HALEY ALDRICH

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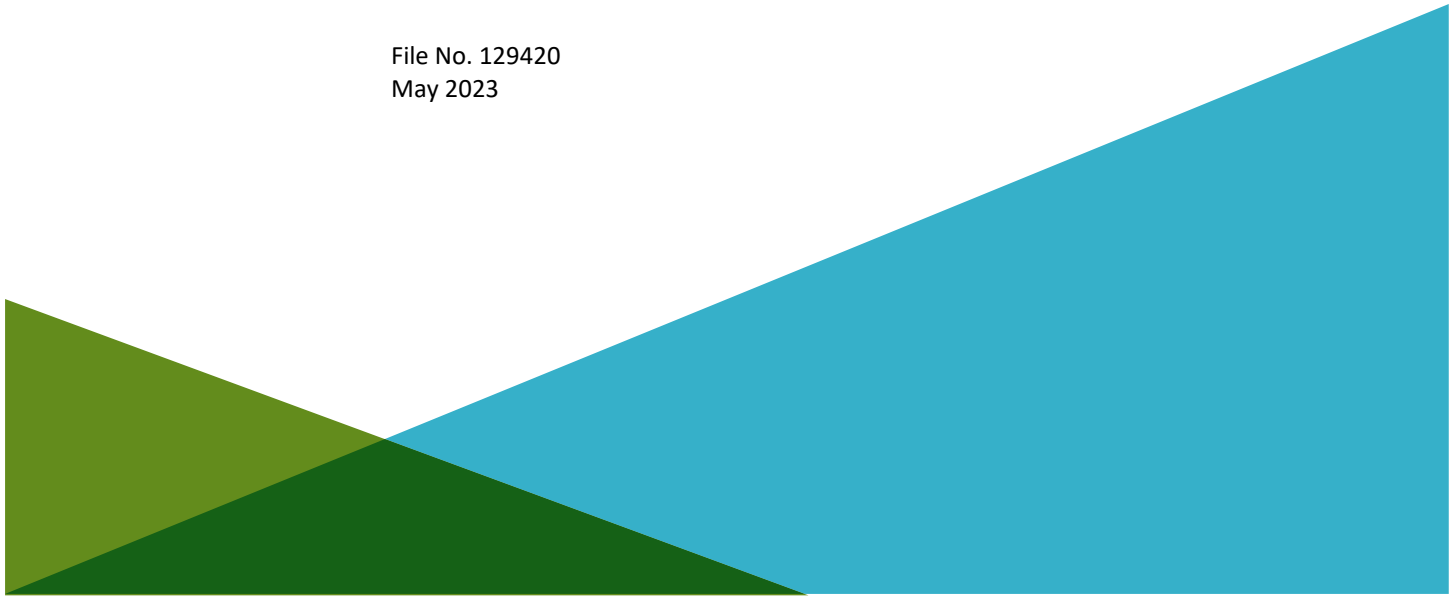
2020 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT ADDENDUM LANDFILL A.B. BROWN GENERATING STATION POSEY COUNTY, INDIANA

by
Haley & Aldrich, Inc.
Greenville, South Carolina

for
Southern Indiana Gas and Electric Company
Evansville, Indiana

File No. 129420
May 2023



HALEY & ALDRICH, INC.
400 Augusta Street
Suite 100
Greenville, SC 29601
864.214.8750

15 May 2023
File No. 129420

SUBJECT: 2020 Annual Groundwater Monitoring and Corrective Action Report Addendum
Southern Indiana Gas and Electric Company
Landfill
A.B. Brown Generating Station; Posey County, Indiana

The Landfill at A.B. Brown Generating Station is subject to the groundwater monitoring and corrective action requirements described under 40 CFR § 257.90 through § 257.98 (Rule). An *Annual Groundwater Monitoring and Corrective Action Report* (Annual Groundwater Report) documenting the activities in 2020 for the Landfill was completed and placed in the facilities operating record on 30 January 2021, as required by the Rule. The Annual Groundwater Report contained the specific information listed in § 257.90(e).

This addendum has been prepared to supplement the operating record in recognition of comments issued by the United States Environmental Protection Agency (U.S. EPA) on 11 January 2022, to various utilities regarding their respective Part A extension applications, and U.S. EPA's "proposed finding that GWMCA reports are incomplete and lack clarity of visual representation of data" in the proposed conditional approval for the A.B. Brown Generating Station that was released on 5 October 2022. Those comments, proposed findings, and U.S. EPA clarifications were understood to be U.S. EPA's expectations regarding the contents of the facility's Annual Groundwater Report. In addition to the information listed in § 257.90(e), the U.S. EPA indicated in their comments that annual reports should contain:

- water level gauging data for each sampling event, including groundwater elevation data, a determination of groundwater flow direction(s) and rate(s), and updated potentiometric surface map(s);
- laboratory analytical reports to verify that groundwater sampling and analysis requirements outlined in § 257.93 are being met; and finally,
- statistical analyses, including detailed discussion of the statistical analyses (e.g., statistical method applied, confidence levels, and normality test results).

While this information is not specifically referred to in the in 257.90(e) of the Rule for inclusion in the annual reports, it has been routinely collected and maintained in Southern Indiana Gas and Electric Company's files, and is being provided in the attachments to this addendum as follows:

Attachment 1 – Groundwater Gauging Data

- Summary of groundwater gauging data

Attachment 2 – Updated Potentiometric Surface Map Containing Most Recent Groundwater Elevation Data

- Water table configuration map – May 2020
- Water table configuration map – November 2020

Water table maps include groundwater flow direction arrows and groundwater velocity calculations.

Attachment 3 – Laboratory Analytical Reports

- Laboratory data packages

Includes supporting information, such as, case narrative, sample and method summary, analytical results, quality control, and chain-of-custody documentation.

Attachment 4 – Statistical Analyses

- Statistical Evaluation of the October 2019 *Semi-annual Groundwater Assessment*
- Statistical Evaluation of the May 2020 *Semi-annual Groundwater Assessment*

Includes a discussion of the statistical analysis utilized along with a table summarizing the statistical outputs (e.g., frequency of detection, maximum detection, variance, standard deviation, coefficient of variance, outlier tests, trends, upper and lower confidence limits, and comparison against Groundwater Protection Standards), and supporting backup.

ATTACHMENT 1

Groundwater Gauging Data

VECTREN - AB BROWN STATION
CCR Groundwater Sampling Event
Gauging Dates: May 21 and May 29, 2020
ATC Project No. 170LF00900

WELL ID	DATE	TIME	DTW FROM TOC
Ash Pond Wells			
CCR-AP-1R	5/21/2020	14:40	14.39
CCR-AP-2R	5/21/2020	17:10	38.30
CCR-AP-2I	5/21/2020	17:05	24.89
CCR-AP-3R	5/21/2020	13:15	39.56
CCR-AP-3I	5/21/2020	13:20	22.40
CCR-AP-4R	5/21/2020	15:00	32.52
CCR-AP-5	5/21/2020	13:30	36.73
CCR-AP-6	5/21/2020	17:20	14.42
CCR-AP-7R	5/21/2020	17:35	33.94
CCR-AP-8	5/21/2020	11:35	4.34
CCR-AP-9	5/21/2020	11:50	7.77
CCR-AP-10	5/21/2020	16:05	34.91
Landfill Wells			
CCR-LF-1	5/21/2020	12:10	7.16
CCR-LF-2	5/21/2020	12:25	26.40
CCR-LF-3	5/21/2020	12:30	28.88
CCR-LF-4	5/21/2020	10:40	46.75
CCR-LF-5	5/21/2020	13:55	20.11
CCR-LF-6	5/21/2020	12:40	8.47
Sedimentation Pond Wells			
CCR-SP-1	5/21/2020	12:50	10.60
CCR-SP-2	5/21/2020	12:55	12.70
CCR-SP-3	5/21/2020	13:00	6.83
Background Wells			
CCR-BK-1R	5/21/2020	11:00	60.45
CCR-BK-2	5/21/2020	11:20	14.29
New Property Line Well			
CCR-AP-11	5/29/2020	9:30	10.60

DTW= Depth to Water
TOC= Top of Casing

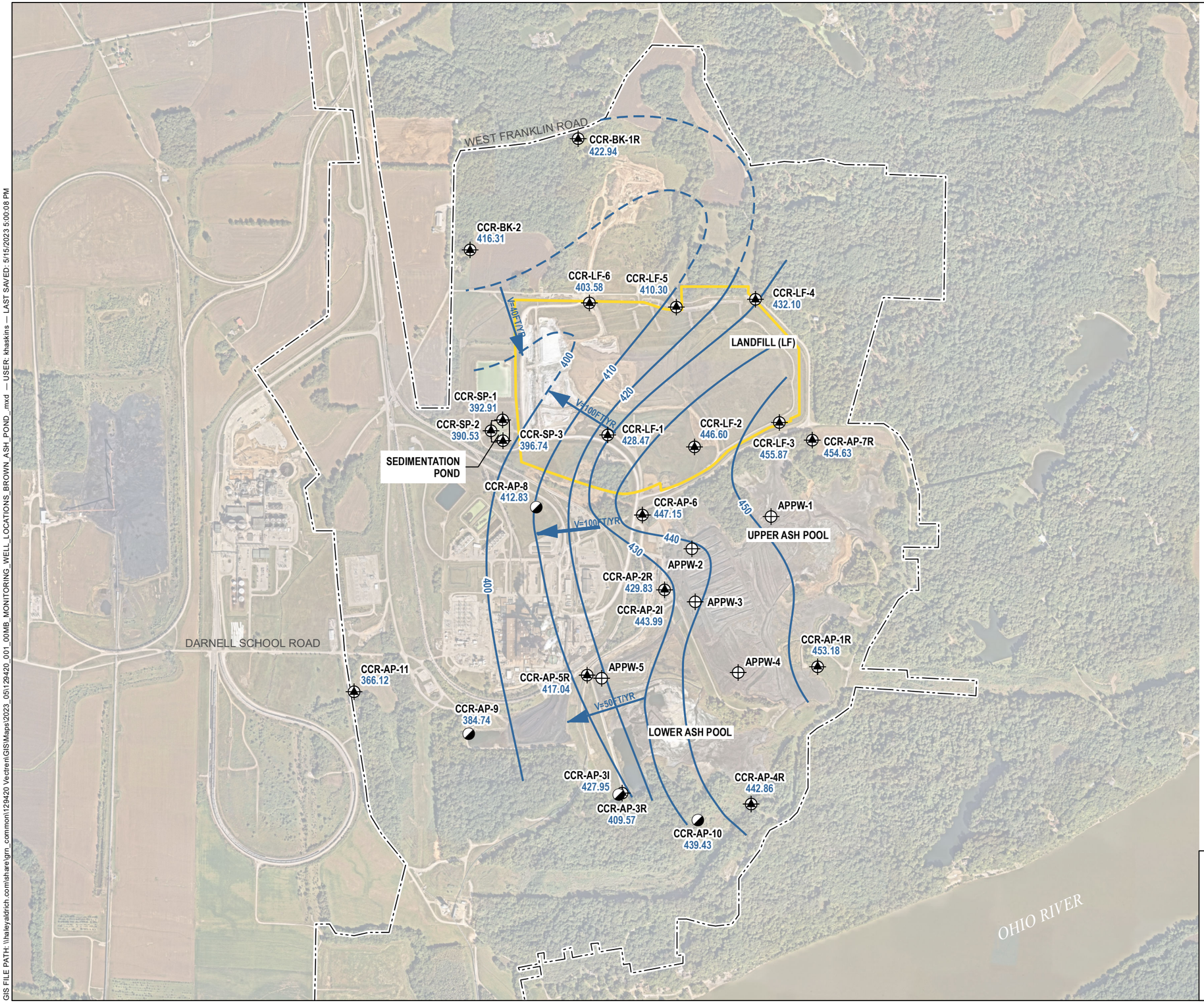
VECTREN - AB BROWN STATION
CCR Groundwater Sampling Event
Gauging Date: November 2, 2020
ATC Project No. 170LF00900

WELL ID	DATE	TIME	DTW FROM TOC
French Drain Area Locations			
HA-PP-1	11/2/2020	13:35	2.65
HA-PP-2	11/2/2020	13:40	3.19
FD PZ-1	11/2/2020	17:00	7.97
FD PZ-2	11/2/2020	17:15	4.00
CCR-SG-3	11/2/2020	13:30	1.00
MH-1	11/2/2020	17:20	9.24
MH-2	11/2/2020	17:25	11.12
Ash Pond Wells			
CCR-AP-1R	11/2/2020	16:35	14.68
CCR-AP-2R	11/2/2020	10:30	39.80
CCR-AP-2I	11/2/2020	10:35	26.38
CCR-AP-3R	11/2/2020	10:10	38.20
CCR-AP-3I	11/2/2020	10:15	22.97
CCR-AP-4R	11/2/2020	15:35	33.21
CCR-AP-5	11/2/2020	Destroyed	
CCR-AP-6	11/2/2020	14:40	18.40
CCR-AP-7R	11/2/2020	15:10	35.38
CCR-AP-8	11/2/2020	14:25	4.89
CCR-AP-9	11/2/2020	14:00	7.94
CCR-AP-10	11/2/2020	16:00	35.80
Landfill Wells			
CCR-LF-1	11/2/2020	11:05	8.79
CCR-LF-2	11/2/2020	10:50	27.33
CCR-LF-3	11/2/2020	10:40	29.72
CCR-LF-4	11/2/2020	15:30	47.89
CCR-LF-5	11/2/2020	12:00	21.80
CCR-LF-6	11/2/2020	12:10	8.49
Sedimentation Pond Wells			
CCR-SP-1	11/2/2020	11:30	12.28
CCR-SP-2	11/2/2020	11:33	14.66
CCR-SP-3	11/2/2020	11:35	7.77
Background Wells			
CCR-BK-1R	11/2/2020	12:58	Dry
CCR-BK-2	11/2/2020	12:40	21.88
New Property Line Well			
CCR-AP-11	11/2/2020	14:10	12.07

DTW= Depth to Water
TOC= Top of Casing

ATTACHMENT 2

Updated Potentiometric Surface Map Containing Most Recent Groundwater Elevation Data



LEGEND

- CCR MONITORING WELL
- NATURE AND EXTENT MONITORING WELL
- CCR PIEZOMETER WELL
- GROUNDWATER ELEVATION CONTOUR, 10-FT INTERVAL, DASHED WHERE INFERRED
- GROUNDWATER FLOW DIRECTION
- APPROXIMATE UNIT BOUNDARY
- SEDIMENTATION POND
- PROPERTY BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. CCR REGULATED UNITS INCLUDE THE ASH POND, LANDFILL, AND SEDIMENTATION POND.
3. GROUNDWATER ELEVATIONS WERE MEASURED 21 MAY 2020.
4. APPROXIMATE GROUNDWATER FLOW RATE CALCULATED USING

$$V = \frac{k(i)}{n_e}$$

WHERE:
V = GROUNDWATER FLOW VELOCITY (FT/YR)
k = HORIZONTAL HYDRAULIC CONDUCTIVITY (FT/DAY)
i = HORIZONTAL GROUNDWATER GRADIENT (FT/FT)
n_e = ASSUMED EFFECTIVE POROSITY

5. AERIAL IMAGERY SOURCE: NEARMAP, 23 SEPTEMBER 2021

N

0 1,100 2,200
SCALE IN FEET

HALEY ALDRICH

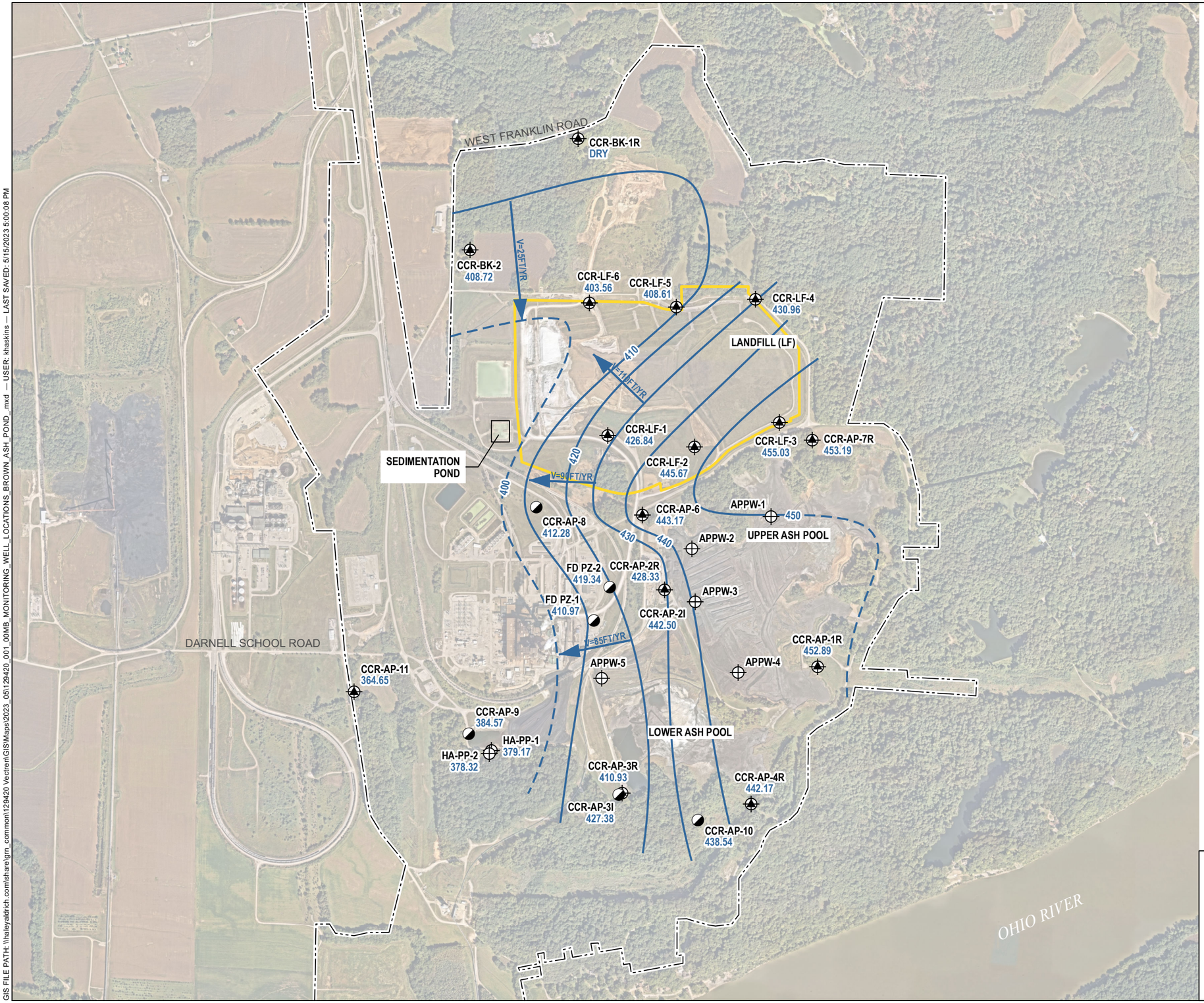
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY
A.B. BROWN GENERATING STATION
MOUNT VERNON, INDIANA

SHALLOW GROUNDWATER ELEVATION CONTOURS - MAY 2020

JUNE 2020

FIGURE 1

GIS FILE PATH: \\haleyaldrich.com\share\grn_common\129420 Vectren\GIS\Maps\2023_05\129420_001_00MB_MONITORING_WELL_LOCATIONS_BROWN_ASH_POND_.mxd — USER: khaskins — LAST SAVED: 5/15/2023 5:00:08 PM



LEGEND

- CCR MONITORING WELL
- NATURE AND EXTENT MONITORING WELL
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- SEDIMENTATION POND
- PROPERTY BOUNDARY

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. CCR REGULATED UNITS INCLUDE THE ASH POND, LANDFILL, AND SEDIMENTATION POND.
3. GROUNDWATER ELEVATIONS WERE MEASURED 2 NOVEMBER 2020.
4. APPROXIMATE GROUNDWATER FLOW RATE CALCULATED USING

$$V = \frac{k(i)}{n_e}$$

WHERE:
V = GROUNDWATER FLOW VELOCITY (FT/YR)
k = HORIZONTAL HYDRAULIC CONDUCTIVITY (FT/DAY)
i = HORIZONTAL GROUNDWATER GRADIENT (FT/FT)
n_e = ASSUMED EFFECTIVE POROSITY

5. AERIAL IMAGERY SOURCE: NEARMAP, 23 SEPTEMBER 2021

N

0 1,100 2,200
SCALE IN FEET

HALEY ALDRICH

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY
A.B. BROWN GENERATING STATION
MOUNT VERNON, INDIANA

SHALLOW GROUNDWATER ELEVATION CONTOURS - NOVEMBER 2020

DECEMBER 2020

FIGURE 2

ATTACHMENT 3

Laboratory Analytical Reports

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-106196-1
Client Project/Site: CCR Groundwater Monitoring AB Brown

For:
Vectren Corporation
PO BOX 209
Evansville, Indiana 47702

Attn: Accounts Payable

Authorized for release by:
6/30/2020 2:35:15 PM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

PA Lab ID: 02-00416

Table of Contents

Job ID: 180-106196-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-106196-1

Comments
No additional comments.

Receipt
The samples were received on 5/27/2020 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.8º C, 2.5º C and 2.5º C.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

RAD
Methods 903.0, 9315: Ra-226 Prep Batch 160-471608
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

CCR-LF-3 (180-106196-1), CCR-LF-6 (180-106196-2), CCR-LF-5 (180-106196-3), BLIND DUPLICATE 2 (180-106196-4), FIELD BLANK 2 (180-106196-5), (LCS 160-471608/1-A), (MB 160-471608/22-A), (160-38177-A-1-A), (160-38177-C-1-A MS) and (160-38177-A-1-B MSD)

Methods 904.0, 9320: Ra-228 Prep Batch 160-471609

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

CCR-LF-3 (180-106196-1), CCR-LF-6 (180-106196-2), CCR-LF-5 (180-106196-3), BLIND DUPLICATE 2 (180-106196-4), FIELD BLANK 2 (180-106196-5), (LCS 160-471609/1-A), (MB 160-471609/22-A), (160-38177-A-1-C), (160-38177-C-1-B MS) and (160-38177-A-1-D MSD)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Methods 200.8, 6020A, 6020B: The ICVL recovered low for 6020B method recovery of (80-120%), actual 78% for vanadium. This passes for 6020A method with subsequent low level passing 99% recovery for vanadium.

(ICVL 180-317614/6)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: Vectren Corporation
Job ID: 180-106196-1
Project/Site: CCR Groundwater Monitoring AB Brown

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Vectren Corporation
Job ID: 180-106196-1
Project/Site: CCR Groundwater Monitoring AB Brown

Laboratory: Eurofins TestAmerica, Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-26-20
California	State	2891	04-30-21
Connecticut	State	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-20
Georgia	State	PA 02-00416	04-30-21
Illinois	NELAP	004375	06-30-20
Kansas	NELAP	E-10350	01-31-21
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-20
Louisiana	NELAP	04041	06-30-20
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20
Nevada	State	PA00164	07-31-20
New Hampshire	NELAP	2030	04-05-21
New Jersey	NELAP	PA005	06-30-20
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	01-01-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-21
Pennsylvania	NELAP	02-00416	05-23-21
Rhode Island	State	LAO00362	12-31-20
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-20 *
Virginia	NELAP	10043	09-15-20
West Virginia DEP	State	142	02-01-21
Wisconsin	State	998027800	08-31-20

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Vectren Corporation
Job ID: 180-106196-1
Project/Site: CCR Groundwater Monitoring AB Brown

Laboratory: Eurofins TestAmerica, St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-20
California	Los Angeles County Sanitation Districts	10259	06-30-20
California	State	2886	06-30-20
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-20
HI - RadChem Recognition	State	n/a	06-30-20
Illinois	NELAP	004553	11-30-20
Iowa	State	373	09-17-20
Kansas	NELAP	E-10236	10-31-20
Kentucky (DW)	State	KY90125	12-31-20
Louisiana	NELAP	04080	06-30-20
Louisiana (DW)	State	LA011	12-31-20
Maryland	State	310	09-30-20
MI - RadChem Recognition	State	9005	06-30-20
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-20
New Jersey	NELAP	MO002	06-30-20
New York	NELAP	11616	04-01-21
North Dakota	State	R-207	06-30-20
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-20
Pennsylvania	NELAP	68-00540	02-28-21
South Carolina	State	85002001	06-30-20
Texas	NELAP	T104704193-19-13	07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542019-11	07-31-20
Virginia	NELAP	10310	06-14-21
Washington	State	C592	08-30-20
West Virginia DEP	State	381	10-31-20

Sample Summary

Client: Vectren Corporation
Job ID: 180-106196-1
Project/Site: CCR Groundwater Monitoring AB Brown

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-106196-1	CCR-LF-3	Water	05/22/20 11:20	05/27/20 09:00	
180-106196-2	CCR-LF-6	Water	05/22/20 12:00	05/27/20 09:00	
180-106196-3	CCR-LF-5	Water	05/22/20 13:15	05/27/20 09:00	
180-106196-4	BLIND DUPLICATE 2	Water	05/22/20 00:00	05/27/20 09:00	
180-106196-5	FIELD BLANK 2	Water	05/22/20 12:05	05/27/20 09:00	

Method Summary

Client: Vectren Corporation
Job ID: 180-106196-1
Project/Site: CCR Groundwater Monitoring AB Brown

Method	Method Description	Protocol	Laboratory
EPA 9056A	Anions, Ion Chromatography	SW846	TAL PIT
EPA 6020A	Metals (ICP/MS)	SW846	TAL PIT
EPA 7470A	Mercury (CVAA)	SW846	TAL PIT
EPA 9040C	pH	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
7470A	Preparation, Mercury	SW846	TAL PIT
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Vectren Corporation
Project/Site: CCR Groundwater Monitoring AB Brown

Job ID: 180-106196-1

Client Sample ID: CCR-LF-3

Date Collected: 05/22/20 11:20
Date Received: 05/27/20 09:00

Lab Sample ID: 180-106196-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2.5			317665	06/07/20 01:38	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		25			317665	06/07/20 01:54	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	316922	05/29/20 14:49	JL	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			317494	06/04/20 04:47	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	316922	05/29/20 14:49	JL	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			317614	06/04/20 20:53	RSK	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	7470A			50 mL	50 mL	316978	06/01/20 15:15	NAM	TAL PIT
Total/NA	Analysis	EPA 7470A		1			317131	06/01/20 20:36	NAM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			317151	06/02/20 09:06	MTW	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	316756	05/28/20 09:52	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.29 mL	1.0 g	471608	06/01/20 06:43	JLC	TAL SL
Total/NA	Analysis	9315		1			474300	06/23/20 07:37	CJQ	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.29 mL	1.0 g	471609	06/01/20 07:18	JLC	TAL SL
Total/NA	Analysis	9320		1			472553	06/05/20 07:29	CJQ	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			474962	06/30/20 09:02	SMP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-LF-6

Date Collected: 05/22/20 12:00
Date Received: 05/27/20 09:00

Lab Sample ID: 180-106196-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			317665	06/07/20 02:10	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		10			317665	06/07/20 02:26	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	316922	05/29/20 14:49	JL	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			317494	06/04/20 04:50	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	316922	05/29/20 14:49	JL	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			317614	06/04/20 20:56	RSK	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	7470A			50 mL	50 mL	316978	06/01/20 15:15	NAM	TAL PIT
Total/NA	Analysis	EPA 7470A		1			317131	06/01/20 20:37	NAM	TAL PIT
	Instrument ID: HGZ									

Lab Chronicle

Client: Vectren Corporation
Project/Site: CCR Groundwater Monitoring AB Brown

Job ID: 180-106196-1

Client Sample ID: CCR-LF-6

Date Collected: 05/22/20 12:00
Date Received: 05/27/20 09:00

Lab Sample ID: 180-106196-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9040C		1			317151	06/02/20 09:11	MTW	TAL PIT
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	316756	05/28/20 09:52	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.88 mL	1.0 g	471608	06/01/20 06:43	JLC	TAL SL
Total/NA	Analysis	9315		1			474300	06/23/20 07:37	CJQ	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.88 mL	1.0 g	471609	06/01/20 07:18	JLC	TAL SL
Total/NA	Analysis	9320		1			472553	06/05/20 07:29	CJQ	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			474962	06/30/20 09:02	SMP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-LF-5

Date Collected: 05/22/20 13:15
Date Received: 05/27/20 09:00

Lab Sample ID: 180-106196-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		5			317665	06/07/20 02:42	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		50			317665	06/07/20 02:57	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	316922	05/29/20 14:49	JL	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			317494	06/04/20 04:54	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	316922	05/29/20 14:49	JL	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			317614	06/04/20 21:00	RSK	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	7470A			50 mL	50 mL	316978	06/01/20 15:15	NAM	TAL PIT
Total/NA	Analysis	EPA 7470A		1			317131	06/01/20 20:38	NAM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			317151	06/02/20 09:14	MTW	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	316756	05/28/20 09:52	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.25 mL	1.0 g	471608	06/01/20 06:43	JLC	TAL SL
Total/NA	Analysis	9315		1			474300	06/23/20 07:37	CJQ	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.25 mL	1.0 g	471609	06/01/20 07:18	JLC	TAL SL
Total/NA	Analysis	9320		1			472553	06/05/20 07:29	CJQ	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			474962	06/30/20 09:02	SMP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: BLIND DUPLICATE 2

Lab Sample ID: 180-106196-4

Date Collected: 05/22/20 00:00

Matrix: Water

Date Received: 05/27/20 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2.5			317665	06/07/20 03:13	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		25			317665	06/07/20 03:29	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	316922	05/29/20 14:49	JL	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			317494	06/04/20 04:57	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	316922	05/29/20 14:49	JL	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			317614	06/04/20 21:03	RSK	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	7470A			50 mL	50 mL	316978	06/01/20 15:15	NAM	TAL PIT
Total/NA	Analysis	EPA 7470A		1			317131	06/01/20 20:39	NAM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			317151	06/02/20 09:17	MTW	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	316756	05/28/20 09:52	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.43 mL	1.0 g	471608	06/01/20 06:43	JLC	TAL SL
Total/NA	Analysis	9315		1			474300	06/23/20 07:38	CJQ	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.43 mL	1.0 g	471609	06/01/20 07:18	JLC	TAL SL
Total/NA	Analysis	9320		1			472553	06/05/20 07:29	CJQ	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			474962	06/30/20 09:02	SMP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: FIELD BLANK 2

Lab Sample ID: 180-106196-5

Date Collected: 05/22/20 12:05

Matrix: Water

Date Received: 05/27/20 09:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			317665	06/07/20 00:51	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	316922	05/29/20 14:49	JL	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			317494	06/04/20 05:00	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	316922	05/29/20 14:49	JL	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			317614	06/04/20 21:07	RSK	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	7470A			50 mL	50 mL	316978	06/01/20 15:15	NAM	TAL PIT
Total/NA	Analysis	EPA 7470A		1			317131	06/01/20 20:40	NAM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			317151	06/02/20 09:20	MTW	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Vectren Corporation
Project/Site: CCR Groundwater Monitoring AB Brown

Job ID: 180-106196-1

Client Sample ID: FIELD BLANK 2

Date Collected: 05/22/20 12:05
Date Received: 05/27/20 09:00

Lab Sample ID: 180-106196-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	316756	05/28/20 09:52	AVS	TAL PIT
Total/NA	Prep	PrecSep-21			1000.17 mL	1.0 g	471608	06/01/20 06:43	JLC	TAL SL
Total/NA	Analysis	9315		1			474300	06/23/20 07:38	CJQ	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.17 mL	1.0 g	471609	06/01/20 07:18	JLC	TAL SL
Total/NA	Analysis	9320		1			472553	06/05/20 07:29	CJQ	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			474962	06/30/20 09:02	SMP	TAL SL
	Instrument ID: NOEQUIP									

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Analyst References:

Lab: TAL PIT
- Batch Type: Prep
  - JL = James Lyu
  - NAM = Nicole Marfisi
- Batch Type: Analysis
  - AVS = Abbey Smith
  - MJH = Matthew Hartman
  - MTW = Michael Wesoloski
  - NAM = Nicole Marfisi
  - RSK = Robert Kurtz

Lab: TAL SL
- Batch Type: Prep
  - JLC = Jessica Chapman
- Batch Type: Analysis
  - CJQ = Caleb Quinn
  - SMP = Siobhan Perry

Client Sample ID: CCR-LF-3

Date Collected: 05/22/20 11:20
Date Received: 05/27/20 09:00

Lab Sample ID: 180-106196-1

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	43		2.5	0.80	mg/L			06/07/20 01:38	2.5
Fluoride	0.34		0.25	0.066	mg/L			06/07/20 01:38	2.5
Sulfate	1500		25	9.5	mg/L			06/07/20 01:54	25

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00066	J	0.0010	0.00031	mg/L		05/29/20 14:49	06/04/20 04:47	1
Boron	0.24		0.080	0.039	mg/L		05/29/20 14:49	06/04/20 04:47	1
Barium	0.027	B	0.010	0.0016	mg/L		05/29/20 14:49	06/04/20 04:47	1
Beryllium	ND		0.0010	0.00018	mg/L		05/29/20 14:49	06/04/20 04:47	1
Calcium	380		0.50	0.13	mg/L		05/29/20 14:49	06/04/20 04:47	1
Cadmium	0.00023	J	0.0010	0.00022	mg/L		05/29/20 14:49	06/04/20 04:47	1
Cobalt	0.00021	J	0.00050	0.00013	mg/L		05/29/20 14:49	06/04/20 04:47	1
Chromium	0.0022		0.0020	0.0015	mg/L		05/29/20 14:49	06/04/20 04:47	1
Molybdenum	0.0033	J	0.0050	0.00061	mg/L		05/29/20 14:49	06/04/20 04:47	1
Lead	0.00047	J B	0.0010	0.00013	mg/L		05/29/20 14:49	06/04/20 04:47	1
Antimony	ND		0.0020	0.00038	mg/L		05/29/20 14:49	06/04/20 04:47	1
Selenium	ND		0.0050	0.0015	mg/L		05/29/20 14:49	06/04/20 04:47	1
Thallium	0.00040	J	0.0010	0.00015	mg/L		05/29/20 14:49	06/04/20 04:47	1
Lithium	ND		5.0	3.4	ug/L		05/29/20 14:49	06/04/20 20:53	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		06/01/20 15:15	06/01/20 20:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2600		20	20	mg/L			05/28/20 09:52	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.9	HF	0.1	0.1	SU			06/02/20 09:06	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0710	U	0.0557	0.0561	1.00	0.0774	pCi/L	06/01/20 06:43	06/23/20 07:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.6*		*40 - 110*	*06/01/20 06:43*	*06/23/20 07:37*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.372		0.225	0.227	1.00	0.343	pCi/L	06/01/20 07:18	06/05/20 07:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.6*		*40 - 110*	*06/01/20 07:18*	*06/05/20 07:29*	*1*
Y Carrier	*87.1*		*40 - 110*	*06/01/20 07:18*	*06/05/20 07:29*	*1*

Client Sample ID: CCR-LF-3
Lab Sample ID: 180-106196-1
Date Collected: 05/22/20 11:20
Matrix: Water
Date Received: 05/27/20 09:00

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.443		0.232	0.234	5.00	0.343	pCi/L		06/30/20 09:02	1

Client Sample ID: CCR-LF-6
Lab Sample ID: 180-106196-2
Date Collected: 05/22/20 12:00
Matrix: Water
Date Received: 05/27/20 09:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	32		1.0	0.32	mg/L			06/07/20 02:10	1
Fluoride	0.29		0.10	0.026	mg/L			06/07/20 02:10	1
Sulfate	920		10	3.8	mg/L			06/07/20 02:26	10

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00036	J	0.0010	0.00031	mg/L		05/29/20 14:49	06/04/20 04:50	1
Boron	0.88		0.080	0.039	mg/L		05/29/20 14:49	06/04/20 04:50	1
Barium	0.043	B	0.010	0.0016	mg/L		05/29/20 14:49	06/04/20 04:50	1
Beryllium	ND		0.0010	0.00018	mg/L		05/29/20 14:49	06/04/20 04:50	1
Calcium	310		0.50	0.13	mg/L		05/29/20 14:49	06/04/20 04:50	1
Cadmium	0.00022	J	0.0010	0.00022	mg/L		05/29/20 14:49	06/04/20 04:50	1
Cobalt	0.00028	J	0.00050	0.00013	mg/L		05/29/20 14:49	06/04/20 04:50	1
Chromium	ND		0.0020	0.0015	mg/L		05/29/20 14:49	06/04/20 04:50	1
Molybdenum	ND		0.0050	0.00061	mg/L		05/29/20 14:49	06/04/20 04:50	1
Lead	0.00024	J B	0.0010	0.00013	mg/L		05/29/20 14:49	06/04/20 04:50	1
Antimony	ND		0.0020	0.00038	mg/L		05/29/20 14:49	06/04/20 04:50	1
Selenium	ND		0.0050	0.0015	mg/L		05/29/20 14:49	06/04/20 04:50	1
Thallium	0.00017	J	0.0010	0.00015	mg/L		05/29/20 14:49	06/04/20 04:50	1
Lithium	19		5.0	3.4	ug/L		05/29/20 14:49	06/04/20 20:56	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		06/01/20 15:15	06/01/20 20:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1700		10	10	mg/L			05/28/20 09:52	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.2	HF	0.1	0.1	SU			06/02/20 09:11	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.188		0.0918	0.0934	1.00	0.116	pCi/L	06/01/20 06:43	06/23/20 07:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.4*		*40 - 110*	*06/01/20 06:43*	*06/23/20 07:37*	*1*

Client Sample ID: CCR-LF-6

Date Collected: 05/22/20 12:00
Date Received: 05/27/20 09:00

Lab Sample ID: 180-106196-2

Matrix: Water

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.305	U	0.205	0.207	1.00	0.316	pCi/L	06/01/20 07:18	06/05/20 07:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.4*		*40 - 110*	*06/01/20 07:18*	*06/05/20 07:29*	*1*
Y Carrier	*89.3*		*40 - 110*	*06/01/20 07:18*	*06/05/20 07:29*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.493**		0.225	0.227	5.00	0.316	pCi/L		06/30/20 09:02	1

