW	J1
Sodium, Total	22.5		mg/L	0.56	SW846 6010C	1	07/26/2023 15:07	AXW	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	07/28/2023 03:47	PDK	H
1,1-Dichloroethane	1.1		ug/L	1.0	SW846 8260B	1	07/28/2023 03:47	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:47	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:47	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:47	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:47	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:47	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:47	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:47	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:47	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:47	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/28/2023 03:47	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:47	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:47	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 03:47	PDK	H

Results

Client Sample ID	CWMP003W	Collected	07/21/2023 10:46
Lab Sample ID	3314306002	Lab Receipt	07/21/2023 14:10

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	99.1%	62 – 133	07/28/2023 03:47	
4-Bromofluorobenzene	460-00-4	107%	79 – 114	07/28/2023 03:47	
Dibromofluoromethane	1868-53-7	99.7%	78 – 116	07/28/2023 03:47	
Toluene-d8	2037-26-5	103%	76 – 127	07/28/2023 03:47	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	24		mg/L	5	SM2320B-2011	1	07/28/2023 02:06	JMS	B
Alkalinity, Total	24	1	mg/L	5	SM2320B-2011	1	07/28/2023 02:06	JMS	B
Ammonia-N	0.157		mg/L	0.100	ASTM D6919-17	10	08/02/2023 13:26	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	07/26/2023 11:05	KMS	A
Chloride	74.6		mg/L	2.0	EPA 300.0	2	07/22/2023 10:50	GMM	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/22/2023 10:50	GMM	B
Nitrate-N	6.5		mg/L	1.0	EPA 300.0	2	07/22/2023 10:50	GMM	B
pH	7.57	2	pH_Units		S4500HB-11	1	07/28/2023 02:06	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	08/04/2023 13:02	AKH	G
Specific Conductance	362		umhos/cm	5	SW846 9050A	1	07/26/2023 11:00	JXL	B
Sulfate	6.3		mg/L	2.0	EPA 300.0	2	07/22/2023 10:50	GMM	B
Total Dissolved Solids	290		mg/L	25	SM2540C-15	1	07/27/2023 18:10	GJB	B
Total Organic Carbon (TOC)	0.54		mg/L	0.50	SW846 9060A	1	07/26/2023 04:37	PAG	E
Turbidity	ND	ND	NTU	0.30	SM2130B-2011	1	07/22/2023 01:25	NRB	B

Results

Client Sample ID	CWMP004W	Collected	07/21/2023 11:00
Lab Sample ID	3314306003	Lab Receipt	07/21/2023 14:10

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	102.13		Feet		Field	1	07/21/2023 11:00	BGS	D
Dissolved Oxygen	6.05		mg/L	0.01	Field	1	07/21/2023 11:00	BGS	D
Elev Top MW Casing above MSL	529.53		Feet		Field	1	07/21/2023 11:00	BGS	D
Ground Water Elevation	427.40		ft/MSL		Field	1	07/21/2023 11:00	BGS	D
Oxidation-Reduction Potential	215		mV		Field	1	07/21/2023 11:00	BGS	D
pH, Field (SM4500B)	5.50		pH_Units		Field	1	07/21/2023 11:00	BGS	D
Sample Depth	130.00		Feet		Field	1	07/21/2023 11:00	BGS	D
Specific Conductance, Field	401		umhos/cm	1	Field	1	07/21/2023 11:00	BGS	D
Temperature	14.95		Deg. C		Field	1	07/21/2023 11:00	BGS	D
Total Well Depth	140.00		Feet		Field	1	07/21/2023 11:00	BGS	D
Turbidity, Field	ND	ND	NTU	1	Field	1	07/21/2023 11:00	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	22.2		mg/L	0.11	SW846 6010C	1	07/26/2023 15:11	AXW	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	07/26/2023 15:11	AXW	J1
Magnesium, Total	7.5		mg/L	0.11	SW846 6010C	1	07/26/2023 15:11	AXW	J1
Manganese, Total	0.011		mg/L	0.0056	SW846 6010C	1	07/26/2023 15:11	AXW	J1
Potassium, Total	1.4		mg/L	0.56	SW846 6010C	1	07/26/2023 15:11	AXW	J1
Sodium, Total	17.6		mg/L	0.56	SW846 6010C	1	07/26/2023 15:11	AXW	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	07/28/2023 04:10	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 04:10	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 04:10	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 04:10	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 04:10	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 04:10	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 04:10	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 04:10	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 04:10	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 04:10	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 04:10	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/28/2023 04:10	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 04:10	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 04:10	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 04:10	PDK	H

