



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
01/26/2023

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

Facility 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 Well Spring Stream Other
 Upgradient/Upstream 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: 6.82 ft Measured from: Land Surface TOC

Casing Stickup: 1.50 ft Elevation of Water Level: 446.58 ft./MSL

Sampling Depth: 33 ft Volume of Water Column: 43.59 gal

Total Well Depth: 36.5 ft Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 1.5

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

Spring Flow Rate: gpm

Sample Date (mm/dd/yy): 10/17/2022 Sample Collection Time: 11:10

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3269081001 Final Lab Analysis CompletionDate: 11/2/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP007W

Sample Date 10/17/2022

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	13	SM18-2321
CALCIUM, TOTAL	18.9	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	74.1	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	10.1	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	6.4	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	10	EPA 300.0
pH-FIELD (SU)	5.39	FIELD
pH-LAB (SU)	6.6	EPA 150.1
POTASSIUM, TOTAL	2.6	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	34.1	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	554	FIELD
SPEC. COND., LAB (umhos/cm)	424	EPA 120.1
SULFATE	15.2	EPA 300.0
ALKALINITY	13	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	204	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 10/17/2022

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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General Reference: Section 273.284
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SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility 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 Well Spring Stream Other
 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: 31.2 ft Measured from: Land Surface TOC

Casing Stickup: 1.23 ft Elevation of Water Level: 483.93 ft./MSL

Sampling Depth: 57 ft Volume of Water Column: 51.55 gal

Total Well Depth: 66.3 ft Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 2.1

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

Spring Flow Rate: gpm

Sample Date (mm/dd/yy): 10/17/2022 Sample Collection Time: 12:29

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3269081002 Final Lab Analysis CompletionDate: 11/2/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP001W

Sample Date 10/17/2022

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	SM18-2321
CALCIUM, TOTAL	14.3	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	25.9	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	300	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	10	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	42	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	18.3	EPA 300.0
pH-FIELD (SU)	5.28	FIELD
pH-LAB (SU)	6.36	EPA 150.1
POTASSIUM, TOTAL	2.5	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	13	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	362	FIELD
SPEC. COND., LAB (umhos/cm)	279	EPA 120.1
SULFATE	2 ND	EPA 300.0
ALKALINITY	5	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	140	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	16	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 10/17/2022

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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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

Facility 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 Well Spring Stream Other
 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: 46.21 ft Measured from: Land Surface TOC

Casing Stickup: -0.37 ft Elevation of Water Level: 467.22 ft./MSL

Sampling Depth: 130 ft Volume of Water Column: 137.74 gal

Total Well Depth: 140 ft Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 1.5

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

Spring Flow Rate: gpm

Sample Date (mm/dd/yy): 10/18/2022 Sample Collection Time: 10:59

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3269229001 Final Lab Analysis CompletionDate: 10/29/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP005W

Sample Date 10/18/2022

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	16	SM18-2321
CALCIUM, TOTAL	14.1	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	56	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	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	42	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	7.7	EPA 300.0
pH-FIELD (SU)	5.32	FIELD
pH-LAB (SU)	6.95	EPA 150.1
POTASSIUM, TOTAL	2.5	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	29.8	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	424	FIELD
SPEC. COND., LAB (umhos/cm)	319	EPA 120.1
SULFATE	4.3	EPA 300.0
ALKALINITY	16	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	192	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	0.39	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 10/18/2022

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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General Reference: Section 273.284
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SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility 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 Well Spring Stream Other
 Upgradient/Upstream 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: 11.82 ft Measured from: Land Surface TOC

Casing Stickup: 2.53 ft Elevation of Water Level: 300.15 ft./MSL

Sampling Depth: 71 ft Volume of Water Column: _____ gal

Total Well Depth: 78.03 ft Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 2.3

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 10/20/2022 Sample Collection Time: 10:06

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3269847001 Final Lab Analysis Completion Date: 11/8/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP016W

Sample Date 10/20/2022

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	11	SM18-2321
CALCIUM, TOTAL	6.6	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	2.6	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	340	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	1.5	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	6.9	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	2.2	EPA 300.0
pH-FIELD (SU)	5.77	FIELD
pH-LAB (SU)	7.04	EPA 150.1
POTASSIUM, TOTAL	0.59	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	3.9	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	93	FIELD
SPEC. COND., LAB (umhos/cm)	74	EPA 120.1
SULFATE	8.5	EPA 300.0
ALKALINITY	11	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	33	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.5 ND	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	3.4	SM 2130B

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T Please indicate detection limit if analyte is not detected.

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Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP016W

Sample Date 10/20/2022

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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Facility 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^o MM' SS.S")

Monitoring Point Number: CWMP002W Well Spring Stream Other
 Upgradient/Upstream 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: 66.29 ft Measured from: Land Surface TOC

Casing Stickup: -1.19 ft Elevation of Water Level: 459.52 ft./MSL

Sampling Depth: 85 ft Volume of Water Column: 49.51 gal

Total Well Depth: 100 ft Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: _____

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 10/20/2022 Sample Collection Time: 10:50

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3269847002 Final Lab Analysis CompletionDate: 11/9/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP002W

Sample Date 10/20/2022

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	0.109	EPA 350.3
BICARBONATE	57	SM18-2321
CALCIUM, TOTAL	40.5	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	62.7	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	1800	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	13	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	440	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	6.8	EPA 300.0
pH-FIELD (SU)	5.75	FIELD
pH-LAB (SU)	7.05	EPA 150.1
POTASSIUM, TOTAL	2.7	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	22.7	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	584	FIELD
SPEC. COND., LAB (umhos/cm)	446	EPA 120.1
SULFATE	13.7	EPA 300.0
ALKALINITY	57	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	192	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	1	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	18	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

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

I.D. No 100008

Monitoring Point No. CWMP002W

Sample Date 10/20/2022

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	2.1	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.



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised
01/26/2023

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

Facility 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^o MM' SS.S")

Monitoring Point Number: CWMP004W Well Spring Stream Other
 Upgradient/Upstream 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: 102.34 ft Measured from: Land Surface TOC

Casing Stickup: -1.37 ft Elevation of Water Level: 427.19 ft./MSL

Sampling Depth: 100 ft Volume of Water Column: 55.31 gal

Total Well Depth: 140 ft Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: _____

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 10/20/2022 Sample Collection Time: 11:40

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3269847003 Final Lab Analysis CompletionDate: 11/8/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP004W

Sample Date 10/20/2022

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	0.124	EPA 350.3
BICARBONATE	25	SM18-2321
CALCIUM, TOTAL	24.4	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	49.8	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	7.9	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)	5.55	FIELD
pH-LAB (SU)	7.05	EPA 150.1
POTASSIUM, TOTAL	1.7	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	19.1	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	398	FIELD
SPEC. COND., LAB (umhos/cm)	309	EPA 120.1
SULFATE	6	EPA 300.0
ALKALINITY	25	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	167	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	0.59	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 10/20/2022

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

Date Prepared/Revised
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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

Facility 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 Well Spring Stream Other
 Upgradient/Upstream 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: 3.26 ft Measured from: Land Surface TOC

Casing Stickup: 2.80 ft Elevation of Water Level: 419.04 ft./MSL

Sampling Depth: 19 ft Volume of Water Column: 3.19 gal

Total Well Depth: 22.8 ft Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 6.2

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

Spring Flow Rate: gpm

Sample Date (mm/dd/yy): 10/21/2022 Sample Collection Time: 9:40

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3270040001 Final Lab Analysis CompletionDate: 11/9/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP008W

Sample Date 10/21/2022

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	8.56	EPA 350.3
BICARBONATE	343	SM18-2321
CALCIUM, TOTAL	65	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	23	EPA 410.4
CHLORIDE	39.4	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	23000	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	28.5	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	14300	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	1 ND	EPA 300.0
pH-FIELD (SU)	6.06	FIELD
pH-LAB (SU)	7.73	EPA 150.1
POTASSIUM, TOTAL	9.1	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	39.9	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	1210	FIELD
SPEC. COND., LAB (umhos/cm)	841	EPA 120.1
SULFATE	6.1	EPA 300.0
ALKALINITY	343	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	394	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	8.7	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	15	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

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

I.D. No 100008

Monitoring Point No. CWMP008W

Sample Date 10/21/2022

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	2.1	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.



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

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FORM 19
MUNICIPAL WASTE LANDFILL
QUARTERLY AND ANNUAL WATER QUALITY ANALYSES

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

SECTION A. APPLICANT IDENTIFIER

Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility 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^o MM' SS.S")

Monitoring Point Number: CWMP009W Well Spring Stream Other
 Upgradient/Upstream 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: 9.21 ft Measured from: Land Surface TOC

Casing Stickup: 2.70 ft Elevation of Water Level: 394.99 ft./MSL

Sampling Depth: 16 ft Volume of Water Column: 6.85 gal

Total Well Depth: 19.7 ft Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 4.5

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

Spring Flow Rate: gpm

Sample Date (mm/dd/yy): 10/21/2022 Sample Collection Time: 10:18

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3270040002 Final Lab Analysis CompletionDate: 11/9/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP009W

Sample Date 10/21/2022

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	30.9	EPA 350.3
BICARBONATE	526	SM18-2321
CALCIUM, TOTAL	175	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	104	EPA 410.4
CHLORIDE	645	EPA 300.0
FLUORIDE	1 ND	EPA 300.0
IRON, TOTAL (ug/l)	36700	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	83	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	13000	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	5 ND	EPA 300.0
pH-FIELD (SU)	6.05	FIELD
pH-LAB (SU)	7.5	EPA 150.1
POTASSIUM, TOTAL	35.8	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	192	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	4253	FIELD
SPEC. COND., LAB (umhos/cm)	344	EPA 120.1
SULFATE	10 ND	EPA 300.0
ALKALINITY	526	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	1710	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	38	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	40	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 10/21/2022

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

ANALYTE	VALUE^T	ANALYSIS METHOD NUMBER
BENZENE	2.5	SW846 8260B
1,2-DIBROMOETHANE (EDB) (ETHYLENE D	1 ND	SW846 8260B
1,1-DICHLOROETHANE	1.2	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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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

Facility 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 Well Spring Stream Other
 Upgradient/Upstream 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: 8.74 ft Measured from: Land Surface TOC

Casing Stickup: 2.10 ft Elevation of Water Level: 352.16 ft./MSL

Sampling Depth: 18 ft Volume of Water Column: 7.09 gal

Total Well Depth: 19.6 ft Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: 1.5

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

Spring Flow Rate: gpm

Sample Date (mm/dd/yy): 10/21/2022 Sample Collection Time: 10:45

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3270040003 Final Lab Analysis CompletionDate: 11/9/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP010W

Sample Date 10/21/2022

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	201	SM18-2321
CALCIUM, TOTAL	48.7	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	117	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	280	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	39.5	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	260	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	6.8	EPA 300.0
pH-FIELD (SU)	6.56	FIELD
pH-LAB (SU)	8.21	EPA 150.1
POTASSIUM, TOTAL	9.8	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	170	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	2344	FIELD
SPEC. COND., LAB (umhos/cm)	1500	EPA 120.1
SULFATE	9.8	EPA 300.0
ALKALINITY	201	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	748	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	3.5	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	2.8	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

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Remaining quarterly samples only require total metals analysis.

I.D. No 100008

Monitoring Point No. CWMP010W

Sample Date 10/21/2022

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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Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility 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 Well Spring Stream Other
 Upgradient/Upstream 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 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: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: _____

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 10/21/2022 Sample Collection Time: 10:55

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3270040004 Final Lab Analysis CompletionDate: 11/9/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP018S

Sample Date 10/21/2022

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	0.169	EPA 350.3
BICARBONATE	501	SM18-2321
CALCIUM, TOTAL	87.1	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	19	EPA 410.4
CHLORIDE	672	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	220	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	98.3	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	22	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	26	EPA 300.0
pH-FIELD (SU)	8.41	FIELD
pH-LAB (SU)	8.62	EPA 150.1
POTASSIUM, TOTAL	22.2	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	399	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	4383	FIELD
SPEC. COND., LAB (umhos/cm)	368	EPA 120.1
SULFATE	46.8	EPA 300.0
ALKALINITY	525	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	1760	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	6.4	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. CWMP018S

Sample Date 10/21/2022

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

Date Prepared/Revised
01/26/2023

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

Facility 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 Well Spring Stream Other
 Upgradient/Upstream 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 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: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: _____

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 10/21/2022 Sample Collection Time: 11:25

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3270040005 Final Lab Analysis CompletionDate: 11/9/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP017S

Sample Date 10/21/2022

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	0.147	EPA 350.3
BICARBONATE	616	SM18-2321
CALCIUM, TOTAL	91.6	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	815	EPA 300.0
FLUORIDE	1 ND	EPA 300.0
IRON, TOTAL (ug/l)	1900	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	130	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	240	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	30.2	EPA 300.0
pH-FIELD (SU)	7.87	FIELD
pH-LAB (SU)	8.5	EPA 150.1
POTASSIUM, TOTAL	24.1	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	538	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	6089	FIELD
SPEC. COND., LAB (umhos/cm)	443	EPA 120.1
SULFATE	78	EPA 300.0
ALKALINITY	616	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	2150	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	4.8	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	7	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 10/21/2022

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

Facility 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 Well Spring Stream Other
 Upgradient/Upstream 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: 66.47 ft Measured from: Land Surface TOC

Casing Stickup: 1.90 ft Elevation of Water Level: 316.23 ft./MSL

Sampling Depth: 0 ft Volume of Water Column: 52.03 gal

Total Well Depth: 101.9 ft Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: _____

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 10/21/2022 Sample Collection Time: 12:15

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3270040006 Final Lab Analysis CompletionDate: 11/9/2022

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP012W

Sample Date 10/21/2022

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	64	SM18-2321
CALCIUM, TOTAL	27.7	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	36.8	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	40600	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	8	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	390	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	2.2	EPA 300.0
pH-FIELD (SU)	6.65	FIELD
pH-LAB (SU)	7.9	EPA 150.1
POTASSIUM, TOTAL	1.6	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	15.7	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	432	FIELD
SPEC. COND., LAB (umhos/cm)	330	EPA 120.1
SULFATE	17.2	EPA 300.0
ALKALINITY	64	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	165	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	2	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	120	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 10/21/2022

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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FORM 19
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Applicant/permittee: Lancaster County Solid Waste Mana

Site Name: Creswell Landfill

Facility 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 Well Spring Stream Other
 Upgradient/Upstream 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: 95.65 ft Measured from: Land Surface TOC

Casing Stickup: -1.29 ft Elevation of Water Level: 428.56 ft./MSL

Sampling Depth: 0 ft Volume of Water Column: -30.33 gal

Total Well Depth: 75 ft Sampling Method: Pumped Bailed Grab

Well Purged: Yes No Well Volumes Purged: _____

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

Spring Flow Rate: _____ gpm

Sample Date (mm/dd/yy): 12/23/2022 Sample Collection Time: 13:18

Sample Collector's Name: Mr. Brian G Shade

Sample Collector's Affiliation: ALS

Laboratory(ies) Performing Analysis: ALS Environmental

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

Lab Accreditation Number(s): 22-293

Lab Sample Number(s): 3280330001 Final Lab Analysis Completion Date: 1/4/2023

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

Comments: _____

I.D. No 100008

Monitoring Point No. CWMP003W

Sample Date 12/23/2022

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	0.194	EPA 350.3
BICARBONATE	25	SM18-2321
CALCIUM, TOTAL	17.1	SW846 6010B
CALCIUM, DISSOLVED		SW 8466010B
COD (CHEMICAL OXYGEN DEMAND)	15 ND	EPA 410.4
CHLORIDE	46.4	EPA 300.0
FLUORIDE	0.2 ND	EPA 300.0
IRON, TOTAL (ug/l)	150	SW846 6010B
IRON, DISSOLVED (ug/l)		SW846 6010B
MAGNESIUM, TOTAL	7.1	SW846 6010B
MAGNESIUM, DISSOLVED		SW846 6010B
MANGANESE, TOTAL (ug/l)	11	SW846 6010B
MANGANESE, DISSOLVED (ug/l)		SW846 6010B
NITRATE-NITROGEN	4.9	EPA 300.0
pH-FIELD (SU)	7.29	FIELD
pH-LAB (SU)	7.36	EPA 150.1
POTASSIUM, TOTAL	2.2	SW846 6010B
POTASSIUM, DISSOLVED		SW846 6010B
SODIUM, TOTAL	14.4	SW846 6010B
SODIUM, DISSOLVED		SW846 6010B
SPEC. COND., FIELD (umhos/cm)	247	FIELD
SPEC. COND., LAB (umhos/cm)	251	EPA 120.1
SULFATE	3.2	EPA 300.0
ALKALINITY	25	SM18-2320B
TDS (TOTAL DISSOLVED SOLIDS)	146	SM18-2540C
TOC (TOTAL ORGANIC CARBON)	2.2	SM18-5310B
TOTAL PHENOLICS (ug/l)	4 ND	SW846 9066
TURBIDITY (N.T.U.)	4.6	SM 2130B

* Indicator Analyte - For comparison with detection zone analytes.

T Please indicate detection limit if analyte is not detected.

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

I.D. No 100008

Monitoring Point No. CWMP003W

Sample Date 12/23/2022

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

T Please indicate detection limit if analyte is not detected.



301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com

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

Analytical Results Report For

Lancaster County Solid Waste Authority

Project 4th QTR 2022 GWMP-FORM 19Q
 Workorder 3269081
 Report ID 205920 on 11/8/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Oct 17, 2022.

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.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
 ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

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

Susan Scherer

Susan Scherer
 Project Coordinator

(ALS Digital Signature)

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



Sample Summary

<u>Lab ID</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>	<u>Collector</u>	<u>Collection Company</u>
3269081001	CWMP007W	Ground Water	10/17/2022 11:10	10/17/2022 15:35	BGS	Analytical Laboratory Service
3269081002	CWMP001W	Ground Water	10/17/2022 12:29	10/17/2022 15:35	BGS	Analytical Laboratory Service



Reference

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- Except as qualified, Clean Water Act sample analyses are consistent with methodology requirements in 40 CFR Part 136.
- 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 performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

Standard Acronyms/Flags

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



Project Notations

Sample Notations

Lab ID **Sample ID**

Result Notations

Notation Ref.