Client Sample ID: CCR-LF-5

Date Collected: 05/22/20 13:15
Date Received: 05/27/20 09:00

Lab Sample ID: 180-106196-3

Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**420**		5.0	1.6	mg/L			06/07/20 02:42	5
Fluoride	**0.38**	**J**	0.50	0.13	mg/L			06/07/20 02:42	5
Sulfate	**2600**		50	19	mg/L			06/07/20 02:57	50

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00046**	**J**	0.0010	0.00031	mg/L		05/29/20 14:49	06/04/20 04:54	1
Boron	**1.7**		0.080	0.039	mg/L		05/29/20 14:49	06/04/20 04:54	1
Barium	**0.034**	**B**	0.010	0.0016	mg/L		05/29/20 14:49	06/04/20 04:54	1
Beryllium	ND		0.0010	0.00018	mg/L		05/29/20 14:49	06/04/20 04:54	1
Calcium	**450**		0.50	0.13	mg/L		05/29/20 14:49	06/04/20 04:54	1
Cadmium	**0.00039**	**J**	0.0010	0.00022	mg/L		05/29/20 14:49	06/04/20 04:54	1
Cobalt	**0.00026**	**J**	0.00050	0.00013	mg/L		05/29/20 14:49	06/04/20 04:54	1
Chromium	ND		0.0020	0.0015	mg/L		05/29/20 14:49	06/04/20 04:54	1
Molybdenum	**0.0010**	**J**	0.0050	0.00061	mg/L		05/29/20 14:49	06/04/20 04:54	1
Lead	**0.00040**	**J B**	0.0010	0.00013	mg/L		05/29/20 14:49	06/04/20 04:54	1
Antimony	ND		0.0020	0.00038	mg/L		05/29/20 14:49	06/04/20 04:54	1
Selenium	ND		0.0050	0.0015	mg/L		05/29/20 14:49	06/04/20 04:54	1
Thallium	**0.00030**	**J**	0.0010	0.00015	mg/L		05/29/20 14:49	06/04/20 04:54	1
Lithium	**24**		5.0	3.4	ug/L		05/29/20 14:49	06/04/20 21:00	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		06/01/20 15:15	06/01/20 20:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**5300**		40	40	mg/L			05/28/20 09:52	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.2**	**HF**	0.1	0.1	SU			06/02/20 09:14	1

Client Sample ID: CCR-LF-5

Lab Sample ID: 180-106196-3
Matrix: Water
Date Collected: 05/22/20 13:15
Date Received: 05/27/20 09:00

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.0922**		0.0593	0.0599	1.00	0.0777	pCi/L	06/01/20 06:43	06/23/20 07:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.7*		*40 - 110*	*06/01/20 06:43*	*06/23/20 07:37*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.142	U	0.172	0.172	1.00	0.284	pCi/L	06/01/20 07:18	06/05/20 07:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.7*		*40 - 110*	*06/01/20 07:18*	*06/05/20 07:29*	*1*
Y Carrier	*88.2*		*40 - 110*	*06/01/20 07:18*	*06/05/20 07:29*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.234	U	0.182	0.182	5.00	0.284	pCi/L		06/30/20 09:02	1

Client Sample ID: BLIND DUPLICATE 2

Lab Sample ID: 180-106196-4
Matrix: Water
Date Collected: 05/22/20 00:00
Date Received: 05/27/20 09:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**43**		2.5	0.80	mg/L			06/07/20 03:13	2.5
Fluoride	**0.34**		0.25	0.066	mg/L			06/07/20 03:13	2.5
Sulfate	**1500**		25	9.5	mg/L			06/07/20 03:29	25

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00031	mg/L		05/29/20 14:49	06/04/20 04:57	1
Boron	**0.25**		0.080	0.039	mg/L		05/29/20 14:49	06/04/20 04:57	1
Barium	**0.047**	**B**	0.010	0.0016	mg/L		05/29/20 14:49	06/04/20 04:57	1
Beryllium	ND		0.0010	0.00018	mg/L		05/29/20 14:49	06/04/20 04:57	1
Calcium	**370**		0.50	0.13	mg/L		05/29/20 14:49	06/04/20 04:57	1
Cadmium	ND		0.0010	0.00022	mg/L		05/29/20 14:49	06/04/20 04:57	1
Cobalt	ND		0.00050	0.00013	mg/L		05/29/20 14:49	06/04/20 04:57	1
Chromium	**0.0018**	**J**	0.0020	0.0015	mg/L		05/29/20 14:49	06/04/20 04:57	1
Molybdenum	**0.0031**	**J**	0.0050	0.00061	mg/L		05/29/20 14:49	06/04/20 04:57	1
Lead	ND		0.0010	0.00013	mg/L		05/29/20 14:49	06/04/20 04:57	1
Antimony	ND		0.0020	0.00038	mg/L		05/29/20 14:49	06/04/20 04:57	1
Selenium	ND		0.0050	0.0015	mg/L		05/29/20 14:49	06/04/20 04:57	1
Thallium	ND		0.0010	0.00015	mg/L		05/29/20 14:49	06/04/20 04:57	1
Lithium	ND		5.0	3.4	ug/L		05/29/20 14:49	06/04/20 21:03	1

Client Sample ID: BLIND DUPLICATE 2
Lab Sample ID: 180-106196-4
Date Collected: 05/22/20 00:00
Matrix: Water
Date Received: 05/27/20 09:00

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		06/01/20 15:15	06/01/20 20:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**2500**		20	20	mg/L			05/28/20 09:52	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.5**	**HF**	0.1	0.1	SU			06/02/20 09:17	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.113**		0.0652	0.0660	1.00	0.0796	pCi/L	06/01/20 06:43	06/23/20 07:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.6*		*40 - 110*	*06/01/20 06:43*	*06/23/20 07:38*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0669	U	0.195	0.195	1.00	0.338	pCi/L	06/01/20 07:18	06/05/20 07:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.6*		*40 - 110*	*06/01/20 07:18*	*06/05/20 07:29*	*1*
Y Carrier	*83.7*		*40 - 110*	*06/01/20 07:18*	*06/05/20 07:29*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.180	U	0.206	0.206	5.00	0.338	pCi/L		06/30/20 09:02	1

Client Sample ID: FIELD BLANK 2
Lab Sample ID: 180-106196-5
Date Collected: 05/22/20 12:05
Matrix: Water
Date Received: 05/27/20 09:00

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.32	mg/L			06/07/20 00:51	1
Fluoride	**0.048**	**J**	0.10	0.026	mg/L			06/07/20 00:51	1
Sulfate	**0.51**	**J**	1.0	0.38	mg/L			06/07/20 00:51	1

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00031	mg/L		05/29/20 14:49	06/04/20 05:00	1
Boron	**0.039**	**J**	0.080	0.039	mg/L		05/29/20 14:49	06/04/20 05:00	1
Barium	**0.0035**	**J B**	0.010	0.0016	mg/L		05/29/20 14:49	06/04/20 05:00	1
Beryllium	ND		0.0010	0.00018	mg/L		05/29/20 14:49	06/04/20 05:00	1
Calcium	ND		0.50	0.13	mg/L		05/29/20 14:49	06/04/20 05:00	1
Cadmium	ND		0.0010	0.00022	mg/L		05/29/20 14:49	06/04/20 05:00	1

Client: Vectren Corporation
Project/Site: CCR Groundwater Monitoring AB Brown

Job ID: 180-106196-1

Client Sample ID: FIELD BLANK 2

Date Collected: 05/22/20 12:05
Date Received: 05/27/20 09:00

Lab Sample ID: 180-106196-5

Matrix: Water

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND		0.00050	0.00013	mg/L		05/29/20 14:49	06/04/20 05:00	1
Chromium	ND		0.0020	0.0015	mg/L		05/29/20 14:49	06/04/20 05:00	1
Molybdenum	ND		0.0050	0.00061	mg/L		05/29/20 14:49	06/04/20 05:00	1
Lead	ND		0.0010	0.00013	mg/L		05/29/20 14:49	06/04/20 05:00	1
Antimony	ND		0.0020	0.00038	mg/L		05/29/20 14:49	06/04/20 05:00	1
Selenium	ND		0.0050	0.0015	mg/L		05/29/20 14:49	06/04/20 05:00	1
Thallium	ND		0.0010	0.00015	mg/L		05/29/20 14:49	06/04/20 05:00	1
Lithium	ND		5.0	3.4	ug/L		05/29/20 14:49	06/04/20 21:07	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		06/01/20 15:15	06/01/20 20:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			05/28/20 09:52	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.9**	**HF**	0.1	0.1	SU			06/02/20 09:20	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0471	U	0.0608	0.0609	1.00	0.101	pCi/L	06/01/20 06:43	06/23/20 07:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.5*		*40 - 110*	*06/01/20 06:43*	*06/23/20 07:38*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.00748	U	0.161	0.161	1.00	0.295	pCi/L	06/01/20 07:18	06/05/20 07:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.5*		*40 - 110*	*06/01/20 07:18*	*06/05/20 07:29*	*1*
Y Carrier	*86.7*		*40 - 110*	*06/01/20 07:18*	*06/05/20 07:29*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0396	U	0.172	0.172	5.00	0.295	pCi/L		06/30/20 09:02	1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-317665/54
Matrix: Water
Analysis Batch: 317665

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.32	mg/L			06/06/20 22:44	1
Fluoride	ND		0.10	0.026	mg/L			06/06/20 22:44	1
Sulfate	ND		1.0	0.38	mg/L			06/06/20 22:44	1

Lab Sample ID: LCS 180-317665/53
Matrix: Water
Analysis Batch: 317665

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	53.6		mg/L		107	80 - 120
Fluoride	2.50	2.46		mg/L		98	80 - 120
Sulfate	50.0	48.3		mg/L		97	80 - 120

Method: EPA 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-316922/1-A
Matrix: Water
Analysis Batch: 317494

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 316922

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00031	mg/L		05/29/20 14:49	06/04/20 04:40	1
Boron	ND		0.080	0.039	mg/L		05/29/20 14:49	06/04/20 04:40	1
Barium	0.00580	J	0.010	0.0016	mg/L		05/29/20 14:49	06/04/20 04:40	1
Beryllium	ND		0.0010	0.00018	mg/L		05/29/20 14:49	06/04/20 04:40	1
Calcium	ND		0.50	0.13	mg/L		05/29/20 14:49	06/04/20 04:40	1
Cadmium	ND		0.0010	0.00022	mg/L		05/29/20 14:49	06/04/20 04:40	1
Cobalt	ND		0.00050	0.00013	mg/L		05/29/20 14:49	06/04/20 04:40	1
Chromium	ND		0.0020	0.0015	mg/L		05/29/20 14:49	06/04/20 04:40	1
Molybdenum	ND		0.0050	0.00061	mg/L		05/29/20 14:49	06/04/20 04:40	1
Lead	0.000221	J	0.0010	0.00013	mg/L		05/29/20 14:49	06/04/20 04:40	1
Antimony	0.000416	J	0.0020	0.00038	mg/L		05/29/20 14:49	06/04/20 04:40	1
Selenium	ND		0.0050	0.0015	mg/L		05/29/20 14:49	06/04/20 04:40	1
Thallium	ND		0.0010	0.00015	mg/L		05/29/20 14:49	06/04/20 04:40	1

Lab Sample ID: MB 180-316922/1-A
Matrix: Water
Analysis Batch: 317614

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 316922

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		5.0	3.4	ug/L		05/29/20 14:49	06/04/20 20:46	1

Lab Sample ID: LCS 180-316922/2-A
Matrix: Water
Analysis Batch: 317494

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 316922

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1.00	0.934		mg/L		93	80 - 120
Boron	1.25	1.09		mg/L		87	80 - 120
Barium	1.00	1.05		mg/L		105	80 - 120
Beryllium	0.500	0.482		mg/L		96	80 - 120

Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-316922/2-A
Matrix: Water
Analysis Batch: 317494

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 316922

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	25.0	27.4		mg/L		110	80 - 120
Cadmium	0.500	0.513		mg/L		103	80 - 120
Cobalt	0.500	0.464		mg/L		93	80 - 120
Chromium	0.500	0.537		mg/L		107	80 - 120
Molybdenum	0.500	0.498		mg/L		100	80 - 120
Lead	0.500	0.516		mg/L		103	80 - 120
Antimony	0.250	0.259		mg/L		104	80 - 120
Selenium	1.00	1.03		mg/L		103	80 - 120
Thallium	1.00	1.09		mg/L		109	80 - 120

Lab Sample ID: LCS 180-316922/2-A
Matrix: Water
Analysis Batch: 317614

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 316922

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	500	512		ug/L		102	80 - 120

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-316978/1-A
Matrix: Water
Analysis Batch: 317131

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 316978

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		06/01/20 15:15	06/01/20 20:19	1

Lab Sample ID: LCS 180-316978/2-A
Matrix: Water
Analysis Batch: 317131

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 316978

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00250	0.00285		mg/L		114	80 - 120

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-317151/1
Matrix: Water
Analysis Batch: 317151

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: 180-106196-1 DU
Matrix: Water
Analysis Batch: 317151

Client Sample ID: CCR-LF-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.9	HF	7.9		SU		0.1	2

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 180-316756/2
Matrix: Water
Analysis Batch: 316756

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			05/28/20 09:52	1

Lab Sample ID: LCS 180-316756/1
Matrix: Water
Analysis Batch: 316756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	192	176		mg/L		92	80 - 120

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-471608/22-A
Matrix: Water
Analysis Batch: 474300

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 471608

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02845	U	0.0460	0.0461	1.00	0.0804	pCi/L	06/01/20 06:43	06/23/20 07:39	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.5*		*40 - 110*	*06/01/20 06:43*	*06/23/20 07:39*	*1*

Lab Sample ID: LCS 160-471608/1-A
Matrix: Water
Analysis Batch: 474058

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 471608

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.3	10.38		1.09	1.00	0.108	pCi/L	91	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*78.3*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-471609/22-A
Matrix: Water
Analysis Batch: 472552

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 471609

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1842	U	0.185	0.186	1.00	0.301	pCi/L	06/01/20 07:18	06/05/20 07:32	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.5*		*40 - 110*	*06/01/20 07:18*	*06/05/20 07:32*	*1*
Y Carrier	*90.1*		*40 - 110*	*06/01/20 07:18*	*06/05/20 07:32*	*1*

Client: Vectren Corporation
Project/Site: CCR Groundwater Monitoring AB Brown

Job ID: 180-106196-1

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-471609/1-A
Matrix: Water
Analysis Batch: 472553

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 471609

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			8.78	7.926		0.974	1.00	0.431	pCi/L	90	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*78.3*		*40 - 110*
Y Carrier	*77.4*		*40 - 110*

HPLC/IC

Analysis Batch: 317665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106196-1	CCR-LF-3	Total/NA	Water	EPA 9056A	
180-106196-1	CCR-LF-3	Total/NA	Water	EPA 9056A	
180-106196-2	CCR-LF-6	Total/NA	Water	EPA 9056A	
180-106196-2	CCR-LF-6	Total/NA	Water	EPA 9056A	
180-106196-3	CCR-LF-5	Total/NA	Water	EPA 9056A	
180-106196-3	CCR-LF-5	Total/NA	Water	EPA 9056A	
180-106196-4	BLIND DUPLICATE 2	Total/NA	Water	EPA 9056A	
180-106196-4	BLIND DUPLICATE 2	Total/NA	Water	EPA 9056A	
180-106196-5	FIELD BLANK 2	Total/NA	Water	EPA 9056A	
MB 180-317665/54	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-317665/53	Lab Control Sample	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 316922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106196-1	CCR-LF-3	Total Recoverable	Water	3005A	
180-106196-2	CCR-LF-6	Total Recoverable	Water	3005A	
180-106196-3	CCR-LF-5	Total Recoverable	Water	3005A	
180-106196-4	BLIND DUPLICATE 2	Total Recoverable	Water	3005A	
180-106196-5	FIELD BLANK 2	Total Recoverable	Water	3005A	
MB 180-316922/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-316922/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 316978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106196-1	CCR-LF-3	Total/NA	Water	7470A	
180-106196-2	CCR-LF-6	Total/NA	Water	7470A	
180-106196-3	CCR-LF-5	Total/NA	Water	7470A	
180-106196-4	BLIND DUPLICATE 2	Total/NA	Water	7470A	
180-106196-5	FIELD BLANK 2	Total/NA	Water	7470A	
MB 180-316978/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-316978/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 317131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106196-1	CCR-LF-3	Total/NA	Water	EPA 7470A	316978
180-106196-2	CCR-LF-6	Total/NA	Water	EPA 7470A	316978
180-106196-3	CCR-LF-5	Total/NA	Water	EPA 7470A	316978
180-106196-4	BLIND DUPLICATE 2	Total/NA	Water	EPA 7470A	316978
180-106196-5	FIELD BLANK 2	Total/NA	Water	EPA 7470A	316978
MB 180-316978/1-A	Method Blank	Total/NA	Water	EPA 7470A	316978
LCS 180-316978/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	316978

Analysis Batch: 317494

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106196-1	CCR-LF-3	Total Recoverable	Water	EPA 6020A	316922
180-106196-2	CCR-LF-6	Total Recoverable	Water	EPA 6020A	316922
180-106196-3	CCR-LF-5	Total Recoverable	Water	EPA 6020A	316922
180-106196-4	BLIND DUPLICATE 2	Total Recoverable	Water	EPA 6020A	316922
180-106196-5	FIELD BLANK 2	Total Recoverable	Water	EPA 6020A	316922

Metals (Continued)

Analysis Batch: 317494 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 180-316922/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	316922
LCS 180-316922/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	316922

Analysis Batch: 317614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106196-1	CCR-LF-3	Total Recoverable	Water	EPA 6020A	316922
180-106196-2	CCR-LF-6	Total Recoverable	Water	EPA 6020A	316922
180-106196-3	CCR-LF-5	Total Recoverable	Water	EPA 6020A	316922
180-106196-4	BLIND DUPLICATE 2	Total Recoverable	Water	EPA 6020A	316922
180-106196-5	FIELD BLANK 2	Total Recoverable	Water	EPA 6020A	316922
MB 180-316922/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	316922
LCS 180-316922/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	316922

General Chemistry

Analysis Batch: 316756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106196-1	CCR-LF-3	Total/NA	Water	SM 2540C	
180-106196-2	CCR-LF-6	Total/NA	Water	SM 2540C	
180-106196-3	CCR-LF-5	Total/NA	Water	SM 2540C	
180-106196-4	BLIND DUPLICATE 2	Total/NA	Water	SM 2540C	
180-106196-5	FIELD BLANK 2	Total/NA	Water	SM 2540C	
MB 180-316756/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-316756/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 317151

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106196-1	CCR-LF-3	Total/NA	Water	EPA 9040C	
180-106196-2	CCR-LF-6	Total/NA	Water	EPA 9040C	
180-106196-3	CCR-LF-5	Total/NA	Water	EPA 9040C	
180-106196-4	BLIND DUPLICATE 2	Total/NA	Water	EPA 9040C	
180-106196-5	FIELD BLANK 2	Total/NA	Water	EPA 9040C	
LCS 180-317151/1	Lab Control Sample	Total/NA	Water	EPA 9040C	
180-106196-1 DU	CCR-LF-3	Total/NA	Water	EPA 9040C	

Rad

Prep Batch: 471608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106196-1	CCR-LF-3	Total/NA	Water	PrecSep-21	
180-106196-2	CCR-LF-6	Total/NA	Water	PrecSep-21	
180-106196-3	CCR-LF-5	Total/NA	Water	PrecSep-21	
180-106196-4	BLIND DUPLICATE 2	Total/NA	Water	PrecSep-21	
180-106196-5	FIELD BLANK 2	Total/NA	Water	PrecSep-21	
MB 160-471608/22-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-471608/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 471609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106196-1	CCR-LF-3	Total/NA	Water	PrecSep_0	
180-106196-2	CCR-LF-6	Total/NA	Water	PrecSep_0	
180-106196-3	CCR-LF-5	Total/NA	Water	PrecSep_0	

Rad (Continued)

Prep Batch: 471609 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106196-4	BLIND DUPLICATE 2	Total/NA	Water	PrecSep_0	
180-106196-5	FIELD BLANK 2	Total/NA	Water	PrecSep_0	
MB 160-471609/22-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-471609/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

TestAmerica Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Jacob Winsett	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-49738-8017.1
Client Contact: Angela Casbon Scheller	Phone: (317)671-3730	E-Mail: veronica.bortot@testamericainc.com		Page: Page 1 of 1
Company: Vectren Corporation				Job #: 170LF00900
Address: PO BOX 209	Due Date Requested:			
City: Evansville	TAT Requested (days):			
State, Zip: IN, 47702				
Phone: 864-214-8750(Tel)	PO #: Purchase Order Requested			
Email: acscheller@Vectren.com	WO #:			
Project Name: CCR Groundwater Monitoring - AB Brown	Project #: 18016014			
Site: AB Brown	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA
M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228	9040C, 9056A_ORGFM_28D	6020A, 7470A	2540C_Calcd - TDS	Total Number of containers	Special Instructions/Note:
				Preservation Code:			D	N	D	N		
~~CCR-AP-2I~~ CCR-LF-3	5-22-20	1120	G	Water			X	X	X	X		[redacted]
~~CCR-AP-3I~~ CCR-LF-6	↓	1200	↓	Water			↓	↓	↓	↓		[redacted]
~~CCR-AP-8~~ CCR-LF-5	↓	1315	↓	Water			↓	↓	↓	↓		
~~CCR-AP-9~~ Blind Duplicate 2	↓	–	↓	Water			↓	↓	↓	↓		
~~CCR-AP-10~~ Field Blank 2	↓	1205	↓	Water			↓	↓	↓	↓		
~~CCR-AP~~				~~Water~~								

180-106196 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☒ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ______ Months

Deliverable Requested: I, II, III, IV, Other (specify)
Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:	
Relinquished by: [signature]	Date/Time: 5-26-20 0900	Company: ATC	Received by: FedEx	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 5-27-20 9:00	Company: [illegible]
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Ver: 08/04/2016

180-106196 Waybill

Uncorrected temp 2.5 °C
Thermometer ID 17
CF Initials
PT-WI-SR-001 effective 7/26/13

NA AGCA

PA-US

15238
PIT

WED - 27 MAY 10:30A
PRIORITY OVERNIGHT

MPS# 7705 4267 5537
0263
2 of 3
Mstr# 7705 4267 5515
0201

FedEx Express
J201120042401uu

DEPT:
PO: 170LF00900
INV: 170LF00900
(412) 963-7058
REF: 170LF00900

PITTSBURGH PA 15238

TO VERONICA BORTOT
TESTAMERICA
301 ALPHA DRIVE

56BJ3/2925/FE4A

BILL SENDER

SHIP DATE: 26MAY20
ACTWGT: 50.00 LB
CAD: 10699784 2/INET4220
DIMS: 24x15x16 IN

CVVA (812) 477-1176
EEMAN
WEDEKING AVENUE
BUILDING D, SUITE 2
EVANSVILLE, IN 47715
UNITED STATES US

VVA (812) 477-1176
EMAN

EKING AVENUE
D, SUITE 2
LE, IN 47715
TATES US

SHIP DATE: 26MAY20
ACTWGT: 50.00 LB
CAD: 106997842/INET4220
DIMS: 24x15x16 IN

BILL SENDER

RONICA BORTOT
ESTAMERICA
01 ALPHA DRIVE

PITTSBURGH PA 15238
2) 963-7058
170LF00900
170LF00900

REF: 170LF00900

DEPT:

56BJ3/2925/FE4A

FedEx Express

E

J201120042401uv

WED - 27 MAY 10:30A
PRIORITY OVERNIGHT

1 of 3
TRK# 0201 7705 4267 5515
MASTER

NA AGCA

15238
PA-US PIT

Uncorrected temp 2.5 °C
Thermometer ID 17
CF 0 Initials AK
PT-WI-SR-001 effective 7/26/13

https://www.fedex.com/ship

13
12
11
10
9
8
7
6
5
4
3
2
1

ORIGIN ID:EVVA (812) 477-1176
BRIAN KLEEMAN
1149 WEDEKING AVENUE
BUILDING D, SUITE 2
EVANSVILLE, IN 47715
UNITED STATES US

SHIP DATE: 26MAY20
ACTWGT: 50.00 LB
CAD: 106997842/INET4220
DIMS: 24x15x16 IN

BILL SENDER

TO VERONICA BORTOT
TESTAMERICA
301 ALPHA DRIVE
PITTSBURGH PA 15238

56BJ3/2925/FE4A

(412) 963-7058
INV: 170LF00900
PO: 170LF00900
REF: 170LF00900
DEPT:

FedEx Express

J2201120042401uu

WED - 27 MAY 10:30A
PRIORITY OVERNIGHT

3 of 3
MPS# 7705 4267 5559
0263
0201
MStr# 7705 4267 5515

NA AGCA

Uncorrected temp
Thermometer ID
CF
Initials
PT-WI-SR-001 effective 7/26/13

15238
PIT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-395478.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: veronica.bortot@testamericainc.com	State of Origin: Indiana	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-106196-1
Address: 13715 Rider Trail North,	Due Date Requested: 6/8/2020			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR Groundwater Monitoring AB Brown	Project #: 18016014			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226/PrecSep_21 Standard Target List	9320_Ra228/PrecSep_0 Standard Target List	Ra226Ra228_GFPC	Total Number of containers	Special Instructions/Note:
			Preservation Code:								
CCR-LF-3 (180-106196-1)	5/22/20	11:20 Eastern		Water			X	X	X	2	
CCR-LF-6 (180-106196-2)	5/22/20	12:00 Eastern		Water			X	X	X	2	
CCR-LF-5 (180-106196-3)	5/22/20	13:15 Eastern		Water			X	X	X	2	
BLIND DUPLICATE 2 (180-106196-4)	5/22/20	Eastern		Water			X	X	X	2	
FIELD BLANK 2 (180-106196-5)	5/22/20	12:05 Eastern		Water			X	X	X	2	

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA

M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For ______ Months*

Deliverable Requested: I, II, III, IV, Other (specify) — Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 5/28/20 1300	Company: EMC	Received by: FED EX	Date/Time:	Company
Relinquished by: FED EX	Date/Time:	Company	Received by: [signature]	Date/Time: 5/29/2020 09:03	Company: ETA STL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: Vectren Corporation

Job Number: 180-106196-1

Login Number: 106196
List Number: 1
Creator: Watson, Debbie

List Source: Eurofins TestAmerica, Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Vectren Corporation

Job Number: 180-106196-1

Login Number: 106196
List Number: 2
Creator: Dunn, Tabytha C

List Source: Eurofins TestAmerica, St. Louis
List Creation: 05/29/20 04:05 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-106383-1
Client Project/Site: CCR Monitoring AB Brown Add't Analytes

For:
Vectren Corporation
PO BOX 209
Evansville, Indiana 47702

Attn: Accounts Payable

Veronica Bortot

Authorized for release by:
6/28/2020 9:49:08 PM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

PA Lab ID: 02-00416

Table of Contents

Job ID: 180-106383-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-106383-1

Comments
No additional comments.

Receipt
The samples were received on 5/29/2020 8:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 6 coolers at receipt time were 1.9º C, 2.4º C, 3.1º C, 4.2º C, 4.4º C and 4.6º C.

Receipt Exceptions

The containers received for the following samples did not match the information listed on the Chain-of-Custody (COC): CCR-LF-2 (180-106383-2[MS]) and CCR-LF-2 (180-106383-2[MSD]). The COC lists extra tests for sample two; however no extra containers were received. The Pm will review with the client.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

RAD
Method PrecSep-21: Radium 226 Prep Batch 160-472398:

The following samples were prepared at a reduced aliquot due to yellow discoloration and cloudy appearance: CCR-LF-2 (180-106383-2) and CCR-LF-2 (180-106383-2[DU]). Samples 180-106382-7, 180-106383-2 and 180-106383-2 DU all have a yellow discoloration. Samples 180-106382-8 and 180-106384-2 both have a cloudy appearance.

Method PrecSep_0: Radium 228 Prep Batch 160-472402:

The following samples were prepared at a reduced aliquot due to yellow discoloration and cloudy appearance: CCR-LF-2 (180-106383-2) and CCR-LF-2 (180-106383-2[DU]). Samples 180-106382-7, 180-106383-2 and 180-106383-2 DU all have a yellow discoloration. Samples 180-106382-8 and 180-106384-2 both have a cloudy appearance.

Methods 904.0, 9320: Radium-228 Prep Batch 160-472402
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
CCR-LF-1 (180-106383-1), CCR-LF-2 (180-106383-2), CCR-LF-2 (180-106383-2[DU]), CCR-LF-4 (180-106383-3), (LCS 160-472402/1-A) and (MB 160-472402/22-A)

Methods 903.0, 9315: Radium-226Prep Batch 160-472398

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

CCR-LF-1 (180-106383-1), CCR-LF-2 (180-106383-2), CCR-LF-2 (180-106383-2[DU]), CCR-LF-4 (180-106383-3), (LCS 160-472398/1-A) and (MB 160-472398/22-A)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 180-106383-1 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

Metals

Method 7470A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 180-317118 and analytical batch 180-317242 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 6020A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 180-317054 and analytical batch 180-317672 were outside control limits for barium. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 6020A: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for preparation batch 180-317054 and analytical batch 180-317672 was outside control limits for barium. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Method 6020A: The following samples were diluted to bring the concentration of target analytes within the calibration range: CCR-LF-2 (180-106383-2) and CCR-LF-4 (180-106383-3). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

Method 9060A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 180-317811. LCS/LCSD analyzed.

Method 9060A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 180-317968. LCS/LCSD analyzed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: Vectren Corporation
Job ID: 180-106383-1
Project/Site: CCR Monitoring AB Brown Add't Analytes

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Vectren Corporation
Job ID: 180-106383-1
Project/Site: CCR Monitoring AB Brown Add't Analytes

Laboratory: Eurofins TestAmerica, Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-20
California	State	2891	04-30-21
Connecticut	State	PH-0688	09-30-20
Florida	NELAP	E871008	06-30-20
Georgia	State	PA 02-00416	04-30-21
Illinois	NELAP	004375	06-30-20
Kansas	NELAP	E-10350	01-31-21
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-20
Louisiana	NELAP	04041	06-30-20
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20
Nevada	State	PA00164	07-31-20
New Hampshire	NELAP	2030	04-05-21
New Jersey	NELAP	PA005	06-30-20
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	01-01-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-21
Pennsylvania	NELAP	02-00416	05-23-21
Rhode Island	State	LAO00362	12-31-20
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-20 *
Virginia	NELAP	10043	09-15-20
West Virginia DEP	State	142	02-01-21
Wisconsin	State	998027800	08-31-20

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Vectren Corporation
Job ID: 180-106383-1
Project/Site: CCR Monitoring AB Brown Add't Analytes

Laboratory: Eurofins TestAmerica, Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-20
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	07-31-20
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-20
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-24-21
Pennsylvania	NELAP	68-00340	08-31-20
Texas	NELAP	T104704517-18-10	08-31-20
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-20
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

Accreditation/Certification Summary

Client: Vectren Corporation
Job ID: 180-106383-1
Project/Site: CCR Monitoring AB Brown Add't Analytes

Laboratory: Eurofins TestAmerica, St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-20
California	Los Angeles County Sanitation Districts	10259	06-30-20
California	State	2886	06-30-20
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-20
HI - RadChem Recognition	State	n/a	06-30-20
Illinois	NELAP	004553	11-30-20
Iowa	State	373	09-17-20
Kansas	NELAP	E-10236	10-31-20
Kentucky (DW)	State	KY90125	12-31-20
Louisiana	NELAP	04080	06-30-20
Louisiana (DW)	State	LA011	12-31-20
Maryland	State	310	09-30-20
MI - RadChem Recognition	State	9005	06-30-20
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-20
New Jersey	NELAP	MO002	06-30-20
New York	NELAP	11616	04-01-21
North Dakota	State	R-207	06-30-20
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-20
Pennsylvania	NELAP	68-00540	02-28-21
South Carolina	State	85002001	06-30-20
Texas	NELAP	T104704193-19-13	07-31-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542019-11	07-31-20
Virginia	NELAP	10310	06-14-21
Washington	State	C592	08-30-20
West Virginia DEP	State	381	10-31-20

Sample Summary

Client: Vectren Corporation
Job ID: 180-106383-1
Project/Site: CCR Monitoring AB Brown Add't Analytes

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-106383-1	CCR-LF-1	Water	05/27/20 16:15	05/29/20 08:45	
180-106383-2	CCR-LF-2	Water	05/27/20 17:40	05/29/20 08:45	
180-106383-3	CCR-LF-4	Water	05/26/20 19:40	05/29/20 08:45	

Method Summary

Client: Vectren Corporation
Job ID: 180-106383-1
Project/Site: CCR Monitoring AB Brown Add't Analytes

Method	Method Description	Protocol	Laboratory
EPA 9056A	Anions, Ion Chromatography	SW846	TAL PIT
EPA 6020A	Metals (ICP/MS)	SW846	TAL PIT
EPA 7470A	Mercury (CVAA)	SW846	TAL PIT
EPA 9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL PIT
EPA 9040C	pH	SW846	TAL PIT
EPA 9060A	Organic Carbon, Dissolved (DOC)	SW846	TAL PIT
EPA 9060A	Organic Carbon, Total (TOC)	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
SM 3500 Fe B	Iron, Ferrous	SM	TAL CAN
SM2320 B	Alkalinity, Total	SM18	TAL PIT
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
7470A	Preparation, Mercury	SW846	TAL PIT
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	TAL PIT
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SM18 = "Standard Methods For The Examination Of Water And Wastewater", 18th Edition, 1992.
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Vectren Corporation
Project/Site: CCR Monitoring AB Brown Add't Analytes

Job ID: 180-106383-1

Client Sample ID: CCR-LF-1

Date Collected: 05/27/20 16:15
Date Received: 05/29/20 08:45

Lab Sample ID: 180-106383-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			317840	06/09/20 12:59	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Analysis	EPA 9056A		10			317840	06/09/20 13:15	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Dissolved	Prep	3005A			50 mL	50 mL	317054	06/01/20 08:43	KEM	TAL PIT
Dissolved	Analysis	EPA 6020A		1			317672	06/05/20 21:47	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	317054	06/01/20 08:43	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			317672	06/05/20 21:44	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	317054	06/01/20 08:43	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			317940	06/06/20 18:23	RSK	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	7470A			50 mL	50 mL	317118	06/01/20 18:50	NAM	TAL PIT
Total/NA	Analysis	EPA 7470A		1			317242	06/02/20 18:57	NAM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Prep	9030B			50 mL	50 mL	317293	06/03/20 08:30	CMR	TAL PIT
Total/NA	Analysis	EPA 9034		1			317431	06/03/20 13:22	CMR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	EPA 9040C		1			317508	06/04/20 19:00	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Dissolved	Analysis	EPA 9060A		1			317968	06/09/20 16:41	TAM	TAL PIT
	Instrument ID: TOC1030									
Total/NA	Analysis	EPA 9060A		1			317811	06/06/20 00:49	TAM	TAL PIT
	Instrument ID: TOC1030									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	316996	05/30/20 08:41	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 3500 Fe B		1	50 mL	50 mL	436560	06/02/20 12:36	JMR	TAL CAN
	Instrument ID: OSCAR									
Total/NA	Analysis	SM2320 B		1			317196	06/02/20 09:16	AVS	TAL PIT
	Instrument ID: PCTITRATOR									
Total/NA	Prep	PrecSep-21			1000.49 mL	1.0 g	472398	06/04/20 07:34	RBR	TAL SL
Total/NA	Analysis	9315		1			474575	06/26/20 06:02	AJD	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.49 mL	1.0 g	472402	06/04/20 08:27	RBR	TAL SL
Total/NA	Analysis	9320		1			474544	06/25/20 09:10	AJD	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			474652	06/26/20 10:32	SMP	TAL SL
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Vectren Corporation
Job ID: 180-106383-1
Project/Site: CCR Monitoring AB Brown Add't Analytes

Client Sample ID: CCR-LF-2
Lab Sample ID: 180-106383-2
Date Collected: 05/27/20 17:40
Matrix: Water
Date Received: 05/29/20 08:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		250			317839	06/09/20 07:27	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Dissolved	Prep	3005A			50 mL	50 mL	317054	06/01/20 08:43	KEM	TAL PIT
Dissolved	Analysis	EPA 6020A		1			317672	06/05/20 22:15	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	317054	06/01/20 08:43	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			317672	06/05/20 21:50	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	317054	06/01/20 08:43	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		10			317940	06/06/20 18:26	RSK	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	7470A			50 mL	50 mL	317118	06/01/20 18:50	NAM	TAL PIT
Total/NA	Analysis	EPA 7470A		1			317242	06/02/20 18:58	NAM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Prep	9030B			50 mL	50 mL	317293	06/03/20 08:30	CMR	TAL PIT
Total/NA	Analysis	EPA 9034		1			317431	06/03/20 13:28	CMR	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	EPA 9040C		1			317508	06/04/20 18:58	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Dissolved	Analysis	EPA 9060A		1			317968	06/09/20 17:08	TAM	TAL PIT
	Instrument ID: TOC1030									
Total/NA	Analysis	EPA 9060A		1			317811	06/06/20 01:16	TAM	TAL PIT
	Instrument ID: TOC1030									
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	316996	05/30/20 08:41	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 3500 Fe B		1	50 mL	50 mL	436560	06/02/20 12:36	JMR	TAL CAN
	Instrument ID: OSCAR									
Total/NA	Analysis	SM2320 B		1			317196	06/02/20 09:31	AVS	TAL PIT
	Instrument ID: PCTITRATOR									
Total/NA	Prep	PrecSep-21			750.98 mL	1.0 g	472398	06/04/20 07:34	RBR	TAL SL
Total/NA	Analysis	9315		1			474575	06/26/20 06:02	AJD	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			750.98 mL	1.0 g	472402	06/04/20 08:27	RBR	TAL SL
Total/NA	Analysis	9320		1			474544	06/25/20 09:10	AJD	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			474652	06/26/20 10:32	SMP	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-LF-4
Lab Sample ID: 180-106383-3
Date Collected: 05/26/20 19:40
Matrix: Water
Date Received: 05/29/20 08:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		10			317840	06/09/20 15:42	MJH	TAL PIT
	Instrument ID: CHICS2100B									