Results

Client Sample ID	CWMP004W	Collected	07/21/2023 11:00
Lab Sample ID	3314306003	Lab Receipt	07/21/2023 14:10

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	96.3%	62 – 133	07/28/2023 04:10	
4-Bromofluorobenzene	460-00-4	103%	79 – 114	07/28/2023 04:10	
Dibromofluoromethane	1868-53-7	99.7%	78 – 116	07/28/2023 04:10	
Toluene-d8	2037-26-5	102%	76 – 127	07/28/2023 04:10	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	27		mg/L	5	SM2320B-2011	1	07/28/2023 02:19	JMS	B
Alkalinity, Total	27	1	mg/L	5	SM2320B-2011	1	07/28/2023 02:19	JMS	B
Ammonia-N	0.240		mg/L	0.100	ASTM D6919-17	10	08/02/2023 13:40	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	07/26/2023 11:05	KMS	A
Chloride	52.3		mg/L	2.0	EPA 300.0	2	07/22/2023 11:00	GMM	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/22/2023 11:00	GMM	B
Nitrate-N	5.8		mg/L	1.0	EPA 300.0	2	07/22/2023 11:00	GMM	B
pH	7.66	2	pH_Units		S4500HB-11	1	07/28/2023 02:19	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	08/04/2023 13:05	AKH	G
Specific Conductance	292		umhos/cm	5	SW846 9050A	1	07/26/2023 11:00	JXL	B
Sulfate	6.9		mg/L	2.0	EPA 300.0	2	07/22/2023 11:00	GMM	B
Total Dissolved Solids	119		mg/L	25	SM2540C-15	1	07/27/2023 18:10	GJB	B
Total Organic Carbon (TOC)	0.54		mg/L	0.50	SW846 9060A	1	07/26/2023 04:37	PAG	E
Turbidity	ND	ND	NTU	0.30	SM2130B-2011	1	07/22/2023 01:25	NRB	B

Results

Client Sample ID	Field Blank	Collected	07/21/2023 12:00
Lab Sample ID	3314306004	Lab Receipt	07/21/2023 14:10

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	ND	ND	mg/L	0.11	SW846 6010C	1	07/26/2023 15:12	AXW	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	07/26/2023 15:12	AXW	J1
Magnesium, Total	ND	ND	mg/L	0.11	SW846 6010C	1	07/26/2023 15:12	AXW	J1
Manganese, Total	ND	ND	mg/L	0.0056	SW846 6010C	1	07/26/2023 15:12	AXW	J1
Potassium, Total	ND	ND	mg/L	0.56	SW846 6010C	1	07/26/2023 15:12	AXW	J1
Sodium, Total	ND	ND	mg/L	0.56	SW846 6010C	1	07/26/2023 15:12	AXW	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	07/28/2023 02:15	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 02:15	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 02:15	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 02:15	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 02:15	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 02:15	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 02:15	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 02:15	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 02:15	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 02:15	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 02:15	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/28/2023 02:15	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 02:15	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 02:15	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 02:15	PDK	H

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	97.3%	62 – 133	07/28/2023 02:15	
4-Bromofluorobenzene	460-00-4	105%	79 – 114	07/28/2023 02:15	
Dibromofluoromethane	1868-53-7	101%	78 – 116	07/28/2023 02:15	
Toluene-d8	2037-26-5	104%	76 – 127	07/28/2023 02:15	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	ND	ND	mg/L	5	SM2320B-2011	1	07/28/2023 02:28	JMS	B
Alkalinity, Total	ND	ND,1	mg/L	5	SM2320B-2011	1	07/28/2023 02:28	JMS	B
Ammonia-N	0.051		mg/L	0.010	ASTM D6919-17	1	08/02/2023 13:54	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	07/26/2023 11:05	KMS	A
Chloride	ND	ND	mg/L	2.0	EPA 300.0	2	07/22/2023 11:11	GMM	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	07/22/2023 11:11	GMM	B
Nitrate-N	ND	ND	mg/L	1.0	EPA 300.0	2	07/22/2023 11:11	GMM	B
pH	5.52	2	pH_Units		S4500HB-11	1	07/28/2023 02:28	JMS	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	08/04/2023 13:08	AKH	G