- | | |
|---|---|
| 1 | The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L. |
| 2 | The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory. |
| 3 | The QC sample type MS for method SW846 9066 was outside the control limits for the analyte Phenolics. The % Recovery was reported as 135 and the control limits were 90 to 110. |
| 4 | The QC sample type MSD for method SW846 9066 was outside the control limits for the analyte Phenolics. The % Recovery was reported as 133 and the control limits were 90 to 110. |



Detected Results Summary

Client Sample ID	CWMP007W	Collected	10/17/2022 11:10
Lab Sample ID	3269081001	Lab Receipt	10/17/2022 15:35

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	6.82	Feet		Field	#
Dissolved Oxygen	5.33	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	453.40	Feet		Field	#
Flow Rate	0.91	gal/min		Field	#
Ground Water Elevation	446.58	ft/MSL		Field	#
Oxidation-Reduction Potential	309	mV		Field	#
pH, Field (SM4500B)	5.39	pH_Units		Field	#
Sample Depth	33.00	Feet		Field	#
Specific Conductance, Field	554	umhos/cm	1	Field	#
Temperature	13.89	Deg. C		Field	#
Total Well Depth	36.50	Feet		Field	#
Volume in Water Column	43.63	Gallons		Field	#
Water Level After Purge	7.28	Feet		Field	#
Well Volumes Purged	1.45	Vol		Field	#
METALS					
Calcium, Total	18.9	mg/L	0.11	SW846 6010C	#
Magnesium, Total	10.1	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.0064	mg/L	0.0056	SW846 6010C	#
Potassium, Total	2.6	mg/L	0.56	SW846 6010C	#
Sodium, Total	34.1	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	13	mg/L	5	SM2320B-2011	#
Alkalinity, Total	13	mg/L	5	SM2320B-2011	#
Chloride	74.1	mg/L	2.0	EPA 300.0	#
Nitrate-N	10	mg/L	1.0	EPA 300.0	#
pH	6.60	pH_Units		S4500HB-11	#
Specific Conductance	424	umhos/cm	1	SW846 9050A	#
Sulfate	15.2	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	204	mg/L	25	S2540C-11	#



Detected Results Summary

Client Sample ID	CWMP001W	Collected	10/17/2022 12:29
Lab Sample ID	3269081002	Lab Receipt	10/17/2022 15:35

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	31.20	Feet		Field	#
Dissolved Oxygen	8.68	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	515.13	Feet		Field	#
Flow Rate	1.81	gal/min		Field	#
Ground Water Elevation	483.93	ft/MSL		Field	#
Oxidation-Reduction Potential	327	mV		Field	#
pH, Field (SM4500B)	5.28	pH_Units		Field	#
Sample Depth	57.00	Feet		Field	#
Specific Conductance, Field	362	umhos/cm	1	Field	#
Temperature	13.91	Deg. C		Field	#
Total Well Depth	66.30	Feet		Field	#
Turbidity, Field	20	NTU	1	Field	#
Volume in Water Column	51.60	Gallons		Field	#
Water Level After Purge	50.83	Feet		Field	#
Well Volumes Purged	2.10	Vol		Field	#
METALS					
Calcium, Total	14.3	mg/L	0.11	SW846 6010C	#
Iron, Total	0.30	mg/L	0.067	SW846 6010C	#
Magnesium, Total	10.0	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.042	mg/L	0.0056	SW846 6010C	#
Potassium, Total	2.5	mg/L	0.56	SW846 6010C	#
Sodium, Total	13.0	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	5	mg/L	5	SM2320B-2011	#
Alkalinity, Total	5	mg/L	5	SM2320B-2011	#
Chloride	25.9	mg/L	2.0	EPA 300.0	#
Nitrate-N	18.3	mg/L	1.0	EPA 300.0	#
pH	6.36	pH_Units		S4500HB-11	#
Specific Conductance	279	umhos/cm	1	SW846 9050A	#
Total Dissolved Solids	140	mg/L	25	S2540C-11	#
Turbidity	16	NTU	0.30	SM2130B-2011	#



Results

Client Sample ID	CWMP007W	Collected	10/17/2022 11:10
Lab Sample ID	3269081001	Lab Receipt	10/17/2022 15:35

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	6.82		Feet		Field	1	10/17/2022 11:10	BGS	D
Dissolved Oxygen	5.33		mg/L	0.01	Field	1	10/17/2022 11:10	BGS	D
Elev Top MW Casing above MSL	453.40		Feet		Field	1	10/17/2022 11:10	BGS	D
Flow Rate	0.91		gal/min		Field	1	10/17/2022 11:10	BGS	D
Ground Water Elevation	446.58		ft/MSL		Field	1	10/17/2022 11:10	BGS	D
Oxidation-Reduction Potential	309		mV		Field	1	10/17/2022 11:10	BGS	D
pH, Field (SM4500B)	5.39		pH_Units		Field	1	10/17/2022 11:10	BGS	D
Sample Depth	33.00		Feet		Field	1	10/17/2022 11:10	BGS	D
Specific Conductance, Field	554		umhos/cm	1	Field	1	10/17/2022 11:10	BGS	D
Temperature	13.89		Deg. C		Field	1	10/17/2022 11:10	BGS	D
Total Well Depth	36.50		Feet		Field	1	10/17/2022 11:10	BGS	D
Turbidity, Field	ND	ND	NTU	1	Field	1	10/17/2022 11:10	BGS	D
Volume in Water Column	43.63		Gallons		Field	1	10/17/2022 11:10	BGS	D
Water Level After Purge	7.28		Feet		Field	1	10/17/2022 11:10	BGS	D
Well Volumes Purged	1.45		Vol		Field	1	10/17/2022 11:10	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	18.9		mg/L	0.11	SW846 6010C	1	10/22/2022 12:52	SRT	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	10/22/2022 12:52	SRT	J1
Magnesium, Total	10.1		mg/L	0.11	SW846 6010C	1	10/28/2022 10:31	SRT	J1
Manganese, Total	0.0064		mg/L	0.0056	SW846 6010C	1	10/28/2022 10:31	SRT	J1
Potassium, Total	2.6		mg/L	0.56	SW846 6010C	1	10/22/2022 12:52	SRT	J1
Sodium, Total	34.1		mg/L	0.56	SW846 6010C	1	10/22/2022 12:52	SRT	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	10/19/2022 03:16	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:16	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:16	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:16	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:16	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:16	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:16	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:16	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:16	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:16	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:16	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	10/19/2022 03:16	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:16	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:16	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:16	PDK	H



Results

Client Sample ID	CWMP007W	Collected	10/17/2022 11:10
Lab Sample ID	3269081001	Lab Receipt	10/17/2022 15:35

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>									
Compound	CAS No			Recovery	Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			107%	62 – 133		10/19/2022 03:16		
4-Bromofluorobenzene	460-00-4			96.2%	79 – 114		10/19/2022 03:16		
Dibromofluoromethane	1868-53-7			87.1%	78 – 116		10/19/2022 03:16		
Toluene-d8	2037-26-5			94%	76 – 127		10/19/2022 03:16		

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	13		mg/L	5	SM2320B-2011	1	10/20/2022 18:19	NML	B
Alkalinity, Total	13	1	mg/L	5	SM2320B-2011	1	10/20/2022 18:19	NML	B
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-09	10	10/21/2022 22:22	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	10/21/2022 12:26	KMS	A
Chloride	74.1		mg/L	2.0	EPA 300.0	2	10/18/2022 19:14	GJB	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/02/2022 17:48	J1W	B
Nitrate-N	10		mg/L	1.0	EPA 300.0	2	10/18/2022 19:14	GJB	B
pH	6.60	2	pH_Units		S4500HB-11	1	10/20/2022 18:19	NML	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	10/21/2022 13:16	AKH	G
Specific Conductance	424		umhos/cm	1	SW846 9050A	1	10/18/2022 08:30	JXL	B
Sulfate	15.2		mg/L	2.0	EPA 300.0	2	10/27/2022 03:57	J1W	B
Total Dissolved Solids	204		mg/L	25	S2540C-11	1	10/19/2022 09:02	SMS	B
Total Organic Carbon (TOC)	ND	ND	mg/L	0.50	SW846 9060A	1	10/18/2022 22:44	PAG	E
Turbidity	ND	ND	NTU	0.30	SM2130B-2011	1	10/18/2022 06:00	NRB	B



Results

Client Sample ID	CWMP001W	Collected	10/17/2022 12:29
Lab Sample ID	3269081002	Lab Receipt	10/17/2022 15:35

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	31.20		Feet		Field	1	10/17/2022 12:29	BGS	D
Dissolved Oxygen	8.68		mg/L	0.01	Field	1	10/17/2022 12:29	BGS	D
Elev Top MW Casing above MSL	515.13		Feet		Field	1	10/17/2022 12:29	BGS	D
Flow Rate	1.81		gal/min		Field	1	10/17/2022 12:29	BGS	D
Ground Water Elevation	483.93		ft/MSL		Field	1	10/17/2022 12:29	BGS	D
Oxidation-Reduction Potential	327		mV		Field	1	10/17/2022 12:29	BGS	D
pH, Field (SM4500B)	5.28		pH_Units		Field	1	10/17/2022 12:29	BGS	D
Sample Depth	57.00		Feet		Field	1	10/17/2022 12:29	BGS	D
Specific Conductance, Field	362		umhos/cm	1	Field	1	10/17/2022 12:29	BGS	D
Temperature	13.91		Deg. C		Field	1	10/17/2022 12:29	BGS	D
Total Well Depth	66.30		Feet		Field	1	10/17/2022 12:29	BGS	D
Turbidity, Field	20		NTU	1	Field	1	10/17/2022 12:29	BGS	D
Volume in Water Column	51.60		Gallons		Field	1	10/17/2022 12:29	BGS	D
Water Level After Purge	50.83		Feet		Field	1	10/17/2022 12:29	BGS	D
Well Volumes Purged	2.10		Vol		Field	1	10/17/2022 12:29	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	14.3		mg/L	0.11	SW846 6010C	1	10/22/2022 12:59	SRT	J1
Iron, Total	0.30		mg/L	0.067	SW846 6010C	1	10/28/2022 10:41	SRT	J1
Magnesium, Total	10.0		mg/L	0.11	SW846 6010C	1	10/28/2022 10:41	SRT	J1
Manganese, Total	0.042		mg/L	0.0056	SW846 6010C	1	10/28/2022 10:41	SRT	J1
Potassium, Total	2.5		mg/L	0.56	SW846 6010C	1	10/22/2022 12:59	SRT	J1
Sodium, Total	13.0		mg/L	0.56	SW846 6010C	1	10/22/2022 12:59	SRT	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	10/19/2022 03:39	PDK	H
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:39	PDK	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:39	PDK	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:39	PDK	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:39	PDK	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:39	PDK	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:39	PDK	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:39	PDK	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:39	PDK	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:39	PDK	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:39	PDK	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	10/19/2022 03:39	PDK	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:39	PDK	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:39	PDK	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/19/2022 03:39	PDK	H



Results

Client Sample ID	CWMP001W	Collected	10/17/2022 12:29
Lab Sample ID	3269081002	Lab Receipt	10/17/2022 15:35

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>									
Compound	CAS No			Recovery	Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			107%	62 – 133		10/19/2022 03:39		
4-Bromofluorobenzene	460-00-4			97%	79 – 114		10/19/2022 03:39		
Dibromofluoromethane	1868-53-7			88%	78 – 116		10/19/2022 03:39		
Toluene-d8	2037-26-5			93.6%	76 – 127		10/19/2022 03:39		

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	5		mg/L	5	SM2320B-2011	1	10/20/2022 18:32	NML	B
Alkalinity, Total	5	1	mg/L	5	SM2320B-2011	1	10/20/2022 18:32	NML	B
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-09	10	10/21/2022 22:08	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	10/21/2022 12:26	KMS	A
Chloride	25.9		mg/L	2.0	EPA 300.0	2	10/18/2022 19:25	GJB	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	11/02/2022 18:00	J1W	B
Nitrate-N	18.3		mg/L	1.0	EPA 300.0	2	10/18/2022 19:25	GJB	B
pH	6.36	2	pH_Units		S4500HB-11	1	10/20/2022 18:32	NML	B
Phenolics	ND	ND,3,4	mg/L	0.004	SW846 9066	1	10/21/2022 13:19	AKH	G
Specific Conductance	279		umhos/cm	1	SW846 9050A	1	10/18/2022 08:30	JXL	B
Sulfate	ND	ND	mg/L	2.0	EPA 300.0	2	10/27/2022 04:08	J1W	B
Total Dissolved Solids	140		mg/L	25	S2540C-11	1	10/19/2022 09:02	SMS	B
Total Organic Carbon (TOC)	ND	ND	mg/L	0.50	SW846 9060A	1	10/18/2022 22:44	PAG	E
Turbidity	16		NTU	0.30	SM2130B-2011	1	10/18/2022 06:00	NRB	B



Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3269081001	CWMP007W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 300.0	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SW846 9050A	N/A	
		SW846 9060A	N/A	
		SW846 9066	SW846 9066	
3269081002	CWMP001W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 300.0	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	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
3269081001	CWMP007W	N/A	N/A	N/A		Field	899001
		SW846 3015A	891345	10/17/2022 18:15	ANN	SW846 6010C	894857
		SW846 3015A	891345	10/17/2022 18:15	ANN	SW846 6010C	893018
		N/A	N/A	N/A		SW846 8260B	891370
		N/A	N/A	N/A		ASTM D6919-09	892831
		N/A	N/A	N/A		EPA 300.0	894690
		N/A	N/A	N/A		EPA 300.0	899586
		N/A	N/A	N/A		EPA 300.0	891199
		N/A	N/A	N/A		EPA 410.4	892805
		N/A	N/A	N/A		S2540C-11	891181
		N/A	N/A	N/A		S4500HB-11	892284
		N/A	N/A	N/A		SM2130B-2011	891161
		N/A	N/A	N/A		SM2320B-2011	892284
		N/A	N/A	N/A		SW846 9050A	891189
		N/A	N/A	N/A		SW846 9060A	891323
			SW846 9066	891437	10/21/2022 09:01	AKH	SW846 9066
3269081002	CWMP001W	N/A	N/A	N/A		Field	899001
		SW846 3015A	891345	10/17/2022 18:15	ANN	SW846 6010C	893018
		SW846 3015A	891345	10/17/2022 18:15	ANN	SW846 6010C	894857
		N/A	N/A	N/A		SW846 8260B	891370
		N/A	N/A	N/A		ASTM D6919-09	892831
		N/A	N/A	N/A		EPA 300.0	891199
		N/A	N/A	N/A		EPA 300.0	894690
		N/A	N/A	N/A		EPA 300.0	899586
		N/A	N/A	N/A		EPA 410.4	892805
		N/A	N/A	N/A		S2540C-11	891181
		N/A	N/A	N/A		S4500HB-11	892284
		N/A	N/A	N/A		SM2130B-2011	891161
		N/A	N/A	N/A		SM2320B-2011	892284
		N/A	N/A	N/A		SW846 9050A	891189
		N/A	N/A	N/A		SW846 9060A	891323
			SW846 9066	891438	10/21/2022 09:02	AKH	SW846 9066



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

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

Email? Y N **dbrown@leswma.org**

Fax? Y N **No.: (717) 397-9973**

Sample Description/Location (as it will appear on the lab report)	Sample		Time
	Date	Time	
1. CWMMP007W	10/17/22	1110	
2. CWMMP001W	10/17/22	1229	
3			
4			
5			
6			
7			
8			
9			
10			

Project Comments:

Relinquished By / Company Name: **ALS**
 Received By / Company Name: **gre...**
 Date: **10/17/22** Time: **1535**

LOGGED BY (signature):	REVIEWED BY (signature):
<i>[Signature]</i>	<i>[Signature]</i>

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

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

ANALYSES/METHOD REQUESTED

* Matrix	TOC	O-H	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,	Alkalinity, HCO3
G or C	2	1	2	X	X	1	2	1	1
	2	1	2	X	X	1	2	1	1

Enter Number of Containers Per Sample or Field Results Below.

Temp Taken By: **SW**
 WO Temp (°C): **6**
 Therm ID: **570**
 Receipt Info Completed By: **SW**
 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 NA**
 Correct Containers Provided: **Y N NA**
 Sample Label/COC Agree: **Y N NA**
 Adequate Sample Volumes: **Y N NA**
 VOA Headspace Present: **Y N NA**
 VOA Trip Blank: **Y N NA**
 NIS 4 Days?: **Y N**
 Rad Screen (uCi): **Y N**
 Courier/Tracking #: **Y N**
 SDWA Compliance: **Y N**
 PWSID: **Y N**
 WW Containers 0-6°C: **Y N**

3269081
 Logged By: SLS
 PH: SUB

1 of 1

Receipt Information completed by Receiving Lab
 Cooler Temp: **6** Therm ID: **570**
 No. of Coolers: **Y N Initial**



301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com

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

Analytical Results Report For

Lancaster County Solid Waste Authority

Project 4th QTR 2022 GWMP-FORM 19Q

Workorder 3269229

Report ID 205702 on 11/7/2022

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Oct 18, 2022.

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.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):

- Ashley Gichuki - Lancaster County Solid Waste Authority
- Daniel Brown - Lancaster County Solid Waste Authority
- Jordan Gallagher - Lancaster County Solid Waste Authority
- Jeff Musser - Lancaster County Solid Waste Authority

Susan Scherer

Susan Scherer
Project Coordinator

(ALS Digital Signature)

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



Sample Summary

<u>Lab ID</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>	<u>Collector</u>	<u>Collection Company</u>
3269229001	CWMP005W	Ground Water	10/18/2022 10:59	10/18/2022 16:01	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.
- 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 performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- 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 CaCO ₃ /L. |
| 2 | The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory. |



Detected Results Summary

Client Sample ID	CWMP005W	Collected	10/18/2022 10:59
Lab Sample ID	3269229001	Lab Receipt	10/18/2022 16:01

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	46.21	Feet		Field	#
Dissolved Oxygen	6.68	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	513.43	Feet		Field	#
Flow Rate	2.90	gal/min		Field	#
Ground Water Elevation	467.22	ft/MSL		Field	#
Oxidation-Reduction Potential	310	mV		Field	#
pH, Field (SM4500B)	5.32	pH_Units		Field	#
Sample Depth	130.00	Feet		Field	#
Specific Conductance, Field	424	umhos/cm	1	Field	#
Temperature	13.06	Deg. C		Field	#
Total Well Depth	138.92	Feet		Field	#
Volume in Water Column	136.28	Gallons		Field	#
Water Level After Purge	46.21	Feet		Field	#
Well Volumes Purged	1.49	Vol		Field	#
METALS					
Calcium, Total	14.1	mg/L	0.11	SW846 6010C	#
Magnesium, Total	7.0	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.042	mg/L	0.0056	SW846 6010C	#
Potassium, Total	2.5	mg/L	0.56	SW846 6010C	#
Sodium, Total	29.8	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	16	mg/L	5	SM2320B-2011	#
Alkalinity, Total	16	mg/L	5	SM2320B-2011	#
Chloride	56.0	mg/L	2.0	EPA 300.0	#
Nitrate-N	7.7	mg/L	1.0	EPA 300.0	#
pH	6.95	pH_Units		S4500HB-11	#
Specific Conductance	319	umhos/cm	5	SM2510B-2011	#
Sulfate	4.3	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	192	mg/L	25	S2540C-11	#
Turbidity	0.39	NTU	0.30	SM2130B-2011	#



Results

Client Sample ID	CWMP005W	Collected	10/18/2022 10:59
Lab Sample ID	3269229001	Lab Receipt	10/18/2022 16:01

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	46.21		Feet		Field	1	10/17/2022 10:59	BGS	B
Dissolved Oxygen	6.68		mg/L	0.01	Field	1	10/17/2022 10:59	BGS	B
Elev Top MW Casing above MSL	513.43		Feet		Field	1	10/17/2022 10:59	BGS	B
Flow Rate	2.90		gal/min		Field	1	10/17/2022 10:59	BGS	B
Ground Water Elevation	467.22		ft/MSL		Field	1	10/17/2022 10:59	BGS	B
Oxidation-Reduction Potential	310		mV		Field	1	10/17/2022 10:59	BGS	B
pH, Field (SM4500B)	5.32		pH_Units		Field	1	10/17/2022 10:59	BGS	B
Sample Depth	130.00		Feet		Field	1	10/17/2022 10:59	BGS	B
Specific Conductance, Field	424		umhos/cm	1	Field	1	10/17/2022 10:59	BGS	B
Temperature	13.06		Deg. C		Field	1	10/17/2022 10:59	BGS	B
Total Well Depth	138.92		Feet		Field	1	10/17/2022 10:59	BGS	B
Turbidity, Field	ND	ND	NTU	1	Field	1	10/17/2022 10:59	BGS	B
Volume in Water Column	136.28		Gallons		Field	1	10/17/2022 10:59	BGS	B
Water Level After Purge	46.21		Feet		Field	1	10/17/2022 10:59	BGS	B
Well Volumes Purged	1.49		Vol		Field	1	10/17/2022 10:59	BGS	B

