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Electric Energy, Inc.

Date
January 31, 2023

Project No.
1940102203-012

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

EAST ASH POND

JOPPA POWER PLANT

JOPPA, ILLINOIS

CCR UNIT 401

RAMBOLL Bright ideas. Sustainable change.

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
JOPPA POWER PLANT EAST ASH POND

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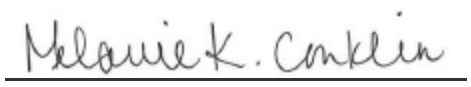

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ACRONYMS AND ABBREVIATIONS

§	Section
35 I.A.C.	Title 35 of the Illinois Administrative Code
40 C.F.R.	Title 40 of the Code of Federal Regulations
ASD	Alternate Source Demonstration
CCR	coal combustion residuals
CMA	Corrective Measures Assessment
EAP	East Ash Pond
GWPS	groundwater protection standard
IEPA	Illinois Environmental Protection Agency
JPP	Joppa Power Plant
NA	not applicable
NRT/OBG	Natural Resource Technology, and OBG Company
Ramboll	Ramboll Americas Engineering Solutions, Inc.
SAP	Sampling and Analysis Plan
SSI	statistically significant increase
SSL	statistically significant level

EXECUTIVE SUMMARY

This report has been prepared to provide the information required by Title 40 of the Code of Federal Regulations (40 C.F.R.) Section (§) 257.90(e) for the East Ash Pond (EAP) located at the Joppa Power Plant (JPP) near Joppa, Illinois.

Groundwater is being monitored at the EAP in accordance with the assessment monitoring program requirements specified in 40 C.F.R. § 257.95. Assessment monitoring was initiated at the EAP on April 9, 2018.

No changes were made to the monitoring system in 2022 (no wells were installed or decommissioned under 40 C.F.R. § 257). As discussed in Section 5 of this annual report, the monitoring well network will be updated in 2023 to use the same monitoring well network developed for compliance with Title 35 of the Illinois Administrative Code (35 I.A.C.) § 845, which was submitted to the Illinois Environmental Protection Agency (IEPA) via an operating permit application.

No Statistically Significant Levels (SSLs) of 40 C.F.R. § 257 Appendix IV parameters over groundwater protection standards (GWPSs) were determined in 2022, but statistically significant increases (SSIs) of Appendix III parameters greater than background values were determined. Consequently, a Corrective Measures Assessment (CMA) is not required and the EAP remains in the Assessment Monitoring Program.

The JPP ceased operation on September 1, 2022.

1. INTRODUCTION

This report has been prepared by Ramboll Americas Engineering Solutions, Inc. (Ramboll) on behalf of Electric Energy, Inc., to provide the information required by 40 C.F.R. § 257.90(e) for the EAP located at the JPP near Joppa, Illinois.

In accordance with 40 C.F.R. § 257.90(e), the owner or operator of a coal combustion residuals (CCR) unit must prepare an Annual Groundwater Monitoring and Corrective Action Report for the preceding calendar year that documents the status of the Groundwater Monitoring and Corrective Action Program for the CCR unit, summarizes key actions completed, describes any problems encountered, discusses actions to resolve the problems, and projects key activities for the upcoming year. At a minimum, the annual report must contain the following information, to the extent available:

1. A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit.
2. Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken.
3. In addition to all the monitoring data obtained under §§ 257.90 through 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs.
4. A narrative discussion of any transition between monitoring programs (*e.g.*, the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase relative to background levels).
5. Other information required to be included in the annual report as specified in §§ 257.90 through 257.98.
6. A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:
    i. At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95.
    ii. At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95.
    iii. If it was determined that there was a statistically significant increase over background for one or more constituents listed in Appendix III of §257 pursuant to §257.94(e):
        A. Identify those constituents listed in Appendix III of §257 and the names of the monitoring wells associated with such an increase.
        B. Provide the date when the assessment monitoring program was initiated for the CCR unit.

iv. If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in Appendix IV of §257 pursuant to §257.95(g) include all of the following:

   A. Identify those constituents listed in Appendix IV of §257 and the names of the monitoring wells associated with such an increase.