Results

Client Sample ID	Field Blank	Collected	07/21/2023 12:00
Lab Sample ID	3314306004	Lab Receipt	07/21/2023 14:10

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	07/26/2023 11:00	JXL	B
Sulfate	ND	ND	mg/L	2.0	EPA 300.0	2	07/22/2023 11:11	GMM	B
Total Dissolved Solids	ND	ND	mg/L	25	SM2540C-15	1	07/27/2023 18:10	GJB	B
Total Organic Carbon (TOC)	ND	ND	mg/L	0.50	SW846 9060A	1	07/26/2023 04:37	PAG	E
Turbidity	ND	ND	NTU	0.30	SM2130B-2011	1	07/22/2023 01:25	NRB	B

Results

Client Sample ID	Trip Blank	Collected	07/21/2023 14:10
Lab Sample ID	3314306005	Lab Receipt	07/21/2023 14:10

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	07/28/2023 01:52	PDK	A
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 01:52	PDK	A
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 01:52	PDK	A
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 01:52	PDK	A
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 01:52	PDK	A
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 01:52	PDK	A
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 01:52	PDK	A
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 01:52	PDK	A
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 01:52	PDK	A
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 01:52	PDK	A
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 01:52	PDK	A
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	07/28/2023 01:52	PDK	A
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 01:52	PDK	A
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 01:52	PDK	A
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	07/28/2023 01:52	PDK	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	99%	62 – 133	07/28/2023 01:52	
4-Bromofluorobenzene	460-00-4	105%	79 – 114	07/28/2023 01:52	
Dibromofluoromethane	1868-53-7	101%	78 – 116	07/28/2023 01:52	
Toluene-d8	2037-26-5	103%	76 – 127	07/28/2023 01:52	

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3314306001	CWMP002W	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	
3314306002	CWMP003W	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	
3314306003	CWMP004W	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	
3314306004	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	
3314306005	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
3314306001	CWMP002W	N/A	N/A	N/A		Field	1030805
		SW846 3015A	1029270	07/24/2023 02:20	ANN	SW846 6010C	1030407
		N/A	N/A	N/A		SW846 8260B	1030816
		N/A	N/A	N/A		ASTM D6919-17	1034499
		N/A	N/A	N/A		EPA 300.0	1029039
		N/A	N/A	N/A		EPA 410.4	1030287
		N/A	N/A	N/A		S4500HB-11	1030762
		N/A	N/A	N/A		SM2130B-2011	1028837
		N/A	N/A	N/A		SM2320B-2011	1030762
		N/A	N/A	N/A		SM2540C-15	1030759
		N/A	N/A	N/A		SW846 9050A	1030318
		N/A	N/A	N/A		SW846 9060A	1030157
		SW846 9066	1034540	08/03/2023 08:44	AKH	SW846 9066	1036018
3314306002	CWMP003W	N/A	N/A	N/A		Field	1030805
		SW846 3015A	1029270	07/24/2023 02:20	ANN	SW846 6010C	1030407
		N/A	N/A	N/A		SW846 8260B	1030816
		N/A	N/A	N/A		ASTM D6919-17	1034499
		N/A	N/A	N/A		EPA 300.0	1029039
		N/A	N/A	N/A		EPA 410.4	1030287
		N/A	N/A	N/A		S4500HB-11	1030762
		N/A	N/A	N/A		SM2130B-2011	1028837
		N/A	N/A	N/A		SM2320B-2011	1030762
		N/A	N/A	N/A		SM2540C-15	1030759
		N/A	N/A	N/A		SW846 9050A	1030318
		N/A	N/A	N/A		SW846 9060A	1030157
		SW846 9066	1034540	08/03/2023 08:44	AKH	SW846 9066	1036018
3314306003	CWMP004W	N/A	N/A	N/A		Field	1030805
		SW846 3015A	1029270	07/24/2023 02:20	ANN	SW846 6010C	1030407
		N/A	N/A	N/A		SW846 8260B	1030816
		N/A	N/A	N/A		ASTM D6919-17	1034499
		N/A	N/A	N/A		EPA 300.0	1029039
		N/A	N/A	N/A		EPA 410.4	1030287
		N/A	N/A	N/A		S4500HB-11	1030762
		N/A	N/A	N/A		SM2130B-2011	1028837
		N/A	N/A	N/A		SM2320B-2011	1030762
		N/A	N/A	N/A		SM2540C-15	1030759
		N/A	N/A	N/A		SW846 9050A	1030318
		N/A	N/A	N/A		SW846 9060A	1030157
		SW846 9066	1034540	08/03/2023 08:44	AKH	SW846 9066	1036018
3314306004	Field Blank	SW846 3015A	1029270	07/24/2023 02:20	ANN	SW846 6010C	1030407
		N/A	N/A	N/A		SW846 8260B	1030816
		N/A	N/A	N/A		ASTM D6919-17	1034499
		N/A	N/A	N/A		EPA 300.0	1029039
		N/A	N/A	N/A		EPA 410.4	1030287
		N/A	N/A	N/A		S4500HB-11	1030762
		N/A	N/A	N/A		SM2130B-2011	1028837
		N/A	N/A	N/A		SM2320B-2011	1030762
		N/A	N/A	N/A		SM2540C-15	1030759
		N/A	N/A	N/A		SW846 9050A	1030318
		N/A	N/A	N/A		SW846 9060A	1030157
		SW846 9066	1034540	08/03/2023 08:44	AKH	SW846 9066	1036018
3314306005	Trip Blank	N/A	N/A	N/A		SW846 8260B	1030816