Lab Chronicle

Client: Vectren Corporation
Project/Site: CCR Monitoring AB Brown Add't Analytes

Job ID: 180-106383-1

Client Sample ID: CCR-LF-4

Date Collected: 05/26/20 19:40
Date Received: 05/29/20 08:45

Lab Sample ID: 180-106383-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		100			317840	06/09/20 15:59	MJH	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	317054	06/01/20 08:43	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			317672	06/05/20 22:18	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	317054	06/01/20 08:43	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			317940	06/06/20 18:54	RSK	TAL PIT
	Instrument ID: DORY									
Total Recoverable	Prep	3005A			50 mL	50 mL	317054	06/01/20 08:43	KEM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		10			317940	06/06/20 18:58	RSK	TAL PIT
	Instrument ID: DORY									
Total/NA	Prep	7470A			50 mL	50 mL	317118	06/01/20 18:50	NAM	TAL PIT
Total/NA	Analysis	EPA 7470A		1			317242	06/02/20 19:01	NAM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			317508	06/04/20 19:01	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	316996	05/30/20 08:41	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.43 mL	1.0 g	472398	06/04/20 07:34	RBR	TAL SL
Total/NA	Analysis	9315		1			474575	06/26/20 06:02	AJD	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.43 mL	1.0 g	472402	06/04/20 08:27	RBR	TAL SL
Total/NA	Analysis	9320		1			474544	06/25/20 09:11	AJD	TAL SL
	Instrument ID: GFPCORANGE									
Total/NA	Analysis	Ra226_Ra228		1			474652	06/26/20 10:32	SMP	TAL SL
	Instrument ID: NOEQUIP									

Laboratory References:

TAL CAN = Eurofins TestAmerica, Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396
TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058
TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Vectren Corporation
Project/Site: CCR Monitoring AB Brown Add't Analytes

Job ID: 180-106383-1

Analyst References:

Lab: TAL CAN
- Batch Type: Analysis
  - JMR = Jacob Rodgers

Lab: TAL PIT
- Batch Type: Prep
  - CMR = Carl Reagle
  - KEM = Kimberly Mahoney
  - NAM = Nicole Marfisi
- Batch Type: Analysis
  - AVS = Abbey Smith
  - CMR = Carl Reagle
  - MJH = Matthew Hartman
  - NAM = Nicole Marfisi
  - PMH = Paloma Hoelzle
  - RSK = Robert Kurtz
  - TAM = Tessa Mastalski

Lab: TAL SL
- Batch Type: Prep
  - RBR = Rachael Ratcliff
- Batch Type: Analysis
  - AJD = Audra DeMariano
  - SMP = Siobhan Perry

Client Sample ID: CCR-LF-1
Date Collected: 05/27/20 16:15
Date Received: 05/29/20 08:45

Lab Sample ID: 180-106383-1
Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19		1.0	0.32	mg/L			06/09/20 12:59	1
Fluoride	0.12		0.10	0.026	mg/L			06/09/20 12:59	1
Sulfate	1200		10	3.8	mg/L			06/09/20 13:15	10

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00035	J	0.0010	0.00031	mg/L		06/01/20 08:43	06/05/20 21:44	1
Boron	0.061	J B	0.080	0.039	mg/L		06/01/20 08:43	06/06/20 18:23	1
Barium	0.033	B	0.010	0.0016	mg/L		06/01/20 08:43	06/05/20 21:44	1
Beryllium	ND		0.0010	0.00018	mg/L		06/01/20 08:43	06/05/20 21:44	1
Calcium	290		0.50	0.13	mg/L		06/01/20 08:43	06/05/20 21:44	1
Cadmium	ND		0.0010	0.00022	mg/L		06/01/20 08:43	06/05/20 21:44	1
Cobalt	ND		0.00050	0.00013	mg/L		06/01/20 08:43	06/05/20 21:44	1
Chromium	ND		0.0020	0.0015	mg/L		06/01/20 08:43	06/05/20 21:44	1
Molybdenum	0.00087	J	0.0050	0.00061	mg/L		06/01/20 08:43	06/05/20 21:44	1
Lead	ND		0.0010	0.00013	mg/L		06/01/20 08:43	06/05/20 21:44	1
Antimony	ND		0.0020	0.00038	mg/L		06/01/20 08:43	06/05/20 21:44	1
Selenium	ND		0.0050	0.0015	mg/L		06/01/20 08:43	06/05/20 21:44	1
Thallium	ND		0.0010	0.00015	mg/L		06/01/20 08:43	06/05/20 21:44	1
Lithium	4.6	J	5.0	3.4	ug/L		06/01/20 08:43	06/05/20 21:44	1
Sodium	27		0.50	0.35	mg/L		06/01/20 08:43	06/06/20 18:23	1
Potassium	0.54		0.50	0.16	mg/L		06/01/20 08:43	06/05/20 21:44	1
Iron	0.057		0.050	0.020	mg/L		06/01/20 08:43	06/05/20 21:44	1
Manganese	0.0022	J	0.0050	0.00087	mg/L		06/01/20 08:43	06/05/20 21:44	1

Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND		0.00050	0.00013	mg/L		06/01/20 08:43	06/05/20 21:47	1
Iron	66		50	20	ug/L		06/01/20 08:43	06/05/20 21:47	1
Magnesium	170000		500	83	ug/L		06/01/20 08:43	06/05/20 21:47	1
Manganese	ND		5.0	0.87	ug/L		06/01/20 08:43	06/05/20 21:47	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		06/01/20 18:50	06/02/20 18:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		3.0	2.1	mg/L		06/03/20 08:30	06/03/20 13:22	1
Total Organic Carbon - Quad	2.4		1.0	0.51	mg/L			06/06/20 00:49	1
Total Dissolved Solids	1900		10	10	mg/L			05/30/20 08:41	1
Ferrous Iron	ND	HF	0.050	0.023	mg/L			06/02/20 12:36	1
Total Alkalinity as CaCO3 to pH 4.5	220		5.0	5.0	mg/L			06/02/20 09:16	1
Bicarbonate Alkalinity as CaCO3	220		5.0	5.0	mg/L			06/02/20 09:16	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.9	HF	0.1	0.1	SU			06/04/20 19:00	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon - Quad	2.6		1.0	0.51	mg/L			06/09/20 16:41	1

Client Sample ID: CCR-LF-1
Lab Sample ID: 180-106383-1
Date Collected: 05/27/20 16:15
Matrix: Water
Date Received: 05/29/20 08:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.109	U	0.120	0.120	1.00	0.189	pCi/L	06/04/20 07:34	06/26/20 06:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*06/04/20 07:34*	*06/26/20 06:02*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.329	U	0.223	0.225	1.00	0.343	pCi/L	06/04/20 08:27	06/25/20 09:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*99.7*		*40 - 110*	*06/04/20 08:27*	*06/25/20 09:10*	*1*
Y Carrier	*86.7*		*40 - 110*	*06/04/20 08:27*	*06/25/20 09:10*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.438**		0.253	0.255	5.00	0.343	pCi/L		06/26/20 10:32	1

Client Sample ID: CCR-LF-2
Lab Sample ID: 180-106383-2
Date Collected: 05/27/20 17:40
Matrix: Water
Date Received: 05/29/20 08:45

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**400**		250	80	mg/L			06/09/20 07:27	250
Fluoride	ND		25	6.6	mg/L			06/09/20 07:27	250
Sulfate	**16000**		250	95	mg/L			06/09/20 07:27	250

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0013**		0.0010	0.00031	mg/L		06/01/20 08:43	06/05/20 21:50	1
Boron	**5.3**	**B**	0.80	0.39	mg/L		06/01/20 08:43	06/06/20 18:26	10
Barium	**0.021**	**B F1 F2**	0.010	0.0016	mg/L		06/01/20 08:43	06/05/20 21:50	1
Beryllium	ND		0.0010	0.00018	mg/L		06/01/20 08:43	06/05/20 21:50	1
Calcium	**390**		0.50	0.13	mg/L		06/01/20 08:43	06/05/20 21:50	1
Cadmium	**0.0054**		0.0010	0.00022	mg/L		06/01/20 08:43	06/05/20 21:50	1
Cobalt	**0.011**		0.00050	0.00013	mg/L		06/01/20 08:43	06/05/20 21:50	1
Chromium	ND		0.0020	0.0015	mg/L		06/01/20 08:43	06/05/20 21:50	1
Molybdenum	**0.0025**	**J**	0.0050	0.00061	mg/L		06/01/20 08:43	06/05/20 21:50	1
Lead	**0.00025**	**J**	0.0010	0.00013	mg/L		06/01/20 08:43	06/05/20 21:50	1
Antimony	ND		0.0020	0.00038	mg/L		06/01/20 08:43	06/05/20 21:50	1
Selenium	**0.0023**	**J**	0.0050	0.0015	mg/L		06/01/20 08:43	06/05/20 21:50	1
Thallium	**0.00073**	**J**	0.0010	0.00015	mg/L		06/01/20 08:43	06/05/20 21:50	1
Lithium	**19**		5.0	3.4	ug/L		06/01/20 08:43	06/05/20 21:50	1
Sodium	**6900**		5.0	3.5	mg/L		06/01/20 08:43	06/06/20 18:26	10

Client Sample ID: CCR-LF-2
Date Collected: 05/27/20 17:40
Date Received: 05/29/20 08:45

Lab Sample ID: 180-106383-2
Matrix: Water

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Potassium	5.8		0.50	0.16	mg/L		06/01/20 08:43	06/05/20 21:50	1
Iron	0.16		0.050	0.020	mg/L		06/01/20 08:43	06/05/20 21:50	1
Manganese	19		0.0050	0.00087	mg/L		06/01/20 08:43	06/05/20 21:50	1

Method: EPA 6020A - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.012		0.00050	0.00013	mg/L		06/01/20 08:43	06/05/20 22:15	1
Iron	250		50	20	ug/L		06/01/20 08:43	06/05/20 22:15	1
Magnesium	330000		500	83	ug/L		06/01/20 08:43	06/05/20 22:15	1
Manganese	20000		5.0	0.87	ug/L		06/01/20 08:43	06/05/20 22:15	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	F1	0.00020	0.00013	mg/L		06/01/20 18:50	06/02/20 18:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		3.0	2.1	mg/L		06/03/20 08:30	06/03/20 13:28	1
Total Organic Carbon - Quad	17		1.0	0.51	mg/L			06/06/20 01:16	1
Total Dissolved Solids	17000		200	200	mg/L			05/30/20 08:41	1
Ferrous Iron	ND	HF	0.050	0.023	mg/L			06/02/20 12:36	1
Total Alkalinity as CaCO3 to pH 4.5	440		5.0	5.0	mg/L			06/02/20 09:31	1
Bicarbonate Alkalinity as CaCO3	440		5.0	5.0	mg/L			06/02/20 09:31	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.5	HF	0.1	0.1	SU			06/04/20 18:58	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon - Quad	17		1.0	0.51	mg/L			06/09/20 17:08	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.574		0.252	0.258	1.00	0.280	pCi/L	06/04/20 07:34	06/26/20 06:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*109*		*40 - 110*	*06/04/20 07:34*	*06/26/20 06:02*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.85		0.385	0.421	1.00	0.429	pCi/L	06/04/20 08:27	06/25/20 09:10	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*109*		*40 - 110*	*06/04/20 08:27*	*06/25/20 09:10*	*1*
Y Carrier	*88.2*		*40 - 110*	*06/04/20 08:27*	*06/25/20 09:10*	*1*

Client Sample ID: CCR-LF-2
Lab Sample ID: 180-106383-2
Date Collected: 05/27/20 17:40
Matrix: Water
Date Received: 05/29/20 08:45

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.43		0.460	0.494	5.00	0.429	pCi/L		06/26/20 10:32	1

Client Sample ID: CCR-LF-4
Lab Sample ID: 180-106383-3
Date Collected: 05/26/20 19:40
Matrix: Water
Date Received: 05/29/20 08:45

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	120		10	3.2	mg/L			06/09/20 15:42	10
Fluoride	0.33	J	1.0	0.26	mg/L			06/09/20 15:42	10
Sulfate	8500		100	38	mg/L			06/09/20 15:59	100

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.021		0.0010	0.00031	mg/L		06/01/20 08:43	06/05/20 22:18	1
Boron	0.33	B	0.080	0.039	mg/L		06/01/20 08:43	06/06/20 18:54	1
Barium	0.017	B	0.010	0.0016	mg/L		06/01/20 08:43	06/05/20 22:18	1
Beryllium	ND		0.0010	0.00018	mg/L		06/01/20 08:43	06/05/20 22:18	1
Calcium	420		0.50	0.13	mg/L		06/01/20 08:43	06/05/20 22:18	1
Cadmium	ND		0.0010	0.00022	mg/L		06/01/20 08:43	06/05/20 22:18	1
Cobalt	0.00098		0.00050	0.00013	mg/L		06/01/20 08:43	06/05/20 22:18	1
Chromium	ND		0.0020	0.0015	mg/L		06/01/20 08:43	06/05/20 22:18	1
Molybdenum	0.027		0.0050	0.00061	mg/L		06/01/20 08:43	06/05/20 22:18	1
Lead	0.00019	J	0.0010	0.00013	mg/L		06/01/20 08:43	06/05/20 22:18	1
Antimony	ND		0.0020	0.00038	mg/L		06/01/20 08:43	06/05/20 22:18	1
Selenium	ND		0.0050	0.0015	mg/L		06/01/20 08:43	06/05/20 22:18	1
Thallium	ND		0.0010	0.00015	mg/L		06/01/20 08:43	06/05/20 22:18	1
Lithium	87		5.0	3.4	ug/L		06/01/20 08:43	06/05/20 22:18	1
Sodium	3900		5.0	3.5	mg/L		06/01/20 08:43	06/06/20 18:58	10
Potassium	5.8		0.50	0.16	mg/L		06/01/20 08:43	06/05/20 22:18	1
Iron	14		0.050	0.020	mg/L		06/01/20 08:43	06/05/20 22:18	1
Manganese	5.2		0.0050	0.00087	mg/L		06/01/20 08:43	06/05/20 22:18	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		06/01/20 18:50	06/02/20 19:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	9800		100	100	mg/L			05/30/20 08:41	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.7	HF	0.1	0.1	SU			06/04/20 19:01	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	4.12		0.523	0.641	1.00	0.229	pCi/L	06/04/20 07:34	06/26/20 06:02	1

Client Sample ID: CCR-LF-4
Lab Sample ID: 180-106383-3

Date Collected: 05/26/20 19:40
Matrix: Water

Date Received: 05/29/20 08:45

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110	06/04/20 07:34	06/26/20 06:02	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.21		0.289	0.309	1.00	0.335	pCi/L	06/04/20 08:27	06/25/20 09:11	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110	06/04/20 08:27	06/25/20 09:11	1
Y Carrier	87.1		40 - 110	06/04/20 08:27	06/25/20 09:11	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	5.33		0.598	0.712	5.00	0.335	pCi/L		06/26/20 10:32	1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-317839/6
Matrix: Water
Analysis Batch: 317839

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.32	mg/L			06/09/20 06:55	1
Fluoride	ND		0.10	0.026	mg/L			06/09/20 06:55	1
Sulfate	ND		1.0	0.38	mg/L			06/09/20 06:55	1

Lab Sample ID: LCS 180-317839/5
Matrix: Water
Analysis Batch: 317839

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	54.4		mg/L		109	80 - 120
Fluoride	2.50	2.69		mg/L		108	80 - 120
Sulfate	50.0	49.9		mg/L		100	80 - 120

Lab Sample ID: 180-106383-2 MS
Matrix: Water
Analysis Batch: 317839

Client Sample ID: CCR-LF-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	400		12500	13500		mg/L		105	80 - 120
Fluoride	ND		625	659		mg/L		105	80 - 120
Sulfate	16000		12500	27500		mg/L		90	80 - 120

Lab Sample ID: 180-106383-2 MSD
Matrix: Water
Analysis Batch: 317839

Client Sample ID: CCR-LF-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	400		12500	13500		mg/L		105	80 - 120	0	15
Fluoride	ND		625	660		mg/L		106	80 - 120	0	15
Sulfate	16000		12500	27600		mg/L		91	80 - 120	0	15

Lab Sample ID: MB 180-317840/6
Matrix: Water
Analysis Batch: 317840

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.32	mg/L			06/09/20 05:30	1
Fluoride	ND		0.10	0.026	mg/L			06/09/20 05:30	1
Sulfate	ND		1.0	0.38	mg/L			06/09/20 05:30	1

Lab Sample ID: LCS 180-317840/5
Matrix: Water
Analysis Batch: 317840

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	53.2		mg/L		106	80 - 120
Fluoride	2.50	2.61		mg/L		105	80 - 120
Sulfate	50.0	54.2		mg/L		108	80 - 120

Method: EPA 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-317054/1-A
Matrix: Water
Analysis Batch: 317672

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 317054

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00031	mg/L		06/01/20 08:43	06/05/20 20:44	1
Boron	0.0647	J	0.080	0.039	mg/L		06/01/20 08:43	06/05/20 20:44	1
Barium	0.00761	J	0.010	0.0016	mg/L		06/01/20 08:43	06/05/20 20:44	1
Magnesium	ND		500	83	ug/L		06/01/20 08:43	06/05/20 20:44	1
Beryllium	ND		0.0010	0.00018	mg/L		06/01/20 08:43	06/05/20 20:44	1
Calcium	ND		0.50	0.13	mg/L		06/01/20 08:43	06/05/20 20:44	1
Cadmium	ND		0.0010	0.00022	mg/L		06/01/20 08:43	06/05/20 20:44	1
Cobalt	ND		0.00050	0.00013	mg/L		06/01/20 08:43	06/05/20 20:44	1
Chromium	ND		0.0020	0.0015	mg/L		06/01/20 08:43	06/05/20 20:44	1
Molybdenum	ND		0.0050	0.00061	mg/L		06/01/20 08:43	06/05/20 20:44	1
Lead	ND		0.0010	0.00013	mg/L		06/01/20 08:43	06/05/20 20:44	1
Antimony	ND		0.0020	0.00038	mg/L		06/01/20 08:43	06/05/20 20:44	1
Selenium	ND		0.0050	0.0015	mg/L		06/01/20 08:43	06/05/20 20:44	1
Thallium	ND		0.0010	0.00015	mg/L		06/01/20 08:43	06/05/20 20:44	1
Lithium	ND		5.0	3.4	ug/L		06/01/20 08:43	06/05/20 20:44	1
Sodium	ND		0.50	0.35	mg/L		06/01/20 08:43	06/05/20 20:44	1
Potassium	ND		0.50	0.16	mg/L		06/01/20 08:43	06/05/20 20:44	1
Iron	ND		0.050	0.020	mg/L		06/01/20 08:43	06/05/20 20:44	1
Manganese	ND		0.0050	0.00087	mg/L		06/01/20 08:43	06/05/20 20:44	1

Lab Sample ID: LCS 180-317054/2-A
Matrix: Water
Analysis Batch: 317672

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 317054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1.00	0.967		mg/L		97	80 - 120
Barium	1.00	0.956		mg/L		96	80 - 120
Magnesium	25000	24000		ug/L		96	80 - 120
Beryllium	0.500	0.475		mg/L		95	80 - 120
Calcium	25.0	26.3		mg/L		105	80 - 120
Cadmium	0.500	0.475		mg/L		95	80 - 120
Cobalt	0.500	0.466		mg/L		93	80 - 120
Chromium	0.500	0.486		mg/L		97	80 - 120
Molybdenum	0.500	0.491		mg/L		98	80 - 120
Lead	0.500	0.496		mg/L		99	80 - 120
Antimony	0.250	0.242		mg/L		97	80 - 120
Selenium	1.00	0.961		mg/L		96	80 - 120
Thallium	1.00	1.06		mg/L		106	80 - 120
Lithium	500	473		ug/L		95	80 - 120
Potassium	25.0	22.5		mg/L		90	80 - 120
Iron	5.00	4.89		mg/L		98	80 - 120
Manganese	0.500	0.465		mg/L		93	80 - 120

Lab Sample ID: LCS 180-317054/2-A
Matrix: Water
Analysis Batch: 317940

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 317054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.25	1.10		mg/L		88	80 - 120

Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 180-317054/2-A
Matrix: Water
Analysis Batch: 317940

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 317054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	25.0	25.0		mg/L		100	80 - 120

Lab Sample ID: 180-106383-2 MS
Matrix: Water
Analysis Batch: 317672

Client Sample ID: CCR-LF-2
Prep Type: Total Recoverable
Prep Batch: 317054

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0013		1.00	1.10		mg/L		109	75 - 125
Barium	0.021	B F1 F2	1.00	0.436	F1	mg/L		41	75 - 125
Beryllium	ND		0.500	0.486		mg/L		97	75 - 125
Calcium	390		25.0	432	4	mg/L		176	75 - 125
Cadmium	0.0054		0.500	0.496		mg/L		98	75 - 125
Cobalt	0.011		0.500	0.537		mg/L		105	75 - 125
Chromium	ND		0.500	0.479		mg/L		96	75 - 125
Molybdenum	0.0025	J	0.500	0.544		mg/L		108	75 - 125
Lead	0.00025	J	0.500	0.470		mg/L		94	75 - 125
Antimony	ND		0.250	0.260		mg/L		104	75 - 125
Selenium	0.0023	J	1.00	0.940		mg/L		94	75 - 125
Thallium	0.00073	J	1.00	1.04		mg/L		104	75 - 125
Lithium	19		500	507		ug/L		98	75 - 125
Potassium	5.8		25.0	30.2		mg/L		97	75 - 125
Iron	0.16		5.00	4.99		mg/L		97	75 - 125
Manganese	19		0.500	21.3	4	mg/L		410	75 - 125

Lab Sample ID: 180-106383-2 MS
Matrix: Water
Analysis Batch: 317940

Client Sample ID: CCR-LF-2
Prep Type: Total Recoverable
Prep Batch: 317054

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	5.3	B	1.25	6.72	4	mg/L		114	75 - 125
Sodium	6900		25.0	7090	4	mg/L		609	75 - 125

Lab Sample ID: 180-106383-2 MSD
Matrix: Water
Analysis Batch: 317672

Client Sample ID: CCR-LF-2
Prep Type: Total Recoverable
Prep Batch: 317054

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0013		1.00	1.06		mg/L		106	75 - 125	4	20
Barium	0.021	B F1 F2	1.00	0.559	F1 F2	mg/L		54	75 - 125	25	20
Beryllium	ND		0.500	0.472		mg/L		94	75 - 125	3	20
Calcium	390		25.0	423	4	mg/L		141	75 - 125	2	20
Cadmium	0.0054		0.500	0.483		mg/L		96	75 - 125	3	20
Cobalt	0.011		0.500	0.526		mg/L		103	75 - 125	2	20
Chromium	ND		0.500	0.464		mg/L		93	75 - 125	3	20
Molybdenum	0.0025	J	0.500	0.535		mg/L		107	75 - 125	2	20
Lead	0.00025	J	0.500	0.460		mg/L		92	75 - 125	2	20
Antimony	ND		0.250	0.244		mg/L		98	75 - 125	6	20
Selenium	0.0023	J	1.00	0.919		mg/L		92	75 - 125	2	20
Thallium	0.00073	J	1.00	1.01		mg/L		101	75 - 125	3	20

Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-106383-2 MSD
Matrix: Water
Analysis Batch: 317672

Client Sample ID: CCR-LF-2
Prep Type: Total Recoverable
Prep Batch: 317054

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	19		500	495		ug/L		95	75 - 125	2	20
Potassium	5.8		25.0	29.6		mg/L		95	75 - 125	2	20
Iron	0.16		5.00	4.84		mg/L		94	75 - 125	3	20
Manganese	19		0.500	20.6	4	mg/L		262	75 - 125	4	20

Lab Sample ID: 180-106383-2 MSD
Matrix: Water
Analysis Batch: 317940

Client Sample ID: CCR-LF-2
Prep Type: Total Recoverable
Prep Batch: 317054

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	5.3	B	1.25	6.56	4	mg/L		101	75 - 125	2	20
Sodium	6900		25.0	6830	4	mg/L		-436	75 - 125	4	20

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-317118/1-A
Matrix: Water
Analysis Batch: 317242

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 317118

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020	0.00013	mg/L		06/01/20 18:50	06/02/20 18:34	1

Lab Sample ID: LCS 180-317118/2-A
Matrix: Water
Analysis Batch: 317242

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 317118

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00250	0.00247		mg/L		99	80 - 120

Lab Sample ID: 180-106383-2 MS
Matrix: Water
Analysis Batch: 317242

Client Sample ID: CCR-LF-2
Prep Type: Total/NA
Prep Batch: 317118

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND	F1	0.00100	0.000497	F1	mg/L		50	75 - 125

Lab Sample ID: 180-106383-2 MSD
Matrix: Water
Analysis Batch: 317242

Client Sample ID: CCR-LF-2
Prep Type: Total/NA
Prep Batch: 317118

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND	F1	0.00100	0.000459	F1	mg/L		46	75 - 125	8	20

Method: EPA 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 180-317293/1-A
Matrix: Water
Analysis Batch: 317431

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 317293

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		3.0	2.1	mg/L		06/03/20 08:30	06/03/20 13:18	1

Method: EPA 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: LCS 180-317293/2-A
Matrix: Water
Analysis Batch: 317431
Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 317293

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	16.4	15.5		mg/L		94	85 - 115

Lab Sample ID: 180-106383-1 MS
Matrix: Water
Analysis Batch: 317431
Client Sample ID: CCR-LF-1
Prep Type: Total/NA
Prep Batch: 317293

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	ND		16.4	14.7		mg/L		90	75 - 125

Lab Sample ID: 180-106383-1 MSD
Matrix: Water
Analysis Batch: 317431
Client Sample ID: CCR-LF-1
Prep Type: Total/NA
Prep Batch: 317293

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	ND		16.4	14.6		mg/L		89	75 - 125	1	20

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-317508/1
Matrix: Water
Analysis Batch: 317508
Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: 180-106383-2 DU
Matrix: Water
Analysis Batch: 317508
Client Sample ID: CCR-LF-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	6.5	HF	6.5	HF	SU		0.2	2

Method: EPA 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 180-317811/6
Matrix: Water
Analysis Batch: 317811
Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	ND		1.0	0.51	mg/L			06/05/20 23:02	1

Lab Sample ID: LCS 180-317811/4
Matrix: Water
Analysis Batch: 317811
Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Quad	20.0	20.1		mg/L		101	85 - 115

Method: EPA 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCSD 180-317811/5
Matrix: Water
Analysis Batch: 317811

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Quad			20.0	19.0		mg/L		95	85 - 115	6	20

Method: EPA 9060A - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 180-317968/6
Matrix: Water
Analysis Batch: 317968

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon - Quad	ND		1.0	0.51	mg/L			06/09/20 16:14	1

Lab Sample ID: LCS 180-317968/4
Matrix: Water
Analysis Batch: 317968

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon - Quad			20.0	19.7		mg/L		99	85 - 115

Lab Sample ID: LCSD 180-317968/5
Matrix: Water
Analysis Batch: 317968

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon - Quad			20.0	18.9		mg/L		95	85 - 115	4	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 180-316996/2
Matrix: Water
Analysis Batch: 316996

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			05/30/20 08:41	1

Lab Sample ID: LCS 180-316996/1
Matrix: Water
Analysis Batch: 316996

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids			192	188		mg/L		98	80 - 120

Lab Sample ID: 180-106383-2 DU
Matrix: Water
Analysis Batch: 316996

Client Sample ID: CCR-LF-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	17000			16500		mg/L				0.6	10

Method: SM 3500 Fe B - Iron, Ferrous

Lab Sample ID: MB 240-436560/3
Matrix: Water
Analysis Batch: 436560

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ferrous Iron	ND		0.050	0.023	mg/L			06/02/20 12:36	1

Lab Sample ID: LCS 240-436560/4
Matrix: Water
Analysis Batch: 436560

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ferrous Iron	1.00	1.00		mg/L		100	80 - 124

Lab Sample ID: 180-106383-1 MS
Matrix: Water
Analysis Batch: 436560

Client Sample ID: CCR-LF-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ferrous Iron	ND	HF	1.00	1.01		mg/L		101	31 - 168

Lab Sample ID: 180-106383-1 MSD
Matrix: Water
Analysis Batch: 436560

Client Sample ID: CCR-LF-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ferrous Iron	ND	HF	1.00	1.03		mg/L		103	31 - 168	2	12

Method: SM2320 B - Alkalinity, Total

Lab Sample ID: MB 180-317196/5
Matrix: Water
Analysis Batch: 317196

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Alkalinity as CaCO3 to pH 4.5	ND		5.0	5.0	mg/L			06/02/20 09:08	1
Bicarbonate Alkalinity as CaCO3	ND		5.0	5.0	mg/L			06/02/20 09:08	1

Lab Sample ID: LCS 180-317196/4
Matrix: Water
Analysis Batch: 317196

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Alkalinity as CaCO3 to pH 4.5	250	240		mg/L		96	90 - 110

Lab Sample ID: 180-106383-1 DU
Matrix: Water
Analysis Batch: 317196

Client Sample ID: CCR-LF-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	220		223		mg/L		3	20
Bicarbonate Alkalinity as CaCO3	220		223		mg/L		3	20

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-472398/22-A
Matrix: Water
Analysis Batch: 474575

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 472398

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02403	U	0.0937	0.0938	1.00	0.186	pCi/L	06/04/20 07:34	06/26/20 07:54	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*06/04/20 07:34*	*06/26/20 07:54*	*1*

Lab Sample ID: LCS 160-472398/1-A
Matrix: Water
Analysis Batch: 474575

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 472398

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.3	9.927		1.19	1.00	0.163	pCi/L	87	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*102*		*40 - 110*

Lab Sample ID: 180-106383-2 DU
Matrix: Water
Analysis Batch: 474575

Client Sample ID: CCR-LF-2
Prep Type: Total/NA
Prep Batch: 472398

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.574			0.6672		0.272	1.00	0.266	pCi/L			0.18	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*105*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-472402/22-A
Matrix: Water
Analysis Batch: 474544

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 472402

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3500		0.214	0.217	1.00	0.323	pCi/L	06/04/20 08:27	06/25/20 09:11	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*103*		*40 - 110*	*06/04/20 08:27*	*06/25/20 09:11*	*1*
Y Carrier	*84.9*		*40 - 110*	*06/04/20 08:27*	*06/25/20 09:11*	*1*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-472402/1-A
Matrix: Water
Analysis Batch: 474544

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 472402

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			8.72	7.257		0.879	1.00	0.374	pCi/L	83	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*102*		*40 - 110*
Y Carrier	*87.5*		*40 - 110*

Lab Sample ID: 180-106383-2 DU
Matrix: Water
Analysis Batch: 474544

Client Sample ID: CCR-LF-2
Prep Type: Total/NA
Prep Batch: 472402

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	1.85			1.529		0.403	1.00	0.459	pCi/L			0.39	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*105*		*40 - 110*
Y Carrier	*88.6*		*40 - 110*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 180-106383-2 DU
Matrix: Water
Analysis Batch: 474652

Client Sample ID: CCR-LF-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Combined Radium 226 + 228	2.43			2.196		0.486	5.00	0.459	pCi/L			0.24	

QC Association Summary

Client: Vectren Corporation
Project/Site: CCR Monitoring AB Brown Add't Analytes

Job ID: 180-106383-1

HPLC/IC

Analysis Batch: 317839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-2	CCR-LF-2	Total/NA	Water	EPA 9056A	
MB 180-317839/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-317839/5	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-106383-2 MS	CCR-LF-2	Total/NA	Water	EPA 9056A	
180-106383-2 MSD	CCR-LF-2	Total/NA	Water	EPA 9056A	

Analysis Batch: 317840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-1	CCR-LF-1	Total/NA	Water	EPA 9056A	
180-106383-1	CCR-LF-1	Total/NA	Water	EPA 9056A	
180-106383-3	CCR-LF-4	Total/NA	Water	EPA 9056A	
180-106383-3	CCR-LF-4	Total/NA	Water	EPA 9056A	
MB 180-317840/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-317840/5	Lab Control Sample	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 317054

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-1	CCR-LF-1	Dissolved	Water	3005A	
180-106383-1	CCR-LF-1	Total Recoverable	Water	3005A	
180-106383-2	CCR-LF-2	Dissolved	Water	3005A	
180-106383-2	CCR-LF-2	Total Recoverable	Water	3005A	
180-106383-3	CCR-LF-4	Total Recoverable	Water	3005A	
MB 180-317054/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-317054/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-106383-2 MS	CCR-LF-2	Total Recoverable	Water	3005A	
180-106383-2 MSD	CCR-LF-2	Total Recoverable	Water	3005A	

Prep Batch: 317118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-1	CCR-LF-1	Total/NA	Water	7470A	
180-106383-2	CCR-LF-2	Total/NA	Water	7470A	
180-106383-3	CCR-LF-4	Total/NA	Water	7470A	
MB 180-317118/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-317118/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-106383-2 MS	CCR-LF-2	Total/NA	Water	7470A	
180-106383-2 MSD	CCR-LF-2	Total/NA	Water	7470A	

Analysis Batch: 317242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-1	CCR-LF-1	Total/NA	Water	EPA 7470A	317118
180-106383-2	CCR-LF-2	Total/NA	Water	EPA 7470A	317118
180-106383-3	CCR-LF-4	Total/NA	Water	EPA 7470A	317118
MB 180-317118/1-A	Method Blank	Total/NA	Water	EPA 7470A	317118
LCS 180-317118/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	317118
180-106383-2 MS	CCR-LF-2	Total/NA	Water	EPA 7470A	317118
180-106383-2 MSD	CCR-LF-2	Total/NA	Water	EPA 7470A	317118

QC Association Summary

Client: Vectren Corporation
Project/Site: CCR Monitoring AB Brown Add't Analytes

Job ID: 180-106383-1

Metals

Analysis Batch: 317672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-1	CCR-LF-1	Dissolved	Water	EPA 6020A	317054
180-106383-1	CCR-LF-1	Total Recoverable	Water	EPA 6020A	317054
180-106383-2	CCR-LF-2	Dissolved	Water	EPA 6020A	317054
180-106383-2	CCR-LF-2	Total Recoverable	Water	EPA 6020A	317054
180-106383-3	CCR-LF-4	Total Recoverable	Water	EPA 6020A	317054
MB 180-317054/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	317054
LCS 180-317054/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	317054
180-106383-2 MS	CCR-LF-2	Total Recoverable	Water	EPA 6020A	317054
180-106383-2 MSD	CCR-LF-2	Total Recoverable	Water	EPA 6020A	317054

Analysis Batch: 317940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-1	CCR-LF-1	Total Recoverable	Water	EPA 6020A	317054
180-106383-2	CCR-LF-2	Total Recoverable	Water	EPA 6020A	317054
180-106383-3	CCR-LF-4	Total Recoverable	Water	EPA 6020A	317054
180-106383-3	CCR-LF-4	Total Recoverable	Water	EPA 6020A	317054
LCS 180-317054/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	317054
180-106383-2 MS	CCR-LF-2	Total Recoverable	Water	EPA 6020A	317054
180-106383-2 MSD	CCR-LF-2	Total Recoverable	Water	EPA 6020A	317054

General Chemistry

Analysis Batch: 316996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-1	CCR-LF-1	Total/NA	Water	SM 2540C	
180-106383-2	CCR-LF-2	Total/NA	Water	SM 2540C	
180-106383-3	CCR-LF-4	Total/NA	Water	SM 2540C	
MB 180-316996/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-316996/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-106383-2 DU	CCR-LF-2	Total/NA	Water	SM 2540C	

Analysis Batch: 317196

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-1	CCR-LF-1	Total/NA	Water	SM2320 B	
180-106383-2	CCR-LF-2	Total/NA	Water	SM2320 B	
MB 180-317196/5	Method Blank	Total/NA	Water	SM2320 B	
LCS 180-317196/4	Lab Control Sample	Total/NA	Water	SM2320 B	
180-106383-1 DU	CCR-LF-1	Total/NA	Water	SM2320 B	

Prep Batch: 317293

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-1	CCR-LF-1	Total/NA	Water	9030B	
180-106383-2	CCR-LF-2	Total/NA	Water	9030B	
MB 180-317293/1-A	Method Blank	Total/NA	Water	9030B	
LCS 180-317293/2-A	Lab Control Sample	Total/NA	Water	9030B	
180-106383-1 MS	CCR-LF-1	Total/NA	Water	9030B	
180-106383-1 MSD	CCR-LF-1	Total/NA	Water	9030B	

Analysis Batch: 317431

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-1	CCR-LF-1	Total/NA	Water	EPA 9034	317293

General Chemistry (Continued)

Analysis Batch: 317431 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-2	CCR-LF-2	Total/NA	Water	EPA 9034	317293
MB 180-317293/1-A	Method Blank	Total/NA	Water	EPA 9034	317293
LCS 180-317293/2-A	Lab Control Sample	Total/NA	Water	EPA 9034	317293
180-106383-1 MS	CCR-LF-1	Total/NA	Water	EPA 9034	317293
180-106383-1 MSD	CCR-LF-1	Total/NA	Water	EPA 9034	317293

Analysis Batch: 317508

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-1	CCR-LF-1	Total/NA	Water	EPA 9040C	
180-106383-2	CCR-LF-2	Total/NA	Water	EPA 9040C	
180-106383-3	CCR-LF-4	Total/NA	Water	EPA 9040C	
LCS 180-317508/1	Lab Control Sample	Total/NA	Water	EPA 9040C	
180-106383-2 DU	CCR-LF-2	Total/NA	Water	EPA 9040C	

Analysis Batch: 317811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-1	CCR-LF-1	Total/NA	Water	EPA 9060A	
180-106383-2	CCR-LF-2	Total/NA	Water	EPA 9060A	
MB 180-317811/6	Method Blank	Total/NA	Water	EPA 9060A	
LCS 180-317811/4	Lab Control Sample	Total/NA	Water	EPA 9060A	
LCSD 180-317811/5	Lab Control Sample Dup	Total/NA	Water	EPA 9060A	