   B. Provide the date when the assessment of corrective measures was initiated for the CCR unit.

   C. Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit.

   D. Provide the date when the assessment of corrective measures was completed for the CCR unit.

v. Whether a remedy was selected pursuant to §257.97 during the current annual reporting period, and if so, the date of remedy selection.

vi. Whether remedial activities were initiated or are ongoing pursuant to § 257.98 during the current annual reporting period.

This report provides the required information for the EAP for calendar year 2022.

2. MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

No changes have occurred to the monitoring program status in calendar year 2022 and the EAP remains in the assessment monitoring program in accordance with 40 C.F.R. § 257.95.

3. KEY ACTIONS COMPLETED IN 2022

The assessment monitoring program is summarized in **Table A** on the following page. The groundwater monitoring system, including the CCR unit and all background and compliance monitoring wells, is presented in **Figure 1**. No changes were made to the monitoring system in 2022 (no wells were installed or decommissioned under 40 C.F.R. § 257). In general, one groundwater sample was collected from each background and compliance well during each monitoring event. All samples were collected and analyzed in accordance with the Sampling and Analysis Plan (SAP; Natural Resource Technology, an OBG Company [NRT/OBG], 2017a). Potentiometric surface maps for the third quarter of 2021 and both monitoring events in 2022 are included in **Figures 2 through 4**. All monitoring data and analytical results obtained under 40 C.F.R. § 257.90 through 257.98 (as applicable) in the third quarter of 2021 and both monitoring events in 2022 are presented in **Tables 1 through 3**. Laboratory reports for the third quarter of 2021 and both monitoring events in 2022 are included in **Appendix A**.

Analytical data were evaluated in accordance with the Statistical Analysis Plan (NRT/OBG, 2017b) to determine any SSLs of Appendix IV parameters over GWPSs and SSIs of Appendix III parameters greater than background values. SSL notifications were completed in accordance with 40 C.F.R. § 257.95(g). SSIs are highlighted in **Table 2**. Statistical background values are provided in **Table 4** and GWPSs in **Table 5**. A flow chart showing the statistical methodology for determination of background values is included as **Appendix B**. A summary of the determination of SSLs in included in **Table 6**. A flow chart showing the statistical methodology for determination of SSLs is included as **Appendix C**.

Additional monitoring wells were installed in 2022 under 35 I.A.C. § 845 and groundwater samples were collected from the installed wells. The additional monitoring wells were installed for further hydrogeologic investigation and water quality delineation. Following investigation activities and collection of background groundwater quality, a subset of monitoring wells will be proposed for inclusion with the groundwater monitoring well network.

The JPP ceased operation on September 1, 2022.

Table A. 2021-2022 Assessment Monitoring Program Summary

Sampling Dates	Analytical Data Receipt Date	Parameters Collected	SSL(s)	SSL(s) Determination Date	ASD Completion Date
September 20, 2021	October 12, 2021	Appendix III Appendix IV Detected [1]	None	January 04, 2022	NA
March 14-15, 2022	April 6, 2022	Appendix III Appendix IV	None	June 27, 2022	NA
September 20-21, 2022	October 26, 2022	Appendix III Appendix IV Detected [1]	None	January 26, 2023	NA

Notes:

ASD: Alternate Source Demonstration

NA: not applicable

SSL: Statistically Significant Level

[1] Groundwater sample analysis was limited to Appendix IV parameters detected during previous events in accordance with 40 C.F.R. § 257.95(d)(1).

4. PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE THE PROBLEMS

No problems were encountered with the groundwater monitoring program during 2022. Groundwater samples were collected and analyzed in accordance with the SAP and all data were accepted.