8/7/2023 11:06 AM

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

3314306
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/#: Creswell/GWMP Form 19Q Wells

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	TOC	O-OH	8260 VOCs - Form 19Q	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Total Metals: Ca, Fe, Mn, Mg, K, Na	pH, NO3, Cl, F, SpC, SO4, Turb, TDS	Alkalinity, HCO3	
Container Type					AG	AN	CG	----	----	PL	PL	PL	PL	
Container Size					40 ml	125 ml	40 ml	----	----	250 ml	125 ml	500 ml	500 ml	
Preservative					HCl	H2SO4	HCl	----	----	H2SO4	HNO3	None	None	
					ANALYSES/METHOD REQUESTED									
					Enter Number of Containers Per Sample or Field Results Below.									
1. CWMP002W	07/21/23	1023	G	GW	2	1	2	X	X	1	2	1	1	
2. CWMP003W	07/21/23	1046	G	GW	2	1	2	X	X	1	2	1	1	
3. CWMP004W	07/21/23	1100	G	GW	2	1	2	X	X	1	2	1	1	
4. Field Blank	07/21/23	1200	G	DI	2	1	2			1	2	1	1	
5. Trip Blank	07/21/23	1410	G	DI			2							
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	7-21-23	1410	2 [signature]	7-21-23	1410
3			4		
5			6		
7			8		
9			10		

Receipt Information (completed by Receiving Lab)

Temp By: 29C | WO Temp (°C) LC | Therm ID 624

Receipt Info Completed By:
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

Rev 8/04

20 of 20

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 3RD QTR 2023 GWMP-FORM 19Q
Workorder 3324602
Report ID 276268 on 10/13/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Sep 22, 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
3324602001	CWMP012W	Ground Water	09/22/2023 09:35	09/22/2023 17:50	BGS	Analytical Laboratory Service
3324602002	Field Blank	Water	09/22/2023 15:18	09/22/2023 17:50	BGS	Analytical Laboratory Service
3324602003	Trip Blank	Water	09/22/2023 17:50	09/22/2023 17:50	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.	
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	CWMP012W	Collected	09/22/2023 09:35
Lab Sample ID	3324602001	Lab Receipt	09/22/2023 17:50

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	68.59	Feet		Field	#
pH, Field (SM4500B)	7.11	pH_Units		Field	#
Specific Conductance, Field	304	umhos/cm	1	Field	#
Temperature	17.80	Deg. C		Field	#
METALS					
Calcium, Total	33.0	mg/L	0.11	SW846 6010C	#
Iron, Total	6.9	mg/L	0.067	SW846 6010C	#
Magnesium, Total	8.9	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.39	mg/L	0.0056	SW846 6010C	#
Potassium, Total	1.4	mg/L	0.56	SW846 6010C	#
Sodium, Total	13.8	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	78	mg/L	5	SM2320B-2011	#
Alkalinity, Total	78	mg/L	5	SM2320B-2011	#
Chloride	32.3	mg/L	2.0	EPA 300.0	#
Nitrate-N	8.2	mg/L	1.0	EPA 300.0	#
pH	7.16	pH_Units		S4500HB-11	#
Phenolics	0.02	mg/L	0.004	SW846 9066	#
Specific Conductance	311	umhos/cm	5	SW846 9050A	#
Sulfate	5.2	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	216	mg/L	25	SM2540C-15	#
Total Organic Carbon (TOC)	2.1	mg/L	0.50	SW846 9060A	#
Turbidity	35	NTU	0.30	SM2130B-2011	#