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	14.1		mg/L	0.11	SW846 6010C	1	10/20/2022 20:26	SRT	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	10/20/2022 20:26	SRT	J1
Magnesium, Total	7.0		mg/L	0.11	SW846 6010C	1	10/20/2022 20:26	SRT	J1
Manganese, Total	0.042		mg/L	0.0056	SW846 6010C	1	10/20/2022 20:26	SRT	J1
Potassium, Total	2.5		mg/L	0.56	SW846 6010C	1	10/20/2022 20:26	SRT	J1
Sodium, Total	29.8		mg/L	0.56	SW846 6010C	1	10/25/2022 14:43	SRT	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	10/25/2022 20:37	VLM	E
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/25/2022 20:37	VLM	E
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/25/2022 20:37	VLM	E
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/25/2022 20:37	VLM	E
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/25/2022 20:37	VLM	E
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/25/2022 20:37	VLM	E
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/25/2022 20:37	VLM	E
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/25/2022 20:37	VLM	E
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/25/2022 20:37	VLM	E
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/25/2022 20:37	VLM	E
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	10/25/2022 20:37	VLM	E
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	10/25/2022 20:37	VLM	E
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/25/2022 20:37	VLM	E
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/25/2022 20:37	VLM	E
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/25/2022 20:37	VLM	E



Results

Client Sample ID	CWMP005W	Collected	10/18/2022 10:59
Lab Sample ID	3269229001	Lab Receipt	10/18/2022 16:01

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>									
Compound	CAS No			Recovery	Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			80.6%	62 – 133		10/25/2022 20:37		
4-Bromofluorobenzene	460-00-4			87.5%	79 – 114		10/25/2022 20:37		
Dibromofluoromethane	1868-53-7			82.3%	78 – 116		10/25/2022 20:37		
Toluene-d8	2037-26-5			91.4%	76 – 127		10/25/2022 20:37		

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	16		mg/L	5	SM2320B-2011	1	10/21/2022 02:04	NML	C
Alkalinity, Total	16	1	mg/L	5	SM2320B-2011	1	10/21/2022 02:04	NML	C
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-09	10	10/25/2022 17:15	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	10/24/2022 14:54	KMS	A
Chloride	56.0		mg/L	2.0	EPA 300.0	2	10/19/2022 16:37	GJB	C
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	10/29/2022 07:31	J1W	C
Nitrate-N	7.7		mg/L	1.0	EPA 300.0	2	10/19/2022 16:37	GJB	C
pH	6.95	2	pH_Units		S4500HB-11	1	10/21/2022 02:04	NML	C
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	10/21/2022 17:09	AKH	I
Specific Conductance	319		umhos/cm	5	SM2510B-2011	1	10/21/2022 09:45	JXL	C
Sulfate	4.3		mg/L	2.0	EPA 300.0	2	10/19/2022 16:37	GJB	C
Total Dissolved Solids	192		mg/L	25	S2540C-11	1	10/20/2022 10:04	SMS	C
Total Organic Carbon (TOC)	ND	ND	mg/L	0.50	SM5310B-2011	1	10/20/2022 23:57	PAG	G
Turbidity	0.39		NTU	0.30	SM2130B-2011	1	10/19/2022 03:50	NRB	C



Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3269229001	CWMP005W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2510B-2011	N/A	
		SM5310B-2011	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
3269229001	CWMP005W	N/A	N/A	N/A		Field	899001
		SW846 3015A	891565	10/19/2022 18:24	ANN	SW846 6010C	892426
		SW846 3015A	891565	10/19/2022 18:24	ANN	SW846 6010C	893979
		N/A	N/A	N/A		SW846 8260B	893940
		N/A	N/A	N/A		ASTM D6919-09	893416
		N/A	N/A	N/A		EPA 300.0	891417
		N/A	N/A	N/A		EPA 300.0	896428
		N/A	N/A	N/A		EPA 410.4	893417
		N/A	N/A	N/A		S2540C-11	891394
		N/A	N/A	N/A		S4500HB-11	892284
		N/A	N/A	N/A		SM2130B-2011	891391
		N/A	N/A	N/A		SM2320B-2011	892284
		N/A	N/A	N/A		SM2510B-2011	892794
		N/A	N/A	N/A		SM5310B-2011	892363
			SW846 9066		891439	10/21/2022 09:03	AKH



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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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

Generated by ALS
COC
ALS

3269229
Logged By: AMF
PM: SJB
1 of 1

Client Name: Lancaster County Solid Waste MA
Address: 1299 Harrisburg Pike, P.O. Box 4424
Lancaster, PA 17604
Contact: Dan Brown
Phone#: (717) 735-0193

Project Name#: Creswell/GWMP Form 19Q Wells
Bill To: Lancaster County Solid Waste MA
TAT Normal-Standard TAT is 10-12 business days.
 Rush-Subject to ALS approval and surcharges.
Date Required: _____ **Approved By:** _____
Email? -Y **dbrown@lswma.org**
Fax? -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

Cooler Temp: 32 Therm ID: JH570
No. of Coolers: Y N Initial
Custody Seal Present?

Temp Taken By: MJE
WO Temp (°C): 3
Therm ID: 570
Receipt Info Completed By: JMN
Cooler Custody Seal Intact Y N
Sample Custody Seal Intact Y N
Received on Ice Y N
Cooler & Samples Provided Y N
Correct Containers Provided Y N
Sample Label/COC Agree Y N
Adequate Sample Volumes Y N
VOA Headspace Present Y N
VOA Trip Blank Y N
NLS: 4 Days? Y N
Courier/Tracking #: Y N

COC
Courier

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

ALS Field Services: Pickup Labor
 Composite_Sampling Rental_Equipment
 Other:

Special Processing
USACE
Navy
USACE

State Samples Collected In
NY
NJ
PA
NC

Sample Disposal
Lab
Special

Reportable to PADEP?
Yes
PWSID # _____
EDDS: Format Type- _____

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	Enter Number of Containers Per Sample or Field Results Below.										Deliverables	Data	
			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. CWMP005W	10/18/22	1059	2	1	2	X	X	1	2	1	1				
2															
3															
4															
5															
6															
7															
8															
9															
10															

Project Comments:
Relinquished By / Company Name: ALS
Date: 10/18/22
Time: 1601
Received By / Company Name: Mike Lee
Date: 10/18/22
Time: 1601

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

* G=Grab; C=Composite
**Matrix - AL=Air; DW=Drinking Water; GW=Groundwater; OL=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater
ALS ENVIRONMENTAL SHIPPING ADDRESS: 34 DOGWOOD LANE, MIDDLETOWN, PA 17057



301 Fulling Mill Road | Middletown, PA 17057 | Phone: 717-944-5541 | Fax: 717-944-1430 | www.alsglobal.com

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

Analytical Results Report For

Lancaster County Solid Waste Authority

Project [4th QTR 2022 GWMP-FORM 19Q](#)
 Workorder [3269847](#)
 Report ID [206265 on 11/10/2022](#)

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Oct 20, 2022.

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.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
 ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

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

Susan Scherer

Susan Scherer
 Project Coordinator

(ALS Digital Signature)

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



Sample Summary

<u>Lab ID</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>	<u>Collector</u>	<u>Collection Company</u>
3269847001	CWMP016W	Ground Water	10/20/2022 10:06	10/20/2022 16:22	BGS	Analytical Laboratory Service
3269847002	CWMP002W	Ground Water	10/20/2022 10:50	10/20/2022 16:22	BGS	Analytical Laboratory Service
3269847003	CWMP004W	Ground Water	10/20/2022 11:40	10/20/2022 16:22	BGS	Analytical Laboratory Service



Reference

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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 CaCO ₃ /L. |
| 2 | The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory. |
| 3 | The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Chlorobenzene. The % Recovery was reported as 82.4 and the control limits were 85 to 117. |



Detected Results Summary

Client Sample ID	CWMP016W	Collected	10/20/2022 10:06
Lab Sample ID	3269847001	Lab Receipt	10/20/2022 16:22

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	11.82	Feet		Field	#
Dissolved Oxygen	8.94	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	311.97	Feet		Field	#
Flow Rate	2.16	gal/min		Field	#
Ground Water Elevation	300.15	ft/MSL		Field	#
Oxidation-Reduction Potential	245	mV		Field	#
pH, Field (SM4500B)	5.77	pH_Units		Field	#
Sample Depth	71.00	Feet		Field	#
Specific Conductance, Field	93	umhos/cm	1	Field	#
Temperature	12.54	Deg. C		Field	#
Total Well Depth	73.52	Feet		Field	#
Volume in Water Column	90.70	Gallons		Field	#
Water Level After Purge	21.69	Feet		Field	#
Well Volumes Purged	2.27	Vol		Field	#
METALS					
Calcium, Total	6.6	mg/L	0.11	SW846 6010C	#
Iron, Total	0.34	mg/L	0.067	SW846 6010C	#
Magnesium, Total	1.5	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.0069	mg/L	0.0056	SW846 6010C	#
Potassium, Total	0.59	mg/L	0.56	SW846 6010C	#
Sodium, Total	3.9	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	11	mg/L	5	SM2320B-2011	#
Alkalinity, Total	11	mg/L	5	SM2320B-2011	#
Chloride	2.6	mg/L	2.0	EPA 300.0	#
Nitrate-N	2.2	mg/L	1.0	EPA 300.0	#
pH	7.04	pH_Units		S4500HB-11	#
Specific Conductance	74	umhos/cm	5	SM2510B-2011	#
Sulfate	8.5	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	33	mg/L	25	S2540C-11	#
Turbidity	3.4	NTU	0.30	SM2130B-2011	#



Detected Results Summary

Client Sample ID	CWMP002W	Collected	10/20/2022 10:50
Lab Sample ID	3269847002	Lab Receipt	10/20/2022 16:22

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	66.29	Feet		Field	#
Dissolved Oxygen	10.86	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	525.81	Feet		Field	#
Ground Water Elevation	459.52	ft/MSL		Field	#
Oxidation-Reduction Potential	255	mV		Field	#
pH, Field (SM4500B)	5.75	pH_Units		Field	#
Sample Depth	85.00	Feet		Field	#
Specific Conductance, Field	584	umhos/cm	1	Field	#
Temperature	14.60	Deg. C		Field	#
Total Well Depth	100.00	Feet		Field	#
Turbidity, Field	65	NTU	1	Field	#
METALS					
Calcium, Total	40.5	mg/L	0.11	SW846 6010C	#
Iron, Total	1.8	mg/L	0.067	SW846 6010C	#
Magnesium, Total	13.0	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.44	mg/L	0.0056	SW846 6010C	#
Potassium, Total	2.7	mg/L	0.56	SW846 6010C	#
Sodium, Total	22.7	mg/L	0.56	SW846 6010C	#
VOLATILE ORGANICS					
1,1-Dichloroethane	2.1	ug/L	1.0	SW846 8260B	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	57	mg/L	5	SM2320B-2011	#
Alkalinity, Total	57	mg/L	5	SM2320B-2011	#
Ammonia-N	0.109	mg/L	0.100	ASTM D6919-09	#
Chloride	62.7	mg/L	2.0	EPA 300.0	#
Nitrate-N	6.8	mg/L	1.0	EPA 300.0	#
pH	7.05	pH_Units		S4500HB-11	#
Specific Conductance	446	umhos/cm	5	SM2510B-2011	#
Sulfate	13.7	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	192	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	1.0	mg/L	0.50	SM5310B-2011	#
Turbidity	18	NTU	0.30	SM2130B-2011	#



Detected Results Summary

Client Sample ID	CWMP004W	Collected	10/20/2022 11:40
Lab Sample ID	3269847003	Lab Receipt	10/20/2022 16:22

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	102.34	Feet		Field	#
Dissolved Oxygen	6.21	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	529.53	Feet		Field	#
Ground Water Elevation	427.19	ft/MSL		Field	#
Oxidation-Reduction Potential	273	mV		Field	#
pH, Field (SM4500B)	5.55	pH_Units		Field	#
Sample Depth	100.00	Feet		Field	#
Specific Conductance, Field	398	umhos/cm	1	Field	#
Temperature	14.77	Deg. C		Field	#
Total Well Depth	140.00	Feet		Field	#
METALS					
Calcium, Total	24.4	mg/L	0.11	SW846 6010C	#
Magnesium, Total	7.9	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.011	mg/L	0.0056	SW846 6010C	#
Potassium, Total	1.7	mg/L	0.56	SW846 6010C	#
Sodium, Total	19.1	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	25	mg/L	5	SM2320B-2011	#
Alkalinity, Total	25	mg/L	5	SM2320B-2011	#
Ammonia-N	0.124	mg/L	0.100	ASTM D6919-09	#
Chloride	49.8	mg/L	2.0	EPA 300.0	#
Nitrate-N	5.8	mg/L	1.0	EPA 300.0	#
pH	7.05	pH_Units		S4500HB-11	#
Specific Conductance	309	umhos/cm	5	SM2510B-2011	#
Sulfate	6.0	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	167	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	0.59	mg/L	0.50	SM5310B-2011	#



Results

Client Sample ID	CWMP016W	Collected	10/20/2022 10:06
Lab Sample ID	3269847001	Lab Receipt	10/20/2022 16:22

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	11.82		Feet		Field	1	10/20/2022 10:06	BGS	B
Dissolved Oxygen	8.94		mg/L	0.01	Field	1	10/20/2022 10:06	BGS	B
Elev Top MW Casing above MSL	311.97		Feet		Field	1	10/20/2022 10:06	BGS	B
Flow Rate	2.16		gal/min		Field	1	10/20/2022 10:06	BGS	B
Ground Water Elevation	300.15		ft/MSL		Field	1	10/20/2022 10:06	BGS	B
Oxidation-Reduction Potential	245		mV		Field	1	10/20/2022 10:06	BGS	B
pH, Field (SM4500B)	5.77		pH_Units		Field	1	10/20/2022 10:06	BGS	B
Sample Depth	71.00		Feet		Field	1	10/20/2022 10:06	BGS	B
Specific Conductance, Field	93		umhos/cm	1	Field	1	10/20/2022 10:06	BGS	B
Temperature	12.54		Deg. C		Field	1	10/20/2022 10:06	BGS	B
Total Well Depth	73.52		Feet		Field	1	10/20/2022 10:06	BGS	B
Turbidity, Field	ND	ND	NTU	1	Field	1	10/20/2022 10:06	BGS	B
Volume in Water Column	90.70		Gallons		Field	1	10/20/2022 10:06	BGS	B
Water Level After Purge	21.69		Feet		Field	1	10/20/2022 10:06	BGS	B
Well Volumes Purged	2.27		Vol		Field	1	10/20/2022 10:06	BGS	B

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	6.6		mg/L	0.11	SW846 6010C	1	11/04/2022 15:48	MO	J1
Iron, Total	0.34		mg/L	0.067	SW846 6010C	1	11/04/2022 15:48	MO	J1
Magnesium, Total	1.5		mg/L	0.11	SW846 6010C	1	11/04/2022 15:48	MO	J1
Manganese, Total	0.0069		mg/L	0.0056	SW846 6010C	1	11/04/2022 15:48	MO	J1
Potassium, Total	0.59		mg/L	0.56	SW846 6010C	1	11/04/2022 15:48	MO	J1
Sodium, Total	3.9		mg/L	0.56	SW846 6010C	1	11/04/2022 15:48	MO	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	10/26/2022 17:23	TMP	E
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:23	TMP	E
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:23	TMP	E
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:23	TMP	E
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:23	TMP	E
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:23	TMP	E
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:23	TMP	E
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:23	TMP	E
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:23	TMP	E
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:23	TMP	E
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:23	TMP	E
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	10/26/2022 17:23	TMP	E
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:23	TMP	E
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:23	TMP	E
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:23	TMP	E



Results

Client Sample ID	CWMP016W	Collected	10/20/2022 10:06
Lab Sample ID	3269847001	Lab Receipt	10/20/2022 16:22

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>									
Compound	CAS No			Recovery	Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			103%	62 – 133		10/26/2022 17:23		
4-Bromofluorobenzene	460-00-4			109%	79 – 114		10/26/2022 17:23		
Dibromofluoromethane	1868-53-7			94.7%	78 – 116		10/26/2022 17:23		
Toluene-d8	2037-26-5			107%	76 – 127		10/26/2022 17:23		

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	11		mg/L	5	SM2320B-2011	1	10/27/2022 11:38	NML	C
Alkalinity, Total	11	1	mg/L	5	SM2320B-2011	1	10/27/2022 11:38	NML	C
Ammonia-N	ND	ND	mg/L	0.100	ASTM D6919-09	10	10/27/2022 05:18	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	10/26/2022 14:13	KMS	A
Chloride	2.6		mg/L	2.0	EPA 300.0	2	11/08/2022 18:14	J1W	C
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	10/21/2022 20:00	GJB	C
Nitrate-N	2.2		mg/L	1.0	EPA 300.0	2	10/21/2022 20:00	GJB	C
pH	7.04	2	pH_Units		S4500HB-11	1	10/27/2022 11:38	NML	C
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	10/27/2022 16:02	AKH	I
Specific Conductance	74		umhos/cm	5	SM2510B-2011	1	10/25/2022 08:40	JXL	C
Sulfate	8.5		mg/L	2.0	EPA 300.0	2	10/21/2022 20:00	GJB	C
Total Dissolved Solids	33		mg/L	25	S2540C-11	1	10/26/2022 08:34	SMS	C
Total Organic Carbon (TOC)	ND	ND	mg/L	0.50	SM5310B-2011	1	10/25/2022 05:19	PAG	G
Turbidity	3.4		NTU	0.30	SM2130B-2011	1	10/21/2022 06:10	NRB	C



Results

Client Sample ID	CWMP002W	Collected	10/20/2022 10:50
Lab Sample ID	3269847002	Lab Receipt	10/20/2022 16:22

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	66.29		Feet		Field	1	10/20/2022 10:50	BGS	B
Dissolved Oxygen	10.86		mg/L	0.01	Field	1	10/20/2022 10:50	BGS	B
Elev Top MW Casing above MSL	525.81		Feet		Field	1	10/20/2022 10:50	BGS	B
Ground Water Elevation	459.52		ft/MSL		Field	1	10/20/2022 10:50	BGS	B
Oxidation-Reduction Potential	255		mV		Field	1	10/20/2022 10:50	BGS	B
pH, Field (SM4500B)	5.75		pH_Units		Field	1	10/20/2022 10:50	BGS	B
Sample Depth	85.00		Feet		Field	1	10/20/2022 10:50	BGS	B
Specific Conductance, Field	584		umhos/cm	1	Field	1	10/20/2022 10:50	BGS	B
Temperature	14.60		Deg. C		Field	1	10/20/2022 10:50	BGS	B
Total Well Depth	100.00		Feet		Field	1	10/20/2022 10:50	BGS	B
Turbidity, Field	65		NTU	1	Field	1	10/20/2022 10:50	BGS	B