5. KEY ACTIVITIES PLANNED FOR 2023

The following key activities are planned for 2023:

- Beginning in 2023, the current monitoring well system will be updated to use the same monitoring well network that was proposed for compliance with 35 I.A.C. § 845 which includes all of the monitoring wells used in the 2022 monitoring system. This is a logical step toward aligning the two regulatory programs. The following documents support the expanded monitoring system for 2023:
  - Hydrogeological Site Characterization Report (Ramboll, 2021), which expands upon the hydrogeologic information provided in the Hydrogeologic Monitoring Plan
  - Multi-Site SAP (Ramboll, 2022a)
  - Multi-Site Quality Assurance Project Plan (Ramboll, 2022b)
  - Multi-Site Data Management Plan (Ramboll, 2022c)
  - Multi-Site Statistical Analysis Plan and Certification (Ramboll, 2022d)
  - 40 C.F.R. § 257 Groundwater Monitoring Plan (Ramboll, 2022e), which replaces the monitoring plan provided in the Hydrogeologic Monitoring Plan
  - Monitoring Well Network Certification
- Continuation of the Assessment Monitoring Program with semi-annual sampling scheduled for the first and third quarters of 2023.
- Complete evaluation of analytical data from the compliance wells to determine whether an SSL of Appendix IV parameters above GWPSs has occurred.
- If an SSL is identified, potential alternate sources (*i.e.,* a source other than the CCR unit caused the SSL or that the SSL resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality) will be evaluated.
  - If an alternate source is identified to be the cause of the SSL, a written demonstration will be completed within 90 days of SSL determination and included in the 2023 Annual Groundwater Monitoring and Corrective Action Report.
  - If an alternate source(s) is not identified to be the cause of the SSL, the applicable requirements of 40 C.F.R. §§ 257.94 through 257.98 (*e.g.,* assessment of corrective measures) as may apply in 2023 will be met, including associated recordkeeping/notifications required by 40 C.F.R. §§ 257.105 through 257.108.
  - Additional monitoring wells were installed in 2022 under 35 I.A.C § 845 and groundwater samples were collected from the installed wells. The additional monitoring wells were installed for further hydrogeologic investigation and water quality delineation. Following investigation activities and collection of background groundwater quality, a subset of monitoring wells will be proposed for inclusion with the groundwater monitoring well network for 35 I.A.C. § 845 and 40 C.F.R. § 257.

6. REFERENCES

Natural Resource Technology, an OBG Company (NRT/OBG), 2017a. Sampling and Analysis Plan, Joppa East Ash Pond, Joppa Power Station, Joppa, Illinois, Project No. 2285, Revision 0, October 17, 2017.

Natural Resource Technology, an OBG Company (NRT/OBG), 2017b. Statistical Analysis Plan, Joppa Power Station, Electric Energy, Inc., October 17, 2017.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2021. Hydrogeological Site Characterization Report, the East Ash Pond, Joppa Power Plant, Joppa, Illinois. October 21, 2021.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022a. Multi-Site Sampling and Analysis Plan. December 28, 2022.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022b. Multi-Site Quality Assurance Project Plan. December 28, 2022.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022c. Multi-Site Data Management Plan. December 28, 2022.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022d. Multi-Site Statistical Analysis Plan, 40 C.F.R. § 257. December 28, 2022.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022e. 40 C.F.R. § 257 Groundwater Monitoring Plan, the East Ash Pond, Joppa Power Plant, Joppa, Illinois. December 28, 2022.