Results

Client Sample ID	CWMP012W	Collected	09/22/2023 09:35
Lab Sample ID	3324602001	Lab Receipt	09/22/2023 17:50

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	68.59		Feet		Field	1	09/22/2023 09:35	BGS	D
pH, Field (SM4500B)	7.11		pH_Units		Field	1	09/22/2023 09:35	BGS	D
Specific Conductance, Field	304		umhos/cm	1	Field	1	09/22/2023 09:35	BGS	D
Temperature	17.80		Deg. C		Field	1	09/22/2023 09:35	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	33.0	3	mg/L	0.11	SW846 6010C	1	10/03/2023 09:59	AXW	J1
Iron, Total	6.9	3	mg/L	0.067	SW846 6010C	1	10/03/2023 09:59	AXW	J1
Magnesium, Total	8.9		mg/L	0.11	SW846 6010C	1	10/03/2023 09:59	AXW	J1
Manganese, Total	0.39		mg/L	0.0056	SW846 6010C	1	10/03/2023 09:59	AXW	J1
Potassium, Total	1.4		mg/L	0.56	SW846 6010C	1	10/03/2023 09:59	AXW	J1
Sodium, Total	13.8		mg/L	0.56	SW846 6010C	1	10/03/2023 09:59	AXW	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	10/05/2023 16:37	ILY	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 16:37	ILY	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 16:37	ILY	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 16:37	ILY	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 16:37	ILY	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 16:37	ILY	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 16:37	ILY	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 16:37	ILY	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 16:37	ILY	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 16:37	ILY	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 16:37	ILY	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	10/05/2023 16:37	ILY	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 16:37	ILY	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 16:37	ILY	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 16:37	ILY	H

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	99.9%	62 – 133	10/05/2023 16:37	
4-Bromofluorobenzene	460-00-4	107%	79 – 114	10/05/2023 16:37	
Dibromofluoromethane	1868-53-7	95%	78 – 116	10/05/2023 16:37	
Toluene-d8	2037-26-5	106%	76 – 127	10/05/2023 16:37	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	78		mg/L	5	SM2320B-2011	1	09/28/2023 15:20	JMS	B

Results

Client Sample ID	CWMP012W	Collected	09/22/2023 09:35
Lab Sample ID	3324602001	Lab Receipt	09/22/2023 17:50

WET CHEMISTRY (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Total	78	1	mg/L	5	SM2320B-2011	1	09/28/2023 15:20	JMS	B
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-17	10	10/05/2023 02:35	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	09/25/2023 15:02	KMS	A
Chloride	32.3		mg/L	2.0	EPA 300.0	2	09/23/2023 11:56	GMM	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	09/23/2023 11:56	GMM	B
Nitrate-N	8.2		mg/L	1.0	EPA 300.0	2	09/23/2023 11:56	GMM	B
pH	7.16	2	pH_Units		S4500HB-11	1	09/28/2023 15:20	JMS	B
Phenolics	0.02		mg/L	0.004	SW846 9066	1	10/03/2023 16:03	AKH	G
Specific Conductance	311		umhos/cm	5	SW846 9050A	1	10/03/2023 13:00	J1W	B
Sulfate	5.2		mg/L	2.0	EPA 300.0	2	09/23/2023 11:56	GMM	B
Total Dissolved Solids	216		mg/L	25	SM2540C-15	1	09/28/2023 17:32	JXK	B
Total Organic Carbon (TOC)	2.1		mg/L	0.50	SW846 9060A	1	09/26/2023 00:11	PAG	E
Turbidity	35		NTU	0.30	SM2130B-2011	1	09/23/2023 14:13	GMM	B

Results

Client Sample ID	Field Blank	Collected	09/22/2023 15:18
Lab Sample ID	3324602002	Lab Receipt	09/22/2023 17:50