Analysis Batch: 317968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-1	CCR-LF-1	Dissolved	Water	EPA 9060A	
180-106383-2	CCR-LF-2	Dissolved	Water	EPA 9060A	
MB 180-317968/6	Method Blank	Dissolved	Water	EPA 9060A	
LCS 180-317968/4	Lab Control Sample	Dissolved	Water	EPA 9060A	
LCSD 180-317968/5	Lab Control Sample Dup	Dissolved	Water	EPA 9060A	

Analysis Batch: 436560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-1	CCR-LF-1	Total/NA	Water	SM 3500 Fe B	
180-106383-2	CCR-LF-2	Total/NA	Water	SM 3500 Fe B	
MB 240-436560/3	Method Blank	Total/NA	Water	SM 3500 Fe B	
LCS 240-436560/4	Lab Control Sample	Total/NA	Water	SM 3500 Fe B	
180-106383-1 MS	CCR-LF-1	Total/NA	Water	SM 3500 Fe B	
180-106383-1 MSD	CCR-LF-1	Total/NA	Water	SM 3500 Fe B	

Rad

Prep Batch: 472398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-1	CCR-LF-1	Total/NA	Water	PrecSep-21	
180-106383-2	CCR-LF-2	Total/NA	Water	PrecSep-21	
180-106383-3	CCR-LF-4	Total/NA	Water	PrecSep-21	
MB 160-472398/22-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-472398/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
180-106383-2 DU	CCR-LF-2	Total/NA	Water	PrecSep-21	

QC Association Summary

Client: Vectren Corporation
Job ID: 180-106383-1
Project/Site: CCR Monitoring AB Brown Add't Analytes

Rad

Prep Batch: 472402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-106383-1	CCR-LF-1	Total/NA	Water	PrecSep_0	
180-106383-2	CCR-LF-2	Total/NA	Water	PrecSep_0	
180-106383-3	CCR-LF-4	Total/NA	Water	PrecSep_0	
MB 160-472402/22-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-472402/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
180-106383-2 DU	CCR-LF-2	Total/NA	Water	PrecSep_0	

TestAmerica Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Jacob Winsett	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-49738-8017.1
Client Contact: Angela Casbon Scheller	Phone: (317) 671-3730	E-Mail: veronica.bortot@testamericainc.com		Page: Page 1 of 1
Company: Vectren Corporation				Job #: 170f000900
Address: PO BOX 209	Due Date Requested:			
City: Evansville	TAT Requested (days):			
State, Zip: IN, 47702				
Phone: 864-214-8750(Tel)	PO #: Purchase Order Requested			
Email: acscheller@Vectren.com	WO #:			
Project Name: CCR Groundwater Monitoring - AB Brown	Project #: 18016014			
Site: AB Brown	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9315_Ra226, 9320_Ra228	9040C, 9056A_ORGFM_28D	6020A, 7470A	2540C_Calcd - TDS	Alkalinity bicarbonate	Total Metals	Dissolved Metals	Ferrous Iron	Sulfide	Dissolved Organic Carbon	Total Organic Carbon	Total Number of containers	Special Instructions/Note
			Preservation Code:				D	N	D	N	N	D	D	N	C	S	S		
~~CCR-AP-2~~ CCR-LF-1	5-27-20	1615	G	Water	X		X	X	X	X	X	X	X	X	X	X	X		Appendix I
~~CCR-AP-3~~ CCR-LF-2	5-27-20	1740		Water	X	X	1	1	1	1	1	1	1	1	1	1	1		analytes re
~~CCR-AP-8~~ CCR-LF-4	5-26-20	1940		Water			X	X	X	X									
~~CCR-AP-9~~ [illegible]				Water															
~~CCR-AP-10~~ [illegible]				Water															
~~CCR-AP-~~ [illegible]				Water															
MS/MSD	5-27-20	1740					X	X	X	X									
[illegible]																			

180-106383 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Non-Hazard ☐ Flammable ☒ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Jacob Winsett	5-28-20 0900		[illegible]	5-29-20	TEAPitt
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 845	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 08/04/2016

FedEx Ship Manager - Print Your Label(s)

ORIGIN ID:EVVA (812) 477-1176
BRIAN KLEEMAN

1149 WEDEKING AVENUE
BUILDING D, SUITE 2
EVANSVILLE, IN 47715
UNITED STATES US

SHIP DATE: 28MAY20
ACTWGT: 50.00 LB
CAD: 106997842/INET4220
DIMS: 24x16x15 IN

BILL SENDER

TO VERONICA BORTOT
TESTAMERICA
301 ALPHA DRIVE

PITTSBURGH PA 15238
(412) 963-7058 REF: 170LF00900
INV: 170LF00900
PO: 170LF00900 DEPT:

56BJ3/2925/FE4A

FedEx Express

J2911208042401uw

FRI - 29 MAY 3:00P
STANDARD OVERNIGHT

4 of 6

MPS# 0263 7705 6608 2780
Mstr# 7705 6608 2210

0201

15238
PIT

NA AGCA

PA-US

Incorrected temp 3.2 °C
Thermometer ID 17
F Initials JB
-WI-SR-001 effective 7/26/13

180-10638 Waybill

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5/28/2020

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ORIGIN ID:EVVA (812) 477-1176
BRIAN KLEEMAN

1149 WEDEKING AVENUE
BUILDING D, SUITE 2
EVANSVILLE, IN 47715
UNITED STATES US

SHIP DATE: 28MAY20
ACTWGT: 50.00 LB
CAD: 106997842/INET4220
DIMS: 24x16x15 IN

BILL SENDER

TO VERONICA BORTOT
TESTAMERICA
301 ALPHA DRIVE

PITTSBURGH PA 15238
(412) 963-7058
INV:170LF00900
PO:170LF00900
REF: 170LF00900
DEPT:

568J3/2925/FE4A

FedEx Express

J2011200424015uu

FRI - 29 MAY 3:00P
STANDARD OVERNIGHT

6 of 6
MPS# 7705 6608 2698
0263
Mstr# 7705 6608 2210

0201

15238
PIT
PA-US

NA AGCA

4.6 °C
12
13

Uncorrected temp
Thermometer ID
Initials

CF 0

PT-WI-SR-001 effective 7/26/13

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UNITED STATES US

SHIP DATE: 28MAY20
ACTWGT: 50.00 LB
CAD: 106997842/INET4220
DIMS: 24x16x15 IN

BILL SENDER

TO VERONICA BORTOT
TESTAMERICA
301 ALPHA DRIVE

PITTSBURGH PA 15238
(412) 963-7058
INV: 170LF00900
PO: 170LF00900
REF: 170LF00900
DEPT:

568J3/2925/FE4A

FedEx Express

J2011200424011uv

FRI - 29 MAY 3:00P
STANDARD OVERNIGHT

5 of 6

MPS# 7705 6608 2676
0263
Mstr# 7705 6608 2210

0201

15238
PIT

NA AGCA

Uncorrected temp 1.4 °C
Thermometer ID 17
Initials TJ
CF
IS

PT-WI-SR-001 effective 7/26/13

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BRIAN KLEEMAN

1149 WEDEKING AVENUE
BUILDING D, SUITE 2
EVANSVILLE, IN 47715
UNITED STATES US

SHIP DATE: 28MAY20
ACTWGT: 50.00 LB
CAD: 106997842/INET4220
DIMS: 24x16x15 IN

BILL SENDER

TO VERONICA BORTOT
TESTAMERICA
301 ALPHA DRIVE

PITTSBURGH PA 15238
(412) 963-7058 REF: 170LF00900
INV: 170LF00900
PO: 170LF00900 DEPT:

56BJ3/2925/FE4A

FedEx Express

J201120042401uv

FRI - 29 MAY 3:00P
STANDARD OVERNIGHT

2 of 6
MPS# 7705 6608 2746 0201
0263
Mstr# 7705 6608 2210

NA AGCA

15238
PA-US PIT

Uncorrected temp 4.2 °C
Thermometer ID 17
CF 0 Initials D
T-WI-SR-001 effective 7/26/13

After printing this label:
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BRIAN KLEEMAN

1149 WEDEKING AVENUE
BUILDING D, SUITE 2
EVANSVILLE, IN 47715
UNITED STATES US

SHIP DATE: 28MAY20
ACTWGT: 50.00 LB
CAD: 106997842/INET4220
DIMS: 24x16x15 IN

BILL SENDER

TO **VERONICA BORTOT**
TESTAMERICA
301 ALPHA DRIVE

PITTSBURGH PA 15238
(412) 963-7058
INV: 170LF00900
PO: 170LF00900

REF: 170LF00900

DEPT:

568J3/2925/FE4A

FedEx Express

J2011200424011uv

TRK# 0201 **7705 6608 2210**

1 of 6

FRI - 29 MAY 3:00P
STANDARD OVERNIGHT

MASTER

15238
PIT
PA-US

NA AGCA

Uncorrected temp 24 °C
Thermometer ID 17

CF 0 Initials 13

PT-WI-SR-001 effective 7/26/13

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Eurofins TestAmerica, Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone: 412-963-7058 Fax: 412-963-2468

3-4/4-1

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bortot, Veronica	Carrier Tracking No(s):	COC No: 180-396062.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: veronica.bortot@testamericainc.com	State of Origin: Indiana	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note):		Job #: 180-106383-1
Address: 4101 Shuffel Street NW,	Due Date Requested: 6/11/2020			
City: North Canton	TAT Requested (days):			
State, Zip: OH, 44720				
Phone: 330-497-9396(Tel) 330-497-0772(Fax)	PO #:			
Email:	WO #:			
Project Name: CCR Monitoring AB Brown Add't Analytes	Project #: 18016014			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

W 107

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	3500_F+2_B_Calc	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
CCR-LF-1 (180-106383-1)	5/27/20	16:15 Eastern		Water			X	1	
CCR-LF-2 (180-106383-2)	5/27/20	17:40 Eastern		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins TestAmerica.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		6/1/20 1700	PNT		6-2-20 1000	TAC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins TestAmerica Canton Sample Receipt Form/Narrative
Canton Facility

Login # : ____________

Client ETA Pittsburgh Site Name ____________ Cooler unpacked by: [signature]

Cooler Received on 6-2-20 Opened on 6-2-20

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other ____________

Receipt After-hours: Drop-off Date/Time ____________ Storage Location ____________

TestAmerica Cooler # 7/2 Foam Box Client Cooler Box Other ____________

Packing material used: Bubble Wrap Foam Plastic Bag None Other ____________

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☐ See Multiple Cooler Form
   IR GUN# IR-10 (CF +0.7 °C) Observed Cooler Temp. ______ °C Corrected Cooler Temp. ______ °C
   IR GUN #IR-11 (CF +0.9°C) Observed Cooler Temp. ______ °C Corrected Cooler Temp. ______ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 2 — Yes No
   - -Were the seals on the outside of the cooler(s) signed & dated? — Yes No NA
   - -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? — Yes No
   - -Were tamper/custody seals intact and uncompromised? — Yes No NA
3. Shippers' packing slip attached to the cooler(s)? — Yes No
4. Did custody papers accompany the sample(s)? — Yes No
5. Were the custody papers relinquished & signed in the appropriate place? — Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? — Yes No
7. Did all bottles arrive in good condition (Unbroken)? — Yes No
8. Could all bottle labels be reconciled with the COC? — Yes No
9. Were correct bottle(s) used for the test(s) indicated? — Yes No
10. Sufficient quantity received to perform indicated analyses? — Yes No
11. Are these work share samples? — Yes No
    If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were all preserved sample(s) at the correct pH upon receipt? — Yes No NA pH Strip Lot# HC902937
13. Were VOAs on the COC? — Yes No
14. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this. — Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # ____________ — Yes No
16. Was a LL Hg or Me Hg trip blank present? ____________ — Yes No

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

Contacted PM ____________ Date ____________ by ____________ via Verbal Voice Mail Other

Concerning ____________

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by:

18. SAMPLE CONDITION

Sample(s) ____________ were received after the recommended holding time had expired.
Sample(s) ____________ were received in a broken container.
Sample(s) ____________ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION

Sample(s) ____________ were further preserved in the laboratory.
Time preserved: ____________ Preservative(s) added/Lot number(s): ____________

VOA Sample Preservation - Date/Time VOAs Frozen: ____________

WI-NC-099

Login # : ____________

Eurofins TestAmerica Canton Sample Receipt Multiple Cooler Form

Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
TA Client Box Other	**IR-10** IR-11	3.4	4.1	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	**IR-10** IR-11	3.3	4.0	**Wet Ice** Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-10 IR-11			Wet Ice Blue Ice Dry Ice Water None

☐ See Temperature Excursion Form

WI-NC-099 Cooler Receipt Form Page 2 – Multiple Cooler.

Login Sample Receipt Checklist

Client: Vectren Corporation

Job Number: 180-106383-1

Login Number: 106383
List Number: 1
Creator: Watson, Debbie

List Source: Eurofins TestAmerica, Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Vectren Corporation

Job Number: 180-106383-1

Login Number: 106383
List Number: 3
Creator: Mazariegos, Leonel A

List Source: Eurofins TestAmerica, St. Louis
List Creation: 06/03/20 12:58 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

Eurofins TestAmerica, Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

Laboratory Job ID: 180-113224-1
Client Project/Site: CCR Groundwater Monitoring AB Brown

For:
Vectren Corporation
PO BOX 209
Evansville, Indiana 47702

Attn: Accounts Payable

Veronica Bortot

Authorized for release by:
12/28/2020 2:38:46 PM

Veronica Bortot, Senior Project Manager
(412)963-2435
Veronica.Bortot@Eurofinset.com

PA Lab ID: 02-00416

Table of Contents

Job ID: 180-113224-1

Laboratory: Eurofins TestAmerica, Pittsburgh

Narrative

Job Narrative
180-113224-1

Comments
No additional comments.

Receipt
The samples were received on 11/5/2020 8:30 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 2.8º C, 3.4º C, 3.9º C and 3.9º C.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

RAD
Methods 903.0, 9315: Radium-226 prep batch 160-489954:

The following samples have Ba carrier recoveries above the 110% QC limit. The LCS (laboratory control sample) have acceptable spike recoveries demonstrating acceptable sample preparation and instrument performance. The samples have been truncated to 100% to reduce any potential bias a high carrier recovery may have. The data have been reported with this narrative.

(MB 160-489954/24-A)

Methods 903.0, 9315: Radium-226 prep batch 160-489954:

The following sample has a barium carrier recovery above the 110% QC limit: CCR-BK-1R (180-113224-1), CCR-BK-2 (180-113224-2), CCR-LF-1 (180-113224-3), CCR-LF-2 (180-113224-4), CCR-LF-2 (180-113224-4[DU]), CCR-LF-3 (180-113224-5), CCR-LF-4 (180-113224-6), CCR-LF-5 (180-113224-7), CCR-LF-6 (180-113224-8), BLIND DUPLICATE 2 (180-113224-9), FIELD BLANK 2 (180-113224-10), CCR-AP-3I (180-113224-11), CCR-AP-3R (180-113224-12), CCR-AP-6 (180-113224-13), CCR-AP-7R (180-113224-14), CCR-AP-8 (180-113224-15), CCR-AP-9 (180-113224-16), BLIND DUPLICATE 1 (180-113224-17) and FIELD BLANK 1 (180-113224-18). Affected samples had a barium correction applied, however, there are possible concentrations of salt-like compounds (i.e. calcium, magnesium, sodium, and strontium) that can interfere with a barium sulfate recovery. The LCS (laboratory control sample) has an acceptable spike recovery demonstrating acceptable sample preparation and instrument performance. The samples have been truncated to 100% to reduce any potential bias a high carrier recovery may have. The data have been qualified and reported.

Methods 903.0, 9315: Radium-226 prep batch 160-489954:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. CCR-BK-1R (180-113224-1), CCR-BK-2 (180-113224-2), CCR-LF-1 (180-113224-3), CCR-LF-2 (180-113224-4), CCR-LF-2 (180-113224-4[DU]), CCR-LF-3 (180-113224-5), CCR-LF-4 (180-113224-6), CCR-LF-5 (180-113224-7), CCR-LF-6 (180-113224-8), BLIND DUPLICATE 2 (180-113224-9), FIELD BLANK 2 (180-113224-10), CCR-AP-3I (180-113224-11), CCR-AP-3R (180-113224-12), CCR-AP-6 (180-113224-13), CCR-AP-7R (180-113224-14), CCR-AP-8 (180-113224-15), CCR-AP-9 (180-113224-16), BLIND DUPLICATE 1 (180-113224-17), FIELD BLANK 1 (180-113224-18), (LCS 160-489954/1-A) and (MB 160-489954/24-A)

Methods 904.0, 9320: Radium-228 prep batch 160-489958:

The following samples have Ba and/or Yttrium carrier recoveries above the 110% QC limit. The LCS (laboratory control sample) have acceptable spike recoveries demonstrating acceptable sample preparation and instrument performance. All other QC is within limits (method blank and duplicate precision). The samples have been truncated to 100% to reduce any potential bias a high carrier recovery may have. The data have been reported with this narrative. CCR-LF-3 (180-113224-5), CCR-LF-4 (180-113224-6), BLIND DUPLICATE 2 (180-113224-9), CCR-AP-3I (180-113224-11), CCR-AP-6 (180-113224-13), CCR-AP-7R (180-113224-14), CCR-AP-8 (180-113224-15), CCR-AP-9 (180-113224-16), FIELD BLANK 1 (180-113224-18) and (MB 160-489958/24-A)

Job ID: 180-113224-1 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

Methods 904.0, 9320: Radium-228 prep batch 160-489958:

The following sample has a barium carrier recovery above the 110% QC limit: CCR-BK-1R (180-113224-1), CCR-BK-2 (180-113224-2), CCR-LF-1 (180-113224-3), CCR-LF-2 (180-113224-4), CCR-LF-2 (180-113224-4[DU]), CCR-LF-3 (180-113224-5), CCR-LF-4 (180-113224-6), CCR-LF-5 (180-113224-7), CCR-LF-6 (180-113224-8), BLIND DUPLICATE 2 (180-113224-9), FIELD BLANK 2 (180-113224-10), CCR-AP-3I (180-113224-11), CCR-AP-3R (180-113224-12), CCR-AP-6 (180-113224-13), CCR-AP-7R (180-113224-14), CCR-AP-8 (180-113224-15), CCR-AP-9 (180-113224-16), BLIND DUPLICATE 1 (180-113224-17) and FIELD BLANK 1 (180-113224-18). Affected samples had a barium correction applied, however, there are possible concentrations of salt-like compounds (i.e. calcium, magnesium, sodium, and strontium) that can interfere with a barium sulfate recovery. The LCS (laboratory control sample) has an acceptable spike recovery demonstrating acceptable sample preparation and instrument performance. The samples have been truncated to 100% to reduce any potential bias a high carrier recovery may have. The data have been qualified and reported.

Methods 904.0, 9320: Radium-228 prep batch 160-489958:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. CCR-BK-1R (180-113224-1), CCR-BK-2 (180-113224-2), CCR-LF-1 (180-113224-3), CCR-LF-2 (180-113224-4), CCR-LF-2 (180-113224-4[DU]), CCR-LF-3 (180-113224-5), CCR-LF-4 (180-113224-6), CCR-LF-5 (180-113224-7), CCR-LF-6 (180-113224-8), BLIND DUPLICATE 2 (180-113224-9), FIELD BLANK 2 (180-113224-10), CCR-AP-3I (180-113224-11), CCR-AP-3R (180-113224-12), CCR-AP-6 (180-113224-13), CCR-AP-7R (180-113224-14), CCR-AP-8 (180-113224-15), CCR-AP-9 (180-113224-16), BLIND DUPLICATE 1 (180-113224-17), FIELD BLANK 1 (180-113224-18), (LCS 160-489958/1-A) and (MB 160-489958/24-A)

Method PrecSep_0: Radium 228 Prep Batch 160-489958:
The following samples contained a slight yellow discoloration: CCR-LF-2 (180-113224-4), CCR-LF-2 (180-113224-4[DU]) and CCR-AP-9 (180-113224-16).

Method PrecSep_0: Radium 228 Prep Batch 489958
The Yttrium carrier recovery is outside the upper control limit (110%) for the following samples: CCR-LF-3 (180-113224-5), CCR-LF-4 (180-113224-6), BLIND DUPLICATE 2 (180-113224-9), CCR-AP-3I (180-113224-11), CCR-AP-6 (180-113224-13), CCR-AP-7R (180-113224-14), CCR-AP-8 (180-113224-15), CCR-AP-9 (180-113224-16) and FIELD BLANK 1 (180-113224-18). Samples weighed above the 110% recovery threshold.

Method PrecSep_0: Radium 228 Prep Batch 489958
The Barium carrier recovery is outside the upper control limit (110%) for the following sample: CCR-LF-2 (180-113224-4[DU]). Samples appear gray in color after 45 minutes on the hot plate drying and weigh above the 110% recovery threshold.

Method PrecSep-21: Radium 226 Prep Batch 160-489954:
The following samples contained a slight yellow discoloration: CCR-LF-2 (180-113224-4), CCR-LF-2 (180-113224-4[DU]) and CCR-AP-7R (180-113224-14).

Method PrecSep-21: Radium 226 Prep Batch 489954
The Barium carrier recovery is outside the upper control limit (110%) for the following samples: CCR-BK-1R (180-113224-1), CCR-BK-2 (180-113224-2), CCR-LF-1 (180-113224-3), CCR-LF-2 (180-113224-4), CCR-LF-3 (180-113224-5), CCR-LF-4 (180-113224-6), CCR-LF-5 (180-113224-7), CCR-LF-6 (180-113224-8), BLIND DUPLICATE 2 (180-113224-9), FIELD BLANK 2 (180-113224-10), CCR-AP-3I (180-113224-11), CCR-AP-3R (180-113224-12), CCR-AP-6 (180-113224-13), CCR-AP-7R (180-113224-14), CCR-AP-8 (180-113224-15), CCR-AP-9 (180-113224-16), BLIND DUPLICATE 1 (180-113224-17) and FIELD BLANK 1 (180-113224-18). Samples appear gray in color after 45 minutes on the hot plate drying and weigh above the 110% recovery threshold.

Job ID: 180-113224-1 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 7470A: The laboratory control sample (LCS) for preparation batch 180-336413 and analytical batch 180-336710 recovered outside control limits for the following analytes: mercury. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 7470A: The continuing calibration verification (CCV) associated with batch 180-336710 recovered above the upper control limit for mercury. The samples associated with this CCV were non-detects for mercury or were below the reporting limit (RL); therefore, the data have been reported.

Method 7470A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 180-336413 and analytical batch 180-336710 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 7470A: The closing low level continuing calibration verification (CCVL) associated with batch 180-336710 recovered above the upper control limit for mercury. The samples associated with this CCVL were non-detects for mercury or were below the reporting limit (RL); therefore, the data have been reported.

Methods 6020A, 6020B: The continuing calibration blank (CCB) associated with batch 180-336996 recovered above the upper control limit for arsenic and zinc. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: (CCV 180-336996/118) and (MB 180-336521/1-A).

Methods 6020A, 6020B: The continuing calibration verification (CCV) associated with batch 180-336996 recovered above the upper control limit for beryllium. The samples associated with this CCV were non-detects -or- less than the RL for the affected analytes; therefore, the data have been reported.

Method 6020A: The continuing calibration verification (CCV) associated with batch 180-336996 recovered above the upper control limit for beryllium. The samples associated with this CCV were non-detects -or- less than the RL for the affected analytes; therefore, the data have been reported. The associated samples are impacted: CCR-LF-4 (180-113224-6), CCR-LF-5 (180-113224-7), CCR-LF-6 (180-113224-8), BLIND DUPLICATE 2 (180-113224-9), FIELD BLANK 2 (180-113224-10), CCR-AP-3I (180-113224-11), CCR-AP-3R (180-113224-12), CCR-AP-6 (180-113224-13), CCR-AP-7R (180-113224-14), CCR-AP-8 (180-113224-15), CCR-AP-9 (180-113224-16), BLIND DUPLICATE 1 (180-113224-17), FIELD BLANK 1 (180-113224-18) and (CCV 180-336996/163).

Method 6020A: The continuing calibration verification (CCV) associated with batch 180-336996 recovered above the upper control limit for beryllium. The samples associated with this CCV were non-detects -or- less than the RL for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 180-336996/174).

Methods 6020A, 6020B: The continuing calibration blank (CCB) associated with batch 180-336996 recovered above the upper control limit for sodium. The samples associated with this CCB were 10X the RL for the affected analytes; therefore, the data have been reported. The associated samples are impacted: (CCB 180-336996/142) and (LCS 180-336521/2-A).

Methods 6020A, 6020B: The following samples were diluted due to the nature of the sample matrix: CCR-LF-2 (180-113224-4), CCR-LF-2 (180-113224-4[MS]), CCR-LF-2 (180-113224-4[MSD]), CCR-LF-4 (180-113224-6), CCR-AP-3R (180-113224-12), CCR-AP-6 (180-113224-13), CCR-AP-9 (180-113224-16), (180-113224-E-4-D PDS ^25) and (180-113224-E-4-D SD ^125). Elevated reporting limits (RLs) are provided.

Method 6020A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 180-336521 and analytical batch 180-337118 were outside control limits for boron. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Job ID: 180-113224-1 (Continued)

Laboratory: Eurofins TestAmerica, Pittsburgh (Continued)

Method 6020A: The post digestion spike % recovery for barium associated with batch 180-337118 was outside of control limits. The associated sample is: CCR-LF-2 (180-113224-4).

Method 6020A: The following samples were diluted due to the nature of the sample matrix: CCR-LF-4 (180-113224-6), CCR-AP-3R (180-113224-12), CCR-AP-6 (180-113224-13) and (180-113224-E-4-D PDS ^25). Elevated reporting limits (RLs) are provided.

Methods 6020A, 6020B: The post digestion spike % recovery for barium associated with batch 180-337356 was outside of control limits. The associated sample is: (180-113224-E-4-D PDS ^25).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Definitions/Glossary

Client: Vectren Corporation
Job ID: 180-113224-1
Project/Site: CCR Groundwater Monitoring AB Brown

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
X	Carrier is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Vectren Corporation
Job ID: 180-113224-1
Project/Site: CCR Groundwater Monitoring AB Brown

Laboratory: Eurofins TestAmerica, Pittsburgh

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	19-033-0	06-27-21
California	State	2891	04-30-21
Connecticut	State	PH-0688	09-30-20 *
Florida	NELAP	E871008	06-30-21
Georgia	State	PA 02-00416	04-30-21
Illinois	NELAP	004375	06-30-21
Kansas	NELAP	E-10350	01-31-21
Kentucky (UST)	State	162013	04-30-21
Kentucky (WW)	State	KY98043	12-31-20
Louisiana	NELAP	04041	06-30-21
Maine	State	PA00164	03-06-22
Minnesota	NELAP	042-999-482	12-31-20
Nevada	State	PA00164	07-31-21
New Hampshire	NELAP	2030	04-05-21
New Jersey	NELAP	PA005	06-30-21
New York	NELAP	11182	04-01-21
North Carolina (WW/SW)	State	434	12-31-21
North Dakota	State	R-227	04-30-21
Oregon	NELAP	PA-2151	02-06-21
Pennsylvania	NELAP	02-00416	04-30-21
Rhode Island	State	LAO00362	12-31-20
South Carolina	State	89014	04-30-21
Texas	NELAP	T104704528	03-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	Federal	P-Soil-01	06-26-22
USDA	US Federal Programs	P330-16-00211	06-26-22
Utah	NELAP	PA001462019-8	05-31-21
Virginia	NELAP	10043	09-14-21
West Virginia DEP	State	142	02-01-21
Wisconsin	State	998027800	08-31-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Vectren Corporation
Job ID: 180-113224-1
Project/Site: CCR Groundwater Monitoring AB Brown

Laboratory: Eurofins TestAmerica, St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-22
ANAB	Dept. of Energy	L2305.01	04-06-22
ANAB	ISO/IEC 17025	L2305	04-06-22
Arizona	State	AZ0813	12-08-21
California	Los Angeles County Sanitation Districts	10259	06-30-21
California	State	2886	06-30-21
Connecticut	State	PH-0241	03-31-21
Florida	NELAP	E87689	06-30-21
HI - RadChem Recognition	State	n/a	06-30-21
Illinois	NELAP	004553	11-30-21
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-21
Kentucky (DW)	State	KY90125	12-31-20
Louisiana	NELAP	04080	06-30-21
Louisiana (DW)	State	LA011	12-31-20
Maryland	State	310	09-30-21
MI - RadChem Recognition	State	9005	06-30-21
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-21
New Jersey	NELAP	MO002	06-30-21
New York	NELAP	11616	04-01-21
North Dakota	State	R-207	06-30-21
NRC	NRC	24-24817-01	12-31-22
Oklahoma	State	9997	08-31-21
Oregon	NELAP	4157	09-01-21
Pennsylvania	NELAP	68-00540	02-28-21
South Carolina	State	85002001	06-30-21
Texas	NELAP	T104704193-19-13	07-31-21
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542019-11	07-31-21
Virginia	NELAP	10310	06-14-21
Washington	State	C592	08-30-21
West Virginia DEP	State	381	10-31-21

Sample Summary

Client: Vectren Corporation
Job ID: 180-113224-1
Project/Site: CCR Groundwater Monitoring AB Brown

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
180-113224-1	CCR-BK-1R	Water	11/03/20 14:10	11/05/20 08:30	
180-113224-2	CCR-BK-2	Water	11/03/20 12:45	11/05/20 08:30	
180-113224-3	CCR-LF-1	Water	11/04/20 13:30	11/05/20 08:30	
180-113224-4	CCR-LF-2	Water	11/04/20 14:55	11/05/20 08:30	
180-113224-5	CCR-LF-3	Water	11/04/20 15:50	11/05/20 08:30	
180-113224-6	CCR-LF-4	Water	11/04/20 12:10	11/05/20 08:30	
180-113224-7	CCR-LF-5	Water	11/04/20 12:15	11/05/20 08:30	
180-113224-8	CCR-LF-6	Water	11/04/20 13:05	11/05/20 08:30	
180-113224-9	BLIND DUPLICATE 2	Water	11/04/20 00:00	11/05/20 08:30	
180-113224-10	FIELD BLANK 2	Water	11/04/20 13:00	11/05/20 08:30	
180-113224-11	CCR-AP-3I	Water	11/04/20 16:35	11/05/20 08:30	
180-113224-12	CCR-AP-3R	Water	11/04/20 15:25	11/05/20 08:30	
180-113224-13	CCR-AP-6	Water	11/04/20 10:40	11/05/20 08:30	
180-113224-14	CCR-AP-7R	Water	11/03/20 17:30	11/05/20 08:30	
180-113224-15	CCR-AP-8	Water	11/04/20 17:00	11/05/20 08:30	
180-113224-16	CCR-AP-9	Water	11/04/20 14:25	11/05/20 08:30	
180-113224-17	BLIND DUPLICATE 1	Water	11/04/20 00:00	11/05/20 08:30	
180-113224-18	FIELD BLANK 1	Water	11/03/20 14:00	11/05/20 08:30	

Method Summary

Client: Vectren Corporation
Job ID: 180-113224-1
Project/Site: CCR Groundwater Monitoring AB Brown

Method	Method Description	Protocol	Laboratory
EPA 9056A	Anions, Ion Chromatography	SW846	TAL PIT
EPA 6020A	Metals (ICP/MS)	SW846	TAL PIT
EPA 7470A	Mercury (CVAA)	SW846	TAL PIT
EPA 9040C	pH	SW846	TAL PIT
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PIT
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL PIT
7470A	Preparation, Mercury	SW846	TAL PIT
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Vectren Corporation
Job ID: 180-113224-1
Project/Site: CCR Groundwater Monitoring AB Brown

Client Sample ID: CCR-BK-1R
Lab Sample ID: 180-113224-1
Date Collected: 11/03/20 14:10
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			337126	11/14/20 22:49	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			337118	11/13/20 13:41	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	336413	11/09/20 11:19	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:40	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			337985	11/20/20 09:52	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	336449	11/09/20 17:04	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.35 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492288	12/17/20 18:40	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			999.35 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492312	12/17/20 08:50	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-BK-2
Lab Sample ID: 180-113224-2
Date Collected: 11/03/20 12:45
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			337126	11/14/20 23:05	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			337118	11/13/20 13:44	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	336413	11/09/20 11:19	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:43	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			338411	11/24/20 22:28	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	336449	11/09/20 17:04	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.46 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492288	12/17/20 18:41	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.46 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492312	12/17/20 08:50	SCB	TAL SL
	Instrument ID: GFPCPURPLE									

Client Sample ID: CCR-BK-2
Lab Sample ID: 180-113224-2
Date Collected: 11/03/20 12:45
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL

Client Sample ID: CCR-LF-1
Lab Sample ID: 180-113224-3
Date Collected: 11/04/20 13:30
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			337126	11/14/20 20:42	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		10			337126	11/14/20 20:58	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			337118	11/13/20 13:47	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	336408	11/09/20 10:40	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:21	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			337985	11/20/20 09:52	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	336756	11/11/20 13:03	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.54 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492288	12/17/20 18:41	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.54 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492312	12/17/20 08:50	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-LF-2
Lab Sample ID: 180-113224-4
Date Collected: 11/04/20 14:55
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		10			337126	11/14/20 12:47	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		100			337126	11/14/20 13:03	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		25			337118	11/13/20 13:50	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	336408	11/09/20 10:40	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:21	KEM	TAL PIT
	Instrument ID: HGZ									

Client Sample ID: CCR-LF-2
Lab Sample ID: 180-113224-4

Date Collected: 11/04/20 14:55
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9040C		1			337985	11/20/20 09:52	AVS	TAL PIT
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	336756	11/11/20 13:03	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.17 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492288	12/17/20 18:42	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			1000.17 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492312	12/17/20 08:51	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-LF-3
Lab Sample ID: 180-113224-5

Date Collected: 11/04/20 15:50
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2.5			337126	11/14/20 19:39	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		25			337126	11/14/20 19:55	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			337356	11/14/20 13:24	TAM	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	336408	11/09/20 10:40	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:24	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			337985	11/20/20 09:52	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	336756	11/11/20 13:03	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.82 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492301	12/17/20 19:11	CMM	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.82 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492312	12/17/20 08:51	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-LF-4
Lab Sample ID: 180-113224-6

Date Collected: 11/04/20 12:10
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		10			337126	11/14/20 13:51	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		100			337126	11/14/20 14:06	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			336996	11/12/20 20:25	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		10			337118	11/13/20 14:14	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		10			337356	11/14/20 13:28	TAM	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	336408	11/09/20 10:40	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:27	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			337985	11/20/20 09:52	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	336760	11/11/20 13:31	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.57 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492301	12/17/20 19:11	CMM	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.57 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492312	12/17/20 08:51	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-LF-5
Lab Sample ID: 180-113224-7

Date Collected: 11/04/20 12:15
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		5			337126	11/14/20 17:01	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		50			337126	11/14/20 17:17	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			336996	11/12/20 20:31	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			337356	11/14/20 13:31	TAM	TAL PIT
	Instrument ID: A									

Client Sample ID: CCR-LF-5
Lab Sample ID: 180-113224-7

Date Collected: 11/04/20 12:15
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			50 mL	50 mL	336408	11/09/20 10:40	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:28	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			337985	11/20/20 09:52	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	336759	11/11/20 13:21	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.20 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492301	12/17/20 19:13	CMM	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.20 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492312	12/17/20 08:51	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-LF-6
Lab Sample ID: 180-113224-8

Date Collected: 11/04/20 13:05
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2.5			337126	11/14/20 22:17	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		25			337126	11/14/20 22:33	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			336996	11/12/20 20:34	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			337356	11/14/20 13:35	TAM	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	336408	11/09/20 10:40	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:29	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			337985	11/20/20 09:52	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	336759	11/11/20 13:21	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.13 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492301	12/17/20 19:13	CMM	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.13 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492312	12/17/20 08:52	SCB	TAL SL
	Instrument ID: GFPCPURPLE									

Lab Chronicle

Client: Vectren Corporation
Job ID: 180-113224-1
Project/Site: CCR Groundwater Monitoring AB Brown

Client Sample ID: CCR-LF-6
Lab Sample ID: 180-113224-8
Date Collected: 11/04/20 13:05
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL

Client Sample ID: BLIND DUPLICATE 2
Lab Sample ID: 180-113224-9
Date Collected: 11/04/20 00:00
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2.5			337126	11/14/20 20:11	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		25			337126	11/14/20 20:27	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			336996	11/12/20 20:37	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			337356	11/14/20 13:38	TAM	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	336408	11/09/20 10:40	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:30	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			337985	11/20/20 09:52	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	336759	11/11/20 13:21	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.78 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492301	12/17/20 19:13	CMM	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.78 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492312	12/17/20 08:52	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: FIELD BLANK 2
Lab Sample ID: 180-113224-10
Date Collected: 11/04/20 13:00
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			337126	11/14/20 21:46	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			336996	11/12/20 20:40	RSK	TAL PIT
	Instrument ID: A									

Lab Chronicle

Client: Vectren Corporation
Job ID: 180-113224-1
Project/Site: CCR Groundwater Monitoring AB Brown

Client Sample ID: FIELD BLANK 2
Lab Sample ID: 180-113224-10
Date Collected: 11/04/20 13:00
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			337356	11/14/20 13:42	TAM	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	336408	11/09/20 10:40	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:31	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			337985	11/20/20 09:52	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	336759	11/11/20 13:21	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.30 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492301	12/17/20 19:14	CMM	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.30 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492312	12/17/20 08:52	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-3I
Lab Sample ID: 180-113224-11
Date Collected: 11/04/20 16:35
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			337126	11/14/20 14:22	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			336996	11/12/20 20:43	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			337356	11/14/20 13:45	TAM	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	336408	11/09/20 10:40	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:32	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			337985	11/20/20 09:52	AVS	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	336759	11/11/20 13:21	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.14 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492301	12/17/20 19:14	CMM	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.14 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492312	12/17/20 08:52	SCB	TAL SL
	Instrument ID: GFPCPURPLE									

Lab Chronicle

Client: Vectren Corporation
Job ID: 180-113224-1
Project/Site: CCR Groundwater Monitoring AB Brown

Client Sample ID: CCR-AP-3I
Lab Sample ID: 180-113224-11
Date Collected: 11/04/20 16:35
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL

Client Sample ID: CCR-AP-3R
Lab Sample ID: 180-113224-12
Date Collected: 11/04/20 15:25
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		5			337126	11/14/20 15:57	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		50			337126	11/14/20 16:13	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			336996	11/12/20 20:46	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		10			337356	11/14/20 13:49	TAM	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	336408	11/09/20 10:40	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:33	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			338411	11/24/20 22:30	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	336759	11/11/20 13:21	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.74 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492301	12/17/20 19:14	CMM	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.74 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492312	12/17/20 08:52	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-6
Lab Sample ID: 180-113224-13
Date Collected: 11/04/20 10:40
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2.5			337126	11/14/20 18:36	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		25			337126	11/14/20 18:52	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			336996	11/12/20 20:59	RSK	TAL PIT
	Instrument ID: A									

Lab Chronicle

Client: Vectren Corporation
Job ID: 180-113224-1
Project/Site: CCR Groundwater Monitoring AB Brown

Client Sample ID: CCR-AP-6
Lab Sample ID: 180-113224-13
Date Collected: 11/04/20 10:40
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		2			337356	11/14/20 14:11	TAM	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	336408	11/09/20 10:40	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:34	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			338411	11/24/20 22:31	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	336759	11/11/20 13:21	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			1000.05 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492301	12/17/20 19:14	CMM	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			1000.05 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492312	12/17/20 08:52	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-7R
Lab Sample ID: 180-113224-14
Date Collected: 11/03/20 17:30
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		5			337126	11/14/20 16:29	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		50			337126	11/14/20 16:45	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			336996	11/12/20 21:11	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			337356	11/14/20 14:14	TAM	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	336413	11/09/20 11:19	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:44	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			338411	11/24/20 22:31	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	336450	11/09/20 17:11	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.76 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492301	12/17/20 19:14	CMM	TAL SL
	Instrument ID: GFPCRED									

Client Sample ID: CCR-AP-7R
Lab Sample ID: 180-113224-14
Date Collected: 11/03/20 17:30
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep_0			999.76 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492312	12/17/20 08:52	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-8
Lab Sample ID: 180-113224-15
Date Collected: 11/04/20 17:00
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		2.5			337126	11/14/20 19:07	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Analysis	EPA 9056A		25			337126	11/14/20 19:23	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			336996	11/12/20 21:23	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			337356	11/14/20 14:18	TAM	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	336408	11/09/20 10:40	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:35	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			338411	11/24/20 22:32	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	336759	11/11/20 13:21	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.94 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492301	12/17/20 19:17	CMM	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.94 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492312	12/17/20 08:53	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: CCR-AP-9
Lab Sample ID: 180-113224-16
Date Collected: 11/04/20 14:25
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		10			337126	11/14/20 15:26	SAT	TAL PIT
	Instrument ID: CHIC2100A									

Client Sample ID: CCR-AP-9
Lab Sample ID: 180-113224-16

Date Collected: 11/04/20 14:25
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		100			337126	11/14/20 15:42	SAT	TAL PIT
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			336996	11/12/20 21:32	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		2			337118	11/13/20 15:00	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	336408	11/09/20 10:40	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:12	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			338411	11/24/20 22:37	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	20 mL	100 mL	336759	11/11/20 13:21	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.74 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492301	12/17/20 21:03	CMM	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.74 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492312	12/17/20 08:53	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: BLIND DUPLICATE 1
Lab Sample ID: 180-113224-17

Date Collected: 11/04/20 00:00
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			337126	11/14/20 17:32	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			336996	11/12/20 21:45	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			337118	11/13/20 15:12	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	336408	11/09/20 10:40	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:13	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			338411	11/24/20 22:33	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	336760	11/11/20 13:31	GRB	TAL PIT
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Vectren Corporation
Project/Site: CCR Groundwater Monitoring AB Brown

Job ID: 180-113224-1

Client Sample ID: BLIND DUPLICATE 1

Lab Sample ID: 180-113224-17

Date Collected: 11/04/20 00:00
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			999.68 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492301	12/17/20 21:04	CMM	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.68 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492312	12/17/20 08:53	SCB	TAL SL
	Instrument ID: GFPCPURPLE									
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL
	Instrument ID: NOEQUIP									

Client Sample ID: FIELD BLANK 1

Lab Sample ID: 180-113224-18

Date Collected: 11/03/20 14:00
Matrix: Water
Date Received: 11/05/20 08:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA 9056A		1			337126	11/14/20 22:02	SAT	TAL PIT
	Instrument ID: CHIC2100A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			336996	11/12/20 21:48	RSK	TAL PIT
	Instrument ID: A									
Total Recoverable	Prep	3005A			50 mL	50 mL	336521	11/10/20 08:10	KHM	TAL PIT
Total Recoverable	Analysis	EPA 6020A		1			337118	11/13/20 15:15	RSK	TAL PIT
	Instrument ID: A									
Total/NA	Prep	7470A			50 mL	50 mL	336413	11/09/20 11:19	MM1	TAL PIT
Total/NA	Analysis	EPA 7470A		1			336710	11/10/20 17:45	KEM	TAL PIT
	Instrument ID: HGZ									
Total/NA	Analysis	EPA 9040C		1			338411	11/24/20 22:34	PMH	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	336449	11/09/20 17:04	GRB	TAL PIT
	Instrument ID: NOEQUIP									
Total/NA	Prep	PrecSep-21			999.14 mL	1.0 g	489954	11/23/20 08:44	KMP	TAL SL
Total/NA	Analysis	9315		1			492301	12/17/20 21:04	CMM	TAL SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			999.14 mL	1.0 g	489958	11/23/20 09:42	KMP	TAL SL
Total/NA	Analysis	9320		1			492288	12/17/20 08:54	SCB	TAL SL
	Instrument ID: GFPCBLUE									
Total/NA	Analysis	Ra226_Ra228		1			492820	12/22/20 21:23	GRW	TAL SL
	Instrument ID: NOEQUIP									

Laboratory References:

TAL PIT = Eurofins TestAmerica, Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL SL = Eurofins TestAmerica, St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Lab Chronicle

Client: Vectren Corporation
Job ID: 180-113224-1
Project/Site: CCR Groundwater Monitoring AB Brown

Analyst References:

Lab: TAL PIT

Batch Type: Prep

KHM = Kyle Mucroski
MM1 = Mary Beth Miller

Batch Type: Analysis

AVS = Abbey Smith
GRB = Gabriel Berghe
KEM = Kimberly Mahoney
PMH = Paloma Hoelzle
RSK = Robert Kurtz
SAT = Stephen Tallam
TAM = Tessa Mastalski

Lab: TAL SL

Batch Type: Prep

KMP = Karen Phillips

Batch Type: Analysis

CMM = Chelsea Mazariegos
GRW = George Witt
SCB = Sarah Bernsen

Client Sample ID: CCR-BK-1R
Date Collected: 11/03/20 14:10
Date Received: 11/05/20 08:30

Lab Sample ID: 180-113224-1
Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6.2**		1.0	0.32	mg/L			11/14/20 22:49	1
Fluoride	**0.36**		0.10	0.044	mg/L			11/14/20 22:49	1
Sulfate	**30**		1.0	0.38	mg/L			11/14/20 22:49	1

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00031	mg/L		11/10/20 08:10	11/13/20 13:41	1
Boron	ND		0.080	0.039	mg/L		11/10/20 08:10	11/13/20 13:41	1
Barium	**0.037**		0.010	0.0016	mg/L		11/10/20 08:10	11/13/20 13:41	1
Beryllium	ND		0.0010	0.00018	mg/L		11/10/20 08:10	11/13/20 13:41	1
Calcium	**59**		0.50	0.13	mg/L		11/10/20 08:10	11/13/20 13:41	1
Cadmium	ND		0.0010	0.00022	mg/L		11/10/20 08:10	11/13/20 13:41	1
Cobalt	**0.00013**	**J**	0.00050	0.00013	mg/L		11/10/20 08:10	11/13/20 13:41	1
Chromium	**0.0019**	**J**	0.0020	0.0015	mg/L		11/10/20 08:10	11/13/20 13:41	1
Molybdenum	**0.00096**	**J**	0.0050	0.00061	mg/L		11/10/20 08:10	11/13/20 13:41	1
Lead	**0.00020**	**J**	0.0010	0.00013	mg/L		11/10/20 08:10	11/13/20 13:41	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/13/20 13:41	1
Selenium	ND		0.0050	0.0015	mg/L		11/10/20 08:10	11/13/20 13:41	1
Thallium	**0.00027**	**J**	0.0010	0.00015	mg/L		11/10/20 08:10	11/13/20 13:41	1
Lithium	ND		0.0050	0.0034	mg/L		11/10/20 08:10	11/13/20 13:41	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	F1 ^ *	0.00020	0.00013	mg/L		11/09/20 11:19	11/10/20 17:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**310**		10	10	mg/L			11/09/20 17:04	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.4**	**HF**	0.1	0.1	SU			11/20/20 09:52	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0680	U	0.156	0.156	1.00	0.286	pCi/L	11/23/20 08:44	12/17/20 18:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*119*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 18:40*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.287	U	0.210	0.211	1.00	0.329	pCi/L	11/23/20 09:42	12/17/20 08:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*119*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:50*	*1*
Y Carrier	*107*		*40 - 110*	*11/23/20 09:42*	*12/17/20 08:50*	*1*

Client Sample ID: CCR-BK-1R
Lab Sample ID: 180-113224-1
Date Collected: 11/03/20 14:10
Matrix: Water
Date Received: 11/05/20 08:30

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.355**		0.262	0.262	5.00	0.329	pCi/L		12/22/20 21:23	1

Client Sample ID: CCR-BK-2
Lab Sample ID: 180-113224-2
Date Collected: 11/03/20 12:45
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**19**		1.0	0.32	mg/L			11/14/20 23:05	1
Fluoride	**0.15**		0.10	0.044	mg/L			11/14/20 23:05	1
Sulfate	**23**		1.0	0.38	mg/L			11/14/20 23:05	1

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00031	mg/L		11/10/20 08:10	11/13/20 13:44	1
Boron	ND		0.080	0.039	mg/L		11/10/20 08:10	11/13/20 13:44	1
Barium	**0.033**		0.010	0.0016	mg/L		11/10/20 08:10	11/13/20 13:44	1
Beryllium	ND		0.0010	0.00018	mg/L		11/10/20 08:10	11/13/20 13:44	1
Calcium	**42**		0.50	0.13	mg/L		11/10/20 08:10	11/13/20 13:44	1
Cadmium	ND		0.0010	0.00022	mg/L		11/10/20 08:10	11/13/20 13:44	1
Cobalt	ND		0.00050	0.00013	mg/L		11/10/20 08:10	11/13/20 13:44	1
Chromium	ND		0.0020	0.0015	mg/L		11/10/20 08:10	11/13/20 13:44	1
Molybdenum	ND		0.0050	0.00061	mg/L		11/10/20 08:10	11/13/20 13:44	1
Lead	**0.00017**	**J**	0.0010	0.00013	mg/L		11/10/20 08:10	11/13/20 13:44	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/13/20 13:44	1
Selenium	ND		0.0050	0.0015	mg/L		11/10/20 08:10	11/13/20 13:44	1
Thallium	**0.00018**	**J**	0.0010	0.00015	mg/L		11/10/20 08:10	11/13/20 13:44	1
Lithium	ND		0.0050	0.0034	mg/L		11/10/20 08:10	11/13/20 13:44	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^ *	0.00020	0.00013	mg/L		11/09/20 11:19	11/10/20 17:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**240**		10	10	mg/L			11/09/20 17:04	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.2**	**HF**	0.1	0.1	SU			11/24/20 22:28	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.125	U	0.190	0.190	1.00	0.424	pCi/L	11/23/20 08:44	12/17/20 18:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*153*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 18:41*	*1*

Client Sample ID: CCR-BK-2
Lab Sample ID: 180-113224-2
Date Collected: 11/03/20 12:45
Matrix: Water
Date Received: 11/05/20 08:30

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.185	U	0.216	0.217	1.00	0.356	pCi/L	11/23/20 09:42	12/17/20 08:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*153*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:50*	*1*
Y Carrier	*107*		*40 - 110*	*11/23/20 09:42*	*12/17/20 08:50*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0601	U	0.288	0.288	5.00	0.424	pCi/L		12/22/20 21:23	1

Client Sample ID: CCR-LF-1
Lab Sample ID: 180-113224-3
Date Collected: 11/04/20 13:30
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**22**		1.0	0.32	mg/L			11/14/20 20:42	1
Fluoride	**0.27**		0.10	0.044	mg/L			11/14/20 20:42	1
Sulfate	**1100**		10	3.8	mg/L			11/14/20 20:58	10

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00039**	**J**	0.0010	0.00031	mg/L		11/10/20 08:10	11/13/20 13:47	1
Boron	**0.049**	**J**	0.080	0.039	mg/L		11/10/20 08:10	11/13/20 13:47	1
Barium	**0.033**		0.010	0.0016	mg/L		11/10/20 08:10	11/13/20 13:47	1
Beryllium	ND		0.0010	0.00018	mg/L		11/10/20 08:10	11/13/20 13:47	1
Calcium	**300**		0.50	0.13	mg/L		11/10/20 08:10	11/13/20 13:47	1
Cadmium	ND		0.0010	0.00022	mg/L		11/10/20 08:10	11/13/20 13:47	1
Cobalt	ND		0.00050	0.00013	mg/L		11/10/20 08:10	11/13/20 13:47	1
Chromium	ND		0.0020	0.0015	mg/L		11/10/20 08:10	11/13/20 13:47	1
Molybdenum	**0.00079**	**J**	0.0050	0.00061	mg/L		11/10/20 08:10	11/13/20 13:47	1
Lead	ND		0.0010	0.00013	mg/L		11/10/20 08:10	11/13/20 13:47	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/13/20 13:47	1
Selenium	ND		0.0050	0.0015	mg/L		11/10/20 08:10	11/13/20 13:47	1
Thallium	ND		0.0010	0.00015	mg/L		11/10/20 08:10	11/13/20 13:47	1
Lithium	**0.0056**		0.0050	0.0034	mg/L		11/10/20 08:10	11/13/20 13:47	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^	0.00020	0.00013	mg/L		11/09/20 10:40	11/10/20 17:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**1800**		10	10	mg/L			11/11/20 13:03	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.1**	**HF**	0.1	0.1	SU			11/20/20 09:52	1

Client Sample ID: CCR-LF-1
Lab Sample ID: 180-113224-3
Date Collected: 11/04/20 13:30
Matrix: Water
Date Received: 11/05/20 08:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.386**		0.220	0.222	1.00	0.288	pCi/L	11/23/20 08:44	12/17/20 18:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*11/23/20 08:44*	*12/17/20 18:41*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0196	U	0.209	0.209	1.00	0.371	pCi/L	11/23/20 09:42	12/17/20 08:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*104*		*40 - 110*	*11/23/20 09:42*	*12/17/20 08:50*	*1*
Y Carrier	*87.5*		*40 - 110*	*11/23/20 09:42*	*12/17/20 08:50*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.406**		0.303	0.305	5.00	0.371	pCi/L		12/22/20 21:23	1

Client Sample ID: CCR-LF-2
Lab Sample ID: 180-113224-4
Date Collected: 11/04/20 14:55
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**360**		10	3.2	mg/L			11/14/20 12:47	10
Fluoride	ND		1.0	0.44	mg/L			11/14/20 12:47	10
Sulfate	**14000**		100	38	mg/L			11/14/20 13:03	100

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.025	0.0078	mg/L		11/10/20 08:10	11/13/20 13:50	25
Boron	**4.7**	**F1**	2.0	0.97	mg/L		11/10/20 08:10	11/13/20 13:50	25
Barium	ND	F1	0.25	0.040	mg/L		11/10/20 08:10	11/13/20 13:50	25
Beryllium	ND		0.025	0.0046	mg/L		11/10/20 08:10	11/13/20 13:50	25
Calcium	**400**		13	3.2	mg/L		11/10/20 08:10	11/13/20 13:50	25
Cadmium	ND		0.025	0.0054	mg/L		11/10/20 08:10	11/13/20 13:50	25
Cobalt	**0.012**	**J**	0.013	0.0034	mg/L		11/10/20 08:10	11/13/20 13:50	25
Chromium	ND		0.050	0.038	mg/L		11/10/20 08:10	11/13/20 13:50	25
Molybdenum	ND		0.13	0.015	mg/L		11/10/20 08:10	11/13/20 13:50	25
Lead	ND		0.025	0.0032	mg/L		11/10/20 08:10	11/13/20 13:50	25
Antimony	ND		0.050	0.0095	mg/L		11/10/20 08:10	11/13/20 13:50	25
Selenium	ND		0.13	0.038	mg/L		11/10/20 08:10	11/13/20 13:50	25
Thallium	ND		0.025	0.0037	mg/L		11/10/20 08:10	11/13/20 13:50	25
Lithium	ND		0.13	0.085	mg/L		11/10/20 08:10	11/13/20 13:50	25

Client Sample ID: CCR-LF-2
Lab Sample ID: 180-113224-4
Date Collected: 11/04/20 14:55
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^	0.00020	0.00013	mg/L		11/09/20 10:40	11/10/20 17:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**23000**		200	200	mg/L			11/11/20 13:03	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.7**	**HF**	0.1	0.1	SU			11/20/20 09:52	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.461**		0.279	0.282	1.00	0.392	pCi/L	11/23/20 08:44	12/17/20 18:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*117*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 18:42*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.74**		0.302	0.342	1.00	0.312	pCi/L	11/23/20 09:42	12/17/20 08:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*117*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:51*	*1*
Y Carrier	*106*		*40 - 110*	*11/23/20 09:42*	*12/17/20 08:51*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**2.20**		0.411	0.443	5.00	0.392	pCi/L		12/22/20 21:23	1

Client Sample ID: CCR-LF-3
Lab Sample ID: 180-113224-5
Date Collected: 11/04/20 15:50
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**32**		2.5	0.80	mg/L			11/14/20 19:39	2.5
Fluoride	**0.14**	**J**	0.25	0.11	mg/L			11/14/20 19:39	2.5
Sulfate	**1500**		25	9.5	mg/L			11/14/20 19:55	25

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00031	mg/L		11/10/20 08:10	11/14/20 13:24	1
Boron	**0.17**		0.080	0.039	mg/L		11/10/20 08:10	11/14/20 13:24	1
Barium	**0.019**		0.010	0.0016	mg/L		11/10/20 08:10	11/14/20 13:24	1
Beryllium	ND		0.0010	0.00018	mg/L		11/10/20 08:10	11/14/20 13:24	1
Calcium	**370**		0.50	0.13	mg/L		11/10/20 08:10	11/14/20 13:24	1
Cadmium	ND		0.0010	0.00022	mg/L		11/10/20 08:10	11/14/20 13:24	1

Client Sample ID: CCR-LF-3
Lab Sample ID: 180-113224-5
Date Collected: 11/04/20 15:50
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND		0.00050	0.00013	mg/L		11/10/20 08:10	11/14/20 13:24	1
Chromium	**0.0020**		0.0020	0.0015	mg/L		11/10/20 08:10	11/14/20 13:24	1
Molybdenum	**0.0014**	**J**	0.0050	0.00061	mg/L		11/10/20 08:10	11/14/20 13:24	1
Lead	ND		0.0010	0.00013	mg/L		11/10/20 08:10	11/14/20 13:24	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/14/20 13:24	1
Selenium	ND		0.0050	0.0015	mg/L		11/10/20 08:10	11/14/20 13:24	1
Thallium	ND		0.0010	0.00015	mg/L		11/10/20 08:10	11/14/20 13:24	1
Lithium	ND		0.0050	0.0034	mg/L		11/10/20 08:10	11/14/20 13:24	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^	0.00020	0.00013	mg/L		11/09/20 10:40	11/10/20 17:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**2600**		20	20	mg/L			11/11/20 13:03	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.3**	**HF**	0.1	0.1	SU			11/20/20 09:52	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00814	U	0.141	0.141	1.00	0.290	pCi/L	11/23/20 08:44	12/17/20 19:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*163*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 19:11*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.214	U	0.199	0.200	1.00	0.321	pCi/L	11/23/20 09:42	12/17/20 08:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*163*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:51*	*1*
Y Carrier	*111*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:51*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.222	U	0.244	0.245	5.00	0.321	pCi/L		12/22/20 21:23	1

Client Sample ID: CCR-LF-4
Lab Sample ID: 180-113224-6
Date Collected: 11/04/20 12:10
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**130**		10	3.2	mg/L			11/14/20 13:51	10

Client Sample ID: CCR-LF-4
Date Collected: 11/04/20 12:10
Date Received: 11/05/20 08:30

Lab Sample ID: 180-113224-6
Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		1.0	0.44	mg/L			11/14/20 13:51	10
Sulfate	**7800**		100	38	mg/L			11/14/20 14:06	100

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.020**		0.010	0.0031	mg/L		11/10/20 08:10	11/13/20 14:14	10
Boron	ND		0.80	0.39	mg/L		11/10/20 08:10	11/14/20 13:28	10
Barium	**0.013**		0.010	0.0016	mg/L		11/10/20 08:10	11/12/20 20:25	1
Beryllium	ND	^	0.0010	0.00018	mg/L		11/10/20 08:10	11/12/20 20:25	1
Calcium	**370**		0.50	0.13	mg/L		11/10/20 08:10	11/12/20 20:25	1
Cadmium	ND		0.0010	0.00022	mg/L		11/10/20 08:10	11/12/20 20:25	1
Cobalt	**0.00089**		0.00050	0.00013	mg/L		11/10/20 08:10	11/12/20 20:25	1
Chromium	ND		0.0020	0.0015	mg/L		11/10/20 08:10	11/12/20 20:25	1
Molybdenum	**0.023**		0.0050	0.00061	mg/L		11/10/20 08:10	11/12/20 20:25	1
Lead	ND		0.0010	0.00013	mg/L		11/10/20 08:10	11/12/20 20:25	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/12/20 20:25	1
Selenium	ND		0.0050	0.0015	mg/L		11/10/20 08:10	11/12/20 20:25	1
Thallium	**0.00020**	**J**	0.0010	0.00015	mg/L		11/10/20 08:10	11/12/20 20:25	1
Lithium	**0.069**		0.0050	0.0034	mg/L		11/10/20 08:10	11/12/20 20:25	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^	0.00020	0.00013	mg/L		11/09/20 10:40	11/10/20 17:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**9300**		100	100	mg/L			11/11/20 13:31	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.9**	**HF**	0.1	0.1	SU			11/20/20 09:52	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**1.13**		0.368	0.381	1.00	0.386	pCi/L	11/23/20 08:44	12/17/20 19:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*207*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 19:11*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.976**		0.273	0.287	1.00	0.355	pCi/L	11/23/20 09:42	12/17/20 08:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*207*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:51*	*1*
Y Carrier	*115*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:51*	*1*

Client Sample ID: CCR-LF-4
Lab Sample ID: 180-113224-6
Date Collected: 11/04/20 12:10
Matrix: Water
Date Received: 11/05/20 08:30

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**2.10**		0.458	0.477	5.00	0.386	pCi/L		12/22/20 21:23	1

Client Sample ID: CCR-LF-5
Lab Sample ID: 180-113224-7
Date Collected: 11/04/20 12:15
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**350**		5.0	1.6	mg/L			11/14/20 17:01	5
Fluoride	ND		0.50	0.22	mg/L			11/14/20 17:01	5
Sulfate	**2700**		50	19	mg/L			11/14/20 17:17	50

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00043**	**J**	0.0010	0.00031	mg/L		11/10/20 08:10	11/12/20 20:31	1
Boron	**1.4**		0.080	0.039	mg/L		11/10/20 08:10	11/14/20 13:31	1
Barium	**0.025**		0.010	0.0016	mg/L		11/10/20 08:10	11/12/20 20:31	1
Beryllium	ND	^	0.0010	0.00018	mg/L		11/10/20 08:10	11/12/20 20:31	1
Calcium	**460**		0.50	0.13	mg/L		11/10/20 08:10	11/12/20 20:31	1
Cadmium	**0.00028**	**J**	0.0010	0.00022	mg/L		11/10/20 08:10	11/12/20 20:31	1
Cobalt	**0.00018**	**J**	0.00050	0.00013	mg/L		11/10/20 08:10	11/12/20 20:31	1
Chromium	ND		0.0020	0.0015	mg/L		11/10/20 08:10	11/12/20 20:31	1
Molybdenum	**0.00081**	**J**	0.0050	0.00061	mg/L		11/10/20 08:10	11/12/20 20:31	1
Lead	**0.00017**	**J**	0.0010	0.00013	mg/L		11/10/20 08:10	11/12/20 20:31	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/12/20 20:31	1
Selenium	ND		0.0050	0.0015	mg/L		11/10/20 08:10	11/12/20 20:31	1
Thallium	ND		0.0010	0.00015	mg/L		11/10/20 08:10	11/12/20 20:31	1
Lithium	**0.022**		0.0050	0.0034	mg/L		11/10/20 08:10	11/12/20 20:31	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00013**	**J ^**	0.00020	0.00013	mg/L		11/09/20 10:40	11/10/20 17:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**4800**		40	40	mg/L			11/11/20 13:21	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.2**	**HF**	0.1	0.1	SU			11/20/20 09:52	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0351	U	0.157	0.157	1.00	0.314	pCi/L	11/23/20 08:44	12/17/20 19:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*182*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 19:13*	*1*

Client Sample ID: CCR-LF-5
Lab Sample ID: 180-113224-7
Date Collected: 11/04/20 12:15
Matrix: Water
Date Received: 11/05/20 08:30

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0122	U	0.198	0.198	1.00	0.349	pCi/L	11/23/20 09:42	12/17/20 08:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*182*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:51*	*1*
Y Carrier	*109*		*40 - 110*	*11/23/20 09:42*	*12/17/20 08:51*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0473	U	0.253	0.253	5.00	0.349	pCi/L		12/22/20 21:23	1

Client Sample ID: CCR-LF-6
Lab Sample ID: 180-113224-8
Date Collected: 11/04/20 13:05
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**59**		2.5	0.80	mg/L			11/14/20 22:17	2.5
Fluoride	**0.20**	**J**	0.25	0.11	mg/L			11/14/20 22:17	2.5
Sulfate	**1000**		25	9.5	mg/L			11/14/20 22:33	25

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00044**	**J**	0.0010	0.00031	mg/L		11/10/20 08:10	11/12/20 20:34	1
Boron	**0.93**		0.080	0.039	mg/L		11/10/20 08:10	11/14/20 13:35	1
Barium	**0.024**		0.010	0.0016	mg/L		11/10/20 08:10	11/12/20 20:34	1
Beryllium	ND	^	0.0010	0.00018	mg/L		11/10/20 08:10	11/12/20 20:34	1
Calcium	**340**		0.50	0.13	mg/L		11/10/20 08:10	11/12/20 20:34	1
Cadmium	ND		0.0010	0.00022	mg/L		11/10/20 08:10	11/12/20 20:34	1
Cobalt	**0.00033**	**J**	0.00050	0.00013	mg/L		11/10/20 08:10	11/12/20 20:34	1
Chromium	ND		0.0020	0.0015	mg/L		11/10/20 08:10	11/12/20 20:34	1
Molybdenum	**0.00079**	**J**	0.0050	0.00061	mg/L		11/10/20 08:10	11/12/20 20:34	1
Lead	ND		0.0010	0.00013	mg/L		11/10/20 08:10	11/12/20 20:34	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/12/20 20:34	1
Selenium	ND		0.0050	0.0015	mg/L		11/10/20 08:10	11/12/20 20:34	1
Thallium	ND		0.0010	0.00015	mg/L		11/10/20 08:10	11/12/20 20:34	1
Lithium	**0.023**		0.0050	0.0034	mg/L		11/10/20 08:10	11/12/20 20:34	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^	0.00020	0.00013	mg/L		11/09/20 10:40	11/10/20 17:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**2000**		20	20	mg/L			11/11/20 13:21	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.2**	**HF**	0.1	0.1	SU			11/20/20 09:52	1

Client Sample ID: CCR-LF-6
Lab Sample ID: 180-113224-8
Date Collected: 11/04/20 13:05
Matrix: Water
Date Received: 11/05/20 08:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0304	U	0.148	0.148	1.00	0.288	pCi/L	11/23/20 08:44	12/17/20 19:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*131*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 19:13*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.161	U	0.195	0.195	1.00	0.321	pCi/L	11/23/20 09:42	12/17/20 08:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*131*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:52*	*1*
Y Carrier	*108*		*40 - 110*	*11/23/20 09:42*	*12/17/20 08:52*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.191	U	0.245	0.245	5.00	0.321	pCi/L		12/22/20 21:23	1

Client Sample ID: BLIND DUPLICATE 2
Lab Sample ID: 180-113224-9
Date Collected: 11/04/20 00:00
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**59**		2.5	0.80	mg/L			11/14/20 20:11	2.5
Fluoride	**0.33**		0.25	0.11	mg/L			11/14/20 20:11	2.5
Sulfate	**1100**		25	9.5	mg/L			11/14/20 20:27	25

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00044**	**J**	0.0010	0.00031	mg/L		11/10/20 08:10	11/12/20 20:37	1
Boron	**0.97**		0.080	0.039	mg/L		11/10/20 08:10	11/14/20 13:38	1
Barium	**0.024**		0.010	0.0016	mg/L		11/10/20 08:10	11/12/20 20:37	1
Beryllium	ND	^	0.0010	0.00018	mg/L		11/10/20 08:10	11/12/20 20:37	1
Calcium	**340**		0.50	0.13	mg/L		11/10/20 08:10	11/12/20 20:37	1
Cadmium	**0.00024**	**J**	0.0010	0.00022	mg/L		11/10/20 08:10	11/12/20 20:37	1
Cobalt	**0.00038**	**J**	0.00050	0.00013	mg/L		11/10/20 08:10	11/12/20 20:37	1
Chromium	ND		0.0020	0.0015	mg/L		11/10/20 08:10	11/12/20 20:37	1
Molybdenum	**0.00093**	**J**	0.0050	0.00061	mg/L		11/10/20 08:10	11/12/20 20:37	1
Lead	ND		0.0010	0.00013	mg/L		11/10/20 08:10	11/12/20 20:37	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/12/20 20:37	1
Selenium	ND		0.0050	0.0015	mg/L		11/10/20 08:10	11/12/20 20:37	1
Thallium	ND		0.0010	0.00015	mg/L		11/10/20 08:10	11/12/20 20:37	1
Lithium	**0.024**		0.0050	0.0034	mg/L		11/10/20 08:10	11/12/20 20:37	1

Client Sample ID: BLIND DUPLICATE 2
Lab Sample ID: 180-113224-9
Date Collected: 11/04/20 00:00
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^	0.00020	0.00013	mg/L		11/09/20 10:40	11/10/20 17:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**2000**		20	20	mg/L			11/11/20 13:21	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.2**	**HF**	0.1	0.1	SU			11/20/20 09:52	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.198	U	0.169	0.170	1.00	0.250	pCi/L	11/23/20 08:44	12/17/20 19:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*122*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 19:13*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0646	U	0.174	0.174	1.00	0.302	pCi/L	11/23/20 09:42	12/17/20 08:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*122*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:52*	*1*
Y Carrier	*112*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:52*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.262	U	0.243	0.243	5.00	0.302	pCi/L		12/22/20 21:23	1

Client Sample ID: FIELD BLANK 2
Lab Sample ID: 180-113224-10
Date Collected: 11/04/20 13:00
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.32	mg/L			11/14/20 21:46	1
Fluoride	ND		0.10	0.044	mg/L			11/14/20 21:46	1
Sulfate	ND		1.0	0.38	mg/L			11/14/20 21:46	1

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00031	mg/L		11/10/20 08:10	11/12/20 20:40	1
Boron	**0.041**	**J**	0.080	0.039	mg/L		11/10/20 08:10	11/14/20 13:42	1
Barium	ND		0.010	0.0016	mg/L		11/10/20 08:10	11/12/20 20:40	1
Beryllium	ND	^	0.0010	0.00018	mg/L		11/10/20 08:10	11/12/20 20:40	1
Calcium	ND		0.50	0.13	mg/L		11/10/20 08:10	11/12/20 20:40	1
Cadmium	ND		0.0010	0.00022	mg/L		11/10/20 08:10	11/12/20 20:40	1

Client Sample ID: FIELD BLANK 2
Lab Sample ID: 180-113224-10
Date Collected: 11/04/20 13:00
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND		0.00050	0.00013	mg/L		11/10/20 08:10	11/12/20 20:40	1
Chromium	ND		0.0020	0.0015	mg/L		11/10/20 08:10	11/12/20 20:40	1
Molybdenum	ND		0.0050	0.00061	mg/L		11/10/20 08:10	11/12/20 20:40	1
Lead	ND		0.0010	0.00013	mg/L		11/10/20 08:10	11/12/20 20:40	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/12/20 20:40	1
Selenium	ND		0.0050	0.0015	mg/L		11/10/20 08:10	11/12/20 20:40	1
Thallium	ND		0.0010	0.00015	mg/L		11/10/20 08:10	11/12/20 20:40	1
Lithium	ND		0.0050	0.0034	mg/L		11/10/20 08:10	11/12/20 20:40	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^	0.00020	0.00013	mg/L		11/09/20 10:40	11/10/20 17:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			11/11/20 13:21	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.9**	**HF**	0.1	0.1	SU			11/20/20 09:52	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0139	U	0.118	0.118	1.00	0.262	pCi/L	11/23/20 08:44	12/17/20 19:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*163*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 19:14*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.268	U	0.204	0.205	1.00	0.321	pCi/L	11/23/20 09:42	12/17/20 08:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*163*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:52*	*1*
Y Carrier	*106*		*40 - 110*	*11/23/20 09:42*	*12/17/20 08:52*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.254	U	0.236	0.237	5.00	0.321	pCi/L		12/22/20 21:23	1

Client Sample ID: CCR-AP-3I
Lab Sample ID: 180-113224-11
Date Collected: 11/04/20 16:35
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**160**		1.0	0.32	mg/L			11/14/20 14:22	1

Client Sample ID: CCR-AP-3I
Date Collected: 11/04/20 16:35
Date Received: 11/05/20 08:30

Lab Sample ID: 180-113224-11
Matrix: Water

Method: EPA 9056A - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**1.4**		0.10	0.044	mg/L			11/14/20 14:22	1
Sulfate	**11**		1.0	0.38	mg/L			11/14/20 14:22	1

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0018**		0.0010	0.00031	mg/L		11/10/20 08:10	11/12/20 20:43	1
Boron	**2.3**		0.080	0.039	mg/L		11/10/20 08:10	11/14/20 13:45	1
Barium	**0.17**		0.010	0.0016	mg/L		11/10/20 08:10	11/12/20 20:43	1
Beryllium	ND	^	0.0010	0.00018	mg/L		11/10/20 08:10	11/12/20 20:43	1
Calcium	**21**		0.50	0.13	mg/L		11/10/20 08:10	11/12/20 20:43	1
Cadmium	ND		0.0010	0.00022	mg/L		11/10/20 08:10	11/12/20 20:43	1
Cobalt	**0.00014**	**J**	0.00050	0.00013	mg/L		11/10/20 08:10	11/12/20 20:43	1
Chromium	ND		0.0020	0.0015	mg/L		11/10/20 08:10	11/12/20 20:43	1
Molybdenum	**0.0025**	**J**	0.0050	0.00061	mg/L		11/10/20 08:10	11/12/20 20:43	1
Lead	ND		0.0010	0.00013	mg/L		11/10/20 08:10	11/12/20 20:43	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/12/20 20:43	1
Selenium	ND		0.0050	0.0015	mg/L		11/10/20 08:10	11/12/20 20:43	1
Thallium	ND		0.0010	0.00015	mg/L		11/10/20 08:10	11/12/20 20:43	1
Lithium	**0.026**		0.0050	0.0034	mg/L		11/10/20 08:10	11/12/20 20:43	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^	0.00020	0.00013	mg/L		11/09/20 10:40	11/10/20 17:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**770**		10	10	mg/L			11/11/20 13:21	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**8.1**	**HF**	0.1	0.1	SU			11/20/20 09:52	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.349**		0.222	0.224	1.00	0.291	pCi/L	11/23/20 08:44	12/17/20 19:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*204*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 19:14*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.518**		0.225	0.230	1.00	0.323	pCi/L	11/23/20 09:42	12/17/20 08:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*204*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:52*	*1*
Y Carrier	*111*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:52*	*1*

Client Sample ID: CCR-AP-3I
Lab Sample ID: 180-113224-11
Date Collected: 11/04/20 16:35
Matrix: Water
Date Received: 11/05/20 08:30

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.867		0.316	0.321	5.00	0.323	pCi/L		12/22/20 21:23	1

Client Sample ID: CCR-AP-3R
Lab Sample ID: 180-113224-12
Date Collected: 11/04/20 15:25
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	540		5.0	1.6	mg/L			11/14/20 15:57	5
Fluoride	1.3		0.50	0.22	mg/L			11/14/20 15:57	5
Sulfate	2800		50	19	mg/L			11/14/20 16:13	50

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00031	mg/L		11/10/20 08:10	11/12/20 20:46	1
Boron	12		0.80	0.39	mg/L		11/10/20 08:10	11/14/20 13:49	10
Barium	0.014		0.010	0.0016	mg/L		11/10/20 08:10	11/12/20 20:46	1
Beryllium	ND	^	0.0010	0.00018	mg/L		11/10/20 08:10	11/12/20 20:46	1
Calcium	210		0.50	0.13	mg/L		11/10/20 08:10	11/12/20 20:46	1
Cadmium	ND		0.0010	0.00022	mg/L		11/10/20 08:10	11/12/20 20:46	1
Cobalt	0.00088		0.00050	0.00013	mg/L		11/10/20 08:10	11/12/20 20:46	1
Chromium	ND		0.0020	0.0015	mg/L		11/10/20 08:10	11/12/20 20:46	1
Molybdenum	0.89		0.0050	0.00061	mg/L		11/10/20 08:10	11/12/20 20:46	1
Lead	ND		0.0010	0.00013	mg/L		11/10/20 08:10	11/12/20 20:46	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/12/20 20:46	1
Selenium	0.040		0.0050	0.0015	mg/L		11/10/20 08:10	11/12/20 20:46	1
Thallium	ND		0.0010	0.00015	mg/L		11/10/20 08:10	11/12/20 20:46	1
Lithium	0.063		0.0050	0.0034	mg/L		11/10/20 08:10	11/12/20 20:46	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^	0.00020	0.00013	mg/L		11/09/20 10:40	11/10/20 17:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	5300		40	40	mg/L			11/11/20 13:21	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	HF	0.1	0.1	SU			11/24/20 22:30	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0380	U	0.139	0.139	1.00	0.272	pCi/L	11/23/20 08:44	12/17/20 19:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*193*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 19:14*	*1*