TABLES

TABLE 1
GROUNDWATER ELEVATIONS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
JOPPA POWER PLANT
401 - EAST ASH POND
JOPPA, IL

Well ID	Monitored Unit	Well Screen Interval (feet BGS)	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
G01D	UA	54.19 - 63.85	Background	37.22043	-88.85718	09/20/2021	44.14	320.05
G01D	UA	54.19 - 63.85	Background	37.22043	-88.85718	03/14/2022	38.25	325.94
G01D	UA	54.19 - 63.85	Background	37.22043	-88.85718	09/20/2022	44.52	319.67
G02D	UA	62.21 - 71.84	Background	37.22071	-88.85331	09/20/2021	44.79	318.86
G02D	UA	62.21 - 71.84	Background	37.22071	-88.85331	03/14/2022	38.19	325.46
G02D	UA	62.21 - 71.84	Background	37.22071	-88.85331	09/21/2022	44.79	318.86
G15S	UA	50 - 60	Water Level Only	37.20715	-88.84888	03/14/2022	23.99	322.82
G15D	UA	83 - 93	Water Level Only	37.20715	-88.84887	03/14/2022	24.10	322.62
G16S	UA	50 - 60	Water Level Only	37.20716	-88.85068	03/14/2022	28.82	323.50
G16D	UA	98 - 108	Water Level Only	37.20715	-88.85069	03/14/2022	28.94	323.49
G51D	UA	49.61 - 59.27	Compliance	37.21602	-88.85565	09/20/2021	46.00	317.85
G51D	UA	49.61 - 59.27	Compliance	37.21602	-88.85565	03/14/2022	37.72	326.13
G51D	UA	49.61 - 59.27	Compliance	37.21602	-88.85565	09/20/2022	45.34	318.51
G52D	UA	69.85 - 79.55	Compliance	37.20963	-88.85294	09/20/2021	27.31	321.10
G52D	UA	69.85 - 79.55	Compliance	37.20963	-88.85294	03/14/2022	25.28	323.13
G52D	UA	69.85 - 79.55	Compliance	37.20963	-88.85294	09/21/2022	27.01	321.40
G53D	UA	47.29 - 56.89	Compliance	37.21507	-88.84937	09/20/2021	39.21	316.26
G53D	UA	47.29 - 56.89	Compliance	37.21507	-88.84937	03/14/2022	30.63	324.84
G53D	UA	47.29 - 56.89	Compliance	37.21507	-88.84937	09/20/2022	39.09	316.38
G54D	UA	69.96 - 79.66	Compliance	37.21226	-88.85749	09/20/2021	44.49	312.54
G54D	UA	69.96 - 79.66	Compliance	37.21226	-88.85749	03/14/2022	31.84	325.19
G54D	UA	69.96 - 79.66	Compliance	37.21226	-88.85749	09/20/2022	43.90	313.13
XPW01	CCR	48.7 - 53.7	Water Level Only	37.21697	-88.85207	03/14/2022	13.79	369.57
XPW02	CCR	24.7 - 29.7	Water Level Only	37.21587	-88.85500	03/14/2022	3.48	372.56
XPW03	CCR	31.7 - 36.7	Water Level Only	37.21215	-88.85542	03/14/2022	7.79	373.73
XSG01	CCR	NA	Water Level Only	37.21517	-88.84980	09/20/2022	4.10	367.68

Notes:
BGS = below ground surface
BMP = below measuring point
NAVD88 = North American Vertical Datum of 1988
NA = not available/not applicable
Monitored Unit Abbreviations:
CCR = coal combustion residuals
UA = uppermost aquifer

TABLE 2
ANALYTICAL RESULTS - APPENDIX III PARAMETERS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
JOPPA POWER PLANT
401 - EAST ASH POND
JOPPA, IL