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	40.5		mg/L	0.11	SW846 6010C	1	11/04/2022 15:55	MO	J1
Iron, Total	1.8		mg/L	0.067	SW846 6010C	1	11/04/2022 15:55	MO	J1
Magnesium, Total	13.0		mg/L	0.11	SW846 6010C	1	11/04/2022 15:55	MO	J1
Manganese, Total	0.44		mg/L	0.0056	SW846 6010C	1	11/04/2022 15:55	MO	J1
Potassium, Total	2.7		mg/L	0.56	SW846 6010C	1	11/04/2022 15:55	MO	J1
Sodium, Total	22.7		mg/L	0.56	SW846 6010C	1	11/04/2022 15:55	MO	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	10/26/2022 17:46	TMP	E
1,1,2,2-Tetrachloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
1,1,2-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
1,1-Dichloroethane	2.1		ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
1,2,3-Trichloropropane	ND	ND	ug/L	2.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
1,2,4-Trichlorobenzene	ND	ND	ug/L	2.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
1,2-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
1,2-Dichloropropane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
1,3-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
1,3-Dichloropropene, Total	ND	ND	ug/L	2.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
1,4-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Bromodichloromethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Bromoform	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Bromomethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Carbon Tetrachloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Chlorobenzene	ND	ND,3	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Chlorodibromomethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E



Results

Client Sample ID	CWMP002W	Collected	10/20/2022 10:50
Lab Sample ID	3269847002	Lab Receipt	10/20/2022 16:22

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Chloroform	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Chloromethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Styrene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Trichlorofluoromethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 17:46	TMP	E

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	104%	62 – 133	10/26/2022 17:46	
4-Bromofluorobenzene	460-00-4	109%	79 – 114	10/26/2022 17:46	
Dibromofluoromethane	1868-53-7	95.5%	78 – 116	10/26/2022 17:46	
Toluene-d8	2037-26-5	107%	76 – 127	10/26/2022 17:46	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	57		mg/L	5	SM2320B-2011	1	10/27/2022 11:48	NML	C
Alkalinity, Total	57	1	mg/L	5	SM2320B-2011	1	10/27/2022 11:48	NML	C
Ammonia-N	0.109		mg/L	0.100	ASTM D6919-09	10	10/28/2022 22:59	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	11/09/2022 14:50	KMS	A
Chloride	62.7		mg/L	2.0	EPA 300.0	2	11/08/2022 18:25	J1W	C
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	10/21/2022 20:11	GJB	C
Nitrate-N	6.8		mg/L	1.0	EPA 300.0	2	10/21/2022 20:11	GJB	C
pH	7.05	2	pH_Units		S4500HB-11	1	10/27/2022 11:48	NML	C
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	10/27/2022 16:05	AKH	I
Specific Conductance	446		umhos/cm	5	SM2510B-2011	1	10/25/2022 08:40	JXL	C
Sulfate	13.7		mg/L	2.0	EPA 300.0	2	10/21/2022 20:11	GJB	C
Total Dissolved Solids	192		mg/L	25	S2540C-11	1	10/26/2022 08:34	SMS	C
Total Organic Carbon (TOC)	1.0		mg/L	0.50	SM5310B-2011	1	10/25/2022 05:19	PAG	G
Turbidity	18		NTU	0.30	SM2130B-2011	1	10/21/2022 06:10	NRB	C



Results

Client Sample ID	CWMP004W	Collected	10/20/2022 11:40
Lab Sample ID	3269847003	Lab Receipt	10/20/2022 16:22

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	102.34		Feet		Field	1	10/20/2022 11:40	BGS	B
Dissolved Oxygen	6.21		mg/L	0.01	Field	1	10/20/2022 11:40	BGS	B
Elev Top MW Casing above MSL	529.53		Feet		Field	1	10/20/2022 11:40	BGS	B
Ground Water Elevation	427.19		ft/MSL		Field	1	10/20/2022 11:40	BGS	B
Oxidation-Reduction Potential	273		mV		Field	1	10/20/2022 11:40	BGS	B
pH, Field (SM4500B)	5.55		pH_Units		Field	1	10/20/2022 11:40	BGS	B
Sample Depth	100.00		Feet		Field	1	10/20/2022 11:40	BGS	B
Specific Conductance, Field	398		umhos/cm	1	Field	1	10/20/2022 11:40	BGS	B
Temperature	14.77		Deg. C		Field	1	10/20/2022 11:40	BGS	B
Total Well Depth	140.00		Feet		Field	1	10/20/2022 11:40	BGS	B
Turbidity, Field	ND	ND	NTU	1	Field	1	10/20/2022 11:40	BGS	B

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	24.4		mg/L	0.11	SW846 6010C	1	11/04/2022 15:59	MO	J1
Iron, Total	ND	ND	mg/L	0.067	SW846 6010C	1	11/04/2022 15:59	MO	J1
Magnesium, Total	7.9		mg/L	0.11	SW846 6010C	1	11/04/2022 15:59	MO	J1
Manganese, Total	0.011		mg/L	0.0056	SW846 6010C	1	11/04/2022 15:59	MO	J1
Potassium, Total	1.7		mg/L	0.56	SW846 6010C	1	11/04/2022 15:59	MO	J1
Sodium, Total	19.1		mg/L	0.56	SW846 6010C	1	11/04/2022 15:59	MO	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	10/26/2022 18:09	TMP	E
1,1,2,2-Tetrachloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
1,1,2-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
1,1-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
1,2,3-Trichloropropane	ND	ND	ug/L	2.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
1,2,4-Trichlorobenzene	ND	ND	ug/L	2.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
1,2-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
1,2-Dichloropropane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
1,3-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
1,3-Dichloropropene, Total	ND	ND	ug/L	2.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
1,4-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Bromodichloromethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Bromoform	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Bromomethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Carbon Tetrachloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Chlorobenzene	ND	ND,3	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Chlorodibromomethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E



Results

Client Sample ID	CWMP004W	Collected	10/20/2022 11:40
Lab Sample ID	3269847003	Lab Receipt	10/20/2022 16:22

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Chloroform	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Chloromethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Styrene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Trichlorofluoromethane	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	10/26/2022 18:09	TMP	E

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	106%	62 – 133	10/26/2022 18:09	
4-Bromofluorobenzene	460-00-4	104%	79 – 114	10/26/2022 18:09	
Dibromofluoromethane	1868-53-7	96.3%	78 – 116	10/26/2022 18:09	
Toluene-d8	2037-26-5	106%	76 – 127	10/26/2022 18:09	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	25		mg/L	5	SM2320B-2011	1	10/27/2022 11:59	NML	C
Alkalinity, Total	25	1	mg/L	5	SM2320B-2011	1	10/27/2022 11:59	NML	C
Ammonia-N	0.124		mg/L	0.100	ASTM D6919-09	10	10/27/2022 12:54	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	10/26/2022 14:30	KMS	A
Chloride	49.8		mg/L	2.0	EPA 300.0	2	11/08/2022 18:35	J1W	C
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	10/21/2022 20:21	GJB	C
Nitrate-N	5.8		mg/L	1.0	EPA 300.0	2	10/21/2022 20:21	GJB	C
pH	7.05	2	pH_Units		S4500HB-11	1	10/27/2022 11:59	NML	C
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	10/27/2022 16:09	AKH	I
Specific Conductance	309		umhos/cm	5	SM2510B-2011	1	10/25/2022 08:40	JXL	C
Sulfate	6.0		mg/L	2.0	EPA 300.0	2	10/21/2022 20:21	GJB	C
Total Dissolved Solids	167		mg/L	25	S2540C-11	1	10/26/2022 08:34	SMS	C
Total Organic Carbon (TOC)	0.59		mg/L	0.50	SM5310B-2011	1	10/25/2022 05:19	PAG	G
Turbidity	ND	ND	NTU	0.30	SM2130B-2011	1	10/21/2022 06:10	NRB	C



Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3269847001	CWMP016W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2510B-2011	N/A	
		SM5310B-2011	N/A	
		SW846 9066	SW846 9066	
3269847002	CWMP002W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2510B-2011	N/A	
		SM5310B-2011	N/A	
		SW846 9066	SW846 9066	
3269847003	CWMP004W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2510B-2011	N/A	
		SM5310B-2011	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
3269847001	CWMP016W	N/A	N/A	N/A		Field	899001
		SW846 3015A	894824	10/27/2022 23:33	ANN	SW846 6010C	901474
		N/A	N/A	N/A		SW846 8260B	894186
		N/A	N/A	N/A		ASTM D6919-09	894577
		N/A	N/A	N/A		EPA 300.0	893444
		N/A	N/A	N/A		EPA 300.0	903998
		N/A	N/A	N/A		EPA 410.4	894674
		N/A	N/A	N/A		S2540C-11	893712
		N/A	N/A	N/A		S4500HB-11	894019
		N/A	N/A	N/A		SM2130B-2011	892775
		N/A	N/A	N/A		SM2320B-2011	894019
		N/A	N/A	N/A		SM2510B-2011	893484
		N/A	N/A	N/A		SM5310B-2011	893494
		SW846 9066	894721	10/27/2022 07:35	AKH	SW846 9066	895691
3269847002	CWMP002W	N/A	N/A	N/A		Field	899001
		SW846 3015A	894824	10/27/2022 23:33	ANN	SW846 6010C	901474
		N/A	N/A	N/A		SW846 8260B	894186
		N/A	N/A	N/A		ASTM D6919-09	896431
		N/A	N/A	N/A		EPA 300.0	893444
		N/A	N/A	N/A		EPA 300.0	903998
		N/A	N/A	N/A		EPA 410.4	904998
		N/A	N/A	N/A		S2540C-11	893712
		N/A	N/A	N/A		S4500HB-11	894019
		N/A	N/A	N/A		SM2130B-2011	892775
		N/A	N/A	N/A		SM2320B-2011	894019
		N/A	N/A	N/A		SM2510B-2011	893484
		N/A	N/A	N/A		SM5310B-2011	893494
		SW846 9066	894721	10/27/2022 07:35	AKH	SW846 9066	895691
3269847003	CWMP004W	N/A	N/A	N/A		Field	899001
		SW846 3015A	894824	10/27/2022 23:33	ANN	SW846 6010C	901474
		N/A	N/A	N/A		SW846 8260B	894186
		N/A	N/A	N/A		ASTM D6919-09	894729
		N/A	N/A	N/A		EPA 300.0	893444
		N/A	N/A	N/A		EPA 300.0	903998
		N/A	N/A	N/A		EPA 410.4	894692
		N/A	N/A	N/A		S2540C-11	893712
		N/A	N/A	N/A		S4500HB-11	894019
		N/A	N/A	N/A		SM2130B-2011	892775
		N/A	N/A	N/A		SM2320B-2011	894019
		N/A	N/A	N/A		SM2510B-2011	893484
		N/A	N/A	N/A		SM5310B-2011	893494
		SW846 9066	894721	10/27/2022 07:35	AKH	SW846 9066	895691



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

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	*Matrix
1. CWMP016W	10/20/22	1006	G	GW
2. CWMP002W	10/20/22	1050	G	GW
3. CWMP004W	10/20/22	1140	G	GW
4				
5				
6				
7				
8				
9				
10				

Project Comments:
 Relinquished By Company Name
 1. *[Signature]* BY *[Signature]* 10/20/22
 2. *[Signature]* 10/20/22
 3. *[Signature]* 10/20/22
 4. *[Signature]* 10/20/22
 5. *[Signature]* 10/20/22
 6. *[Signature]* 10/20/22
 7. *[Signature]* 10/20/22
 8. *[Signature]* 10/20/22
 9. *[Signature]* 10/20/22
 10. *[Signature]* 10/20/22

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

Date **Time** **Received By / Company Name** **Date** **Time**

10/20/22 1006 *[Signature]* 10/20/22 1006
 10/20/22 1050 *[Signature]* 10/20/22 1050
 10/20/22 1140 *[Signature]* 10/20/22 1140

Generated by ALS



3269847
 Logged By: AMF
 PM: SJB

1 of 1

by Receiving Lab

Cooler Temp: 29 Therm ID: TH576
 No. of Coolers: Y N Initial

Custody Seals Present?

Temp Taken By: MJE
 WO Temp (°C): 8

Receipt Info Completed By: AWF
 Therm ID: 570

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 NA
 Correct Containers Provided Y N NA
 Sample Label/COC Agree Y N NA
 Adequate Sample Volumes Y N NA
 VOA Headspace Present Y N NA
 Voa Trip Blank Y N NA
 NIS 4 Days? Y N NA
 Rad Screen (uCi) Y N NA
 Courier/Tracking #: Y N NA

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

*NONE = LMP
 - AUDF 10.21.22

ALS Field Services: Pickup Labor
 Composite_Sampling Rental_Equipment
 Other:

Standard State Samples Collected In

CLP-like USACE Navy

USACE Reportable to PADEP? Lab X
 Special

Deliverables PWSID #

EDDS: Format Type: _____

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

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

Rev 8/04

11/10/2022 9:10 AM

16 99 16



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

Analytical Results Report For

Lancaster County Solid Waste Authority

Project [4th QTR 2022 GWMP-FORM 19Q](#)
 Workorder [3270040](#)
 Report ID [207027 on 11/14/2022](#)

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Oct 21, 2022.

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.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
 ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

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

Susan Scherer

Susan Scherer
 Project Coordinator

(ALS Digital Signature)

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



Sample Summary

<u>Lab ID</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>	<u>Collector</u>	<u>Collection Company</u>
3270040001	CWMP008W	Ground Water	10/21/2022 09:40	10/21/2022 14:40	BGS	Analytical Laboratory Service
3270040002	CWMP009W	Ground Water	10/21/2022 10:18	10/21/2022 14:40	BGS	Analytical Laboratory Service
3270040003	CWMP010W	Ground Water	10/21/2022 10:45	10/21/2022 14:40	BGS	Analytical Laboratory Service
3270040004	CWMP018S	Ground Water	10/21/2022 10:55	10/21/2022 14:40	BGS	Analytical Laboratory Service
3270040005	CWMP017S	Ground Water	10/21/2022 11:25	10/21/2022 14:40	BGS	Analytical Laboratory Service
3270040006	CWMP012W	Ground Water	10/21/2022 12:15	10/21/2022 14:40	BGS	Analytical Laboratory Service
3270040007	Field Blank	Water	10/21/2022 13:12	10/21/2022 14:40	BGS	Analytical Laboratory Service
3270040008	Trip Blank	Water	10/21/2022 14:40	10/21/2022 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.
- 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 performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- 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		
3270040001	CWMP008W	S1	Sample temperature upon receipt at lab was greater than 6 °C.
3270040002	CWMP009W	S2	Sample temperature upon receipt at lab was greater than 6 °C.
3270040003	CWMP010W	S3	Sample temperature upon receipt at lab was greater than 6 °C.
3270040004	CWMP018S	S4	Sample temperature upon receipt at lab was greater than 6 °C.
3270040005	CWMP017S	S5	Sample temperature upon receipt at lab was greater than 6 °C.
3270040006	CWMP012W	S6	Sample temperature upon receipt at lab was greater than 6 °C.
3270040007	Field Blank	S7	Sample temperature upon receipt at lab was greater than 6 °C.
3270040008	Trip Blank	S8	Sample temperature upon receipt at lab was greater than 6 °C.

Result Notations

Notation Ref.	
1	The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO ₃ /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 RPD for the QC sample types MS & MSD in method EPA 300.0 for the analyte Chloride was reported as 22.6% , and the upper control limit is 20%.
4	The QC sample type MS for method EPA 300.0 was outside the control limits for the analyte Chloride. The % Recovery was reported as 78.1 and the control limits were 80 to 120.
5	The QC sample type MS for method SW846 9066 was outside the control limits for the analyte Phenolics. The % Recovery was reported as 143 and the control limits were 90 to 110.
6	The QC sample type MSD for method SW846 9066 was outside the control limits for the analyte Phenolics. The % Recovery was reported as 143 and the control limits were 90 to 110.
7	The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Chlorobenzene. The % Recovery was reported as 82.4 and the control limits were 85 to 117.



Detected Results Summary

Client Sample ID	CWMP008W	Collected	10/21/2022 09:40
Lab Sample ID	3270040001	Lab Receipt	10/21/2022 14:40

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	3.26	Feet		Field	#
Dissolved Oxygen	0.06	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	422.30	Feet		Field	#
Flow Rate	0.96	gal/min		Field	#
Ground Water Elevation	419.04	ft/MSL		Field	#
Oxidation-Reduction Potential	-35	mV		Field	#
pH, Field (SM4500B)	6.06	pH_Units		Field	#
Sample Depth	19.00	Feet		Field	#
Specific Conductance, Field	1210	umhos/cm	1	Field	#
Temperature	15.96	Deg. C		Field	#
Total Well Depth	22.80	Feet		Field	#
Volume in Water Column	3.13	Gallons		Field	#
Water Level After Purge	13.75	Feet		Field	#
Well Volumes Purged	6.15	Vol		Field	#
METALS					
Calcium, Total	65.0	mg/L	0.11	SW846 6010C	#
Iron, Total	23.0	mg/L	0.067	SW846 6010C	#
Magnesium, Total	28.5	mg/L	0.11	SW846 6010C	#
Manganese, Total	14.3	mg/L	0.0056	SW846 6010C	#
Potassium, Total	9.1	mg/L	0.56	SW846 6010C	#
Sodium, Total	39.9	mg/L	0.56	SW846 6010C	#
VOLATILE ORGANICS					
1,1-Dichloroethane	2.1	ug/L	1.0	SW846 8260B	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	343	mg/L	5	SM2320B-2011	#
Alkalinity, Total	343	mg/L	5	SM2320B-2011	#
Ammonia-N	8.56	mg/L	0.100	ASTM D6919-09	#
Chemical Oxygen Demand (COD)	23	mg/L	15	EPA 410.4	#
Chloride	39.4	mg/L	2.0	EPA 300.0	#
pH	7.73	pH_Units		S4500HB-11	#
Specific Conductance	841	umhos/cm	5	SM2510B-2011	#
Sulfate	6.1	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	394	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	8.7	mg/L	2.5	SM5310B-2011	#
Turbidity	15	NTU	0.30	SM2130B-2011	#



Detected Results Summary

Client Sample ID	CWMP009W	Collected	10/21/2022 10:18
Lab Sample ID	3270040002	Lab Receipt	10/21/2022 14:40