Client Sample ID: CCR-AP-3R
Lab Sample ID: 180-113224-12
Date Collected: 11/04/20 15:25
Matrix: Water
Date Received: 11/05/20 08:30

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.252	U	0.201	0.203	1.00	0.318	pCi/L	11/23/20 09:42	12/17/20 08:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*193*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:52*	*1*
Y Carrier	*108*		*40 - 110*	*11/23/20 09:42*	*12/17/20 08:52*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.290	U	0.244	0.246	5.00	0.318	pCi/L		12/22/20 21:23	1

Client Sample ID: CCR-AP-6
Lab Sample ID: 180-113224-13
Date Collected: 11/04/20 10:40
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**280**		2.5	0.80	mg/L			11/14/20 18:36	2.5
Fluoride	**0.16**	**J**	0.25	0.11	mg/L			11/14/20 18:36	2.5
Sulfate	**1400**		25	9.5	mg/L			11/14/20 18:52	25

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0011**		0.0010	0.00031	mg/L		11/10/20 08:10	11/12/20 20:59	1
Boron	**5.9**		0.16	0.077	mg/L		11/10/20 08:10	11/14/20 14:11	2
Barium	**0.011**		0.010	0.0016	mg/L		11/10/20 08:10	11/12/20 20:59	1
Beryllium	ND	^	0.0010	0.00018	mg/L		11/10/20 08:10	11/12/20 20:59	1
Calcium	**270**		0.50	0.13	mg/L		11/10/20 08:10	11/12/20 20:59	1
Cadmium	ND		0.0010	0.00022	mg/L		11/10/20 08:10	11/12/20 20:59	1
Cobalt	**0.00044**	**J**	0.00050	0.00013	mg/L		11/10/20 08:10	11/12/20 20:59	1
Chromium	ND		0.0020	0.0015	mg/L		11/10/20 08:10	11/12/20 20:59	1
Molybdenum	**0.0043**	**J**	0.0050	0.00061	mg/L		11/10/20 08:10	11/12/20 20:59	1
Lead	ND		0.0010	0.00013	mg/L		11/10/20 08:10	11/12/20 20:59	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/12/20 20:59	1
Selenium	ND		0.0050	0.0015	mg/L		11/10/20 08:10	11/12/20 20:59	1
Thallium	ND		0.0010	0.00015	mg/L		11/10/20 08:10	11/12/20 20:59	1
Lithium	**0.027**		0.0050	0.0034	mg/L		11/10/20 08:10	11/12/20 20:59	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^	0.00020	0.00013	mg/L		11/09/20 10:40	11/10/20 17:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**2700**		20	20	mg/L			11/11/20 13:21	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.2**	**HF**	0.1	0.1	SU			11/24/20 22:31	1

Client Sample ID: CCR-AP-6
Lab Sample ID: 180-113224-13
Date Collected: 11/04/20 10:40
Matrix: Water
Date Received: 11/05/20 08:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0144	U	0.142	0.142	1.00	0.289	pCi/L	11/23/20 08:44	12/17/20 19:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*170*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 19:14*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0765	U	0.175	0.175	1.00	0.302	pCi/L	11/23/20 09:42	12/17/20 08:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*170*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:52*	*1*
Y Carrier	*119*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:52*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0909	U	0.225	0.225	5.00	0.302	pCi/L		12/22/20 21:23	1

Client Sample ID: CCR-AP-7R
Lab Sample ID: 180-113224-14
Date Collected: 11/03/20 17:30
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**330**		5.0	1.6	mg/L			11/14/20 16:29	5
Fluoride	ND		0.50	0.22	mg/L			11/14/20 16:29	5
Sulfate	**3100**		50	19	mg/L			11/14/20 16:45	50

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00087**	**J**	0.0010	0.00031	mg/L		11/10/20 08:10	11/12/20 21:11	1
Boron	**3.8**		0.080	0.039	mg/L		11/10/20 08:10	11/14/20 14:14	1
Barium	**0.032**		0.010	0.0016	mg/L		11/10/20 08:10	11/12/20 21:11	1
Beryllium	ND	^	0.0010	0.00018	mg/L		11/10/20 08:10	11/12/20 21:11	1
Calcium	**410**		0.50	0.13	mg/L		11/10/20 08:10	11/12/20 21:11	1
Cadmium	ND		0.0010	0.00022	mg/L		11/10/20 08:10	11/12/20 21:11	1
Cobalt	**0.00053**		0.00050	0.00013	mg/L		11/10/20 08:10	11/12/20 21:11	1
Chromium	ND		0.0020	0.0015	mg/L		11/10/20 08:10	11/12/20 21:11	1
Molybdenum	ND		0.0050	0.00061	mg/L		11/10/20 08:10	11/12/20 21:11	1
Lead	**0.00040**	**J**	0.0010	0.00013	mg/L		11/10/20 08:10	11/12/20 21:11	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/12/20 21:11	1
Selenium	ND		0.0050	0.0015	mg/L		11/10/20 08:10	11/12/20 21:11	1
Thallium	ND		0.0010	0.00015	mg/L		11/10/20 08:10	11/12/20 21:11	1
Lithium	**0.021**		0.0050	0.0034	mg/L		11/10/20 08:10	11/12/20 21:11	1

Client Sample ID: CCR-AP-7R
Lab Sample ID: 180-113224-14
Date Collected: 11/03/20 17:30
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^ *	0.00020	0.00013	mg/L		11/09/20 11:19	11/10/20 17:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**4800**		40	40	mg/L			11/09/20 17:11	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.7**	**HF**	0.1	0.1	SU			11/24/20 22:31	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00614	U	0.121	0.121	1.00	0.257	pCi/L	11/23/20 08:44	12/17/20 19:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*164*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 19:14*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.389**		0.227	0.230	1.00	0.346	pCi/L	11/23/20 09:42	12/17/20 08:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*164*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:52*	*1*
Y Carrier	*115*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:52*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.395**		0.257	0.260	5.00	0.346	pCi/L		12/22/20 21:23	1

Client Sample ID: CCR-AP-8
Lab Sample ID: 180-113224-15
Date Collected: 11/04/20 17:00
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**100**		2.5	0.80	mg/L			11/14/20 19:07	2.5
Fluoride	**0.25**		0.25	0.11	mg/L			11/14/20 19:07	2.5
Sulfate	**1000**		25	9.5	mg/L			11/14/20 19:23	25

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0015**		0.0010	0.00031	mg/L		11/10/20 08:10	11/12/20 21:23	1
Boron	**0.69**		0.080	0.039	mg/L		11/10/20 08:10	11/14/20 14:18	1
Barium	**0.065**		0.010	0.0016	mg/L		11/10/20 08:10	11/12/20 21:23	1
Beryllium	ND	^	0.0010	0.00018	mg/L		11/10/20 08:10	11/12/20 21:23	1
Calcium	**310**		0.50	0.13	mg/L		11/10/20 08:10	11/12/20 21:23	1
Cadmium	ND		0.0010	0.00022	mg/L		11/10/20 08:10	11/12/20 21:23	1

Client Sample ID: CCR-AP-8
Lab Sample ID: 180-113224-15
Date Collected: 11/04/20 17:00
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	**0.00046**	**J**	0.00050	0.00013	mg/L		11/10/20 08:10	11/12/20 21:23	1
Chromium	ND		0.0020	0.0015	mg/L		11/10/20 08:10	11/12/20 21:23	1
Molybdenum	**0.00085**	**J**	0.0050	0.00061	mg/L		11/10/20 08:10	11/12/20 21:23	1
Lead	ND		0.0010	0.00013	mg/L		11/10/20 08:10	11/12/20 21:23	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/12/20 21:23	1
Selenium	ND		0.0050	0.0015	mg/L		11/10/20 08:10	11/12/20 21:23	1
Thallium	ND		0.0010	0.00015	mg/L		11/10/20 08:10	11/12/20 21:23	1
Lithium	**0.016**		0.0050	0.0034	mg/L		11/10/20 08:10	11/12/20 21:23	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^	0.00020	0.00013	mg/L		11/09/20 10:40	11/10/20 17:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**2000**		20	20	mg/L			11/11/20 13:21	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**7.0**	**HF**	0.1	0.1	SU			11/24/20 22:32	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0798	U	0.151	0.151	1.00	0.270	pCi/L	11/23/20 08:44	12/17/20 19:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*139*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 19:17*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.256	U	0.207	0.208	1.00	0.329	pCi/L	11/23/20 09:42	12/17/20 08:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*139*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:53*	*1*
Y Carrier	*116*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:53*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	**0.336**		0.256	0.257	5.00	0.329	pCi/L		12/22/20 21:23	1

Client Sample ID: CCR-AP-9
Lab Sample ID: 180-113224-16
Date Collected: 11/04/20 14:25
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**670**		10	3.2	mg/L			11/14/20 15:26	10

Client Sample ID: CCR-AP-9
Lab Sample ID: 180-113224-16

Date Collected: 11/04/20 14:25
Matrix: Water

Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		1.0	0.44	mg/L			11/14/20 15:26	10
Sulfate	**3800**		100	38	mg/L			11/14/20 15:42	100

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.027**		0.0010	0.00031	mg/L		11/10/20 08:10	11/12/20 21:32	1
Boron	**5.5**		0.080	0.039	mg/L		11/10/20 08:10	11/12/20 21:32	1
Barium	**0.090**		0.010	0.0016	mg/L		11/10/20 08:10	11/12/20 21:32	1
Beryllium	ND	^	0.0010	0.00018	mg/L		11/10/20 08:10	11/12/20 21:32	1
Calcium	**480**		0.50	0.13	mg/L		11/10/20 08:10	11/12/20 21:32	1
Cadmium	ND		0.0010	0.00022	mg/L		11/10/20 08:10	11/12/20 21:32	1
Cobalt	**0.00022**	**J**	0.00050	0.00013	mg/L		11/10/20 08:10	11/12/20 21:32	1
Chromium	ND		0.0020	0.0015	mg/L		11/10/20 08:10	11/12/20 21:32	1
Molybdenum	**0.0078**		0.0050	0.00061	mg/L		11/10/20 08:10	11/12/20 21:32	1
Lead	ND		0.0010	0.00013	mg/L		11/10/20 08:10	11/12/20 21:32	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/12/20 21:32	1
Selenium	ND		0.0050	0.0015	mg/L		11/10/20 08:10	11/12/20 21:32	1
Thallium	ND		0.0010	0.00015	mg/L		11/10/20 08:10	11/12/20 21:32	1
Lithium	**0.031**		0.010	0.0068	mg/L		11/10/20 08:10	11/13/20 15:00	2

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^	0.00020	0.00013	mg/L		11/09/20 10:40	11/10/20 17:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**6800**		50	50	mg/L			11/11/20 13:21	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**6.7**	**HF**	0.1	0.1	SU			11/24/20 22:37	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.444**		0.218	0.221	1.00	0.255	pCi/L	11/23/20 08:44	12/17/20 21:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*123*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 21:03*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.245	U	0.170	0.171	1.00	0.260	pCi/L	11/23/20 09:42	12/17/20 08:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*123*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:53*	*1*
Y Carrier	*114*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:53*	*1*

Client Sample ID: CCR-AP-9
Lab Sample ID: 180-113224-16
Date Collected: 11/04/20 14:25
Matrix: Water
Date Received: 11/05/20 08:30

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.689		0.276	0.279	5.00	0.260	pCi/L		12/22/20 21:23	1

Client Sample ID: BLIND DUPLICATE 1
Lab Sample ID: 180-113224-17
Date Collected: 11/04/20 00:00
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	150		1.0	0.32	mg/L			11/14/20 17:32	1
Fluoride	1.4		0.10	0.044	mg/L			11/14/20 17:32	1
Sulfate	11		1.0	0.38	mg/L			11/14/20 17:32	1

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0020		0.0010	0.00031	mg/L		11/10/20 08:10	11/12/20 21:45	1
Boron	1.8		0.080	0.039	mg/L		11/10/20 08:10	11/12/20 21:45	1
Barium	0.17		0.010	0.0016	mg/L		11/10/20 08:10	11/12/20 21:45	1
Beryllium	ND	^	0.0010	0.00018	mg/L		11/10/20 08:10	11/12/20 21:45	1
Calcium	21		0.50	0.13	mg/L		11/10/20 08:10	11/12/20 21:45	1
Cadmium	ND		0.0010	0.00022	mg/L		11/10/20 08:10	11/12/20 21:45	1
Cobalt	ND		0.00050	0.00013	mg/L		11/10/20 08:10	11/12/20 21:45	1
Chromium	ND		0.0020	0.0015	mg/L		11/10/20 08:10	11/12/20 21:45	1
Molybdenum	0.0023	J	0.0050	0.00061	mg/L		11/10/20 08:10	11/12/20 21:45	1
Lead	ND		0.0010	0.00013	mg/L		11/10/20 08:10	11/12/20 21:45	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/12/20 21:45	1
Selenium	ND		0.0050	0.0015	mg/L		11/10/20 08:10	11/12/20 21:45	1
Thallium	ND		0.0010	0.00015	mg/L		11/10/20 08:10	11/12/20 21:45	1
Lithium	0.025		0.0050	0.0034	mg/L		11/10/20 08:10	11/13/20 15:12	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^	0.00020	0.00013	mg/L		11/09/20 10:40	11/10/20 17:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	760		10	10	mg/L			11/11/20 13:31	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	8.0	HF	0.1	0.1	SU			11/24/20 22:33	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.00679	U	0.171	0.171	1.00	0.353	pCi/L	11/23/20 08:44	12/17/20 21:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*265*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 21:04*	*1*

Client Sample ID: BLIND DUPLICATE 1
Lab Sample ID: 180-113224-17
Date Collected: 11/04/20 00:00
Matrix: Water
Date Received: 11/05/20 08:30

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0532	U	0.155	0.156	1.00	0.272	pCi/L	11/23/20 09:42	12/17/20 08:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*265*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:53*	*1*
Y Carrier	*110*		*40 - 110*	*11/23/20 09:42*	*12/17/20 08:53*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0464	U	0.231	0.231	5.00	0.353	pCi/L		12/22/20 21:23	1

Client Sample ID: FIELD BLANK 1
Lab Sample ID: 180-113224-18
Date Collected: 11/03/20 14:00
Matrix: Water
Date Received: 11/05/20 08:30

Method: EPA 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.32	mg/L			11/14/20 22:02	1
Fluoride	ND		0.10	0.044	mg/L			11/14/20 22:02	1
Sulfate	ND		1.0	0.38	mg/L			11/14/20 22:02	1

Method: EPA 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.0010	0.00031	mg/L		11/10/20 08:10	11/12/20 21:48	1
Boron	**0.13**		0.080	0.039	mg/L		11/10/20 08:10	11/12/20 21:48	1
Barium	ND		0.010	0.0016	mg/L		11/10/20 08:10	11/12/20 21:48	1
Beryllium	ND	^	0.0010	0.00018	mg/L		11/10/20 08:10	11/12/20 21:48	1
Calcium	ND		0.50	0.13	mg/L		11/10/20 08:10	11/12/20 21:48	1
Cadmium	ND		0.0010	0.00022	mg/L		11/10/20 08:10	11/12/20 21:48	1
Cobalt	ND		0.00050	0.00013	mg/L		11/10/20 08:10	11/12/20 21:48	1
Chromium	ND		0.0020	0.0015	mg/L		11/10/20 08:10	11/12/20 21:48	1
Molybdenum	ND		0.0050	0.00061	mg/L		11/10/20 08:10	11/12/20 21:48	1
Lead	ND		0.0010	0.00013	mg/L		11/10/20 08:10	11/12/20 21:48	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/12/20 21:48	1
Selenium	ND		0.0050	0.0015	mg/L		11/10/20 08:10	11/12/20 21:48	1
Thallium	ND		0.0010	0.00015	mg/L		11/10/20 08:10	11/12/20 21:48	1
Lithium	ND		0.0050	0.0034	mg/L		11/10/20 08:10	11/13/20 15:15	1

Method: EPA 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^ *	0.00020	0.00013	mg/L		11/09/20 11:19	11/10/20 17:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			11/09/20 17:04	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	**5.8**	**HF**	0.1	0.1	SU			11/24/20 22:34	1

Client: Vectren Corporation
Project/Site: CCR Groundwater Monitoring AB Brown

Job ID: 180-113224-1

Client Sample ID: FIELD BLANK 1

Date Collected: 11/03/20 14:00
Date Received: 11/05/20 08:30

Lab Sample ID: 180-113224-18

Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0518	U	0.149	0.149	1.00	0.283	pCi/L	11/23/20 08:44	12/17/20 21:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*218*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 21:04*	*1*

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.117	U	0.183	0.183	1.00	0.308	pCi/L	11/23/20 09:42	12/17/20 08:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*218*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:54*	*1*
Y Carrier	*112*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:54*	*1*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.169	U	0.236	0.236	5.00	0.308	pCi/L		12/22/20 21:23	1

Method: EPA 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 180-337126/6
Matrix: Water
Analysis Batch: 337126

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.32	mg/L			11/14/20 09:17	1
Fluoride	ND		0.10	0.044	mg/L			11/14/20 09:17	1
Sulfate	ND		1.0	0.38	mg/L			11/14/20 09:17	1

Lab Sample ID: LCS 180-337126/5
Matrix: Water
Analysis Batch: 337126

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	49.5		mg/L		99	80 - 120
Fluoride	2.50	2.44		mg/L		98	80 - 120
Sulfate	50.0	49.5		mg/L		99	80 - 120

Lab Sample ID: 180-113224-4 MS
Matrix: Water
Analysis Batch: 337126

Client Sample ID: CCR-LF-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	360		5000	5250		mg/L		98	80 - 120
Fluoride	ND		250	243		mg/L		97	80 - 120
Sulfate	14000		5000	18600		mg/L		89	80 - 120

Lab Sample ID: 180-113224-4 MSD
Matrix: Water
Analysis Batch: 337126

Client Sample ID: CCR-LF-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	360		5000	5320		mg/L		99	80 - 120	1	15
Fluoride	ND		250	246		mg/L		98	80 - 120	1	15
Sulfate	14000		5000	18800		mg/L		93	80 - 120	1	15

Method: EPA 6020A - Metals (ICP/MS)

Lab Sample ID: MB 180-336521/1-A
Matrix: Water
Analysis Batch: 336996

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 336521

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	^	0.0010	0.00031	mg/L		11/10/20 08:10	11/12/20 18:58	1
Barium	ND		0.010	0.0016	mg/L		11/10/20 08:10	11/12/20 18:58	1
Beryllium	ND		0.0010	0.00018	mg/L		11/10/20 08:10	11/12/20 18:58	1
Calcium	ND		0.50	0.13	mg/L		11/10/20 08:10	11/12/20 18:58	1
Cadmium	ND		0.0010	0.00022	mg/L		11/10/20 08:10	11/12/20 18:58	1
Cobalt	ND		0.00050	0.00013	mg/L		11/10/20 08:10	11/12/20 18:58	1
Chromium	ND		0.0020	0.0015	mg/L		11/10/20 08:10	11/12/20 18:58	1
Molybdenum	ND		0.0050	0.00061	mg/L		11/10/20 08:10	11/12/20 18:58	1
Lead	ND		0.0010	0.00013	mg/L		11/10/20 08:10	11/12/20 18:58	1
Antimony	ND		0.0020	0.00038	mg/L		11/10/20 08:10	11/12/20 18:58	1
Selenium	ND		0.0050	0.0015	mg/L		11/10/20 08:10	11/12/20 18:58	1
Thallium	ND		0.0010	0.00015	mg/L		11/10/20 08:10	11/12/20 18:58	1

Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 180-336521/1-A
Matrix: Water
Analysis Batch: 336996

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 336521

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.0050	0.0034	mg/L		11/10/20 08:10	11/12/20 18:58	1

Lab Sample ID: MB 180-336521/1-A
Matrix: Water
Analysis Batch: 337118

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 336521

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.080	0.039	mg/L		11/10/20 08:10	11/13/20 13:16	1

Lab Sample ID: LCS 180-336521/2-A
Matrix: Water
Analysis Batch: 337118

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 336521

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1.00	1.04		mg/L		104	80 - 120
Boron	1.25	1.21		mg/L		97	80 - 120

Lab Sample ID: 180-113224-4 MS
Matrix: Water
Analysis Batch: 337118

Client Sample ID: CCR-LF-2
Prep Type: Total Recoverable
Prep Batch: 336521

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		1.00	1.09		mg/L		109	75 - 125
Boron	4.7	F1	1.25	6.03		mg/L		105	75 - 125
Barium	ND	F1	1.00	0.470	F1	mg/L		47	75 - 125
Beryllium	ND		0.500	0.519		mg/L		104	75 - 125
Calcium	400		25.0	436	4	mg/L		149	75 - 125
Cadmium	ND		0.500	0.496		mg/L		99	75 - 125
Cobalt	0.012	J	0.500	0.540		mg/L		105	75 - 125
Chromium	ND		0.500	0.493		mg/L		99	75 - 125
Molybdenum	ND		0.500	0.522		mg/L		104	75 - 125
Lead	ND		0.500	0.465		mg/L		93	75 - 125
Antimony	ND		0.250	0.249		mg/L		100	75 - 125
Selenium	ND		1.00	0.989		mg/L		99	75 - 125
Thallium	ND		1.00	1.02		mg/L		102	75 - 125
Lithium	ND		0.500	0.565		mg/L		113	75 - 125

Lab Sample ID: 180-113224-4 MSD
Matrix: Water
Analysis Batch: 337118

Client Sample ID: CCR-LF-2
Prep Type: Total Recoverable
Prep Batch: 336521

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		1.00	1.10		mg/L		110	75 - 125	1	20
Boron	4.7	F1	1.25	6.32	F1	mg/L		128	75 - 125	5	20
Barium	ND	F1	1.00	0.530	F1	mg/L		53	75 - 125	12	20
Beryllium	ND		0.500	0.516		mg/L		103	75 - 125	1	20
Calcium	400		25.0	437	4	mg/L		153	75 - 125	0	20
Cadmium	ND		0.500	0.517		mg/L		103	75 - 125	4	20
Cobalt	0.012	J	0.500	0.546		mg/L		107	75 - 125	1	20
Chromium	ND		0.500	0.501		mg/L		100	75 - 125	2	20

Method: EPA 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 180-113224-4 MSD
Matrix: Water
Analysis Batch: 337118

Client Sample ID: CCR-LF-2
Prep Type: Total Recoverable
Prep Batch: 336521

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Molybdenum	ND		0.500	0.517		mg/L		103	75 - 125	1	20
Lead	ND		0.500	0.476		mg/L		95	75 - 125	2	20
Antimony	ND		0.250	0.249		mg/L		100	75 - 125	0	20
Selenium	ND		1.00	1.02		mg/L		102	75 - 125	3	20
Thallium	ND		1.00	1.02		mg/L		102	75 - 125	0	20
Lithium	ND		0.500	0.570		mg/L		114	75 - 125	1	20

Method: EPA 7470A - Mercury (CVAA)

Lab Sample ID: MB 180-336408/1-A
Matrix: Water
Analysis Batch: 336710

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 336408

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^	0.00020	0.00013	mg/L		11/09/20 10:40	11/10/20 17:09	1

Lab Sample ID: LCS 180-336408/2-A
Matrix: Water
Analysis Batch: 336710

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 336408

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00250	0.00278	^	mg/L		111	80 - 120

Lab Sample ID: 180-113224-4 MS
Matrix: Water
Analysis Batch: 336710

Client Sample ID: CCR-LF-2
Prep Type: Total/NA
Prep Batch: 336408

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND	^	0.00100	0.000870	^	mg/L		87	75 - 125

Lab Sample ID: 180-113224-4 MSD
Matrix: Water
Analysis Batch: 336710

Client Sample ID: CCR-LF-2
Prep Type: Total/NA
Prep Batch: 336408

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND	^	0.00100	0.000936	^	mg/L		94	75 - 125	7	20

Lab Sample ID: MB 180-336413/1-A
Matrix: Water
Analysis Batch: 336710

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 336413

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^	0.00020	0.00013	mg/L		11/09/20 11:19	11/10/20 17:38	1

Lab Sample ID: LCS 180-336413/2-A
Matrix: Water
Analysis Batch: 336710

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 336413

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00250	0.00337	^ *	mg/L		135	80 - 120

Method: EPA 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 180-113224-1 MS
Matrix: Water
Analysis Batch: 336710

Client Sample ID: CCR-BK-1R
Prep Type: Total/NA
Prep Batch: 336413

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND	F1 ^ *	0.00100	0.00146	F1 ^	mg/L		146	75 - 125

Lab Sample ID: 180-113224-1 MSD
Matrix: Water
Analysis Batch: 336710

Client Sample ID: CCR-BK-1R
Prep Type: Total/NA
Prep Batch: 336413

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND	F1 ^ *	0.00100	0.00152	F1 ^	mg/L		152	75 - 125	4	20

Method: EPA 9040C - pH

Lab Sample ID: LCS 180-337985/1
Matrix: Water
Analysis Batch: 337985

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH			7.00	7.0		SU		100	99 - 101

Lab Sample ID: 180-113224-1 DU
Matrix: Water
Analysis Batch: 337985

Client Sample ID: CCR-BK-1R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.4	HF		7.4		SU				0.1	2

Lab Sample ID: 180-113224-4 DU
Matrix: Water
Analysis Batch: 337985

Client Sample ID: CCR-LF-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	6.7	HF		6.7	HF	SU				0.1	2

Lab Sample ID: LCS 180-338411/1
Matrix: Water
Analysis Batch: 338411

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH			7.00	7.0		SU		100	99 - 101

Lab Sample ID: 180-113224-2 DU
Matrix: Water
Analysis Batch: 338411

Client Sample ID: CCR-BK-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	7.2	HF		7.2		SU				0.4	2

Method: EPA 9040C - pH (Continued)

Lab Sample ID: 180-113224-16 DU
Matrix: Water
Analysis Batch: 338411

Client Sample ID: CCR-AP-9
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	6.7	HF	6.7		SU		0.4	2

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 180-336449/2
Matrix: Water
Analysis Batch: 336449

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			11/09/20 17:04	1

Lab Sample ID: LCS 180-336449/1
Matrix: Water
Analysis Batch: 336449

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	714	744		mg/L		104	80 - 120

Lab Sample ID: MB 180-336450/2
Matrix: Water
Analysis Batch: 336450

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			11/09/20 17:11	1

Lab Sample ID: LCS 180-336450/1
Matrix: Water
Analysis Batch: 336450

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	714	726		mg/L		102	80 - 120

Lab Sample ID: MB 180-336756/2
Matrix: Water
Analysis Batch: 336756

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			11/11/20 13:03	1

Lab Sample ID: LCS 180-336756/1
Matrix: Water
Analysis Batch: 336756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	714	698		mg/L		98	80 - 120

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 180-113224-4 DU
Matrix: Water
Analysis Batch: 336756

Client Sample ID: CCR-LF-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	23000		22500		mg/L		0.09	10

Lab Sample ID: MB 180-336759/2
Matrix: Water
Analysis Batch: 336759

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			11/11/20 13:21	1

Lab Sample ID: LCS 180-336759/1
Matrix: Water
Analysis Batch: 336759

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	714	698		mg/L		98	80 - 120

Lab Sample ID: 180-113224-15 DU
Matrix: Water
Analysis Batch: 336759

Client Sample ID: CCR-AP-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	2000		2040		mg/L		0.3	10

Lab Sample ID: MB 180-336760/2
Matrix: Water
Analysis Batch: 336760

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			11/11/20 13:31	1

Lab Sample ID: LCS 180-336760/1
Matrix: Water
Analysis Batch: 336760

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	714	668		mg/L		94	80 - 120

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-489954/24-A
Matrix: Water
Analysis Batch: 492301

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 489954

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1342	U	0.194	0.195	1.00	0.330	pCi/L	11/23/20 08:44	12/17/20 21:04	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*129*	*X*	*40 - 110*	*11/23/20 08:44*	*12/17/20 21:04*	*1*

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-489954/1-A
Matrix: Water
Analysis Batch: 492288

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 489954

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-226			11.3	9.889		1.28	1.00	0.308	pCi/L	87	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*88.8*		*40 - 110*

Lab Sample ID: 180-113224-4 DU
Matrix: Water
Analysis Batch: 492288

Client Sample ID: CCR-LF-2
Prep Type: Total/NA
Prep Batch: 489954

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.461			0.2341	U	0.237	1.00	0.375	pCi/L			0.44	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*109*		*40 - 110*

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-489958/24-A
Matrix: Water
Analysis Batch: 492288

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 489958

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.09782	U	0.210	0.210	1.00	0.359	pCi/L	11/23/20 09:42	12/17/20 08:55	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*129*	*X*	*40 - 110*	*11/23/20 09:42*	*12/17/20 08:55*	*1*
Y Carrier	*108*		*40 - 110*	*11/23/20 09:42*	*12/17/20 08:55*	*1*

Lab Sample ID: LCS 160-489958/1-A
Matrix: Water
Analysis Batch: 492312

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 489958

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		
Radium-228			7.57	7.076		0.863	1.00	0.375	pCi/L	93	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*88.8*		*40 - 110*
Y Carrier	*110*		*40 - 110*

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: 180-113224-4 DU
Matrix: Water
Analysis Batch: 492312

Client Sample ID: CCR-LF-2
Prep Type: Total/NA
Prep Batch: 489958

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	1.74			1.321		0.310	1.00	0.332	pCi/L			0.64	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*109*		*40 - 110*
Y Carrier	*109*		*40 - 110*

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 180-113224-4 DU
Matrix: Water
Analysis Batch: 492820

Client Sample ID: CCR-LF-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Combined Radium 226 + 228	2.20			1.555		0.390	5.00	0.375	pCi/L			0.77	

HPLC/IC

Analysis Batch: 337126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-1	CCR-BK-1R	Total/NA	Water	EPA 9056A	
180-113224-2	CCR-BK-2	Total/NA	Water	EPA 9056A	
180-113224-3	CCR-LF-1	Total/NA	Water	EPA 9056A	
180-113224-3	CCR-LF-1	Total/NA	Water	EPA 9056A	
180-113224-4	CCR-LF-2	Total/NA	Water	EPA 9056A	
180-113224-4	CCR-LF-2	Total/NA	Water	EPA 9056A	
180-113224-5	CCR-LF-3	Total/NA	Water	EPA 9056A	
180-113224-5	CCR-LF-3	Total/NA	Water	EPA 9056A	
180-113224-6	CCR-LF-4	Total/NA	Water	EPA 9056A	
180-113224-6	CCR-LF-4	Total/NA	Water	EPA 9056A	
180-113224-7	CCR-LF-5	Total/NA	Water	EPA 9056A	
180-113224-7	CCR-LF-5	Total/NA	Water	EPA 9056A	
180-113224-8	CCR-LF-6	Total/NA	Water	EPA 9056A	
180-113224-8	CCR-LF-6	Total/NA	Water	EPA 9056A	
180-113224-9	BLIND DUPLICATE 2	Total/NA	Water	EPA 9056A	
180-113224-9	BLIND DUPLICATE 2	Total/NA	Water	EPA 9056A	
180-113224-10	FIELD BLANK 2	Total/NA	Water	EPA 9056A	
180-113224-11	CCR-AP-3I	Total/NA	Water	EPA 9056A	
180-113224-12	CCR-AP-3R	Total/NA	Water	EPA 9056A	
180-113224-12	CCR-AP-3R	Total/NA	Water	EPA 9056A	
180-113224-13	CCR-AP-6	Total/NA	Water	EPA 9056A	
180-113224-13	CCR-AP-6	Total/NA	Water	EPA 9056A	
180-113224-14	CCR-AP-7R	Total/NA	Water	EPA 9056A	
180-113224-14	CCR-AP-7R	Total/NA	Water	EPA 9056A	
180-113224-15	CCR-AP-8	Total/NA	Water	EPA 9056A	
180-113224-15	CCR-AP-8	Total/NA	Water	EPA 9056A	
180-113224-16	CCR-AP-9	Total/NA	Water	EPA 9056A	
180-113224-16	CCR-AP-9	Total/NA	Water	EPA 9056A	
180-113224-17	BLIND DUPLICATE 1	Total/NA	Water	EPA 9056A	
180-113224-18	FIELD BLANK 1	Total/NA	Water	EPA 9056A	
MB 180-337126/6	Method Blank	Total/NA	Water	EPA 9056A	
LCS 180-337126/5	Lab Control Sample	Total/NA	Water	EPA 9056A	
180-113224-4 MS	CCR-LF-2	Total/NA	Water	EPA 9056A	
180-113224-4 MSD	CCR-LF-2	Total/NA	Water	EPA 9056A	

Metals

Prep Batch: 336408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-3	CCR-LF-1	Total/NA	Water	7470A	
180-113224-4	CCR-LF-2	Total/NA	Water	7470A	
180-113224-5	CCR-LF-3	Total/NA	Water	7470A	
180-113224-6	CCR-LF-4	Total/NA	Water	7470A	
180-113224-7	CCR-LF-5	Total/NA	Water	7470A	
180-113224-8	CCR-LF-6	Total/NA	Water	7470A	
180-113224-9	BLIND DUPLICATE 2	Total/NA	Water	7470A	
180-113224-10	FIELD BLANK 2	Total/NA	Water	7470A	
180-113224-11	CCR-AP-3I	Total/NA	Water	7470A	
180-113224-12	CCR-AP-3R	Total/NA	Water	7470A	
180-113224-13	CCR-AP-6	Total/NA	Water	7470A	
180-113224-15	CCR-AP-8	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 336408 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-16	CCR-AP-9	Total/NA	Water	7470A	
180-113224-17	BLIND DUPLICATE 1	Total/NA	Water	7470A	
MB 180-336408/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-336408/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-113224-4 MS	CCR-LF-2	Total/NA	Water	7470A	
180-113224-4 MSD	CCR-LF-2	Total/NA	Water	7470A	

Prep Batch: 336413

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-1	CCR-BK-1R	Total/NA	Water	7470A	
180-113224-2	CCR-BK-2	Total/NA	Water	7470A	
180-113224-14	CCR-AP-7R	Total/NA	Water	7470A	
180-113224-18	FIELD BLANK 1	Total/NA	Water	7470A	
MB 180-336413/1-A	Method Blank	Total/NA	Water	7470A	
LCS 180-336413/2-A	Lab Control Sample	Total/NA	Water	7470A	
180-113224-1 MS	CCR-BK-1R	Total/NA	Water	7470A	
180-113224-1 MSD	CCR-BK-1R	Total/NA	Water	7470A	

Prep Batch: 336521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-1	CCR-BK-1R	Total Recoverable	Water	3005A	
180-113224-2	CCR-BK-2	Total Recoverable	Water	3005A	
180-113224-3	CCR-LF-1	Total Recoverable	Water	3005A	
180-113224-4	CCR-LF-2	Total Recoverable	Water	3005A	
180-113224-5	CCR-LF-3	Total Recoverable	Water	3005A	
180-113224-6	CCR-LF-4	Total Recoverable	Water	3005A	
180-113224-7	CCR-LF-5	Total Recoverable	Water	3005A	
180-113224-8	CCR-LF-6	Total Recoverable	Water	3005A	
180-113224-9	BLIND DUPLICATE 2	Total Recoverable	Water	3005A	
180-113224-10	FIELD BLANK 2	Total Recoverable	Water	3005A	
180-113224-11	CCR-AP-3I	Total Recoverable	Water	3005A	
180-113224-12	CCR-AP-3R	Total Recoverable	Water	3005A	
180-113224-13	CCR-AP-6	Total Recoverable	Water	3005A	
180-113224-14	CCR-AP-7R	Total Recoverable	Water	3005A	
180-113224-15	CCR-AP-8	Total Recoverable	Water	3005A	
180-113224-16	CCR-AP-9	Total Recoverable	Water	3005A	
180-113224-17	BLIND DUPLICATE 1	Total Recoverable	Water	3005A	
180-113224-18	FIELD BLANK 1	Total Recoverable	Water	3005A	
MB 180-336521/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 180-336521/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
180-113224-4 MS	CCR-LF-2	Total Recoverable	Water	3005A	
180-113224-4 MSD	CCR-LF-2	Total Recoverable	Water	3005A	

Analysis Batch: 336710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-1	CCR-BK-1R	Total/NA	Water	EPA 7470A	336413
180-113224-2	CCR-BK-2	Total/NA	Water	EPA 7470A	336413
180-113224-3	CCR-LF-1	Total/NA	Water	EPA 7470A	336408
180-113224-4	CCR-LF-2	Total/NA	Water	EPA 7470A	336408
180-113224-5	CCR-LF-3	Total/NA	Water	EPA 7470A	336408
180-113224-6	CCR-LF-4	Total/NA	Water	EPA 7470A	336408

Metals (Continued)

Analysis Batch: 336710 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-7	CCR-LF-5	Total/NA	Water	EPA 7470A	336408
180-113224-8	CCR-LF-6	Total/NA	Water	EPA 7470A	336408
180-113224-9	BLIND DUPLICATE 2	Total/NA	Water	EPA 7470A	336408
180-113224-10	FIELD BLANK 2	Total/NA	Water	EPA 7470A	336408
180-113224-11	CCR-AP-3I	Total/NA	Water	EPA 7470A	336408
180-113224-12	CCR-AP-3R	Total/NA	Water	EPA 7470A	336408
180-113224-13	CCR-AP-6	Total/NA	Water	EPA 7470A	336408
180-113224-14	CCR-AP-7R	Total/NA	Water	EPA 7470A	336413
180-113224-15	CCR-AP-8	Total/NA	Water	EPA 7470A	336408
180-113224-16	CCR-AP-9	Total/NA	Water	EPA 7470A	336408
180-113224-17	BLIND DUPLICATE 1	Total/NA	Water	EPA 7470A	336408
180-113224-18	FIELD BLANK 1	Total/NA	Water	EPA 7470A	336413
MB 180-336408/1-A	Method Blank	Total/NA	Water	EPA 7470A	336408
MB 180-336413/1-A	Method Blank	Total/NA	Water	EPA 7470A	336413
LCS 180-336408/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	336408
LCS 180-336413/2-A	Lab Control Sample	Total/NA	Water	EPA 7470A	336413
180-113224-1 MS	CCR-BK-1R	Total/NA	Water	EPA 7470A	336413
180-113224-1 MSD	CCR-BK-1R	Total/NA	Water	EPA 7470A	336413
180-113224-4 MS	CCR-LF-2	Total/NA	Water	EPA 7470A	336408
180-113224-4 MSD	CCR-LF-2	Total/NA	Water	EPA 7470A	336408