Well ID	Well Type	Date	Event ID	Boron, total (mg/L)	Calcium, total (mg/L)	Chloride, total (mg/L)	Fluoride, total (mg/L)	pH (field) (SU)	Sulfate, total (mg/L)	Total Dissolved Solids (mg/L)
Background Value(s)	--	--	--	*0.0552*	*46.7*	*29.4*	*0.288*	*6.2/6.9*	*203*	*541*
G01D	Background	09/20/2021	A4D	0.025 U	26.0	9.00	0.210	6.5	18.0	294
G01D	Background	03/14/2022	A5	0.025 U	26.1	8.00	0.220	6.4	22.0	318
G01D	Background	09/20/2022	A5D	0.014 J	25.5	8.00	0.190	6.5	23.0	302
G02D	Background	09/20/2021	A4D	0.0313	34.3	20.0	0.180	6.3	19.0	240
G02D	Background	03/14/2022	A5	0.0283	38.2	22.0	0.230	6.5	11.0	260
G02D	Background	09/21/2022	A5D	0.0266	35.3	21.0	0.190	6.5	15.0	220
G51D	Compliance	09/20/2021	A4D	0.689	31.2	6.00	0.1 U	5.5	131	312
G51D	Compliance	03/15/2022	A5	0.689	31.0	5.00	0.1 U	5.6	123	324
G51D	Compliance	09/20/2022	A5D	0.551	28.9	4.00	0.08 J	5.6	125	322
G52D	Compliance	09/20/2021	A4D	0.025 U	47.8	13.0	0.260	6.3	83.0	318
G52D	Compliance	03/15/2022	A5	0.025 U	48.3	12.0	0.290	6.2	68.0	350
G52D	Compliance	09/21/2022	A5D	0.011 J	45.6	12.0	0.240	6.3	72.0	334
G53D	Compliance	09/20/2021	A4D	0.402	38.5	19.0	0.700	6.3	78.0	324
G53D	Compliance	03/15/2022	A5	0.332	38.1	18.0	0.710	6.5	74.0	342
G53D	Compliance	09/20/2022	A5D	0.431	35.9	18.0	0.660	6.5	79.0	350
G54D	Compliance	09/20/2021	A4D	0.350	72.8	24.0	0.290	6.5	175	474
G54D	Compliance	03/15/2022	A5	0.451	83.4	21.0	0.310	6.6	213	524
G54D	Compliance	09/20/2022	A5D	0.252	69.7	22.0	0.270	6.5	218	518

Notes:
Exceedance of Background
mg/L = milligrams per liter
SU = Standard Units
U = The analyte was analyzed for, but was not detected above the level of the adjusted detection limit or quantitation limit, as appropriate. Lab reports may or may not report both the limit of detection and the limit of quantitation. Limits are provided in the electronic data deliverable. As such, the U-flagged result value provided in this table may not match the result value provided in the lab report.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

TABLE 3
ANALYTICAL RESULTS - APPENDIX IV PARAMETERS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
JOPPA POWER PLANT
401 - EAST ASH POND
JOPPA, IL