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	9.21	Feet		Field	#
Dissolved Oxygen	0.11	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	404.20	Feet		Field	#
Flow Rate	1.54	gal/min		Field	#
Ground Water Elevation	394.99	ft/MSL		Field	#
Oxidation-Reduction Potential	-30	mV		Field	#
pH, Field (SM4500B)	6.05	pH_Units		Field	#
Sample Depth	16.00	Feet		Field	#
Specific Conductance, Field	4253	umhos/cm	1	Field	#
Temperature	15.07	Deg. C		Field	#
Total Well Depth	19.70	Feet		Field	#
Volume in Water Column	6.82	Gallons		Field	#
Water Level After Purge	11.02	Feet		Field	#
Well Volumes Purged	4.53	Vol		Field	#
METALS					
Calcium, Total	175	mg/L	0.11	SW846 6010C	#
Iron, Total	36.7	mg/L	0.067	SW846 6010C	#
Magnesium, Total	83.0	mg/L	0.11	SW846 6010C	#
Manganese, Total	13.0	mg/L	0.0056	SW846 6010C	#
Potassium, Total	35.8	mg/L	0.56	SW846 6010C	#
Sodium, Total	192	mg/L	0.56	SW846 6010C	#
VOLATILE ORGANICS					
1,1-Dichloroethane	1.2	ug/L	1.0	SW846 8260B	#
Benzene	2.5	ug/L	1.0	SW846 8260B	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	526	mg/L	50	SM2320B-2011	#
Alkalinity, Total	526	mg/L	50	SM2320B-2011	#
Ammonia-N	30.9	mg/L	0.100	ASTM D6919-09	#
Chemical Oxygen Demand (COD)	104	mg/L	15	EPA 410.4	#
Chloride	645	mg/L	10.0	EPA 300.0	#
pH	7.50	pH_Units		S4500HB-11	#
Specific Conductance	344	umhos/cm	50	SM2510B-2011	#
Total Dissolved Solids	1710	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	38.0	mg/L	5.0	SM5310B-2011	#
Turbidity	40	NTU	0.30	SM2130B-2011	#



Detected Results Summary

Client Sample ID	CWMP010W	Collected	10/21/2022 10:45
Lab Sample ID	3270040003	Lab Receipt	10/21/2022 14:40

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	8.74	Feet		Field	#
Dissolved Oxygen	4.58	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	352.16	ft/MSL		Field	#
Oxidation-Reduction Potential	104	mV		Field	#
pH, Field (SM4500B)	6.56	pH_Units		Field	#
Sample Depth	18.00	Feet		Field	#
Specific Conductance, Field	2344	umhos/cm	1	Field	#
Temperature	16.14	Deg. C		Field	#
Total Well Depth	19.60	Feet		Field	#
Turbidity, Field	3	NTU	1	Field	#
Volume in Water Column	7.06	Gallons		Field	#
Water Level After Purge	17.45	Feet		Field	#
Well Volumes Purged	1.46	Vol		Field	#
METALS					
Calcium, Total	48.7	mg/L	0.11	SW846 6010C	#
Iron, Total	0.28	mg/L	0.067	SW846 6010C	#
Magnesium, Total	39.5	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.26	mg/L	0.0056	SW846 6010C	#
Potassium, Total	9.8	mg/L	0.56	SW846 6010C	#
Sodium, Total	170	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	201	mg/L	50	SM2320B-2011	#
Alkalinity, Total	201	mg/L	50	SM2320B-2011	#
Chloride	117	mg/L	2.0	EPA 300.0	#
Nitrate-N	6.8	mg/L	1.0	EPA 300.0	#
pH	8.21	pH_Units		S4500HB-11	#
Specific Conductance	1500	umhos/cm	5	SM2510B-2011	#
Sulfate	9.8	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	748	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	3.5	mg/L	0.50	SM5310B-2011	#
Turbidity	2.8	NTU	0.30	SM2130B-2011	#



Detected Results Summary

Client Sample ID	CWMP018S	Collected	10/21/2022 10:55
Lab Sample ID	3270040004	Lab Receipt	10/21/2022 14:40

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Dissolved Oxygen	10.96	mg/L	0.01	Field	#
pH, Field (SM4500B)	8.41	pH_Units		Field	#
Specific Conductance, Field	4383	umhos/cm	1	Field	#
Temperature	10.39	Deg. C		Field	#
METALS					
Calcium, Total	87.1	mg/L	0.11	SW846 6010C	#
Iron, Total	0.22	mg/L	0.067	SW846 6010C	#
Magnesium, Total	98.3	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.022	mg/L	0.0056	SW846 6010C	#
Potassium, Total	22.2	mg/L	0.56	SW846 6010C	#
Sodium, Total	399	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	501	mg/L	50	SM2320B-2011	#
Alkalinity, Total	525	mg/L	50	SM2320B-2011	#
Ammonia-N	0.169	mg/L	0.100	ASTM D6919-09	#
Chemical Oxygen Demand (COD)	19	mg/L	15	EPA 410.4	#
Chloride	672	mg/L	25.0	EPA 300.0	#
Nitrate-N	26.0	mg/L	12.5	EPA 300.0	#
pH	8.62	pH_Units		S4500HB-11	#
Specific Conductance	368	umhos/cm	50	SM2510B-2011	#
Sulfate	46.8	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	1760	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	6.4	mg/L	0.50	SM5310B-2011	#
Turbidity	0.35	NTU	0.30	SM2130B-2011	#



Detected Results Summary

Client Sample ID	CWMP017S	Collected	10/21/2022 11:25
Lab Sample ID	3270040005	Lab Receipt	10/21/2022 14:40

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Dissolved Oxygen	8.95	mg/L	0.01	Field	#
pH, Field (SM4500B)	7.87	pH_Units		Field	#
Specific Conductance, Field	6089	umhos/cm	1	Field	#
Temperature	18.05	Deg. C		Field	#
METALS					
Calcium, Total	91.6	mg/L	0.11	SW846 6010C	#
Iron, Total	1.9	mg/L	0.067	SW846 6010C	#
Magnesium, Total	130	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.24	mg/L	0.0056	SW846 6010C	#
Potassium, Total	24.1	mg/L	0.56	SW846 6010C	#
Sodium, Total	538	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	616	mg/L	50	SM2320B-2011	#
Alkalinity, Total	616	mg/L	50	SM2320B-2011	#
Ammonia-N	0.147	mg/L	0.100	ASTM D6919-09	#
Chloride	815	mg/L	10.0	EPA 300.0	#
Nitrate-N	30.2	mg/L	5.0	EPA 300.0	#
pH	8.50	pH_Units		S4500HB-11	#
Specific Conductance	443	umhos/cm	50	SM2510B-2011	#
Sulfate	78.0	mg/L	10.0	EPA 300.0	#
Total Dissolved Solids	2150	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	4.8	mg/L	0.50	SM5310B-2011	#
Turbidity	7.0	NTU	0.30	SM2130B-2011	#



Detected Results Summary

Client Sample ID	CWMP012W	Collected	10/21/2022 12:15
Lab Sample ID	3270040006	Lab Receipt	10/21/2022 14:40

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	66.47	Feet		Field	#
Dissolved Oxygen	8.63	mg/L	0.01	Field	#
Oxidation-Reduction Potential	73	mV		Field	#
pH, Field (SM4500B)	6.65	pH_Units		Field	#
Specific Conductance, Field	432	umhos/cm	1	Field	#
Temperature	15.34	Deg. C		Field	#
Turbidity, Field	117	NTU	1	Field	#
METALS					
Calcium, Total	27.7	mg/L	0.11	SW846 6010C	#
Iron, Total	40.6	mg/L	0.067	SW846 6010C	#
Magnesium, Total	8.0	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.39	mg/L	0.0056	SW846 6010C	#
Potassium, Total	1.6	mg/L	0.56	SW846 6010C	#
Sodium, Total	15.7	mg/L	0.56	SW846 6010C	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	64	mg/L	5	SM2320B-2011	#
Alkalinity, Total	64	mg/L	5	SM2320B-2011	#
Ammonia-N	0.244	mg/L	0.100	ASTM D6919-09	#
Chloride	36.8	mg/L	2.0	EPA 300.0	#
Nitrate-N	2.2	mg/L	1.0	EPA 300.0	#
pH	7.90	pH_Units		S4500HB-11	#
Specific Conductance	330	umhos/cm	5	SM2510B-2011	#
Sulfate	17.2	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	165	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	2.0	mg/L	1.0	SM5310B-2011	#
Turbidity	120	NTU	0.30	SM2130B-2011	#



Detected Results Summary

Client Sample ID	Field Blank	Collected	10/21/2022 13:12
Lab Sample ID	3270040007	Lab Receipt	10/21/2022 14:40

<u>Compound</u>	<u>Result</u>	<u>Units</u>	<u>RDL</u>	<u>Method</u>	<u>Flag</u>
WET CHEMISTRY					
pH	5.82	pH_Units		S4500HB-11	#



Results

Client Sample ID	CWMP008W	Collected	10/21/2022 09:40
Lab Sample ID	3270040001	Lab Receipt	10/21/2022 14:40

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	3.26	S1	Feet		Field	1	10/21/2022 09:40	BGS	B
Dissolved Oxygen	0.06	S1	mg/L	0.01	Field	1	10/21/2022 09:40	BGS	B
Elev Top MW Casing above MSL	422.30	S1	Feet		Field	1	10/21/2022 09:40	BGS	B
Flow Rate	0.96	S1	gal/min		Field	1	10/21/2022 09:40	BGS	B
Ground Water Elevation	419.04	S1	ft/MSL		Field	1	10/21/2022 09:40	BGS	B
Oxidation-Reduction Potential	-35	S1	mV		Field	1	10/21/2022 09:40	BGS	B
pH, Field (SM4500B)	6.06	S1	pH_Units		Field	1	10/21/2022 09:40	BGS	B
Sample Depth	19.00	S1	Feet		Field	1	10/21/2022 09:40	BGS	B
Specific Conductance, Field	1210	S1	umhos/cm	1	Field	1	10/21/2022 09:40	BGS	B
Temperature	15.96	S1	Deg. C		Field	1	10/21/2022 09:40	BGS	B
Total Well Depth	22.80	S1	Feet		Field	1	10/21/2022 09:40	BGS	B
Turbidity, Field	ND	ND,S1	NTU	1	Field	1	10/21/2022 09:40	BGS	B
Volume in Water Column	3.13	S1	Gallons		Field	1	10/21/2022 09:40	BGS	B
Water Level After Purge	13.75	S1	Feet		Field	1	10/21/2022 09:40	BGS	B
Well Volumes Purged	6.15	S1	Vol		Field	1	10/21/2022 09:40	BGS	B

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	65.0	S1	mg/L	0.11	SW846 6010C	1	11/05/2022 10:15	SRT	J1
Iron, Total	23.0	S1	mg/L	0.067	SW846 6010C	1	11/05/2022 10:15	SRT	J1
Magnesium, Total	28.5	S1	mg/L	0.11	SW846 6010C	1	11/05/2022 10:15	SRT	J1
Manganese, Total	14.3	S1	mg/L	0.0056	SW846 6010C	1	11/09/2022 18:14	A1S	J1
Potassium, Total	9.1	S1	mg/L	0.56	SW846 6010C	1	11/05/2022 10:15	SRT	J1
Sodium, Total	39.9	S1	mg/L	0.56	SW846 6010C	1	11/05/2022 10:15	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND,S1	ug/L	1.0	SW846 8260B	1	10/27/2022 01:45	PDK	E
1,1-Dichloroethane	2.1	S1	ug/L	1.0	SW846 8260B	1	10/27/2022 01:45	PDK	E
1,1-Dichloroethene	ND	ND,S1	ug/L	1.0	SW846 8260B	1	10/27/2022 01:45	PDK	E
1,2-Dibromoethane	ND	ND,S1	ug/L	1.0	SW846 8260B	1	10/27/2022 01:45	PDK	E
1,2-Dichloroethane	ND	ND,S1	ug/L	1.0	SW846 8260B	1	10/27/2022 01:45	PDK	E
Benzene	ND	ND,S1	ug/L	1.0	SW846 8260B	1	10/27/2022 01:45	PDK	E
cis-1,2-Dichloroethene	ND	ND,S1	ug/L	1.0	SW846 8260B	1	10/27/2022 01:45	PDK	E
Ethylbenzene	ND	ND,S1	ug/L	1.0	SW846 8260B	1	10/27/2022 01:45	PDK	E
Methylene Chloride	ND	ND,S1	ug/L	1.0	SW846 8260B	1	10/27/2022 01:45	PDK	E
Tetrachloroethene	ND	ND,S1	ug/L	1.0	SW846 8260B	1	10/27/2022 01:45	PDK	E
Toluene	ND	ND,S1	ug/L	1.0	SW846 8260B	1	10/27/2022 01:45	PDK	E
Total Xylenes	ND	ND,S1	ug/L	3.0	SW846 8260B	1	10/27/2022 01:45	PDK	E
trans-1,2-Dichloroethene	ND	ND,S1	ug/L	1.0	SW846 8260B	1	10/27/2022 01:45	PDK	E
Trichloroethene	ND	ND,S1	ug/L	1.0	SW846 8260B	1	10/27/2022 01:45	PDK	E
Vinyl Chloride	ND	ND,S1	ug/L	1.0	SW846 8260B	1	10/27/2022 01:45	PDK	E



Results

Client Sample ID	CWMP008W	Collected	10/21/2022 09:40
Lab Sample ID	3270040001	Lab Receipt	10/21/2022 14:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>									
Compound	CAS No			Recovery	Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			105%	62 – 133		10/27/2022 01:45		
4-Bromofluorobenzene	460-00-4			110%	79 – 114		10/27/2022 01:45		
Dibromofluoromethane	1868-53-7			94.9%	78 – 116		10/27/2022 01:45		
Toluene-d8	2037-26-5			105%	76 – 127		10/27/2022 01:45		

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	343	S1	mg/L	5	SM2320B-2011	1	10/27/2022 21:48	NML	C
Alkalinity, Total	343	1,S1	mg/L	5	SM2320B-2011	1	10/27/2022 21:48	NML	C
Ammonia-N	8.56	S1	mg/L	0.100	ASTM D6919-09	10	10/31/2022 20:28	NML	A
Chemical Oxygen Demand (COD)	23	S1	mg/L	15	EPA 410.4	1	10/26/2022 14:30	KMS	A
Chloride	39.4	S1	mg/L	2.0	EPA 300.0	2	10/22/2022 16:38	GJB	C
Fluoride	ND	ND,S1	mg/L	0.20	EPA 300.0	2	10/22/2022 16:38	GJB	C
Nitrate-N	ND	ND,S1	mg/L	1.0	EPA 300.0	2	10/22/2022 16:38	GJB	C
pH	7.73	2,S1	pH_Units		S4500HB-11	1	10/27/2022 21:48	NML	C
Phenolics	ND	ND,S1	mg/L	0.004	SW846 9066	1	10/27/2022 17:33	AKH	I
Specific Conductance	841	S1	umhos/cm	5	SM2510B-2011	1	10/25/2022 09:10	JXL	C
Sulfate	6.1	S1	mg/L	2.0	EPA 300.0	2	10/22/2022 16:38	GJB	C
Total Dissolved Solids	394	S1	mg/L	25	S2540C-11	1	10/28/2022 08:03	AKH	C
Total Organic Carbon (TOC)	8.7	S1	mg/L	2.5	SM5310B-2011	5	10/27/2022 05:02	PAG	G
Turbidity	15	S1	NTU	0.30	SM2130B-2011	1	10/22/2022 03:50	NRB	C



Results

Client Sample ID	CWMP009W	Collected	10/21/2022 10:18
Lab Sample ID	3270040002	Lab Receipt	10/21/2022 14:40

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	9.21	S2	Feet		Field	1	10/21/2022 10:18	BGS	B
Dissolved Oxygen	0.11	S2	mg/L	0.01	Field	1	10/21/2022 10:18	BGS	B
Elev Top MW Casing above MSL	404.20	S2	Feet		Field	1	10/21/2022 10:18	BGS	B
Flow Rate	1.54	S2	gal/min		Field	1	10/21/2022 10:18	BGS	B
Ground Water Elevation	394.99	S2	ft/MSL		Field	1	10/21/2022 10:18	BGS	B
Oxidation-Reduction Potential	-30	S2	mV		Field	1	10/21/2022 10:18	BGS	B
pH, Field (SM4500B)	6.05	S2	pH_Units		Field	1	10/21/2022 10:18	BGS	B
Sample Depth	16.00	S2	Feet		Field	1	10/21/2022 10:18	BGS	B
Specific Conductance, Field	4253	S2	umhos/cm	1	Field	1	10/21/2022 10:18	BGS	B
Temperature	15.07	S2	Deg. C		Field	1	10/21/2022 10:18	BGS	B
Total Well Depth	19.70	S2	Feet		Field	1	10/21/2022 10:18	BGS	B
Turbidity, Field	ND	ND,S2	NTU	1	Field	1	10/21/2022 10:18	BGS	B
Volume in Water Column	6.82	S2	Gallons		Field	1	10/21/2022 10:18	BGS	B
Water Level After Purge	11.02	S2	Feet		Field	1	10/21/2022 10:18	BGS	B
Well Volumes Purged	4.53	S2	Vol		Field	1	10/21/2022 10:18	BGS	B

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	175	S2	mg/L	0.11	SW846 6010C	1	11/05/2022 10:22	SRT	J1
Iron, Total	36.7	S2	mg/L	0.067	SW846 6010C	1	11/05/2022 10:22	SRT	J1
Magnesium, Total	83.0	S2	mg/L	0.11	SW846 6010C	1	11/05/2022 10:22	SRT	J1
Manganese, Total	13.0	S2	mg/L	0.0056	SW846 6010C	1	11/09/2022 18:22	A1S	J1
Potassium, Total	35.8	S2	mg/L	0.56	SW846 6010C	1	11/05/2022 10:22	SRT	J1
Sodium, Total	192	S2	mg/L	0.56	SW846 6010C	1	11/05/2022 10:22	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND,S2	ug/L	1.0	SW846 8260B	1	10/27/2022 02:08	PDK	E
1,1-Dichloroethane	1.2	S2	ug/L	1.0	SW846 8260B	1	10/27/2022 02:08	PDK	E
1,1-Dichloroethene	ND	ND,S2	ug/L	1.0	SW846 8260B	1	10/27/2022 02:08	PDK	E
1,2-Dibromoethane	ND	ND,S2	ug/L	1.0	SW846 8260B	1	10/27/2022 02:08	PDK	E
1,2-Dichloroethane	ND	ND,S2	ug/L	1.0	SW846 8260B	1	10/27/2022 02:08	PDK	E
Benzene	2.5	S2	ug/L	1.0	SW846 8260B	1	10/27/2022 02:08	PDK	E
cis-1,2-Dichloroethene	ND	ND,S2	ug/L	1.0	SW846 8260B	1	10/27/2022 02:08	PDK	E
Ethylbenzene	ND	ND,S2	ug/L	1.0	SW846 8260B	1	10/27/2022 02:08	PDK	E
Methylene Chloride	ND	ND,S2	ug/L	1.0	SW846 8260B	1	10/27/2022 02:08	PDK	E
Tetrachloroethene	ND	ND,S2	ug/L	1.0	SW846 8260B	1	10/27/2022 02:08	PDK	E
Toluene	ND	ND,S2	ug/L	1.0	SW846 8260B	1	10/27/2022 02:08	PDK	E
Total Xylenes	ND	ND,S2	ug/L	3.0	SW846 8260B	1	10/27/2022 02:08	PDK	E
trans-1,2-Dichloroethene	ND	ND,S2	ug/L	1.0	SW846 8260B	1	10/27/2022 02:08	PDK	E
Trichloroethene	ND	ND,S2	ug/L	1.0	SW846 8260B	1	10/27/2022 02:08	PDK	E
Vinyl Chloride	ND	ND,S2	ug/L	1.0	SW846 8260B	1	10/27/2022 02:08	PDK	E