Analysis Batch: 336996

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-6	CCR-LF-4	Total Recoverable	Water	EPA 6020A	336521
180-113224-7	CCR-LF-5	Total Recoverable	Water	EPA 6020A	336521
180-113224-8	CCR-LF-6	Total Recoverable	Water	EPA 6020A	336521
180-113224-9	BLIND DUPLICATE 2	Total Recoverable	Water	EPA 6020A	336521
180-113224-10	FIELD BLANK 2	Total Recoverable	Water	EPA 6020A	336521
180-113224-11	CCR-AP-3I	Total Recoverable	Water	EPA 6020A	336521
180-113224-12	CCR-AP-3R	Total Recoverable	Water	EPA 6020A	336521
180-113224-13	CCR-AP-6	Total Recoverable	Water	EPA 6020A	336521
180-113224-14	CCR-AP-7R	Total Recoverable	Water	EPA 6020A	336521
180-113224-15	CCR-AP-8	Total Recoverable	Water	EPA 6020A	336521
180-113224-16	CCR-AP-9	Total Recoverable	Water	EPA 6020A	336521
180-113224-17	BLIND DUPLICATE 1	Total Recoverable	Water	EPA 6020A	336521
180-113224-18	FIELD BLANK 1	Total Recoverable	Water	EPA 6020A	336521
MB 180-336521/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	336521

Analysis Batch: 337118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-1	CCR-BK-1R	Total Recoverable	Water	EPA 6020A	336521
180-113224-2	CCR-BK-2	Total Recoverable	Water	EPA 6020A	336521
180-113224-3	CCR-LF-1	Total Recoverable	Water	EPA 6020A	336521
180-113224-4	CCR-LF-2	Total Recoverable	Water	EPA 6020A	336521
180-113224-6	CCR-LF-4	Total Recoverable	Water	EPA 6020A	336521
180-113224-16	CCR-AP-9	Total Recoverable	Water	EPA 6020A	336521
180-113224-17	BLIND DUPLICATE 1	Total Recoverable	Water	EPA 6020A	336521
180-113224-18	FIELD BLANK 1	Total Recoverable	Water	EPA 6020A	336521
MB 180-336521/1-A	Method Blank	Total Recoverable	Water	EPA 6020A	336521
LCS 180-336521/2-A	Lab Control Sample	Total Recoverable	Water	EPA 6020A	336521
180-113224-4 MS	CCR-LF-2	Total Recoverable	Water	EPA 6020A	336521

Metals (Continued)

Analysis Batch: 337118 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-4 MSD	CCR-LF-2	Total Recoverable	Water	EPA 6020A	336521

Analysis Batch: 337356

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-5	CCR-LF-3	Total Recoverable	Water	EPA 6020A	336521
180-113224-6	CCR-LF-4	Total Recoverable	Water	EPA 6020A	336521
180-113224-7	CCR-LF-5	Total Recoverable	Water	EPA 6020A	336521
180-113224-8	CCR-LF-6	Total Recoverable	Water	EPA 6020A	336521
180-113224-9	BLIND DUPLICATE 2	Total Recoverable	Water	EPA 6020A	336521
180-113224-10	FIELD BLANK 2	Total Recoverable	Water	EPA 6020A	336521
180-113224-11	CCR-AP-3I	Total Recoverable	Water	EPA 6020A	336521
180-113224-12	CCR-AP-3R	Total Recoverable	Water	EPA 6020A	336521
180-113224-13	CCR-AP-6	Total Recoverable	Water	EPA 6020A	336521
180-113224-14	CCR-AP-7R	Total Recoverable	Water	EPA 6020A	336521
180-113224-15	CCR-AP-8	Total Recoverable	Water	EPA 6020A	336521

General Chemistry

Analysis Batch: 336449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-1	CCR-BK-1R	Total/NA	Water	SM 2540C	
180-113224-2	CCR-BK-2	Total/NA	Water	SM 2540C	
180-113224-18	FIELD BLANK 1	Total/NA	Water	SM 2540C	
MB 180-336449/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-336449/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 336450

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-14	CCR-AP-7R	Total/NA	Water	SM 2540C	
MB 180-336450/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-336450/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 336756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-3	CCR-LF-1	Total/NA	Water	SM 2540C	
180-113224-4	CCR-LF-2	Total/NA	Water	SM 2540C	
180-113224-5	CCR-LF-3	Total/NA	Water	SM 2540C	
MB 180-336756/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-336756/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-113224-4 DU	CCR-LF-2	Total/NA	Water	SM 2540C	

Analysis Batch: 336759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-7	CCR-LF-5	Total/NA	Water	SM 2540C	
180-113224-8	CCR-LF-6	Total/NA	Water	SM 2540C	
180-113224-9	BLIND DUPLICATE 2	Total/NA	Water	SM 2540C	
180-113224-10	FIELD BLANK 2	Total/NA	Water	SM 2540C	
180-113224-11	CCR-AP-3I	Total/NA	Water	SM 2540C	
180-113224-12	CCR-AP-3R	Total/NA	Water	SM 2540C	
180-113224-13	CCR-AP-6	Total/NA	Water	SM 2540C	
180-113224-15	CCR-AP-8	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 336759 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-16	CCR-AP-9	Total/NA	Water	SM 2540C	
MB 180-336759/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-336759/1	Lab Control Sample	Total/NA	Water	SM 2540C	
180-113224-15 DU	CCR-AP-8	Total/NA	Water	SM 2540C	

Analysis Batch: 336760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-6	CCR-LF-4	Total/NA	Water	SM 2540C	
180-113224-17	BLIND DUPLICATE 1	Total/NA	Water	SM 2540C	
MB 180-336760/2	Method Blank	Total/NA	Water	SM 2540C	
LCS 180-336760/1	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 337985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-1	CCR-BK-1R	Total/NA	Water	EPA 9040C	
180-113224-3	CCR-LF-1	Total/NA	Water	EPA 9040C	
180-113224-4	CCR-LF-2	Total/NA	Water	EPA 9040C	
180-113224-5	CCR-LF-3	Total/NA	Water	EPA 9040C	
180-113224-6	CCR-LF-4	Total/NA	Water	EPA 9040C	
180-113224-7	CCR-LF-5	Total/NA	Water	EPA 9040C	
180-113224-8	CCR-LF-6	Total/NA	Water	EPA 9040C	
180-113224-9	BLIND DUPLICATE 2	Total/NA	Water	EPA 9040C	
180-113224-10	FIELD BLANK 2	Total/NA	Water	EPA 9040C	
180-113224-11	CCR-AP-3I	Total/NA	Water	EPA 9040C	
LCS 180-337985/1	Lab Control Sample	Total/NA	Water	EPA 9040C	
180-113224-1 DU	CCR-BK-1R	Total/NA	Water	EPA 9040C	
180-113224-4 DU	CCR-LF-2	Total/NA	Water	EPA 9040C	

Analysis Batch: 338411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-2	CCR-BK-2	Total/NA	Water	EPA 9040C	
180-113224-12	CCR-AP-3R	Total/NA	Water	EPA 9040C	
180-113224-13	CCR-AP-6	Total/NA	Water	EPA 9040C	
180-113224-14	CCR-AP-7R	Total/NA	Water	EPA 9040C	
180-113224-15	CCR-AP-8	Total/NA	Water	EPA 9040C	
180-113224-16	CCR-AP-9	Total/NA	Water	EPA 9040C	
180-113224-17	BLIND DUPLICATE 1	Total/NA	Water	EPA 9040C	
180-113224-18	FIELD BLANK 1	Total/NA	Water	EPA 9040C	
LCS 180-338411/1	Lab Control Sample	Total/NA	Water	EPA 9040C	
180-113224-2 DU	CCR-BK-2	Total/NA	Water	EPA 9040C	
180-113224-16 DU	CCR-AP-9	Total/NA	Water	EPA 9040C	

Rad

Prep Batch: 489954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-1	CCR-BK-1R	Total/NA	Water	PrecSep-21	
180-113224-2	CCR-BK-2	Total/NA	Water	PrecSep-21	
180-113224-3	CCR-LF-1	Total/NA	Water	PrecSep-21	
180-113224-4	CCR-LF-2	Total/NA	Water	PrecSep-21	
180-113224-5	CCR-LF-3	Total/NA	Water	PrecSep-21	

Rad (Continued)

Prep Batch: 489954 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-6	CCR-LF-4	Total/NA	Water	PrecSep-21	
180-113224-7	CCR-LF-5	Total/NA	Water	PrecSep-21	
180-113224-8	CCR-LF-6	Total/NA	Water	PrecSep-21	
180-113224-9	BLIND DUPLICATE 2	Total/NA	Water	PrecSep-21	
180-113224-10	FIELD BLANK 2	Total/NA	Water	PrecSep-21	
180-113224-11	CCR-AP-3I	Total/NA	Water	PrecSep-21	
180-113224-12	CCR-AP-3R	Total/NA	Water	PrecSep-21	
180-113224-13	CCR-AP-6	Total/NA	Water	PrecSep-21	
180-113224-14	CCR-AP-7R	Total/NA	Water	PrecSep-21	
180-113224-15	CCR-AP-8	Total/NA	Water	PrecSep-21	
180-113224-16	CCR-AP-9	Total/NA	Water	PrecSep-21	
180-113224-17	BLIND DUPLICATE 1	Total/NA	Water	PrecSep-21	
180-113224-18	FIELD BLANK 1	Total/NA	Water	PrecSep-21	
MB 160-489954/24-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-489954/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
180-113224-4 DU	CCR-LF-2	Total/NA	Water	PrecSep-21	

Prep Batch: 489958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-113224-1	CCR-BK-1R	Total/NA	Water	PrecSep_0	
180-113224-2	CCR-BK-2	Total/NA	Water	PrecSep_0	
180-113224-3	CCR-LF-1	Total/NA	Water	PrecSep_0	
180-113224-4	CCR-LF-2	Total/NA	Water	PrecSep_0	
180-113224-5	CCR-LF-3	Total/NA	Water	PrecSep_0	
180-113224-6	CCR-LF-4	Total/NA	Water	PrecSep_0	
180-113224-7	CCR-LF-5	Total/NA	Water	PrecSep_0	
180-113224-8	CCR-LF-6	Total/NA	Water	PrecSep_0	
180-113224-9	BLIND DUPLICATE 2	Total/NA	Water	PrecSep_0	
180-113224-10	FIELD BLANK 2	Total/NA	Water	PrecSep_0	
180-113224-11	CCR-AP-3I	Total/NA	Water	PrecSep_0	
180-113224-12	CCR-AP-3R	Total/NA	Water	PrecSep_0	
180-113224-13	CCR-AP-6	Total/NA	Water	PrecSep_0	
180-113224-14	CCR-AP-7R	Total/NA	Water	PrecSep_0	
180-113224-15	CCR-AP-8	Total/NA	Water	PrecSep_0	
180-113224-16	CCR-AP-9	Total/NA	Water	PrecSep_0	
180-113224-17	BLIND DUPLICATE 1	Total/NA	Water	PrecSep_0	
180-113224-18	FIELD BLANK 1	Total/NA	Water	PrecSep_0	
MB 160-489958/24-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-489958/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
180-113224-4 DU	CCR-LF-2	Total/NA	Water	PrecSep_0	

Chain of Custody Record 495484

Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager:	Site Contact:	Date: 11-4-20
Company Name: Vertex	Tel/Email:	Lab Contact: Veronica Botet	Carrier: Fedex
Address: 8511 Wellborn Road	**Analysis Turnaround Time**		
City/State/Zip: Mt Vernon IN 47620	☐ CALENDAR DAYS ☐ WORKING DAYS		
Phone: 317-573-4082	TAT if different from Below _____		
Fax:	☐ 2 weeks		
Project Name: CCR Groundwater Monitoring	☐ 1 week		
Site: AB Brown	☐ 2 days		
P O #	☐ 1 day		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Fluoride (4056 A)	EPA App IV Total Metals (6020 A)	Mercury (Total) EPA 7470 A	Radium 226/228	GPA 903.0/904.0	Sample Specific Notes.
CCR-BK-1R	11-3-20	1410	G	WT	5			X	X	X	X		
CCR-BK-2	↓	1245	↓	↓	↓			↓	↓	↓	↓		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☒ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____		
Relinquished by: Jacob Winsett	Company: ATC	Date/Time: 11-4-20/1900	Received by: Dellie Watts	Company: EA Pitt	Date/Time: 11-5-20
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time: 8:30
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

180-113224 Chain of Custody

12/28/2020

Chain of Custody Record 495480

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Address: ____________________

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

Client Contact: Vectren	Project Manager: Mark Mesfeldt
Company Name: [illegible] LLC	Tel/Email:
Address: 8511 Wellborn Road	Analysis Turnaround Time
City/State/Zip: Mt Vernon IN 47620	☐ CALENDAR DAYS ☐ WORKING DAYS
Phone: 317 573 4082	TAT if different from Below ______
Fax:	☐ 2 weeks
Project Name: CCR Groundwater Monitoring	☐ 1 week
Site: AB Brown	☐ 2 days
P O #	☐ 1 day

Site Contact: Angela Scheller | Date: 11-4-20
Lab Contact: Veronica Bortot | Carrier: FedEx

COC No: 2 of 3 COCs
Sampler: Jacob Winsett
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Flouride (9056A)	EPA App IV Total Metals (6020A)	Mercury (Total) EPA 7470A	Radium 226/228 (EPA 903.0/904.0)	Sample Specific Notes:
CCR-LF-1	11-4-20	1330	G	WT	5			X	X	X	X	
CCR-LF-2		1455										
CCR-LF-3		1550										
CCR-LF-4		1210										
CCR-LF-5		1215										
CCR-LF-6		1305										
MSMSD		1455			10							
Blind Duplicate 2		—			5							
Field Blank 2		1300			1							

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ______

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☒ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ______ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: ______ Corr'd: ______ Therm ID No.: ______

Relinquished by: Jacob Winsett	Company: ATC	Date/Time: 11-4-20/1900	Received by: [signature]	Company: ETA Pitt	Date/Time: 11-5-20
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time: 8:30
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Chain of Custody Record 495483

eurofins | Environment Testing TestAmerica

Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

Client Contact Vectren	**Project Manager:** Mark Meisfeldt	**Site Contact:** Angela Scheller	**Date:** 11-4-20	COC No:
Company Name: [redacted]	**Tel/Email:** M	**Lab Contact:** Veronica Bolton	**Carrier:** Fed Ex	3 of 3 COCs
Address: 8511 Wellborn Road	**Analysis Turnaround Time**			Sampler: Jacob Wisett
City/State/Zip: [redacted] Mt Vernon	☐ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
Phone: IN 47620	TAT if different from Below _____			Walk-in Client:
Fax: 317 573 4082	☐ 2 weeks			Lab Sampling:
Project Name: [redacted] CCR GW Monitoring	☐ 1 week			
Site: AB Brown	☐ 2 days			Job / SDG No.:
PO# 170LF00900	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Fluoride (9056A)	EPA App IV Total Metals (6020A)	Mercury (Total) EPA 7470A	Radium 226/228 EPA 903.0/904.0	Sample Specific Notes:
CCR-AP-3I	11-4-20	1635	G	WT	5			X	X	X	X	
CCR-AP-3R	↓	1525	↓	↓	↓			↓	↓	↓	↓	
CCR-AP-6	↓	1040										
CCR-AP-7R	11-3-20	1730										
CCR-AP-8	11-4-20	1700										
CCR-AP-9	↓	1425										
Blind Duplicate 1	11-4-20	—										
Field Blank 1	11-3-20	1400	↓	↓	↓			↓	↓	↓	↓	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☒ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Jacob Wisett	ATC	11-4-20/1900	[signature]	FTAPITT	11-5-20 8:30
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

ORIGIN ID:EVVA (812) 477-1176
BRIAN KLEEMAN

1149 WEDEKING AVENUE
BUILDING D, SUITE 2
EVANSVILLE, IN 47715
UNITED STATES US

SHIP DATE: 04NOV20
ACTWGT: 50.00 LB
CAD: 106997842/INET4280
DIMS: 22x15x14 IN

BILL SENDER

TO VERONICA BORTOT
TESTAMERICA
301 ALPHA DRIVE

PITTSBURGH PA 15238
(412) 963-7058 REF: 170LF00900
INV: 170LF00900
PO: 170LF00900 DEPT:

56BJ3/51D8/B766

FedEx Express E

J202020071401uv

1 of 4
TRK# 0201 7719 9599 7699
MASTER

THU - 05 NOV 4:30P
STANDARD OVERNIGHT

15238
PA-US PIT

NA AGCA

Uncorrected temp 3.9 °C
Thermometer ID 14
CF 0 Initials JJ
PT-WI-SR-001 effective 7/26/13

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180-113224 Waybill

ORIGIN ID:EVVA (812) 477-1176
BRIAN KLEEMAN

1149 WEDEKING AVENUE
BUILDING D, SUITE 2
EVANSVILLE, IN 47715
UNITED STATES US

SHIP DATE: 04NOV20
ACTWGT: 50.00 LB
CAD: 106997842/INET4280
DIMS: 22x15x14 IN

BILL SENDER

TO VERONICA BORTOT
TESTAMERICA
301 ALPHA DRIVE

PITTSBURGH PA 15238
(412) 963-7058
INV: 170LF00900
PO: 170LF00900
REF: 170LF00900
DEPT:

568J351D8/B766

FedEx Express

J202020071401uv

3 of 4
MPS# 7719 9599 7910
Mstr# 7719 9599 7699

THU - 05 NOV 4:30P
STANDARD OVERNIGHT

0263 0201

15238
PIT

NA
Uncorrected temp 25 °C
Thermometer ID 14
CF 0 Initials 13

PT-WI-SR-001 effective 7/26/13

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BRIAN KLEEMAN

1149 WEDEKING AVENUE
BUILDING D, SUITE 2
EVANSVILLE, IN 47715
UNITED STATES US

SHIP DATE: 04NOV20
ACTWGT: 50.00 LB
CAD: 106997842/INET4280
DIMS: 22x15x14 IN

BILL SENDER

TO **VERONICA BORTOT**
TESTAMERICA
301 ALPHA DRIVE

PITTSBURGH PA 15238
(412) 963-7058 REF: 170LF00900
INV: 170LF00900
PO: 170LF00900 DEPT:

568J3/51D8/B766

FedEx Express

J2020200714010u

THU - 05 NOV 4:30P
STANDARD OVERNIGHT

2 of 4
MPS# 7719 9599 8055
0263
Mstr# 7719 9599 7699

0201

15238
PIT
PA-US

NA AGCA

Uncorrected temp 3.4 °C
Thermometer ID TM
CF 0 Initials TB

PT-WI-SR-001 effective 7/26/13

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ORIGIN ID:EVVA (812) 477-1176
BRIAN KLEEMAN

1149 WEDEKING AVENUE
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EVANSVILLE, IN 47715
UNITED STATES US

SHIP DATE: 04NOV20
ACTWGT: 50.00 LB
CAD: 106997842/INET4280
DIMS: 22x15x14 IN

BILL SENDER

TO **VERONICA BORTOT**
TESTAMERICA
301 ALPHA DRIVE

PITTSBURGH PA 15238
(412) 963-7058
INV: 170LF00900
PO: 170LF00900

REF: 170LF00900

DEPT:

568J3/51D8/B766

FedEx Express

J202020071401uv

4 of 4

MPS# 0263 **7719 9599 7986**

Mstr# **7719 9599 7699**

0201

THU - 05 NOV 4:30P
STANDARD OVERNIGHT

15238
PIT

PA-US

NA

Uncorrected temp 19 °C
Thermometer ID 14

CF 0 Initials TJ

PT-WI-SR-001 effective 7/26/13

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Login Sample Receipt Checklist

Client: Vectren Corporation

Job Number: 180-113224-1

Login Number: 113224
List Number: 1
Creator: Watson, Debbie

List Source: Eurofins TestAmerica, Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Vectren Corporation

Job Number: 180-113224-1

Login Number: 113224
List Number: 2
Creator: Boyd, Jacob C

List Source: Eurofins TestAmerica, St. Louis
List Creation: 11/07/20 02:03 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ATTACHMENT 4

Statistical Analyses

HALEY & ALDRICH, INC.
400 Augusta Street
Suite 130
Greenville, SC 29601
864.214.8750

24 February 2020
File No. 129420

TO: Southern Indiana Gas and Electric Company

FROM: Haley & Aldrich, Inc.
[Steven F. Putrich, P.E., Project Principal
Mark Miesfeldt, P.G., Lead Hydrogeologist]

SUBJECT: Notification of Statistically Significant Levels of Appendix IV Constituents
Pursuant to 40 CFR § 257.95(g) and 40 CFR § 257.105(h)(8)
A.B. Brown Generating Station – FGD Landfill - West Franklin, Indiana

Southern Indiana Gas and Electric Company (SIGECO) is implementing the 17 April 2015 United States Environmental Protection Agency (U.S. EPA) Federal Coal Combustion Residuals (CCR) Rule (40 CFR § 257 and 261) for the A.B. Brown Generating Station, in Posey County near West Franklin, Indiana. Detection monitoring events occurred in 2016 and 2017. The results of the sampling events were compared to background using appropriate statistical methods to determine if Appendix III constituents were present at concentrations above background. The result of the statistical analysis identified a statistically significant increase (SSI) downgradient of the FGD Landfill thereby triggering Assessment Monitoring and respective notification of the same.

During the Assessment Monitoring phase, groundwater samples were collected from the CCR monitoring well network. Samples were collected in June, and August 2018 and subsequently analyzed for the Appendix III and Appendix IV constituents as required by 40 CFR § 257.95(b) and 40 CFR § 257.95(d)(1). Concurrent with the second assessment sampling round, and as required by 40 CFR § 257.95(h), groundwater protection standards (GWPS) were established for the detected Appendix IV constituents. The assessment monitoring sampling results were compared to the GWPS to determine if statistically significant levels (SSL) of Appendix IV constituents were present downgradient of the FGD Landfill. The results of this evaluation indicated that an SSL for cobalt was present at monitoring well CCR-LF-2, and SSL's of arsenic and lithium were present at monitoring well CCR-LF-4.

As a result of this determination, and in accordance with 40 CFR § 257.95(g)(3), Haley & Aldrich evaluated the occurrence of Appendix IV constituents detected in groundwater downgradient of the FGD Landfill. In July 2019, a successful alternate source demonstration (ASD) was completed for cobalt, arsenic and lithium.

As required by 40 CFR § 257.95(b) and 40 CFR § 257.95(d)(1), semiannual groundwater sampling and analysis continued for the FGD Landfill in 2019. The second round of semiannual groundwater sampling was conducted in October 2019. For the Landfill, which continued in Assessment Monitoring in 2019, a statistical analysis of the October 2019 analytical results was conducted, and downgradient wells were compared to each respective GWPS.

If the detected constituent was greater than the GWPS for that Unit, pursuant to 40 CFR § 257.93 (f)(5), the confidence interval method was used to evaluate if that Appendix IV constituent was present at an SSL. Intrawell statistical analysis was used to evaluate cobalt, arsenic and lithium as a result of the certified ASD. Based on the comparisons outlined above, the results of the statistical analyses conducted for those detected Appendix IV constituents did not identify Appendix IV constituents downgradient of the FGD Landfill at statistically significant levels above GWPS. As a result, the FGD Landfill will remain in assessment monitoring.

\\haleyaldrich.com\share\grn_common\129420 Vectren\Deliverables\AB_Brown\SSL Notification\February 2020\2020_0224_SSL_notification_Landfill_F.docx

A.B. Brown Generating Station
Landfill
Detection Monitoring Statistical Analysis Summary
Prepared: February 24, 2020

													MCL Comparison						Inter-well Analysis				Intra-well Analysis		
Location Id	Frequency of Detection	Percent Non-Detects	Range of Non-Detect	Mean	50th Percentile (Median)	95th Percentile	Maximum Detect	Variance	Standard Deviation	Coefficient of Variance	CCR MCL/RSL	Report Result Unit	Detection Exceedances (Y/N)	Number of Detection Exceedances	Outlier Detected	Outlier Removed	Trend	Distribution Group*	Distribution Well*	October 2019 Concentration	Upper Tolerance Limit	Groundwater Protection Standard (Higher of MCL/RSL or Upper Tolerance Limit)	Exceedance above Background at Individual Well	Upper Prediction Limit	Exceedance above Background at Individual Well	SSL
CCR Appendix-IV: Arsenic, Total (mg/L)																									
CCR-BK-1	12/13	8%	0.001-0.001	0.000914	0.00095	0.0019	0.0025	3.888E-07	0.0006236	0.6823	0.01	mg/L	N	0	Y	N	Stable	Non-parametric	Normal		0.004	0.010				
CCR-BK-2	7/13	46%	0.001-0.001	0.00117	0.001	0.00308	0.0035	8.959E-07	0.0009465	0.8122	0.01	mg/L	N	0	Y	N	Stable		Log-transformed							
CCR-LF-1	9/13	31%	0.001-0.001	0.000913	0.001	0.00132	0.0015	8.922E-08	0.0002987	0.3271	0.01	mg/L	N	0	N	N	Stable		Normal	0.00094			N	0.002	N	FALSE
CCR-LF-2	8/13	38%	0.01-0.01	0.00532	0.0028	0.01	0.0062	0.00001635	0.004044	0.7597	0.01	mg/L	N	0	N	N	Stable		Log-transformed	0.00130			N	0.072	N	FALSE
CCR-LF-3	9/13	31%	0.001-0.001	0.00124	0.00056	0.00412	0.0088	0.000005249	0.002291	1.85	0.01	mg/L	N	0	N	N	Stable		Log-transformed	0.00056			N	0.126	N	FALSE
CCR-LF-4	13/13	0%	-	0.0158	0.016	0.0246	0.03	0.00004696	0.006853	0.435	0.01	mg/L	Y	11	N	N	Stable		Normal	0.01800			Y	0.054	N	FALSE
CCR-LF-5	8/13	38%	0.001-0.01	0.00265	0.001	0.012	0.015	0.00002055	0.004533	1.708	0.01	mg/L	Y	1	Y	N	Stable		Log-transformed	0.00043			N	0.401	N	FALSE
CCR-LF-6	7/13	46%	0.001-0.001	0.00137	0.001	0.00448	0.0097	0.000006362	0.002522	1.835	0.01	mg/L	N	0	Y	N	Stable		Non-parametric	0.00047			N	0.010	N	FALSE
CCR Appendix-IV: Barium, Total (mg/L)																									
CCR-BK-1	13/13	0%	-	0.0411	0.038	0.0622	0.082	0.0001889	0.01374	0.3346	2	mg/L	N	0	Y	N	Stable	Non-parametric	Non-parametric		0.150	2.0				
CCR-BK-2	13/13	0%	-	0.0464	0.036	0.0888	0.15	0.0009994	0.03161	0.6816	2	mg/L	N	0	Y	N	Stable		Non-parametric							
CCR-LF-1	13/13	0%	-	0.0468	0.045	0.0682	0.088	0.0002069	0.01438	0.3075	2	mg/L	N	0	Y	N	Stable		Non-parametric	0.055			N			FALSE
CCR-LF-2	10/13	23%	0.1-0.1	0.0327	0.013	0.1	0.014	0.001473	0.03838	1.174	2	mg/L	N	0	N	N	Stable		Normal	0.013			N			FALSE
CCR-LF-3	13/13	0%	-	0.0258	0.026	0.03	0.03	0.00001086	0.003295	0.1279	2	mg/L	N	0	N	N	Stable		Normal	0.020			N			FALSE
CCR-LF-4	10/13	23%	0.01-0.1	0.0257	0.013	0.1	0.016	0.001092	0.03305	1.287	2	mg/L	N	0	N	N	Stable		Normal	0.014			N			FALSE
CCR-LF-5	13/13	0%	-	0.0264	0.026	0.0304	0.031	0.000004923	0.002219	0.08409	2	mg/L	N	0	N	N	Stable		Normal	0.027			N			FALSE
CCR-LF-6	13/13	0%	-	0.0189	0.018	0.0264	0.03	0.00001658	0.004071	0.2152	2	mg/L	N	0	N	N	Increase		Log-transformed	0.019			N			FALSE
CCR Appendix-IV: Cadmium, Total (mg/L)																									
CCR-BK-1	0/13	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.005	mg/L	N	0	N	N	Stable	Non-parametric	Non-parametric		0.001	0.005				
CCR-BK-2	0/13	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.005	mg/L	N	0	N	N	Stable		Non-parametric							
CCR-LF-1	0/13	100%	0.001-0.001	0.001	0.001	0.001		0	0	0	0.005	mg/L	N	0	N	N	Stable		Non-parametric	0.0010			N			FALSE
CCR-LF-2	13/13	0%	-	0.0036	0.0039	0.00458	0.0047	0.000001158	0.001076	0.2986	0.005	mg/L	N	0	N	N	Stable		Normal	0.0045			N			FALSE
CCR-LF-3	3/13	77%	0.001-0.001	0.000793	0.001	0.001	0.00011	1.552E-07	0.000394	0.497	0.005	mg/L	N	0	N	N	Stable		Non-parametric	0.0010			N			FALSE
CCR-LF-4	1/13	92%	0.001-0.01	0.0037	0.001	0.01	0.000092	0.00001917	0.004379	1.184	0.005	mg/L	N	0	N	N	Stable		Non-parametric	0.0010			N			FALSE
CCR-LF-5	11/13	15%	0.001-0.01	0.00101	0.00021	0.0046	0.00025	0.000007346	0.00271	2.681	0.005	mg/L	N	0	Y	N	Stable		Non-parametric	0.0002			N			FALSE
CCR-LF-6	10/13	23%	0.001-0.001	0.000345	0.00015	0.001	0.00021	1.406E-07	0.000375	1.088	0.005	mg/L	N	0	N	N	Stable		Non-parametric	0.0002			N			FALSE
CCR Appendix-IV: Chromium, Total (mg/L)																									
CCR-BK-1	11/13	15%	0.002-0.002	0.00246	0.0025	0.00484	0.0076	0.000003119	0.001766	0.7188	0.1	mg/L	N	0	Y	N	Increase	Non-parametric	Normal		0.009	0.10				
CCR-BK-2	5/13	62%	0.002-0.002	0.00297	0.002	0.0063	0.0087	0.000004274	0.002067	0.6969	0.1	mg/L	N	0	N	N	Stable		Non-parametric							
CCR-LF-1	10/13	23%	0.002-0.002	0.00197	0.0017	0.0044	0.0062	0.000002012	0.001418	0.7183	0.1	mg/L	N	0	N	N	Increase		Normal	0.0032			N			FALSE
CCR-LF-2	8/13	38%	0.02-0.02	0.0085	0.0018	0.02	0.0022	0.00008981	0.009477	1.116	0.1	mg/L	N	0	N	N	Stable		Non-parametric	0.0018			N			FALSE
CCR-LF-3	10/13	23%	0.002-0.0035	0.00235	0.002	0.00344	0.0034	0.000000416	0.000645	0.274	0.1	mg/L	N	0	N	N	Stable		Log-transformed	0.0033			N			FALSE
CCR-LF-4	5/13	62%	0.002-0.02	0.00718	0.002	0.02	0.0021	0.00007941	0.008911	1.24	0.1	mg/L	N	0	N	N	Stable		Log-transformed	0.0016			N			FALSE
CCR-LF-5	9/13	31%	0.002-0.02	0.00442	0.002	0.0208	0.022	0.00005473	0.007398	1.673	0.1	mg/L	N	0	Y	N	Stable		Non-parametric	0.0020			N			FALSE
CCR-LF-6	4/13	69%	0.002-0.0023	0.00198	0.002	0.00306	0.0042	7.901E-07	0.0008889	0.4495	0.1	mg/L	N	0	N	N	Stable		Non-parametric	0.0022			N			FALSE
CCR Appendix-IV: Cobalt, Total (mg/L)																									
CCR-BK-1	12/13	8%	0.0005-0.0005	0.000909	0.00076	0.00244	0.0028	0.000000613	0.0007829	0.8611	0.006	mg/L	N	0	Y	N	Stable	Non-parametric	Log-transformed		0.006	0.006				
CCR-BK-2	8/13	38%	0.0005-0.0005	0.000946	0.0005	0.00338	0.0062	0.000002669	0.001634	1.726	0.006	mg/L	Y	1	Y	N	Stable		Log-transformed							
CCR-LF-1	11/13	15%	0.0005-0.0005	0.000325	0.0003	0.000668	0.00068	4.593E-08	0.0002143	0.6591	0.006	mg/L	N	0	N	N	Stable		Normal	0.00041			N	0.001	N	FALSE
CCR-LF-2	13/13	0%	-	0.00872	0.0076	0.0122	0.014	0.000005254	0.002292	0.2628	0.006	mg/L	Y	12	N	N	Stable		Normal	0.01100			Y	0.025	N	FALSE
CCR-LF-3	11/13	15%	0.0005-0.0005	0.000455	0.00044	0.000714	0.00072	2.286E-08	0.0001512	0.3326	0.006	mg/L	N	0	N	N	Stable		Normal	0.00027			N	0.001	N	FALSE
CCR-LF-4	13/13	0%	-	0.00118	0.0012	0.0018	0.0018	0.000000177	0.0004207	0.3565	0.006	mg/L	N	0	N	N	Stable		Normal	0.00130			N	0.004	N	FALSE
CCR-LF-5	9/13	31%	0.0005-0.005	0.000952	0.00035	0.00398	0.0033	0.000002162	0.00147	1.545	0.006	mg/L	N	0	N	N	Stable		Log-transformed	0.00035			N	0.033	N	FALSE
CCR-LF-6	11/13	15%	0.0005-0.0005	0.000348	0.00027	0.000722	0.00086	5.252E-08	0.0002292	0.6578	0.006	mg/L	N	0	N	N	Stable		Normal	0.00033			N	0.001	N	FALSE
CCR Appendix-III: Fluoride (mg/L)																									
CCR-BK-1	12/13	8%	0.23-0.23	1.264	1.28	1.51	1.52	0.01066	0.20648	0.6532	4	mg/L	N	0	N	N	Stable	Non-parametric	Normal		0.380	4.0				
CCR-BK-2	12/13	8%	0.12-0.12	0.576	0.56	0.8	0.8	0.004452	0.13344	0.9276	4	mg/L	N	0	N	N	Decrease		Normal							
CCR-LF-1	13/13	0%	-	0.936	1	1.17	1.2	0.010468	0.2046	0.8748	4	mg/L	N	0	N	N	Stable		Normal	0.10			N			FALSE
CCR-LF-2	1/13	92%	1-5	8.24	10	17.5	1.04	5.676	4.764	2.3144	4	mg/L	N	0	Y	N	Stable		Non-parametric	2.50			N			FALSE
CCR-LF-3	13/13	0%	-	0.86	0.8	1.33	1.36	0.014504	0.24088	1.1184	4	mg/L	N	0	N	N	Stable		Normal	0.17			N			FALSE
CCR-LF-4	3/13	77%	1-2.5	4.84	4	10	2.04	2.332	3.054	2.5288	4	mg/L	N	0	N	N	Stable		Non-parametric	1.00			N			FALSE
CCR-LF-5	11/13	15%	0.5-1	1.148	0.88	3.5	1.36	0.2162	0.93	3.2404	4	mg/L	N	0	N	N	Stable		Log-transformed	0.21			N			FALSE
CCR-LF-6	13/13	0%	-	1.376	1.36	2	2.04	0.0422	0.4108	1.1952	4	mg/L	N	0	N	N	Increase		Normal	0.26			N			FALSE
CCR Appendix-IV: Lithium, Total (mg/L)																									
CCR-BK-1	3/13	77%	0.005-0.05	0.033	0.05	0.05	0.0086	0.0005044	0.02246	0.6814	0.04	mg/L	N	0	N	N	Stable	Non-parametric	Non-parametric		0.050	0.050				
CCR-BK-2	0/13	100%	0.005-0.05	0.04	0.05	0.05		0.000365	0.01911	0.4781	0.04	mg/L	N	0	N	N	Stable		Non-parametric							
CCR-LF-1	5/13	62%	0.0059-0.05	0.0301	0.05	0.05	0.01	0.0005011	0.02238	0.7425	0.04	mg/L	N	0	N	N	Stable		Non-parametric	0.0048			N	0.050	N	FALSE
CCR-LF-2	9/13	31%	0.005-0.25	0.0465	0.029	0.13	0.041	0.003889	0.06236	1.342	0.04	mg/L	Y	1	Y	N	Stable		Non-parametric	0.0050			N	0.250	N	FALSE
CCR-LF-3	3/13	77%	0.005-0.05	0.0342	0.05	0.05	0.018	0.0004438	0.02107	0.6163	0.04	mg/L	N	0	N	N	Stable		Non-parametric	0.0042			N	0.050	N	FALSE
CCR-LF-4	13/13	0%	-	0.0907	0.092	0.114	0.12	0.0002209	0.01486	0.1639	0.04	mg/L	Y	13	N	N	Stable		Normal	0.0750			Y	0.158	N	FALSE
CCR-LF-5	12/13	8%	0.05-0.05	0.0263	0.024	0.0386	0.031	0.00006506	0.008066	0.3066	0.04	mg/L	N	0	N	N	Stable		Normal	0.0200			N	0.040	N	FALSE
CCR-LF-6	13/13	0%	-	0.0189	0.019	0.023	0.023	0.000007577	0.002753	0.1455	0.04	mg/L	N	0	N	N	Stable		Normal	0.0160			N	0.031	N	FALSE

A.B. Brown Generating Station
Landfill
Detection Monitoring Statistical Analysis Summary
Prepared: February 24, 2020

													MCL Comparison						Inter-well Analysis				Intra-well Analysis		
Location Id	Frequency of Detection	Percent Non-Detects	Range of Non-Detect	Mean	50th Percentile (Median)	95th Percentile	Maximum Detect	Variance	Standard Deviation	Coefficient of Variance	CCR MCL/RSL	Report Result Unit	Detection Exceedances (Y/N)	Number of Detection Exceedances	Outlier Detected	Outlier Removed	Trend	Distribution Group*	Distribution Well*	October 2019 Concentration	Upper Tolerance Limit	Groundwater Protection Standard (Higher of MCL/RSL or Upper Tolerance Limit)	Exceedance above Background at Individual Well	Upper Prediction Limit	Exceedance above Background at Individual Well	SSL
CCR Appendix-IV: Molybdenum, Total (mg/L)																									
CCR-BK-1	11/13	15%	0.005-0.005	0.00218	0.0015	0.005	0.0034	0.000002146	0.001465	0.6734	0.1	mg/L	N	0	N	N	Decrease	Non-parametric	Normal		0.005	0.10				
CCR-BK-2	5/13	62%	0.005-0.005	0.00354	0.005	0.005	0.0025	0.000003951	0.001988	0.5616	0.1	mg/L	N	0	N	N	Stable		Non-parametric							
CCR-LF-1	11/13	15%	0.005-0.005	0.00181	0.0012	0.005	0.0016	0.000002072	0.001439	0.7959	0.1	mg/L	N	0	Y	N	Stable		Non-parametric	0.0011			N			FALSE
CCR-LF-2	8/13	38%	0.05-0.05	0.021	0.0034	0.05	0.0048	0.0005703	0.02388	1.138	0.1	mg/L	N	0	N	N	Stable		Non-parametric	0.0025			N			FALSE
CCR-LF-3	12/13	8%	0.005-0.005	0.00208	0.0015	0.00524	0.0056	0.000002279	0.00151	0.7249	0.1	mg/L	N	0	N	N	Stable		Log-transformed	0.0016			N			FALSE
CCR-LF-4	12/13	8%	0.005-0.005	0.0198	0.021	0.0248	0.026	0.00002947	0.005429	0.2736	0.1	mg/L	N	0	Y	N	Stable		Normal	0.0220			N			FALSE
CCR-LF-5	6/13	54%	0.005-0.05	0.0066	0.005	0.023	0.0023	0.0001743	0.0132	2.002	0.1	mg/L	N	0	N	N	Stable		Non-parametric	0.0007			N			FALSE
CCR-LF-6	10/13	23%	0.005-0.005	0.00208	0.0012	0.005	0.0022	0.000002941	0.001715	0.8245	0.1	mg/L	N	0	N	N	Stable		Non-parametric	0.0010			N			FALSE
CCR Appendix-IV: Radium-226 & 228 (pCi/L)																									
CCR-BK-1	8/13	38%	0.366-5	1.21	0.486	5	0.795	2.847	1.687	1.389	5	pCi/L	N	0	Y	N	Stable	Non-parametric	Normal		0.005	5.0				
CCR-BK-2	4/13	69%	0.356-5	3.24	5	5	3.13	4.453	2.11	0.652	5	pCi/L	N	0	N	N	Stable		Non-parametric							
CCR-LF-1	12/13	8%	5-5	1.15	0.747	2.882	1.47	1.416	1.19	1.039	5	pCi/L	N	0	N	N	Stable		Normal	5.0			N			FALSE
CCR-LF-2	13/13	0%	-	2.02	2.11	2.558	2.9	0.2015	0.4489	0.2227	5	pCi/L	N	0	N	N	Stable		Normal	2.1			N			FALSE
CCR-LF-3	8/13	38%	0.399-5	1.26	0.525	5	1.1	2.8	1.673	1.333	5	pCi/L	N	0	N	N	Stable		Normal	5.0			N			FALSE
CCR-LF-4	13/13	0%	-	4.99	4.62	7.204	8.14	1.836	1.355	0.2717	5	pCi/L	Y	5	N	N	Stable		Normal	3.5			N			FALSE
CCR-LF-5	3/13	77%	0.323-5	2.56	0.715	5	0.641	5.538	2.353	0.9192	5	pCi/L	N	0	N	N	Stable		Non-parametric	5.0			N			FALSE
CCR-LF-6	3/13	77%	0.358-5	2.92	5	5	0.619	5.461	2.337	0.7997	5	pCi/L	N	0	N	N	Stable		Non-parametric	5.0			N			FALSE

N/A - Not available NT- Not tested

* - Determined using the Shapiro-Wilks statistical test at a 1% significance level and a residual probability plot.