Well ID	Well Type	Date	Antimony, total (mg/L)	Arsenic, total (mg/L)	Barium, total (mg/L)	Beryllium, total (mg/L)	Cadmium, total (mg/L)	Chromium, total (mg/L)	Cobalt, total (mg/L)	Fluoride, total (mg/L)	Lead, total (mg/L)	Lithium, total (mg/L)	Mercury, total (mg/L)	Molybdenum, total (mg/L)	Radium 226 + 228 (pCi/L)	Selenium, total (mg/L)	Thallium, total (mg/L)
G01D	Background	09/20/2021	--	0.001 U	0.145	--	--	0.00230	0.001 U	0.210	0.001 U	0.003 U	--	--	0.0588	0.00160	--
G01D	Background	03/14/2022	0.001 U	0.001 U	0.128	0.001 U	0.001 U	0.00260	0.001 U	0.220	0.001 U	0.003 U	0.0002 U	0.0015 U	1.10	0.00120	0.002 U
G01D	Background	09/20/2022	--	0.0005 J	0.142	--	--	0.00250	0.0007 J	0.190	0.0006 J	0.0014 U	--	0.0007 J	1.16 B	0.00120	--
G02D	Background	09/20/2021	--	0.001 U	0.189	--	--	0.0015 U	0.001 U	0.180	0.001 U	0.003 U	--	--	1.01	0.00250	--
G02D	Background	03/14/2022	0.001 U	0.001 U	0.148	0.001 U	0.001 U	0.0015 U	0.001 U	0.230	0.001 U	0.003 U	0.0002 U	0.0015 U	0.905	0.00120	0.002 U
G02D	Background	09/21/2022	--	0.0004 U	0.171	--	--	0.0007 U	0.0001 U	0.190	0.0006 U	0.0014 U	--	0.0006 U	0.663	0.00120	--
G51D	Compliance	09/20/2021	--	0.001 U	0.0405	--	--	0.00180	0.00180	0.1 U	0.001 U	0.00650	--	--	0.295	0.00470	--
G51D	Compliance	03/15/2022	0.001 U	0.001 U	0.0433	0.001 U	0.001 U	0.00170	0.00160	0.1 U	0.001 U	0.00550	0.0002 U	0.0015 U	1.21	0.00490	0.002 U
G51D	Compliance	09/20/2022	--	0.0004 U	0.0321	--	--	0.0014 J	0.0009 J	0.08 J	0.0006 U	0.00530	--	0.0006 U	0.215	0.00470	--
G52D	Compliance	09/20/2021	--	0.001 U	0.232	--	--	0.0015 U	0.00110	0.260	0.001 U	0.003 U	--	--	1.43	0.001 U	--
G52D	Compliance	03/15/2022	0.001 U	0.00180	0.208	0.001 U	0.001 U	0.0015 U	0.00630	0.290	0.001 U	0.003 U	0.0002 U	0.0015 U	0.975 J	0.001 U	0.002 U
G52D	Compliance	09/21/2022	--	0.00190	0.225	--	--	0.0007 U	0.00440	0.240	0.0006 U	0.0025 J	--	0.0007 J	1.81 B	0.0006 U	--
G53D	Compliance	09/20/2021	--	0.001 U	0.103	--	--	0.00330	0.00210	0.700	0.001 U	0.003 U	--	--	1.50	0.001 U	--
G53D	Compliance	03/15/2022	0.001 U	0.001 U	0.0922	0.001 U	0.001 U	0.0015 U	0.00220	0.710	0.001 U	0.003 U	0.0002 U	0.0015 U	0.285	0.001 U	0.002 U
G53D	Compliance	09/20/2022	--	0.0004 U	0.109	--	--	0.0007 U	0.00170	0.660	0.0006 U	0.0014 U	--	0.0006 U	0.221	0.0006 U	--
G54D	Compliance	09/20/2021	--	0.001 U	0.0879	--	--	0.0015 U	0.00830	0.290	0.001 U	0.00340	--	--	3.17	0.001 U	--
G54D	Compliance	03/15/2022	0.001 U	0.001 U	0.0640	0.001 U	0.001 U	0.0015 U	0.0110	0.310	0.001 U	0.003 U	0.0002 U	0.0015 U	0.843	0.001 U	0.002 U
G54D	Compliance	09/20/2022	--	0.0004 U	0.0768	--	--	0.0007 U	0.00480	0.270	0.0006 U	0.0027 J	--	0.0006 U	1.11 B	0.0006 U	--

Notes:
mg/L = milligrams per liter
pCi/L = picoCuries per liter
-- = not analyzed
U = The analyte was analyzed for, but was not detected above the level of the adjusted detection limit or quantitation limit, as appropriate. Lab reports may or may not report both the limit of detection and the limit of quantitation. Limits are provided in the electronic data deliverable. As such, the U-flagged result value provided in this table may not match the result value provided in the lab report.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
B = The analyte was found in sample and in associated method blank.