Results

Client Sample ID	CWMP009W	Collected	10/21/2022 10:18
Lab Sample ID	3270040002	Lab Receipt	10/21/2022 14:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>									
Compound	CAS No			Recovery	Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			103 %	62 – 133		10/27/2022 02:08		
4-Bromofluorobenzene	460-00-4			111 %	79 – 114		10/27/2022 02:08		
Dibromofluoromethane	1868-53-7			96.1 %	78 – 116		10/27/2022 02:08		
Toluene-d8	2037-26-5			105 %	76 – 127		10/27/2022 02:08		

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	526	S2	mg/L	50	SM2320B-2011	10	10/31/2022 13:24	NML	C
Alkalinity, Total	526	1,S2	mg/L	50	SM2320B-2011	10	10/31/2022 13:24	NML	C
Ammonia-N	30.9	S2	mg/L	0.100	ASTM D6919-09	10	10/27/2022 06:24	NML	A
Chemical Oxygen Demand (COD)	104	S2	mg/L	15	EPA 410.4	1	10/26/2022 14:30	KMS	A
Chloride	645	S2	mg/L	10.0	EPA 300.0	10	10/22/2022 16:48	GJB	C
Fluoride	ND	ND,S2	mg/L	1.0	EPA 300.0	10	10/22/2022 16:48	GJB	C
Nitrate-N	ND	ND,S2	mg/L	5.0	EPA 300.0	10	10/22/2022 16:48	GJB	C
pH	7.50	2,S2	pH_Units		S4500HB-11	1	10/27/2022 21:59	NML	C
Phenolics	ND	ND,S2	mg/L	0.004	SW846 9066	1	10/27/2022 17:39	AKH	I
Specific Conductance	344	S2	umhos/cm	50	SM2510B-2011	10	10/25/2022 09:10	JXL	C
Sulfate	ND	ND,S2	mg/L	10.0	EPA 300.0	10	10/22/2022 16:48	GJB	C
Total Dissolved Solids	1710	S2	mg/L	25	S2540C-11	1	10/28/2022 08:03	AKH	C
Total Organic Carbon (TOC)	38.0	S2	mg/L	5.0	SM5310B-2011	10	10/27/2022 05:02	PAG	G
Turbidity	40	S2	NTU	0.30	SM2130B-2011	1	10/22/2022 03:50	NRB	C



Results

Client Sample ID	CWMP010W	Collected	10/21/2022 10:45
Lab Sample ID	3270040003	Lab Receipt	10/21/2022 14:40

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	8.74	S3	Feet		Field	1	10/21/2022 10:45	BGS	B
Dissolved Oxygen	4.58	S3	mg/L	0.01	Field	1	10/21/2022 10:45	BGS	B
Elev Top MW Casing above MSL	360.90	S3	Feet		Field	1	10/21/2022 10:45	BGS	B
Flow Rate	0.86	S3	gal/min		Field	1	10/21/2022 10:45	BGS	B
Ground Water Elevation	352.16	S3	ft/MSL		Field	1	10/21/2022 10:45	BGS	B
Oxidation-Reduction Potential	104	S3	mV		Field	1	10/21/2022 10:45	BGS	B
pH, Field (SM4500B)	6.56	S3	pH_Units		Field	1	10/21/2022 10:45	BGS	B
Sample Depth	18.00	S3	Feet		Field	1	10/21/2022 10:45	BGS	B
Specific Conductance, Field	2344	S3	umhos/cm	1	Field	1	10/21/2022 10:45	BGS	B
Temperature	16.14	S3	Deg. C		Field	1	10/21/2022 10:45	BGS	B
Total Well Depth	19.60	S3	Feet		Field	1	10/21/2022 10:45	BGS	B
Turbidity, Field	3	S3	NTU	1	Field	1	10/21/2022 10:45	BGS	B
Volume in Water Column	7.06	S3	Gallons		Field	1	10/21/2022 10:45	BGS	B
Water Level After Purge	17.45	S3	Feet		Field	1	10/21/2022 10:45	BGS	B
Well Volumes Purged	1.46	S3	Vol		Field	1	10/21/2022 10:45	BGS	B

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	48.7	S3	mg/L	0.11	SW846 6010C	1	11/05/2022 10:26	SRT	J1
Iron, Total	0.28	S3	mg/L	0.067	SW846 6010C	1	11/05/2022 10:26	SRT	J1
Magnesium, Total	39.5	S3	mg/L	0.11	SW846 6010C	1	11/05/2022 10:26	SRT	J1
Manganese, Total	0.26	S3	mg/L	0.0056	SW846 6010C	1	11/09/2022 18:23	A1S	J1
Potassium, Total	9.8	S3	mg/L	0.56	SW846 6010C	1	11/05/2022 10:26	SRT	J1
Sodium, Total	170	S3	mg/L	0.56	SW846 6010C	1	11/05/2022 10:26	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND,S3	ug/L	1.0	SW846 8260B	1	10/27/2022 02:31	PDK	E
1,1-Dichloroethane	ND	ND,S3	ug/L	1.0	SW846 8260B	1	10/27/2022 02:31	PDK	E
1,1-Dichloroethene	ND	ND,S3	ug/L	1.0	SW846 8260B	1	10/27/2022 02:31	PDK	E
1,2-Dibromoethane	ND	ND,S3	ug/L	1.0	SW846 8260B	1	10/27/2022 02:31	PDK	E
1,2-Dichloroethane	ND	ND,S3	ug/L	1.0	SW846 8260B	1	10/27/2022 02:31	PDK	E
Benzene	ND	ND,S3	ug/L	1.0	SW846 8260B	1	10/27/2022 02:31	PDK	E
cis-1,2-Dichloroethene	ND	ND,S3	ug/L	1.0	SW846 8260B	1	10/27/2022 02:31	PDK	E
Ethylbenzene	ND	ND,S3	ug/L	1.0	SW846 8260B	1	10/27/2022 02:31	PDK	E
Methylene Chloride	ND	ND,S3	ug/L	1.0	SW846 8260B	1	10/27/2022 02:31	PDK	E
Tetrachloroethene	ND	ND,S3	ug/L	1.0	SW846 8260B	1	10/27/2022 02:31	PDK	E
Toluene	ND	ND,S3	ug/L	1.0	SW846 8260B	1	10/27/2022 02:31	PDK	E
Total Xylenes	ND	ND,S3	ug/L	3.0	SW846 8260B	1	10/27/2022 02:31	PDK	E
trans-1,2-Dichloroethene	ND	ND,S3	ug/L	1.0	SW846 8260B	1	10/27/2022 02:31	PDK	E
Trichloroethene	ND	ND,S3	ug/L	1.0	SW846 8260B	1	10/27/2022 02:31	PDK	E
Vinyl Chloride	ND	ND,S3	ug/L	1.0	SW846 8260B	1	10/27/2022 02:31	PDK	E



Results

Client Sample ID	CWMP010W	Collected	10/21/2022 10:45
Lab Sample ID	3270040003	Lab Receipt	10/21/2022 14:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>									
Compound	CAS No			Recovery	Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			106%	62 – 133		10/27/2022 02:31		
4-Bromofluorobenzene	460-00-4			106%	79 – 114		10/27/2022 02:31		
Dibromofluoromethane	1868-53-7			93.2%	78 – 116		10/27/2022 02:31		
Toluene-d8	2037-26-5			107%	76 – 127		10/27/2022 02:31		

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	201	S3	mg/L	50	SM2320B-2011	10	10/31/2022 13:35	NML	C
Alkalinity, Total	201	1,S3	mg/L	50	SM2320B-2011	10	10/31/2022 13:35	NML	C
Ammonia-N	ND	ND,S3	mg/L	0.100	ASTM D6919-09	10	10/27/2022 04:05	NML	A
Chemical Oxygen Demand (COD)	ND	ND,S3	mg/L	15	EPA 410.4	1	10/26/2022 14:13	KMS	A
Chloride	117	3,4,S3	mg/L	2.0	EPA 300.0	2	10/22/2022 16:59	GJB	C
Fluoride	ND	ND,S3	mg/L	0.20	EPA 300.0	2	10/22/2022 16:59	GJB	C
Nitrate-N	6.8	S3	mg/L	1.0	EPA 300.0	2	10/22/2022 16:59	GJB	C
pH	8.21	2,S3	pH_Units		S4500HB-11	1	10/27/2022 22:11	NML	C
Phenolics	ND	ND,5,6, S3	mg/L	0.004	SW846 9066	1	10/27/2022 18:02	AKH	I
Specific Conductance	1500	S3	umhos/cm	5	SM2510B-2011	1	10/25/2022 09:10	JXL	C
Sulfate	9.8	S3	mg/L	2.0	EPA 300.0	2	10/22/2022 16:59	GJB	C
Total Dissolved Solids	748	S3	mg/L	25	S2540C-11	1	10/28/2022 08:03	AKH	C
Total Organic Carbon (TOC)	3.5	S3	mg/L	0.50	SM5310B-2011	1	10/27/2022 05:02	PAG	G
Turbidity	2.8	S3	NTU	0.30	SM2130B-2011	1	10/22/2022 03:50	NRB	C



Results

Client Sample ID	CWMP018S	Collected	10/21/2022 10:55
Lab Sample ID	3270040004	Lab Receipt	10/21/2022 14:40

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Dissolved Oxygen	10.96	S4	mg/L	0.01	Field	1	10/21/2022 10:55	BGS	B
pH, Field (SM4500B)	8.41	S4	pH_Units		Field	1	10/21/2022 10:55	BGS	B
Specific Conductance, Field	4383	S4	umhos/cm	1	Field	1	10/21/2022 10:55	BGS	B
Temperature	10.39	S4	Deg. C		Field	1	10/21/2022 10:55	BGS	B

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	87.1	S4	mg/L	0.11	SW846 6010C	1	11/05/2022 10:30	SRT	J1
Iron, Total	0.22	S4	mg/L	0.067	SW846 6010C	1	11/05/2022 10:30	SRT	J1
Magnesium, Total	98.3	S4	mg/L	0.11	SW846 6010C	1	11/05/2022 10:30	SRT	J1
Manganese, Total	0.022	S4	mg/L	0.0056	SW846 6010C	1	11/09/2022 18:24	A1S	J1
Potassium, Total	22.2	S4	mg/L	0.56	SW846 6010C	1	11/05/2022 10:30	SRT	J1
Sodium, Total	399	S4	mg/L	0.56	SW846 6010C	1	11/05/2022 10:30	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND,S4	ug/L	1.0	SW846 8260B	1	10/27/2022 02:53	PDK	E
1,1-Dichloroethane	ND	ND,S4	ug/L	1.0	SW846 8260B	1	10/27/2022 02:53	PDK	E
1,1-Dichloroethene	ND	ND,S4	ug/L	1.0	SW846 8260B	1	10/27/2022 02:53	PDK	E
1,2-Dibromoethane	ND	ND,S4	ug/L	1.0	SW846 8260B	1	10/27/2022 02:53	PDK	E
1,2-Dichloroethane	ND	ND,S4	ug/L	1.0	SW846 8260B	1	10/27/2022 02:53	PDK	E
Benzene	ND	ND,S4	ug/L	1.0	SW846 8260B	1	10/27/2022 02:53	PDK	E
cis-1,2-Dichloroethene	ND	ND,S4	ug/L	1.0	SW846 8260B	1	10/27/2022 02:53	PDK	E
Ethylbenzene	ND	ND,S4	ug/L	1.0	SW846 8260B	1	10/27/2022 02:53	PDK	E
Methylene Chloride	ND	ND,S4	ug/L	1.0	SW846 8260B	1	10/27/2022 02:53	PDK	E
Tetrachloroethene	ND	ND,S4	ug/L	1.0	SW846 8260B	1	10/27/2022 02:53	PDK	E
Toluene	ND	ND,S4	ug/L	1.0	SW846 8260B	1	10/27/2022 02:53	PDK	E
Total Xylenes	ND	ND,S4	ug/L	3.0	SW846 8260B	1	10/27/2022 02:53	PDK	E
trans-1,2-Dichloroethene	ND	ND,S4	ug/L	1.0	SW846 8260B	1	10/27/2022 02:53	PDK	E
Trichloroethene	ND	ND,S4	ug/L	1.0	SW846 8260B	1	10/27/2022 02:53	PDK	E
Vinyl Chloride	ND	ND,S4	ug/L	1.0	SW846 8260B	1	10/27/2022 02:53	PDK	E

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	104%	62 – 133	10/27/2022 02:53	
4-Bromofluorobenzene	460-00-4	108%	79 – 114	10/27/2022 02:53	
Dibromofluoromethane	1868-53-7	93.7%	78 – 116	10/27/2022 02:53	
Toluene-d8	2037-26-5	106%	76 – 127	10/27/2022 02:53	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	501	S4	mg/L	50	SM2320B-2011	10	10/31/2022 13:45	NML	C



Results

Client Sample ID	CWMP018S	Collected	10/21/2022 10:55
Lab Sample ID	3270040004	Lab Receipt	10/21/2022 14:40

WET CHEMISTRY (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Total	525	1,S4	mg/L	50	SM2320B-2011	10	10/31/2022 13:45	NML	C
Ammonia-N	0.169	S4	mg/L	0.100	ASTM D6919-09	10	10/27/2022 07:35	NML	A
Chemical Oxygen Demand (COD)	19	S4	mg/L	15	EPA 410.4	1	10/26/2022 14:30	KMS	A
Chloride	672	S4	mg/L	25.0	EPA 300.0	25	11/02/2022 05:55	J1W	C
Fluoride	ND	ND,S4	mg/L	0.20	EPA 300.0	2	10/22/2022 17:51	GJB	C
Nitrate-N	26.0	S4	mg/L	12.5	EPA 300.0	25	11/02/2022 05:55	J1W	C
pH	8.62	2,S4	pH_Units		S4500HB-11	1	10/27/2022 22:26	NML	C
Phenolics	ND	ND,S4	mg/L	0.004	SW846 9066	1	10/27/2022 18:12	AKH	I
Specific Conductance	368	S4	umhos/cm	50	SM2510B-2011	10	10/25/2022 09:10	JXL	C
Sulfate	46.8	S4	mg/L	2.0	EPA 300.0	2	10/22/2022 17:51	GJB	C
Total Dissolved Solids	1760	S4	mg/L	25	S2540C-11	1	10/28/2022 08:03	AKH	C
Total Organic Carbon (TOC)	6.4	S4	mg/L	0.50	SM5310B-2011	1	10/27/2022 05:02	PAG	G
Turbidity	0.35	S4	NTU	0.30	SM2130B-2011	1	10/22/2022 06:30	NRB	C



Results

Client Sample ID	CWMP017S	Collected	10/21/2022 11:25
Lab Sample ID	3270040005	Lab Receipt	10/21/2022 14:40

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Dissolved Oxygen	8.95	S5	mg/L	0.01	Field	1	10/21/2022 11:25	BGS	B
pH, Field (SM4500B)	7.87	S5	pH_Units		Field	1	10/21/2022 11:25	BGS	B
Specific Conductance, Field	6089	S5	umhos/cm	1	Field	1	10/21/2022 11:25	BGS	B
Temperature	18.05	S5	Deg. C		Field	1	10/21/2022 11:25	BGS	B

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	91.6	S5	mg/L	0.11	SW846 6010C	1	11/05/2022 10:33	SRT	J1
Iron, Total	1.9	S5	mg/L	0.067	SW846 6010C	1	11/05/2022 10:33	SRT	J1
Magnesium, Total	130	S5	mg/L	0.11	SW846 6010C	1	11/05/2022 10:33	SRT	J1
Manganese, Total	0.24	S5	mg/L	0.0056	SW846 6010C	1	11/09/2022 18:25	A1S	J1
Potassium, Total	24.1	S5	mg/L	0.56	SW846 6010C	1	11/05/2022 10:33	SRT	J1
Sodium, Total	538	S5	mg/L	0.56	SW846 6010C	1	11/05/2022 10:33	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND,S5	ug/L	1.0	SW846 8260B	1	10/27/2022 03:16	PDK	E
1,1-Dichloroethane	ND	ND,S5	ug/L	1.0	SW846 8260B	1	10/27/2022 03:16	PDK	E
1,1-Dichloroethene	ND	ND,S5	ug/L	1.0	SW846 8260B	1	10/27/2022 03:16	PDK	E
1,2-Dibromoethane	ND	ND,S5	ug/L	1.0	SW846 8260B	1	10/27/2022 03:16	PDK	E
1,2-Dichloroethane	ND	ND,S5	ug/L	1.0	SW846 8260B	1	10/27/2022 03:16	PDK	E
Benzene	ND	ND,S5	ug/L	1.0	SW846 8260B	1	10/27/2022 03:16	PDK	E
cis-1,2-Dichloroethene	ND	ND,S5	ug/L	1.0	SW846 8260B	1	10/27/2022 03:16	PDK	E
Ethylbenzene	ND	ND,S5	ug/L	1.0	SW846 8260B	1	10/27/2022 03:16	PDK	E
Methylene Chloride	ND	ND,S5	ug/L	1.0	SW846 8260B	1	10/27/2022 03:16	PDK	E
Tetrachloroethene	ND	ND,S5	ug/L	1.0	SW846 8260B	1	10/27/2022 03:16	PDK	E
Toluene	ND	ND,S5	ug/L	1.0	SW846 8260B	1	10/27/2022 03:16	PDK	E
Total Xylenes	ND	ND,S5	ug/L	3.0	SW846 8260B	1	10/27/2022 03:16	PDK	E
trans-1,2-Dichloroethene	ND	ND,S5	ug/L	1.0	SW846 8260B	1	10/27/2022 03:16	PDK	E
Trichloroethene	ND	ND,S5	ug/L	1.0	SW846 8260B	1	10/27/2022 03:16	PDK	E
Vinyl Chloride	ND	ND,S5	ug/L	1.0	SW846 8260B	1	10/27/2022 03:16	PDK	E

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	105%	62 – 133	10/27/2022 03:16	
4-Bromofluorobenzene	460-00-4	110%	79 – 114	10/27/2022 03:16	
Dibromofluoromethane	1868-53-7	95.5%	78 – 116	10/27/2022 03:16	
Toluene-d8	2037-26-5	106%	76 – 127	10/27/2022 03:16	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	616	S5	mg/L	50	SM2320B-2011	10	10/31/2022 14:55	NML	C



Results

Client Sample ID	CWMP017S	Collected	10/21/2022 11:25
Lab Sample ID	3270040005	Lab Receipt	10/21/2022 14:40

WET CHEMISTRY (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Total	616	1,S5	mg/L	50	SM2320B-2011	10	10/31/2022 14:55	NML	C
Ammonia-N	0.147	S5	mg/L	0.100	ASTM D6919-09	10	10/27/2022 08:57	NML	A
Chemical Oxygen Demand (COD)	ND	ND,S5	mg/L	15	EPA 410.4	1	10/26/2022 14:13	KMS	A
Chloride	815	S5	mg/L	10.0	EPA 300.0	10	10/22/2022 18:01	GJB	C
Fluoride	ND	ND,S5	mg/L	1.0	EPA 300.0	10	10/22/2022 18:01	GJB	C
Nitrate-N	30.2	S5	mg/L	5.0	EPA 300.0	10	10/22/2022 18:01	GJB	C
pH	8.50	2,S5	pH_Units		S4500HB-11	1	10/27/2022 22:41	NML	C
Phenolics	ND	ND,S5	mg/L	0.004	SW846 9066	1	10/27/2022 18:19	AKH	I
Specific Conductance	443	S5	umhos/cm	50	SM2510B-2011	10	10/25/2022 09:10	JXL	C
Sulfate	78.0	S5	mg/L	10.0	EPA 300.0	10	10/22/2022 18:01	GJB	C
Total Dissolved Solids	2150	S5	mg/L	25	S2540C-11	1	10/28/2022 08:03	AKH	C
Total Organic Carbon (TOC)	4.8	S5	mg/L	0.50	SM5310B-2011	1	10/27/2022 05:02	PAG	G
Turbidity	7.0	S5	NTU	0.30	SM2130B-2011	1	10/22/2022 06:30	NRB	C