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	10/05/2023 13:55	ILY	A
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:55	ILY	A
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:55	ILY	A
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:55	ILY	A
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:55	ILY	A
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:55	ILY	A
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:55	ILY	A
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:55	ILY	A
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:55	ILY	A
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:55	ILY	A
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:55	ILY	A
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	10/05/2023 13:55	ILY	A
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:55	ILY	A
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:55	ILY	A
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:55	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.1%	62 – 133	10/05/2023 13:55	
4-Bromofluorobenzene	460-00-4	102%	79 – 114	10/05/2023 13:55	
Dibromofluoromethane	1868-53-7	95.1%	78 – 116	10/05/2023 13:55	
Toluene-d8	2037-26-5	98.9%	76 – 127	10/05/2023 13:55	

Results

Client Sample ID	Trip Blank	Collected	09/22/2023 17:50
Lab Sample ID	3324602003	Lab Receipt	09/22/2023 17:50

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	10/05/2023 13:32	ILY	A
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:32	ILY	A
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:32	ILY	A
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:32	ILY	A
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:32	ILY	A
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:32	ILY	A
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:32	ILY	A
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:32	ILY	A
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:32	ILY	A
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:32	ILY	A
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:32	ILY	A
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	10/05/2023 13:32	ILY	A
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:32	ILY	A
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:32	ILY	A
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/05/2023 13:32	ILY	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	98.4%	62 – 133	10/05/2023 13:32	
4-Bromofluorobenzene	460-00-4	106%	79 – 114	10/05/2023 13:32	
Dibromofluoromethane	1868-53-7	103%	78 – 116	10/05/2023 13:32	
Toluene-d8	2037-26-5	106%	76 – 127	10/05/2023 13:32	

Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3324602001	CWMP012W	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	
3324602002	Field Blank	SW846 8260B	N/A	
3324602003	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
3324602001	CWMP012W	N/A	N/A	N/A		Field	1064709
		SW846 3015A	1062854	09/27/2023 03:25	ANN	SW846 6010C	1067111
		N/A	N/A	N/A		SW846 8260B	1069610
		N/A	N/A	N/A		ASTM D6919-17	1067831
		N/A	N/A	N/A		EPA 300.0	1061948
		N/A	N/A	N/A		EPA 410.4	1062256
		N/A	N/A	N/A		S4500HB-11	1064550
		N/A	N/A	N/A		SM2130B-2011	1061952
		N/A	N/A	N/A		SM2320B-2011	1064550
		N/A	N/A	N/A		SM2540C-15	1064953
		N/A	N/A	N/A		SW846 9050A	1067808
		N/A	N/A	N/A		SW846 9060A	1062294
		SW846 9066	1067172	10/03/2023 10:04	AKH	SW846 9066	1067847
3324602002	Field Blank	N/A	N/A	N/A		SW846 8260B	1069610
3324602003	Trip Blank	N/A	N/A	N/A		SW846 8260B	1069610

Generated by ALS

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

PM: SJB

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

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/#: Creswell/GWMP Form 19Q Wells

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	AN	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

Enter Number of Containers Per Sample or Field Results Below.

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	TOC	O-OH	8260 VOCs - Form 19Q	Field Measurements	Sample Depth for AUX Data	NH3-N, COD	Total Metals: Ca, Fe, Mn, Mg, K, Na	pH, NO3, Cl, F, SpC, SO4, Turb, TDS	Alkalinity, HCO3	
1. CWMP012W	09/22/23	0935	G	GW	2	1	2	X	X	1	2	1	1	
2. Field Blank	09/22/23	1518		DI			2							
3. Trip Blank	09/22/23	1750		DI			2							
4														
5														
6														
7														
8														
9														
10														

Project Comments:

LOGGED BY(signature): DATE TIME

REVIEWED BY(signature): DATE TIME

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [signature] ALS	9/22/23	1750	2 [signature]	9/22/23	1750
3			4		
5			6		
7			8		
			10		

(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:	WO Temp (°C)	Therm ID
PW	3c	32

RW

Receipt Info Completed By:	
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 NA
CR6 Samples Filtered	Y N NA
OP Samples Filtered	Y N NA
VOA Trip Blank	Y N
NJ≤ 4 Days?	
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 Sample Collected In: ☐NY ☐NJ [X] PA ☐NC

Reportable to PADEP? Yes ☐

PWSID # _____

Sample Disposal: Lab [X] Special ☐

EDDS: Format Type- _____

Rev

* 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