HALEY & ALDRICH, INC.
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24 September 2020
File No. 129420

TO: Southern Indiana Gas and Electric Company

FROM: Haley & Aldrich, Inc.
[Steven F. Putrich, P.E., Project Principal
Mark Miesfeldt, Lead Hydrogeologist]

SUBJECT: May 2020 Sampling Results and Assessment Monitoring Statistical Analysis Summary
Pursuant to 40 CFR § 257.95
A.B. Brown Generating Station – Landfill – West Franklin, Indiana

Southern Indiana Gas and Electric Company (SIGECO) is implementing the 17 April 2015 United States Environmental Protection Agency Federal Coal Combustion Residuals (CCR) Rule (40 CFR § 257 and 261) for the A.B. Brown Generating Station, in Posey County near West Franklin, Indiana. Detection monitoring events occurred in 2016 and 2017. The results of the sampling events were compared to background using appropriate statistical methods to determine if Appendix III constituents were present at concentrations above background. The result of the statistical analysis identified statistically significant increases of Appendix III constituents downgradient of the Landfill thereby triggering Assessment Monitoring and respective notification of the same.

During the Assessment Monitoring phase, groundwater samples were collected from the CCR monitoring well network. Samples were collected in June, and August 2018 and subsequently analyzed for the Appendix III and Appendix IV constituents as required by 40 CFR § 257.95(b) and 40 CFR § 257.95(d)(1). Concurrent with the second assessment sampling round, and as required by 40 CFR § 257.95(h), groundwater protection standards (GWPS) were established for the detected Appendix IV constituents. The assessment monitoring sampling results were compared to the GWPS to determine if statistically significant levels (SSL) of Appendix IV constituents were present downgradient of the Landfill. The results of this evaluation indicated that an SSL for cobalt was present at monitoring well CCR-LF-2, and SSLs of arsenic and lithium were present at monitoring well CCR-LF-4.

As a result of this determination, and in accordance with 40 CFR § 257.95(g)(3), Haley & Aldrich evaluated the occurrence of Appendix IV constituents detected in groundwater downgradient of the Landfill. In July 2019, a successful alternate source demonstration (ASD) was completed for cobalt, arsenic and lithium.

As required by 40 CFR § 257.95(b) and 40 CFR § 257.95(d)(1), semiannual groundwater sampling and analysis continued for the Landfill in 2020. The first round of semiannual groundwater sampling was conducted in May 2020. Analytical results for the May 2020 semiannual sampling event are summarized in Table I. For the Landfill, statistical analysis of the May 2020 analytical results was finalized within 90-days of completion of sampling and analysis as required by 40 CFR § 257.93(g). Downgradient wells

were compared to each constituents' respective GWPS. The assessment monitoring statistical analysis summary is provided in Table II.

Intrawell statistical analysis was used to evaluate cobalt, arsenic and lithium as a result of the certified ASD. The results of the statistical analyses conducted for those detected Appendix IV constituents did not identify Appendix IV constituents downgradient of the Landfill at statistically significant levels above GWPS. This information is being provided for SIGECO's records. Since no new constituents were identified at SSLs above the GWPS, further notifications associated with the statistical analysis of the May 2020 sampling results are not required at this time.

Attachments:
Table I - Summary of Analytical Results – May 2020
Table II - Assessment Monitoring Statistical Analysis Summary – May 2020

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Table II

A.B. Brown Generating Station
Landfill
Assessment Monitoring Statistical Analysis Summary

Prepared: September 24, 2020

													MCL Comparison						Inter-well Analysis						Intra-well Analysis		
Location Id	**Frequency of Detection**	**Percent Non-Detects**	**Range of Non-Detect**	**Mean**	**50th Percentile (Median)**	**95th Percentile**	**Maximum Detect**	**Variance**	**Standard Deviation**	**Coefficient of Variance**	**CCR MCL/RSL**	**Report Result Unit**	**Detection Exceedances (Y/N)**	**Number of Detection Exceedances**	**Outlier Detected**	**Outlier Removed**	**Trend**	**Distribution Group***	**Distribution Well***	**May 2020 Concentration**	**Detect?**	**95% Lower Confidence Limit (LCL)**	**Upper Tolerance Limit**	**Groundwater Protection Standard (Higher of MCL/RSL or Upper Tolerance Limit)**	**Exceedance above Background at Individual Well**	**Upper Prediction Limit**	**Exceedance above Background at Individual Well**	**SSL**
CCR Appendix-IV: Antimony, Total (mg/L)																											
CCR-BK-1	2/13	85%	0.002-0.002	0.00346	0.004	0.004	0.0009	8.388E-07	0.0012952	0.7482	0.006	mg/L	N	0	N	N	Stable	Non-parametric	Non-parametric				0.002	0.006				
CCR-BK-2	1/13	92%	0.002-0.002	0.00376	0.004	0.004	0.00096	3.412E-07	0.0008262	0.4388	0.006	mg/L	N	0	N	N	Stable		Non-parametric									
CCR-LF-1	1/12	92%	0.002-0.002	0.00376	0.004	0.004	0.00118	0.000000317	0.0007962	0.423	0.006	mg/L	N	0	N	N	Stable		Non-parametric	0.002	N				N			FALSE
CCR-LF-2	1/12	92%	0.002-0.02	0.01602	0.004	0.04	0.0042	0.00015006	0.017324	2.164	0.006	mg/L	N	0	N	N	Stable		Non-parametric	0.002	N				N			FALSE
CCR-LF-3	2/12	83%	0.002-0.002	0.00362	0.004	0.004	0.0022	3.804E-07	0.0008722	0.481	0.006	mg/L	N	0	N	N	Stable		Non-parametric	0.002	N				N			FALSE
CCR-LF-4	0/12	100%	0.002-0.02	0.016	0.004	0.04		0.00015026	0.017336	2.166	0.006	mg/L	N	0	N	N	Stable		Non-parametric	0.002	N				N			FALSE
CCR-LF-5	1/12	92%	0.002-0.02	0.00676	0.004	0.0346	0.0011	0.00005274	0.01027	3.04	0.006	mg/L	N	0	N	N	Stable		Non-parametric	0.002	N				N			FALSE
CCR-LF-6	1/12	92%	0.002-0.002	0.00386	0.004	0.004	0.0022	1.2914E-07	0.0005082	0.264	0.006	mg/L	N	0	N	N	Stable		Non-parametric	0.002	N				N			FALSE
CCR Appendix-IV: Arsenic, Total (mg/L)																											
CCR-BK-1	12/14	14%	0.001-0.001	0.00184	0.00195	0.0043	0.005	6.922E-07	0.0011766	1.279	0.01	mg/L	N	0	Y	N	Stable	Non-parametric	Normal				0.004	0.010				
CCR-BK-2	7/14	50%	0.001-0.001	0.0023	0.002	0.00651	0.007	1.5966E-06	0.001787	1.549	0.01	mg/L	N	0	Y	N	Stable		Log-transformed									
CCR-LF-1	10/14	29%	0.001-0.001	0.001746	0.00194	0.00279	0.003	2.022E-07	0.000636	0.7286	0.01	mg/L	N	0	N	N	Stable		Normal	0.00035	Y				N	0.002	N	FALSE
CCR-LF-2	9/14	36%	0.01-0.01	0.01008	0.0051	0.02	0.0124	0.0000313	0.007912	1.5712	0.01	mg/L	N	0	N	N	Stable		Log-transformed	0.00130	Y				N	0.114	N	FALSE
CCR-LF-3	10/14	29%	0.001-0.001	0.0024	0.00118	0.01214	0.0176	0.000009378	0.00433	3.618	0.01	mg/L	N	0	N	N	Stable		Log-transformed	0.00066	Y				N	0.028	N	FALSE
CCR-LF-4	14/14	0%	-	0.0322	0.033	0.0537	0.06	0.00008726	0.013212	0.8192	0.01	mg/L	Y	24	N	N	Stable		Normal	0.02100	Y				Y	0.043	N	FALSE
CCR-LF-5	9/14	36%	0.001-0.01	0.005	0.00163	0.0265	0.03	0.0000372	0.008624	3.454	0.01	mg/L	Y	2	Y	N	Stable		Log-transformed	0.00046	Y				N	0.143	N	FALSE
CCR-LF-6	8/14	43%	0.001-0.001	0.0026	0.00147	0.01331	0.0194	0.000011452	0.004786	3.676	0.01	mg/L	N	0	Y	N	Stable		Non-parametric	0.00036	Y				N	0.010	N	FALSE
CCR Appendix-IV: Barium, Total (mg/L)																											
CCR-BK-1	14/14	0%	-	0.0808	0.075	0.1409	0.164	0.0003498	0.02646	0.6554	2	mg/L	N	0	Y	N	Stable	Non-parametric	Non-parametric				0.150	2.0				
CCR-BK-2	14/14	0%	-	0.0916	0.073	0.2286	0.3	0.0017864	0.05978	1.3056	2	mg/L	N	0	Y	N	Stable		Non-parametric									
CCR-LF-1	14/14	0%	-	0.0916	0.087	0.1529	0.176	0.0003938	0.02806	0.613	2	mg/L	N	0	Y	N	Stable		Non-parametric	0.033	Y				N			FALSE
CCR-LF-2	11/14	21%	0.1-0.1	0.0638	0.026	0.2	0.042	0.002638	0.07262	2.28	2	mg/L	N	0	N	N	Stable		Normal	0.021	Y				N			FALSE
CCR-LF-3	14/14	0%	-	0.0518	0.052	0.06	0.06	0.000019514	0.006248	0.2416	2	mg/L	N	0	N	N	Stable		Normal	0.027	Y				N			FALSE
CCR-LF-4	10/14	29%	0.01-0.1	0.0502	0.027	0.2	0.032	0.0019526	0.0625	2.494	2	mg/L	N	0	N	N	Stable		Normal	0.017	N				N			FALSE
CCR-LF-5	14/14	0%	-	0.0538	0.052	0.0659	0.068	0.00001673	0.005784	0.2148	2	mg/L	N	0	N	N	Stable		Normal	0.034	Y				N			FALSE
CCR-LF-6	14/14	0%	-	0.0412	0.036	0.0769	0.086	0.00010922	0.01478	0.716	2	mg/L	N	0	N	N	Increase		Log-transformed	0.043	Y				N			FALSE
CCR Appendix-IV: Beryllium, Total (mg/L)																											
CCR-BK-1	1/13	92%	0.001-0.001	0.001864	0.002	0.002	0.00024	1.1438E-07	0.0004782	0.513	0.004	mg/L	N	0	N	N	Stable	Non-parametric	Non-parametric				0.001	0.004				
CCR-BK-2	2/13	85%	0.001-0.001	0.001782	0.002	0.002	0.0008	1.4036E-07	0.0005298	0.5948	0.004	mg/L	N	0	N	N	Stable		Non-parametric									
CCR-LF-1	0/12	100%	0.001-0.001	0.002	0.002	0.002		0	0	0	0.004	mg/L	N	0	N	N	Stable		Non-parametric	0.001	N				N			FALSE
CCR-LF-2	4/12	67%	0.001-0.01	0.00596	0.002	0.02	0.00056	0.00003458	0.008316	2.794	0.004	mg/L	N	0	N	N	Stable		Non-parametric	0.001	N				N			FALSE
CCR-LF-3	0/12	100%	0.001-0.001	0.002	0.002	0.002		0	0	0	0.004	mg/L	N	0	N	N	Stable		Non-parametric	0.001	N				N			FALSE
CCR-LF-4	4/12	67%	0.001-0.01	0.00596	0.002	0.02	0.00056	0.00003456	0.008314	2.792	0.004	mg/L	N	0	N	N	Stable		Non-parametric	0.001	N				N			FALSE
CCR-LF-5	0/12	100%	0.001-0.001	0.002	0.002	0.002		0	0	0	0.004	mg/L	N	0	N	N	Stable		Non-parametric	0.001	N				N			FALSE
CCR-LF-6	0/12	100%	0.001-0.001	0.002	0.002	0.002		0	0	0	0.004	mg/L	N	0	N	N	Stable		Non-parametric	0.001	N				N			FALSE
CCR Appendix-IV: Cadmium, Total (mg/L)																											
CCR-BK-1	0/14	100%	0.001-0.001	0.002	0.002	0.002		0	0	0	0.005	mg/L	N	0	N	N	Stable	Non-parametric	Non-parametric				0.001	0.005				
CCR-BK-2	0/14	100%	0.001-0.001	0.002	0.002	0.002		0	0	0	0.005	mg/L	N	0	N	N	Stable		Non-parametric									
CCR-LF-1	0/14	100%	0.001-0.001	0.002	0.002	0.002		0	0	0	0.005	mg/L	N	0	N	N	Stable		Non-parametric	0.0010	N				N			FALSE
CCR-LF-2	14/14	0%	-	0.00746	0.0079	0.01031	0.0108	0.000002502	0.002236	0.5994	0.005	mg/L	Y	2	N	N	Increase		Normal	0.0054	Y	0.0032			N			FALSE
CCR-LF-3	4/14	71%	0.001-0.001	0.001506	0.002	0.002	0.00046	3.194E-07	0.0007994	1.0622	0.005	mg/L	N	0	N	N	Stable		Non-parametric	0.0002	Y				N			FALSE
CCR-LF-4	1/14	93%	0.001-0.01	0.00702	0.002	0.02	0.000184	0.0000351	0.008378	2.39	0.005	mg/L	N	0	N	N	Stable		Non-parametric	0.0010	N				N			FALSE
CCR-LF-5	12/14	14%	0.001-0.01	0.001932	0.00043	0.0137	0.00078	0.000013112	0.00512	5.298	0.005	mg/L	N	0	Y	N	Increase		Non-parametric	0.0004	Y				N			FALSE
CCR-LF-6	11/14	21%	0.001-0.001	0.000672	0.00032	0.002	0.00044	2.522E-07	0.0007102	2.116	0.005	mg/L	N	0	N	N	Stable		Non-parametric	0.0002	Y				N			FALSE
CCR Appendix-IV: Chromium, Total (mg/L)																											
CCR-BK-1	11/14	21%	0.002-0.002	0.00484	0.0045	0.01198	0.0152	0.000005574	0.003338	1.3772	0.1	mg/L	N	0	Y	N	Increase	Non-parametric	Normal				0.009	0.10				
CCR-BK-2	5/14	64%	0.002-0.002	0.0058	0.004	0.0146	0.0174	0.000007726	0.00393	1.3568	0.1	mg/L	N	0	N	N	Stable		Non-parametric									
CCR-LF-1	9/14	36%	0.002-0.0032	0.00396	0.0035	0.0103	0.0124	0.000003576	0.002674	1.3532	0.1	mg/L	N	0	N	N	Increase		Normal	0.0020	N				N			FALSE
CCR-LF-2	7/14	50%	0.002-0.02	0.0161	0.004	0.04	0.0044	0.0001651	0.018172	2.258	0.1	mg/L	N	0	N	N	Stable		Non-parametric	0.0020	N				N			FALSE
CCR-LF-3	10/14	29%	0.002-0.0035	0.00468	0.0042	0.00693	0.0068	7.428E-07	0.0012188	0.5202	0.1	mg/L	N	0	N	N	Stable		Log-transformed	0.0022	Y				N			FALSE
CCR-LF-4	4/14	71%	0.002-0.02	0.01368	0.004	0.04	0.0042	0.00014428	0.016988	2.482	0.1	mg/L	N	0	N	N	Stable		Log-transformed	0.0020	N				N			FALSE
CCR-LF-5	8/14	43%	0.002-0.02	0.0085	0.004	0.0426	0.044	0.0000981	0.014006	3.296	0.1	mg/L	N	0	Y	N	Stable		Non-parametric	0.0020	N				N			FALSE
CCR-LF-6	3/14	79%	0.002-0.0023	0.00396	0.004	0.00707	0.0084	1.4048E-06	0.0016762	0.8468	0.1	mg/L	N	0	N	N	Stable		Non-parametric	0.0020	N				N			FALSE
CCR Appendix-IV: Cobalt, Total (mg/L)																											
CCR-BK-1	13/14	7%	0.0005-0.0005	0.000855	0.00069	0.00241	0.0028	0.000000607	0.0007791	0.9112	0.006	mg/L	N	0	Y	N	Stable	Non-parametric	Log-transformed				0.0062	0.006				
CCR-BK-2	8/14	43%	0.0005-0.0005	0.000915	0.0005	0.003145	0.0062	0.000002478	0.001574	1.721	0.006	mg/L	Y	1	Y	N	Stable		Log-transformed									
CCR-LF-1	11/14	21%	0.0005-0.0005	0.000338	0.00031	0.000667	0.00068	4.458E-08	0.0002111	0.6253	0.006	mg/L	N	0	N	N	Stable		Normal	0.00050	N				N	0.001	N	FALSE
CCR-LF-2	14/14	0%	-	0.00889	0.00775	0.01205	0.014	0.00000522	0.002285	0.2571	0.006	mg/L	Y	13	Y	N	Stable		Normal	0.01100	Y				Y	0.017	N	FALSE
CCR-LF-3	12/14	14%	0.0005-0.0005	0.000437	0.00042	0.0007135	0.00072	2.538E-08	0.0001593	0.3644	0.006	mg/L	N	0	N	N	Decrease		Normal	0.00021	Y				N	0.001	N	FALSE
CCR-LF-4	14/14	0%	-	0.00117	0.0012	0.0018	0.0018	1.662E-07	0.0004077	0.3498	0.006	mg/L	N	0	N	N	Stable		Normal	0.00098	Y				N	0.003	N	FALSE
CCR-LF-5	10/14	29%	0.0005-0.005	0.000902	0.000345	0.003895	0.0033	0.00000203	0.001425	1.579	0.006	mg/L	N	0	N	N	Stable		Log-transformed	0.00026	Y				N	0.031	N	FALSE
CCR-LF-6	12/14	14%	0.0005-0.0005	0.000344	0.000275	0.0007105	0.00086	4.882E-08	0.0002209	0.6432	0.006	mg/L	N	0	N	N	Stable		Normal	0.00028	Y				N	0.001	N	FALSE
CCR Appendix-III: Fluoride (mg/L)																											
CCR-BK-1	13/14	7%	0.23-0.23	2.56	2.68	3.04	3.04	0.020944	0.40936	1.2792	4	mg/L	N	0	N	N	Stable	Non-parametric	Normal				0.380	4.0				
CCR-BK-2	13/14	7%	0.12-0.12	1.192	1.12	1.68	1.68	0.010456	0.2892	1.9464	4	mg/L	N	0	N	N	Decrease		Normal									
CCR-LF-1	12/14	14%	0.1-0.12	1.808	1.92	2.4	2.4	0.026032	0.45632	2.0216	4	mg/L	N	0	N	N	Decrease		Normal	0.12	N				N			FALSE
CCR-LF-2	1/14	93%	1-25	29.6	20	200	2.08	294.64	48.552	13.136	4	mg/L	N	0	Y	N	Stable		Non-parametric	25.00	N				Y			FALSE
CCR-LF-3	13/14	7%	0.25-0.25	1.84	1.76	2.72	2.72	0.03316	0.51512	2.2392	4	mg/L	N	0	N	N	Stable		Normal	0.34	Y				N			FALSE
CCR-LF-4	4/14	71%	1-2.5	9.2	8	20	4.08	4.656	6.1032	5.3304	4	mg/L	N	0	N	N	Stable		Non-parametric	0.33	Y				N			FALSE
CCR-LF-5	11/14	21%	0.5-1	2.512	1.84	8	3.04	0.41504	1.8224	5.796	4	mg/L	N	0	N	N	Increase		Log-transformed	0.38	Y				N			FALSE
CCR-LF-6	14/14	0%	-	2.72	2.64	4.08	4.08	0.078312	0.79152	2.328	4	mg/L	N	0	N	N	Increase		Normal	0.29	Y				N			FALSE

CCR Appendix-IV: Lead, Total (mg/L)																											
CCR-BK-1	13/14	7%	0.001-0.001	0.001116	0.00115	0.00213	0.0022	2.752E-07	0.000742	1.3292	0.015	mg/L	N	0	N	N	Stable	Non-parametric	Normal				0.011	0.015				
CCR-BK-2	5/14	64%	0.001-0.001	0.00368	0.002	0.01626	0.022	0.00001428	0.005344	2.9	0.015	mg/L	N	0	Y	N	Stable		Non-parametric									
CCR-LF-1	7/13	46%	0.001-0.001	0.001434	0.002	0.00215	0.0022	2.702E-07	0.0007352	1.0252	0.015	mg/L	N	0	N	N	Stable		Normal	0.001	N				N			FALSE
CCR-LF-2	7/13	46%	0.001-0.01	0.00848	0.002	0.02	0.0028	0.00004336	0.009312	2.198	0.015	mg/L	N	0	N	N	Stable		Non-parametric	0.000	Y				N			FALSE
CCR-LF-3	2/13	85%	0.00047-0.001	0.001632	0.002	0.002	0.000148	2.532E-07	0.0007114	0.8724	0.015	mg/L	N	0	Y	N	Stable		Non-parametric	0.000	N				N			FALSE
CCR-LF-4	6/13	54%	0.001-0.01	0.01756	0.002	0.1235	0.158	0.000887	0.04212	4.798	0.015	mg/L	Y	2	Y	N	Stable		Non-parametric	0.000	Y				N			FALSE
CCR-LF-5	6/13	54%	0.0004-0.01	0.00272	0.002	0.0156	0.0024	0.000013252	0.005148	3.786	0.015	mg/L	N	0	N	N	Stable		Non-parametric	0.000	N				N			FALSE
CCR-LF-6	3/13	77%	0.00024-0.001	0.001478	0.002	0.002	0.00034	3.224E-07	0.0008028	1.0866	0.015	mg/L	N	0	N	N	Stable		Non-parametric	0.000	N				N			FALSE
CCR Appendix-IV: Lithium, Total (mg/L)																											
CCR-BK-1	3/14	79%	0.005-0.05	0.031	0.05	0.05	0.0086	0.0005215	0.02284	0.7375	0.04	mg/L	N	0	N	N	Stable	Non-parametric	Non-parametric				0.050	0.050				
CCR-BK-2	1/14	93%	0.005-0.05	0.0374	0.05	0.05	0.0036	0.0004314	0.02077	0.5559	0.04	mg/L	N	0	N	N	Stable		Non-parametric									
CCR-LF-1	6/14	57%	0.0059-0.05	0.0283	0.03	0.05	0.01	0.0005091	0.02256	0.7967	0.04	mg/L	N	0	N	N	Decrease		Non-parametric	0.0046	Y				N	0.050	N	FALSE
CCR-LF-2	10/14	29%	0.005-0.25	0.0445	0.0285	0.12	0.041	0.003643	0.06036	1.356	0.04	mg/L	Y	1	Y	N	Stable		Non-parametric	0.0190	Y				N	0.250	N	FALSE
CCR-LF-3	3/14	79%	0.005-0.05	0.0321	0.05	0.05	0.018	0.0004705	0.02169	0.6757	0.04	mg/L	N	0	N	N	Stable		Non-parametric	0.0050	N				N	0.050	N	FALSE
CCR-LF-4	14/14	0%	-	0.0904	0.0895	0.1135	0.12	0.0002049	0.01431	0.1583	0.04	mg/L	Y	14	N	N	Stable		Normal	0.0870	Y				Y	0.158	N	FALSE
CCR-LF-5	13/14	7%	0.05-0.05	0.0261	0.024	0.03765	0.031	0.00006044	0.007774	0.2974	0.04	mg/L	N	0	N	N	Stable		Log-transformed	0.0240	Y				N	0.040	N	FALSE
CCR-LF-6	14/14	0%	-	0.0189	0.019	0.023	0.023	0.000006995	0.002645	0.1397	0.04	mg/L	N	0	N	N	Stable		Normal	0.0190	Y				N	0.031	N	FALSE
CCR Appendix-IV: Mercury, Total (mg/L)																											
CCR-BK-1	0/13	100%	0.0002-0.0002	0.0004	0.0004	0.0004		6.776E-23	1.1642E-11	5.82E-08	0.002	mg/L	N	0	N	N	Stable	Non-parametric	Normal				0.0002	0.002				
CCR-BK-2	2/13	85%	0.0002-0.0002	0.000384	0.0004	0.0004	0.0004	1.477E-09	0.00005434	0.2826	0.002	mg/L	N	0	N	N	Stable		Non-parametric									
CCR-LF-1	0/13	100%	0.0002-0.0002	0.0004	0.0004	0.0004		6.776E-23	1.1642E-11	5.82E-08	0.002	mg/L	N	0	Y	N	Stable		Non-parametric	0.0002	N				N			FALSE
CCR-LF-2	0/13	100%	0.0002-0.0002	0.0004	0.0004	0.0004		6.776E-23	1.1642E-11	5.82E-08	0.002	mg/L	N	0	N	N	Stable		Non-parametric	0.0002	N				N			FALSE
CCR-LF-3	0/13	100%	0.0002-0.0002	0.0004	0.0004	0.0004		6.776E-23	1.1642E-11	5.82E-08	0.002	mg/L	N	0	N	N	Stable		Log-transformed	0.0002	N				N			FALSE
CCR-LF-4	0/13	100%	0.0002-0.0002	0.0004	0.0004	0.0004		6.776E-23	1.1642E-11	5.82E-08	0.002	mg/L	N	0	Y	N	Stable		Normal	0.0002	N				N			FALSE
CCR-LF-5	8/13	38%	0.0002-0.0002	0.000272	0.00024	0.0004	0.0003	6.436E-09	0.00011344	0.8346	0.002	mg/L	N	0	N	N	Stable		Non-parametric	0.0002	N				N			FALSE
CCR-LF-6	0/13	100%	0.0002-0.0002	0.0004	0.0004	0.0004		6.776E-23	1.1642E-11	5.82E-08	0.002	mg/L	N	0	N	N	Stable		Non-parametric	0.0002	N				N			FALSE
CCR Appendix-IV: Molybdenum, Total (mg/L)																											
CCR-BK-1	12/14	14%	0.005-0.005	0.00208	0.0015	0.005	0.0034	0.000002118	0.001455	0.7009	0.1	mg/L	N	0	N	N	Decrease	Non-parametric	Normal				0.005	0.10				
CCR-BK-2	6/14	57%	0.005-0.005	0.00339	0.005	0.005	0.0025	0.000003944	0.001986	0.5852	0.1	mg/L	N	0	N	N	Stable		Non-parametric									
CCR-LF-1	12/14	14%	0.005-0.005	0.00174	0.0012	0.005	0.0016	0.000001975	0.001405	0.8071	0.1	mg/L	N	0	Y	N	Decrease		Non-parametric	0.0009	Y				N			FALSE
CCR-LF-2	9/14	36%	0.05-0.05	0.0197	0.0033	0.05	0.0048	0.0005509	0.02347	1.193	0.1	mg/L	N	0	N	N	Stable		Non-parametric	0.0025	Y				N			FALSE
CCR-LF-3	13/14	7%	0.005-0.005	0.00217	0.00155	0.00521	0.0056	0.000002209	0.001486	0.6852	0.1	mg/L	N	0	N	N	Increase		Log-transformed	0.0033	Y				N			FALSE
CCR-LF-4	13/14	7%	0.005-0.005	0.0204	0.0215	0.02635	0.027	0.00003086	0.005555	0.2729	0.1	mg/L	N	0	Y	N	Stable		Normal	0.0270	Y				N			FALSE
CCR-LF-5	7/14	50%	0.005-0.05	0.0062	0.00365	0.02075	0.0023	0.0001632	0.01277	2.061	0.1	mg/L	N	0	N	N	Stable		Non-parametric	0.0010	Y				N			FALSE
CCR-LF-6	10/14	29%	0.005-0.005	0.00229	0.00135	0.005	0.0022	0.000003324	0.001823	0.7966	0.1	mg/L	N	0	N	N	Stable		Non-parametric	0.0050	N				N			FALSE
CCR Appendix-IV: Radium-226 & 228 (pCi/L)																											
CCR-BK-1	8/14	43%	0.366-5	2.96	1.001	10	1.59	7.032	3.75	2.526	5	pCi/L	N	0	Y	N	Stable	Non-parametric	Normal				5.000	5.0				
CCR-BK-2	4/14	71%	0.356-5	6.72	10	10	6.26	8.344	4.086	1.2148	5	pCi/L	N	0	N	N	Stable		Non-parametric									
CCR-LF-1	13/14	7%	5-5	2.2	1.492	7.528	2.94	2.586	2.274	2.076	5	pCi/L	N	0	N	N	Stable		Normal	0.4	Y				N			FALSE
CCR-LF-2	14/14	0%	-	4.08	4.26	5.472	5.8	0.3818	0.874	0.4274	5	pCi/L	N	0	N	N	Increase		Normal	2.4	Y				N			FALSE
CCR-LF-3	9/14	36%	0.399-5	2.4	1.049	10	2.2	5.068	3.184	2.66	5	pCi/L	N	0	N	N	Stable		Non-parametric	0.4	Y				N			FALSE
CCR-LF-4	14/14	0%	-	10.02	9.57	15.188	16.28	3.28	2.562	0.511	5	pCi/L	Y	12	N	N	Stable		Normal	5.3	Y	4.34			N			FALSE
CCR-LF-5	3/14	79%	0.323-5	5.46	5.716	10	1.282	10.664	4.618	1.6888	5	pCi/L	N	0	N	N	Stable		Non-parametric	5.0	N				N			FALSE
CCR-LF-6	4/14	71%	0.358-5	5.5	5.618	10	1.238	10.52	4.588	1.6688	5	pCi/L	N	0	N	N	Stable		Non-parametric	0.5	Y				N			FALSE
CCR Appendix-IV: Selenium, Total (mg/L)																											
CCR-BK-1	3/14	79%	0.005-0.005	0.00808	0.01	0.01	0.00134	0.000007026	0.003748	0.928	0.05	mg/L	N	0	N	N	Stable	Non-parametric	Non-parametric				0.005	0.050				
CCR-BK-2	2/14	86%	0.005-0.005	0.00878	0.01	0.01	0.00196	0.00000466	0.003054	0.6956	0.05	mg/L	N	0	Y	N	Stable		Non-parametric									
CCR-LF-1	4/13	69%	0.005-0.005	0.00758	0.01	0.01	0.0026	0.00000685	0.003702	0.9762	0.05	mg/L	N	0	N	N	Increase		Non-parametric	0.005	N				N			FALSE
CCR-LF-2	8/13	38%	0.05-0.05	0.0414	0.0054	0.1	0.0068	0.001117	0.04726	2.284	0.05	mg/L	N	0	N	N	Increase		Non-parametric	0.002	Y				N			FALSE
CCR-LF-3	10/13	23%	0.005-0.005	0.00516	0.004	0.01	0.0048	0.000003894	0.002792	1.083	0.05	mg/L	N	0	N	N	Decrease		Log-transformed	0.005	N				N			FALSE
CCR-LF-4	3/13	77%	0.005-0.05	0.0356	0.01	0.1	0.0014	0.0009626	0.04388	2.46	0.05	mg/L	N	0	N	N	Stable		Non-parametric	0.005	N				N			FALSE
CCR-LF-5	1/13	92%	0.005-0.05	0.01624	0.01	0.0775	0.00108	0.000307	0.02478	3.052	0.05	mg/L	N	0	N	N	Stable		Non-parametric	0.005	N				N			FALSE
CCR-LF-6	2/13	85%	0.005-0.005	0.00888	0.01	0.01	0.004	0.000003694	0.002718	0.612	0.05	mg/L	N	0	Y	N	Stable		Non-parametric	0.005	N				N			FALSE
CCR Appendix-IV: Thallium, Total (mg/L)																											
CCR-BK-1	1/13	92%	0.001-0.001	0.001852	0.002	0.002	0.000076	1.3668E-07	0.0005228	0.5646	0.002	mg/L	N	0	N	N	Stable	Non-parametric	Non-parametric				0.001	0.002				
CCR-BK-2	1/13	92%	0.001-0.001	0.001856	0.002	0.002	0.000118	1.3078E-07	0.0005114	0.5514	0.002	mg/L	N	0	N	N	Stable		Non-parametric									
CCR-LF-1	1/12	92%	0.001-0.001	0.001842	0.002	0.002	0.00011	1.4236E-07	0.0005336	0.5792	0.002	mg/L	N	0	N	N	Stable		Non-parametric	0.001	N				N			FALSE
CCR-LF-2	6/12	50%	0.001-0.01	0.00748	0.00173	0.02	0.00146	0.00004106	0.009062	2.426	0.002	mg/L	N	0	N	N	Increase		Non-parametric	0.001	Y				N			FALSE
CCR-LF-3	6/12	50%	0.001-0.001	0.001172	0.0014	0.002	0.0008	0.000000375	0.000866	1.4772	0.002	mg/L	N	0	N	N	Stable		Non-parametric	0.000	Y				N			FALSE
CCR-LF-4	3/12	75%	0.001-0.01	0.00754	0.002	0.02	0.00024	0.00004078	0.00903	2.396	0.002	mg/L	N	0	N	N	Stable		Non-parametric	0.001	N				N			FALSE
CCR-LF-5	3/12	75%	0.001-0.01	0.00306	0.002	0.0173	0.0006	0.000013896	0.005272	3.44	0.002	mg/L	N	0	N	N	Stable		Non-parametric	0.000	Y				N			FALSE
CCR-LF-6	2/12	83%	0.001-0.001	0.001708	0.002	0.002	0.00034	2.246E-07	0.0006702	0.785	0.002	mg/L	N	0	N	N	Stable		Non-parametric	0.000	Y				N			FALSE

N/A - Not available NT- Not tested

* - Determined using the Shapiro-Wilks statistical test at a 5% significance level and a residual probability plot.