Results

Client Sample ID	CWMP012W	Collected	10/21/2022 12:15
Lab Sample ID	3270040006	Lab Receipt	10/21/2022 14:40

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	66.47	S6	Feet		Field	1	10/21/2022 12:15	BGS	B
Dissolved Oxygen	8.63	S6	mg/L	0.01	Field	1	10/21/2022 12:15	BGS	B
Oxidation-Reduction Potential	73	S6	mV		Field	1	10/21/2022 12:15	BGS	B
pH, Field (SM4500B)	6.65	S6	pH_Units		Field	1	10/21/2022 12:15	BGS	B
Specific Conductance, Field	432	S6	umhos/cm	1	Field	1	10/21/2022 12:15	BGS	B
Temperature	15.34	S6	Deg. C		Field	1	10/21/2022 12:15	BGS	B
Turbidity, Field	117	S6	NTU	1	Field	1	10/21/2022 12:15	BGS	B

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	27.7	S6	mg/L	0.11	SW846 6010C	1	11/05/2022 10:37	SRT	J1
Iron, Total	40.6	S6	mg/L	0.067	SW846 6010C	1	11/05/2022 10:37	SRT	J1
Magnesium, Total	8.0	S6	mg/L	0.11	SW846 6010C	1	11/05/2022 10:37	SRT	J1
Manganese, Total	0.39	S6	mg/L	0.0056	SW846 6010C	1	11/09/2022 18:26	A1S	J1
Potassium, Total	1.6	S6	mg/L	0.56	SW846 6010C	1	11/05/2022 10:37	SRT	J1
Sodium, Total	15.7	S6	mg/L	0.56	SW846 6010C	1	11/05/2022 10:37	SRT	J1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND,S6	ug/L	1.0	SW846 8260B	1	10/27/2022 03:39	PKD	E
1,1-Dichloroethane	ND	ND,S6	ug/L	1.0	SW846 8260B	1	10/27/2022 03:39	PKD	E
1,1-Dichloroethene	ND	ND,S6	ug/L	1.0	SW846 8260B	1	10/27/2022 03:39	PKD	E
1,2-Dibromoethane	ND	ND,S6	ug/L	1.0	SW846 8260B	1	10/27/2022 03:39	PKD	E
1,2-Dichloroethane	ND	ND,S6	ug/L	1.0	SW846 8260B	1	10/27/2022 03:39	PKD	E
Benzene	ND	ND,S6	ug/L	1.0	SW846 8260B	1	10/27/2022 03:39	PKD	E
cis-1,2-Dichloroethene	ND	ND,S6	ug/L	1.0	SW846 8260B	1	10/27/2022 03:39	PKD	E
Ethylbenzene	ND	ND,S6	ug/L	1.0	SW846 8260B	1	10/27/2022 03:39	PKD	E
Methylene Chloride	ND	ND,S6	ug/L	1.0	SW846 8260B	1	10/27/2022 03:39	PKD	E
Tetrachloroethene	ND	ND,S6	ug/L	1.0	SW846 8260B	1	10/27/2022 03:39	PKD	E
Toluene	ND	ND,S6	ug/L	1.0	SW846 8260B	1	10/27/2022 03:39	PKD	E
Total Xylenes	ND	ND,S6	ug/L	3.0	SW846 8260B	1	10/27/2022 03:39	PKD	E
trans-1,2-Dichloroethene	ND	ND,S6	ug/L	1.0	SW846 8260B	1	10/27/2022 03:39	PKD	E
Trichloroethene	ND	ND,S6	ug/L	1.0	SW846 8260B	1	10/27/2022 03:39	PKD	E
Vinyl Chloride	ND	ND,S6	ug/L	1.0	SW846 8260B	1	10/27/2022 03:39	PKD	E

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	104%	62 – 133	10/27/2022 03:39	
4-Bromofluorobenzene	460-00-4	109%	79 – 114	10/27/2022 03:39	
Dibromofluoromethane	1868-53-7	93.8%	78 – 116	10/27/2022 03:39	
Toluene-d8	2037-26-5	104%	76 – 127	10/27/2022 03:39	

WET CHEMISTRY



Results

Client Sample ID	CWMP012W	Collected	10/21/2022 12:15
Lab Sample ID	3270040006	Lab Receipt	10/21/2022 14:40

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	64	S6	mg/L	5	SM2320B-2011	1	10/27/2022 23:29	NML	C
Alkalinity, Total	64	1,S6	mg/L	5	SM2320B-2011	1	10/27/2022 23:29	NML	C
Ammonia-N	0.244	S6	mg/L	0.100	ASTM D6919-09	10	10/27/2022 07:21	NML	A
Chemical Oxygen Demand (COD)	ND	ND,S6	mg/L	15	EPA 410.4	1	10/31/2022 15:10	KMS	A
Chloride	36.8	S6	mg/L	2.0	EPA 300.0	2	10/22/2022 18:12	GJB	C
Fluoride	ND	ND,S6	mg/L	0.20	EPA 300.0	2	10/22/2022 18:12	GJB	C
Nitrate-N	2.2	S6	mg/L	1.0	EPA 300.0	2	10/22/2022 18:12	GJB	C
pH	7.90	2,S6	pH_Units		S4500HB-11	1	10/27/2022 23:29	NML	C
Phenolics	ND	ND,S6	mg/L	0.004	SW846 9066	1	10/27/2022 18:25	AKH	I
Specific Conductance	330	S6	umhos/cm	5	SM2510B-2011	1	10/25/2022 09:10	JXL	C
Sulfate	17.2	S6	mg/L	2.0	EPA 300.0	2	10/22/2022 18:12	GJB	C
Total Dissolved Solids	165	S6	mg/L	25	S2540C-11	1	10/28/2022 08:03	AKH	C
Total Organic Carbon (TOC)	2.0	S6	mg/L	1.0	SM5310B-2011	2	10/28/2022 03:17	PAG	G
Turbidity	120	S6	NTU	0.30	SM2130B-2011	1	10/22/2022 06:30	NRB	C



Results

Client Sample ID	Field Blank	Collected	10/21/2022 13:12
Lab Sample ID	3270040007	Lab Receipt	10/21/2022 14:40

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	ND	ND,S7	mg/L	0.11	SW846 6010C	1	11/05/2022 10:40	SRT	I1
Iron, Total	ND	ND,S7	mg/L	0.067	SW846 6010C	1	11/05/2022 10:40	SRT	I1
Magnesium, Total	ND	ND,S7	mg/L	0.11	SW846 6010C	1	11/05/2022 10:40	SRT	I1
Manganese, Total	ND	ND,S7	mg/L	0.0056	SW846 6010C	1	11/09/2022 18:27	A1S	I1
Potassium, Total	ND	ND,S7	mg/L	0.56	SW846 6010C	1	11/05/2022 10:40	SRT	I1
Sodium, Total	ND	ND,S7	mg/L	0.56	SW846 6010C	1	11/05/2022 10:40	SRT	I1

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
1,1,2,2-Tetrachloroethane	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
1,1,2-Trichloroethane	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
1,1-Dichloroethane	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
1,1-Dichloroethene	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
1,2,3-Trichloropropane	ND	ND,S7	ug/L	2.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
1,2,4-Trichlorobenzene	ND	ND,S7	ug/L	2.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
1,2-Dibromoethane	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
1,2-Dichlorobenzene	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
1,2-Dichloroethane	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
1,2-Dichloropropane	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
1,3-Dichlorobenzene	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
1,3-Dichloropropene, Total	ND	ND,S7	ug/L	2.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
1,4-Dichlorobenzene	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Benzene	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Bromodichloromethane	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Bromoform	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Bromomethane	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Carbon Tetrachloride	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Chlorobenzene	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Chlorodibromomethane	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Chloroethane	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Chloroform	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Chloromethane	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
cis-1,2-Dichloroethene	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Ethylbenzene	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Methylene Chloride	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Styrene	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Tetrachloroethene	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Toluene	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Total Xylenes	ND	ND,S7	ug/L	3.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
trans-1,2-Dichloroethene	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Trichloroethene	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Trichlorofluoromethane	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D
Vinyl Chloride	ND	ND,S7	ug/L	1.0	SW846 8260B	1	10/27/2022 01:00	PDK	D



Results

Client Sample ID	Field Blank	Collected	10/21/2022 13:12
Lab Sample ID	3270040007	Lab Receipt	10/21/2022 14:40

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
<i>SURROGATES</i>									
Compound	CAS No			Recovery	Limits(%)		Analysis Date/Time		Qualifiers
1,2-Dichloroethane-d4	17060-07-0			104%	62 – 133		10/27/2022 01:00		
4-Bromofluorobenzene	460-00-4			108%	79 – 114		10/27/2022 01:00		
Dibromofluoromethane	1868-53-7			95.8%	78 – 116		10/27/2022 01:00		
Toluene-d8	2037-26-5			107%	76 – 127		10/27/2022 01:00		

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	ND	ND,S7	mg/L	5	SM2320B-2011	1	10/27/2022 23:37	NML	B
Alkalinity, Total	ND	ND,1,S7	mg/L	5	SM2320B-2011	1	10/27/2022 23:37	NML	B
Ammonia-N	ND	ND,S7	mg/L	0.010	ASTM D6919-09	1	10/27/2022 04:19	NML	A
Chemical Oxygen Demand (COD)	ND	ND,S7	mg/L	15	EPA 410.4	1	10/26/2022 14:13	KMS	A
Chloride	ND	ND,S7	mg/L	2.0	EPA 300.0	2	10/22/2022 18:22	GJB	B
Fluoride	ND	ND,S7	mg/L	0.20	EPA 300.0	2	10/22/2022 18:22	GJB	B
Nitrate-N	ND	ND,S7	mg/L	1.0	EPA 300.0	2	10/22/2022 18:22	GJB	B
pH	5.82	2,S7	pH_Units		S4500HB-11	1	10/27/2022 23:37	NML	B
Phenolics	ND	ND,S7	mg/L	0.004	SW846 9066	1	10/27/2022 18:29	AKH	H
Specific Conductance	ND	ND,S7	umhos/cm	5	SM2510B-2011	1	10/25/2022 09:10	JXL	B
Sulfate	ND	ND,S7	mg/L	2.0	EPA 300.0	2	10/22/2022 18:22	GJB	B
Total Dissolved Solids	ND	ND,S7	mg/L	25	S2540C-11	1	10/28/2022 08:03	AKH	B
Total Organic Carbon (TOC)	ND	ND,S7	mg/L	0.50	SM5310B-2011	1	10/28/2022 03:17	PAG	F
Turbidity	ND	ND,S7	NTU	0.30	SM2130B-2011	1	10/22/2022 06:30	NRB	B



Results

Client Sample ID	Trip Blank	Collected	10/21/2022 14:40
Lab Sample ID	3270040008	Lab Receipt	10/21/2022 14:40

VOLATILE ORGANICS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
1,1,1-Trichloroethane	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
1,1,2,2-Tetrachloroethane	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
1,1,2-Trichloroethane	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
1,1-Dichloroethane	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
1,1-Dichloroethene	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
1,2,3-Trichloropropane	ND	ND,S8	ug/L	2.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
1,2,4-Trichlorobenzene	ND	ND,S8	ug/L	2.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
1,2-Dibromoethane	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
1,2-Dichlorobenzene	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
1,2-Dichloroethane	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
1,2-Dichloropropane	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
1,3-Dichlorobenzene	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
1,3-Dichloropropene, Total	ND	ND,S8	ug/L	2.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
1,4-Dichlorobenzene	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Benzene	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Bromodichloromethane	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Bromoform	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Bromomethane	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Carbon Tetrachloride	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Chlorobenzene	ND	ND,7,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Chlorodibromomethane	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Chloroethane	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Chloroform	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Chloromethane	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
cis-1,2-Dichloroethene	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Ethylbenzene	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Methylene Chloride	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Styrene	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Tetrachloroethene	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Toluene	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Total Xylenes	ND	ND,S8	ug/L	3.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
trans-1,2-Dichloroethene	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Trichloroethene	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Trichlorofluoromethane	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A
Vinyl Chloride	ND	ND,S8	ug/L	1.0	SW846 8260B	1	10/26/2022 12:50	TMP	A

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	104%	62 – 133	10/26/2022 12:50	
4-Bromofluorobenzene	460-00-4	110%	79 – 114	10/26/2022 12:50	
Dibromofluoromethane	1868-53-7	93.8%	78 – 116	10/26/2022 12:50	
Toluene-d8	2037-26-5	107%	76 – 127	10/26/2022 12:50	



Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3270040001	CWMP008W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2510B-2011	N/A	
		SM5310B-2011	N/A	
		SW846 9066		
3270040002	CWMP009W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2510B-2011	N/A	
		SM5310B-2011	N/A	
		SW846 9066		
3270040003	CWMP010W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2510B-2011	N/A	
		SM5310B-2011	N/A	
		SW846 9066		
3270040004	CWMP018S	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2510B-2011	N/A	
SM5310B-2011	N/A			
		SW846 9066		



Project 4th QTR 2022 GWMP-FORM 19Q
Workorder 3270040

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3270040005	CWMP017S	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2510B-2011	N/A	
		SM5310B-2011	N/A	
		SW846 9066	SW846 9066	
		3270040006	CWMP012W	Field
SW846 6010C	SW846 3015A			
SW846 8260B	N/A			
ASTM D6919-09	N/A			
EPA 300.0	N/A			
EPA 410.4	N/A			
S2540C-11	N/A			
S4500HB-11	N/A			
SM2130B-2011	N/A			
SM2320B-2011	N/A			
SM2510B-2011	N/A			
SM5310B-2011	N/A			
SW846 9066	SW846 9066			
3270040007	Field Blank			SW846 6010C
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	N/A	
		SM2510B-2011	N/A	
		SM5310B-2011	N/A	
		SW846 9066	SW846 9066	
3270040008	Trip Blank	SW846 8260B	N/A	

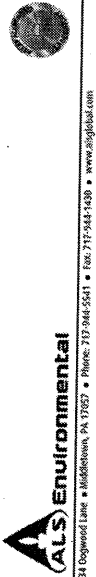


QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3270040001	CWMP008W	N/A	N/A	N/A		Field	899001
		SW846 3015A	895716	10/27/2022 12:47	JSE	SW846 6010C	905119
		SW846 3015A	895716	10/27/2022 12:47	JSE	SW846 6010C	902487
		N/A	N/A	N/A		SW846 8260B	895276
		N/A	N/A	N/A		ASTM D6919-09	898916
		N/A	N/A	N/A		EPA 300.0	892992
		N/A	N/A	N/A		EPA 410.4	894692
		N/A	N/A	N/A		S2540C-11	895482
		N/A	N/A	N/A		S4500HB-11	894019
		N/A	N/A	N/A		SM2130B-2011	892978
		N/A	N/A	N/A		SM2320B-2011	894019
		N/A	N/A	N/A		SM2510B-2011	893486
		N/A	N/A	N/A		SM5310B-2011	894813
	SW846 9066	894721	10/27/2022 07:35	AKH	SW846 9066	895691	
3270040002	CWMP009W	N/A	N/A	N/A		Field	899001
		SW846 3015A	895716	10/27/2022 12:47	JSE	SW846 6010C	905119
		SW846 3015A	895716	10/27/2022 12:47	JSE	SW846 6010C	902487
		N/A	N/A	N/A		SW846 8260B	895276
		N/A	N/A	N/A		ASTM D6919-09	894580
		N/A	N/A	N/A		EPA 300.0	892992
		N/A	N/A	N/A		EPA 410.4	894692
		N/A	N/A	N/A		S2540C-11	895482
		N/A	N/A	N/A		S4500HB-11	894019
		N/A	N/A	N/A		SM2130B-2011	892978
		N/A	N/A	N/A		SM2320B-2011	896468
		N/A	N/A	N/A		SM2510B-2011	893486
		N/A	N/A	N/A		SM5310B-2011	894813
	SW846 9066	894721	10/27/2022 07:35	AKH	SW846 9066	895691	
3270040003	CWMP010W	N/A	N/A	N/A		Field	899001
		SW846 3015A	895716	10/27/2022 12:47	JSE	SW846 6010C	905119
		SW846 3015A	895716	10/27/2022 12:47	JSE	SW846 6010C	902487
		N/A	N/A	N/A		SW846 8260B	895276
		N/A	N/A	N/A		ASTM D6919-09	894580
		N/A	N/A	N/A		EPA 300.0	892992
		N/A	N/A	N/A		EPA 410.4	894674
		N/A	N/A	N/A		S2540C-11	895482
		N/A	N/A	N/A		S4500HB-11	894019
		N/A	N/A	N/A		SM2130B-2011	892978
		N/A	N/A	N/A		SM2320B-2011	896468
		N/A	N/A	N/A		SM2510B-2011	893486
		N/A	N/A	N/A		SM5310B-2011	894813
	SW846 9066	894722	10/27/2022 07:36	AKH	SW846 9066	895691	
3270040004	CWMP018S	N/A	N/A	N/A		Field	899001
		SW846 3015A	895716	10/27/2022 12:47	JSE	SW846 6010C	905119
		SW846 3015A	895716	10/27/2022 12:47	JSE	SW846 6010C	902487
		N/A	N/A	N/A		SW846 8260B	895276
		N/A	N/A	N/A		ASTM D6919-09	894675
		N/A	N/A	N/A		EPA 300.0	892992
		N/A	N/A	N/A		EPA 300.0	899196
		N/A	N/A	N/A		EPA 410.4	894692
		N/A	N/A	N/A		S2540C-11	895482
		N/A	N/A	N/A		S4500HB-11	894019
		N/A	N/A	N/A		SM2130B-2011	892987
		N/A	N/A	N/A		SM2320B-2011	896468
		N/A	N/A	N/A		SM2510B-2011	893486
N/A	N/A	N/A		SM5310B-2011	894813		
	SW846 9066	894722	10/27/2022 07:36	AKH	SW846 9066	895691	



Lab ID	Sample ID	Preparation Method	Prep Batch	Prep Date/Time	By	Analysis Method	Anly Batch
3270040005	CWMP017S	N/A	N/A	N/A		Field	899001
		SW846 3015A	895716	10/27/2022 12:47	JSE	SW846 6010C	905119
		SW846 3015A	895716	10/27/2022 12:47	JSE	SW846 6010C	902487
		N/A	N/A	N/A		SW846 8260B	895276
		N/A	N/A	N/A		ASTM D6919-09	894675
		N/A	N/A	N/A		EPA 300.0	892992
		N/A	N/A	N/A		EPA 410.4	894674
		N/A	N/A	N/A		S2540C-11	895482
		N/A	N/A	N/A		S4500HB-11	894019
		N/A	N/A	N/A		SM2130B-2011	892987
		N/A	N/A	N/A		SM2320B-2011	896468
		N/A	N/A	N/A		SM2510B-2011	893486
		N/A	N/A	N/A		SM5310B-2011	894813
		SW846 9066	894722	10/27/2022 07:36	AKH	SW846 9066	895691
3270040006	CWMP012W	N/A	N/A	N/A		Field	899001
		SW846 3015A	895716	10/27/2022 12:47	JSE	SW846 6010C	905119
		SW846 3015A	895716	10/27/2022 12:47	JSE	SW846 6010C	902487
		N/A	N/A	N/A		SW846 8260B	895276
		N/A	N/A	N/A		ASTM D6919-09	894675
		N/A	N/A	N/A		EPA 300.0	892992
		N/A	N/A	N/A		EPA 410.4	898971
		N/A	N/A	N/A		S2540C-11	895482
		N/A	N/A	N/A		S4500HB-11	894019
		N/A	N/A	N/A		SM2130B-2011	892987
		N/A	N/A	N/A		SM2320B-2011	894019
		N/A	N/A	N/A		SM2510B-2011	893486
		N/A	N/A	N/A		SM5310B-2011	895764
		SW846 9066	894722	10/27/2022 07:36	AKH	SW846 9066	895691
3270040007	Field Blank	SW846 3015A	895716	10/27/2022 12:47	JSE	SW846 6010C	902487
		SW846 3015A	895716	10/27/2022 12:47	JSE	SW846 6010C	905119
		N/A	N/A	N/A		SW846 8260B	895276
		N/A	N/A	N/A		ASTM D6919-09	894580
		N/A	N/A	N/A		EPA 300.0	892992
		N/A	N/A	N/A		EPA 410.4	894674
		N/A	N/A	N/A		S2540C-11	895482
		N/A	N/A	N/A		S4500HB-11	894019
		N/A	N/A	N/A		SM2130B-2011	892987
		N/A	N/A	N/A		SM2320B-2011	894019
		N/A	N/A	N/A		SM2510B-2011	893486
		N/A	N/A	N/A		SM5310B-2011	895764
		SW846 9066	894722	10/27/2022 07:36	AKH	SW846 9066	895691
		3270040008	Trip Blank	N/A	N/A	N/A	



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**CHAIN OF CUSTODY/
REQUEST FOR ANALYSIS**
ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /
SAMPLER. INSTRUCTIONS ON THE BACK.

Generated by ALS



3270040
Logged By: RHJF
PH: SJB



1 of 1

Client Name: Lancaster County Solid Waste MA

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

Contact: Dan Brown

Phone#: (717) 735-0193

Project Name#: Creswell/GWMP Form 19Q Wells

Bill To: Lancaster County Solid Waste MA

TAT Normal-Standard TAT is 10-12 business days.

Rush-Subject to ALS approval and surcharges.

Date Required: _____ Approved By: _____

Email? X-Y dbrown@lcswwma.org

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

Sample Description/Location (as it will appear on the lab report)

Sample Date Time

1. CWMP008W 10/21/22 0940

2. CWMP009W 10/21/22 1018

3. CWMP010W 10/21/22 1045

4. CWMP018S 10/21/22 1055

5. CWMP017S 10/21/22 1125

6. CWMP012W 10/21/22 1215

7. Field Blank 10/21/22 1312

8. Trip Blank 10/21/22 1440

9

10

Project Comments:

LOGGED BY (signature): _____

REVIEWED BY (signature): _____

Requested By / Company Name

Date Time

1. *[Signature]* 10-21-22 1440

2. *[Signature]* 10-21-22 1440

3. *[Signature]* 10-21-22 1440

4

6

8

10

Received By / Company Name

Date Time

10-21-22 1440

10-21-22 1440

10-21-22 1440

10-21-22 1440

10-21-22 1440

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

COOLER TEMP: 11 Thermo ID: 570

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?

Temp Taken By: *KSB*

WO Temp (°C): *570*

Therm ID: *570*

Receipt Info Completed By: *KSB*

Cooler Custody Seal Intact Y N N/A

Sample Custody Seal Intact Y N N/A

Received on Ice Y N N/A

Cooler & Samples Intact Y N N/A

Correct Containers Provided Y N N/A

Sample Label/COC Agree Y N N/A

Adequate Sample Volumes Y N N/A

VOA Headspace Present Y N N/A

Voa Trip Blank Y N N/A

MIS 4 Days? Y N N/A

Rad Screen (uCi) Y N N/A

Courier/Tracking #: _____

SDWA Compliance Y N

PWSID Y N N/A

WV Containers 0-6°C Y N N/A

ALS Field Services: Pickup Labor

Composite_Sampling Rental_Equipment

Other: _____

ANALYSES/METHOD REQUESTED

Enter Number of Containers Per Sample or Field Results Below.	TOC	O-H	8260 VOCs - Form 19Q	Field Measurements	Sample Depth for AUX Data	Total Metals: Ca, Fe, Mn, Mg, K, Na	PH, NO3, Cl, F, SPC, SO4, Turb	Alkalinity, HCO3
1	2	1	2	X	X	1	2	1
2	2	1	2	X	X	1	2	1
2	2	1	2	X	X	1	2	1
2	2	1	2	X	X	1	2	1
2	2	1	2	X	X	1	2	1
2	2	1	2	X	X	1	2	1
2	2	1	2	X	X	1	2	1
2	2	1	2	X	X	1	2	1
2	2	1	2	X	X	1	2	1
2	2	1	2	X	X	1	2	1
2	2	1	2	X	X	1	2	1

Standard CLP-like USACE

Special Processing USACE Navy

State Samples Collected In NY NJ PA NC

Reportable to PADEP? Yes Lab Special

PWSID # _____

EDDS: Format Type: _____



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

Analytical Results Report For

Lancaster County Solid Waste Authority

Project 4th QTR 2022 GWMP-FORM 19Q

Workorder 3280330

Report ID 217609 on 1/9/2023

Certificate of Analysis

Enclosed are the analytical results for samples received by the laboratory on Dec 23, 2022.

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.

This laboratory report may not be reproduced, except in full, without the written approval of ALS Global.
ALS Middletown: 301 Fulling Mill Road, Middletown, PA 17057 : 717-944-5541.

Recipient(s):

Ashley Gichuki - Lancaster County Solid Waste Authority
Daniel Brown - Lancaster County Solid Waste Authority
Jordan Gallagher - Lancaster County Solid Waste Authority
Jeff Musser - Lancaster County Solid Waste Authority

Susan Scherer

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

Susan Scherer
Project Coordinator

(ALS Digital Signature)



Sample Summary

<u>Lab ID</u>	<u>Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>	<u>Collector</u>	<u>Collection Company</u>
3280330001	CWMP003W	Ground Water	12/23/2022 13:18	12/23/2022 15:30	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.
- 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 performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.
- 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 QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Chloroethane. The % Recovery was reported as 150 and the control limits were 51 to 142. |
| 2 | The QC sample type LCS for method SW846 8260B was outside the control limits for the analyte Trichlorofluoromethane. The % Recovery was reported as 146 and the control limits were 38 to 123. |
| 3 | The Total Alkalinity is titrated to a pH of 4.5 and reported as mg CaCO3/L. |
| 4 | Method ASTMD6919-09 is equivalent to Method ASTMD6919-17. |
| 5 | The pH analysis is an "analyze immediately" analysis. Parameters identified as "analyze immediately" require analysis within 15 minutes of collection, and are therefore analyzed outside of the method holding time when analyzed in the laboratory. |



Detected Results Summary

Client Sample ID	CWMP003W	Collected	12/23/2022 13:18
Lab Sample ID	3280330001	Lab Receipt	12/23/2022 15:30

Compound	Result	Units	RDL	Method	Flag
FIELD PARAMETERS					
Depth to Water Level	95.65	Feet		Field	#
Dissolved Oxygen	8.12	mg/L	0.01	Field	#
Elev Top MW Casing above MSL	524.21	Feet		Field	#
Ground Water Elevation	428.56	ft/MSL		Field	#
Oxidation-Reduction Potential	309	mV		Field	#
pH, Field (SM4500B)	7.29	pH_Units		Field	#
Specific Conductance, Field	247	umhos/cm	1	Field	#
Temperature	12.34	Deg. C		Field	#
Total Well Depth	140.00	Feet		Field	#
Turbidity, Field	6	NTU	1	Field	#
METALS					
Calcium, Total	17.1	mg/L	0.11	SW846 6010C	#
Iron, Total	0.15	mg/L	0.067	SW846 6010C	#
Magnesium, Total	7.1	mg/L	0.11	SW846 6010C	#
Manganese, Total	0.011	mg/L	0.0056	SW846 6010C	#
Potassium, Total	2.2	mg/L	0.56	SW846 6010C	#
Sodium, Total	14.4	mg/L	0.56	SW846 6010C	#
VOLATILE ORGANICS					
1,1-Dichloroethane	1.0	ug/L	1.0	SW846 8260B	#
WET CHEMISTRY					
Alkalinity, Bicarbonate	25	mg/L	5	SM2320B-2011	#
Alkalinity, Total	25	mg/L	5	SM2320B-2011	#
Ammonia-N	0.194	mg/L	0.100	ASTM D6919-09	#
Chloride	46.4	mg/L	2.0	EPA 300.0	#
Nitrate-N	4.9	mg/L	1.0	EPA 300.0	#
pH	7.36	pH_Units		S4500HB-11	#
Specific Conductance	251	umhos/cm	5	SW846 9050A	#
Sulfate	3.2	mg/L	2.0	EPA 300.0	#
Total Dissolved Solids	146	mg/L	25	S2540C-11	#
Total Organic Carbon (TOC)	2.2	mg/L	0.50	SW846 9060A	#
Turbidity	4.6	NTU	0.30	SM2130B-2011	#



Results

Client Sample ID	CWMP003W	Collected	12/23/2022 13:18
Lab Sample ID	3280330001	Lab Receipt	12/23/2022 15:30

FIELD PARAMETERS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Depth to Water Level	95.65		Feet		Field	1	12/23/2022 13:18	BGS	D
Dissolved Oxygen	8.12		mg/L	0.01	Field	1	12/23/2022 13:18	BGS	D
Elev Top MW Casing above MSL	524.21		Feet		Field	1	12/23/2022 13:18	BGS	D
Ground Water Elevation	428.56		ft/MSL		Field	1	12/23/2022 13:18	BGS	D
Oxidation-Reduction Potential	309		mV		Field	1	12/23/2022 13:18	BGS	D
pH, Field (SM4500B)	7.29		pH_Units		Field	1	12/23/2022 13:18	BGS	D
Specific Conductance, Field	247		umhos/cm	1	Field	1	12/23/2022 13:18	BGS	D
Temperature	12.34		Deg. C		Field	1	12/23/2022 13:18	BGS	D
Total Well Depth	140.00		Feet		Field	1	12/23/2022 13:18	BGS	D
Turbidity, Field	6		NTU	1	Field	1	12/23/2022 13:18	BGS	D

METALS

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Calcium, Total	17.1		mg/L	0.11	SW846 6010C	1	01/03/2023 11:54	A1S	J1
Iron, Total	0.15		mg/L	0.067	SW846 6010C	1	01/03/2023 11:54	A1S	J1
Magnesium, Total	7.1		mg/L	0.11	SW846 6010C	1	01/03/2023 11:54	A1S	J1
Manganese, Total	0.011		mg/L	0.0056	SW846 6010C	1	01/03/2023 11:54	A1S	J1
Potassium, Total	2.2		mg/L	0.56	SW846 6010C	1	01/03/2023 11:54	A1S	J1
Sodium, Total	14.4		mg/L	0.56	SW846 6010C	1	01/03/2023 11:54	A1S	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	01/04/2023 11:48	TMP	H
1,1,2,2-Tetrachloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
1,1,2-Trichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
1,1-Dichloroethane	1.0		ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
1,1-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
1,2,3-Trichloropropane	ND	ND	ug/L	2.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
1,2,4-Trichlorobenzene	ND	ND	ug/L	2.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
1,2-Dibromoethane	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
1,2-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
1,2-Dichloroethane	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
1,2-Dichloropropane	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
1,3-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
1,3-Dichloropropene, Total	ND	ND	ug/L	2.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
1,4-Dichlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Benzene	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Bromodichloromethane	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Bromoform	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Bromomethane	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Carbon Tetrachloride	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Chlorobenzene	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Chlorodibromomethane	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Chloroethane	ND	ND,1	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H



Results

Client Sample ID	CWMP003W	Collected	12/23/2022 13:18
Lab Sample ID	3280330001	Lab Receipt	12/23/2022 15:30

VOLATILE ORGANICS (cont.)

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Chloroform	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Chloromethane	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
cis-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Ethylbenzene	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Methylene Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Styrene	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Tetrachloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Toluene	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Total Xylenes	ND	ND	ug/L	3.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
trans-1,2-Dichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Trichloroethene	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Trichlorofluoromethane	ND	ND,2	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H
Vinyl Chloride	ND	ND	ug/L	1.0	SW846 8260B	1	01/04/2023 11:48	TMP	H

SURROGATES

Compound	CAS No	Recovery	Limits(%)	Analysis Date/Time	Qualifiers
1,2-Dichloroethane-d4	17060-07-0	92.2%	62 – 133	01/04/2023 11:48	
4-Bromofluorobenzene	460-00-4	107%	79 – 114	01/04/2023 11:48	
Dibromofluoromethane	1868-53-7	87.7%	78 – 116	01/04/2023 11:48	
Toluene-d8	2037-26-5	99.6%	76 – 127	01/04/2023 11:48	

WET CHEMISTRY

Compound	Result	Flag	Units	RDL	Method	Dilution	Analysis Date/Time	By	Cntr
Alkalinity, Bicarbonate	25		mg/L	5	SM2320B-2011	1	12/28/2022 08:40	NML	B
Alkalinity, Total	25	3	mg/L	5	SM2320B-2011	1	12/28/2022 08:40	NML	B
Ammonia-N	0.194	4	mg/L	0.100	ASTM D6919-09	10	12/30/2022 18:12	NML	A
Chemical Oxygen Demand (COD)	ND	ND	mg/L	15	EPA 410.4	1	12/28/2022 14:20	KMS	A
Chloride	46.4		mg/L	2.0	EPA 300.0	2	12/24/2022 04:17	GJB	B
Fluoride	ND	ND	mg/L	0.20	EPA 300.0	2	12/24/2022 04:17	GJB	B
Nitrate-N	4.9		mg/L	1.0	EPA 300.0	2	12/24/2022 04:17	GJB	B
pH	7.36	5	pH_Units		S4500HB-11	1	12/28/2022 08:40	NML	B
Phenolics	ND	ND	mg/L	0.004	SW846 9066	1	12/29/2022 19:01	AKH	G
Specific Conductance	251		umhos/cm	5	SW846 9050A	1	01/03/2023 09:50	JXL	B
Sulfate	3.2		mg/L	2.0	EPA 300.0	2	12/24/2022 04:17	GJB	B
Total Dissolved Solids	146		mg/L	25	S2540C-11	1	12/27/2022 06:59	SMS	B
Total Organic Carbon (TOC)	2.2		mg/L	0.50	SW846 9060A	1	12/28/2022 18:41	PAG	E
Turbidity	4.6		NTU	0.30	SM2130B-2011	1	12/24/2022 03:25	NRB	B



Sample - Method Cross Reference Table

Lab ID	Sample ID	Analysis Method	Preparation Method	Leachate Method
3280330001	CWMP003W	Field	N/A	
		SW846 6010C	SW846 3015A	
		SW846 8260B	N/A	
		ASTM D6919-09	N/A	
		EPA 300.0	N/A	
		EPA 410.4	N/A	
		S2540C-11	N/A	
		S4500HB-11	N/A	
		SM2130B-2011	N/A	
		SM2320B-2011	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	
3280330001	CWMP003W	N/A	N/A	N/A		Field	931944	
		SW846 3015A	930682	12/30/2022 13:30	JSE	SW846 6010C	931523	
		N/A	N/A	N/A		SW846 8260B	931858	
		N/A	N/A	N/A		ASTM D6919-09	930580	
		N/A	N/A	N/A		EPA 300.0	929651	
		N/A	N/A	N/A		EPA 410.4	930362	
		N/A	N/A	N/A		S2540C-11	930151	
		N/A	N/A	N/A		S4500HB-11	930173	
		N/A	N/A	N/A		SM2130B-2011	929957	
		N/A	N/A	N/A		SM2320B-2011	930173	
		N/A	N/A	N/A		SW846 9050A	931500	
		N/A	N/A	N/A		SW846 9060A	930456	
		N/A	SW846 9066	930412	12/29/2022 12:01	AKH	SW846 9066	930715



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**CHAIN OF CUSTODY/
 REQUEST FOR ANALYSIS**
**ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /
 SAMPLER. INSTRUCTIONS ON THE BACK.**

3280330

Logged By: SLS
 PM: SJB



Client Name: Lancaster County Solid Waste MA
Address: 1299 Harrisburg Pike, P.O. Box 4424
 Lancaster, PA 17604
Contact: Dan Brown
Phone#: (717) 735-0193
Project Name#: Creswell/GWMP Form 19Q Wells
Bill To: Lancaster County Solid Waste MA

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

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time
1. CWMP003W	12/23/22	1318
2		
3		
4		
5		
6		
7		
8		
9		
10		

Project Comments:

Relinquished By / Company Name
 1. *[Signature]* ALS
 3. *[Signature]* ALS
 5. *[Signature]* ALS
 7. *[Signature]* ALS
 9. *[Signature]* ALS

Date
 1. 12/23/22 1530
 3. 12/23/22 1730
 5. 12/23/22 1730
 7. 12/23/22 1730
 9. 12/23/22 1730

Received By / Company Name
 2. *[Signature]*
 4. *[Signature]*
 6. *[Signature]*
 8. *[Signature]*
 10. *[Signature]*

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

Container Type
 AG 40 ml
 AN 125 ml
 HCl
 H2SO4
 HCl
 H2SO4
 HNO3
 None
 None

Field Measurements
 8260 VOCs - Form 19Q
 O-H
 TOC
 Sample Depth for AUX Data
 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.

Matrix	*G	*C	1	2	3	4	5	6	7	8	9	10
GW				X								

1 of 1

Cooler Temp: 3 Therm ID: 570
No. of Coolers: Y N Initial
Custody Seals Present?
(if present) Seals Intact?

Temp By: W/O Temp (°C)
 DPB / 30
 Therm ID
 570

Receipt Info Completed By:
 Cooler Custody Seal Intact
 Sample Custody Seal Intact
 Received on Ice
 Cooler & Samples Intact
 Correct Containers Provided
 Sample Label/COC Agree
 Adequate Sample Volumes
 CR6 Samples Filtered
 OP Samples Filtered
 VOA Headspace Present
 Voa Trip Blank
 NIS 4 Days?
 Rad Screen (uG)
 Courier/Tracking #:

SDWA Compliance
 PWSID
 WW Containers 0-6 C

ALS Field Services: Pickup Labor
 Composite Sampling Rental Equipment
 Other:

Special Processing
 USACE
 Navy
 Reportable to PADEP?
 Yes
 PWSID #

State Samples Collected in
 NY
 NJ
 PA
 NC

Sample Disposal
 Lab
 Special

EDDS: Format Type-