TABLE 4
STATISTICAL BACKGROUND VALUES
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
JOPPA POWER PLANT
401 - EAST ASH POND
JOPPA, IL

Parameter	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Background Value (LPL/UPL)
Boron (mg/L)	12/03/2015 - 07/20/2017	16	31	Non-parametric UPL	0.0552
Calcium (mg/L)	12/03/2015 - 07/20/2017	16	0	Parametric UPL	46.7
Chloride (mg/L)	12/03/2015 - 07/20/2017	16	0	Parametric UPL	29.4
Fluoride (mg/L)	12/03/2015 - 07/20/2017	16	0	Parametric UPL	0.288
pH (field) (SU)	12/03/2015 - 07/20/2017	16	0	Non-parametric LPL/UPL	6.2/6.9
Sulfate (mg/L)	12/03/2015 - 07/20/2017	16	0	Parametric UPL (log-transformed)	203
Total Dissolved Solids (mg/L)	12/03/2015 - 07/20/2017	16	0	Parametric UPL	541

Notes:
LPL = lower prediction limit (applicable for pH only)
mg/L = milligrams per liter
SU = standard units
UPL = upper prediction limit

TABLE 5
GROUNDWATER PROTECTION STANDARDS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
JOPPA POWER PLANT
401 - EAST ASH POND
JOPPA, IL

Parameter	Background					MCL/HBL	Groundwater Protection Standard*	Groundwater Protection Standard Source
	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Value			
Antimony (mg/L)	12/03/2015 - 07/20/2017	16	100	All ND - Last Reporting Limit	0.001	0.006	0.006	MCL/HBL
Arsenic (mg/L)	12/03/2015 - 07/20/2017	16	62	Non-parametric UTL	0.00260	0.010	0.010	MCL/HBL
Barium (mg/L)	12/03/2015 - 07/20/2017	16	0	Parametric UTL	0.300	2	2	MCL/HBL
Beryllium (mg/L)	12/03/2015 - 07/20/2017	16	100	All ND - Last Reporting Limit	0.001	0.004	0.004	MCL/HBL
Cadmium (mg/L)	12/03/2015 - 07/20/2017	16	100	All ND - Last Reporting Limit	0.001	0.005	0.005	MCL/HBL
Chromium (mg/L)	12/03/2015 - 07/20/2017	16	38	Parametric UTL (log-transformed)	0.00930	0.1	0.1	MCL/HBL
Cobalt (mg/L)	12/03/2015 - 07/20/2017	16	38	Parametric UTL (log-transformed)	0.0366	0.006	0.0366	Background
Fluoride (mg/L)	12/03/2015 - 07/20/2017	16	0	Parametric UTL	0.301	4.0	4.0	MCL/HBL
Lead (mg/L)	12/03/2015 - 07/20/2017	16	62	Non-parametric UTL	0.00180	0.015	0.015	MCL/HBL
Lithium (mg/L)	12/03/2015 - 07/20/2017	16	19	Parametric UTL	0.00238	0.04	0.04	MCL/HBL
Mercury (mg/L)	12/03/2015 - 07/20/2017	16	100	All ND - Last Reporting Limit	0.0002	0.002	0.002	MCL/HBL
Molybdenum (mg/L)	12/03/2015 - 07/20/2017	16	69	Non-parametric UTL	0.00180	0.1	0.1	MCL/HBL
Radium 226 + Radium 228 (pCi/L)	12/03/2015 - 07/20/2017	16	0	Parametric UTL	1.51	5	5	MCL/HBL
Selenium (mg/L)	12/03/2015 - 07/20/2017	16	50	Non-parametric UTL	0.00390	0.05	0.05	MCL/HBL
Thallium (mg/L)	12/03/2015 - 07/20/2017	16	100	All ND - Last Reporting Limit	0.001	0.002	0.002	MCL/HBL

Notes:
* Groundwater Protection Standard is the higher of the MCL/HBL or background.
MCL/HBL = maximum contaminant level/health-based level
mg/L = milligrams per liter
ND = non-detect
pCi/L = picoCuries per liter
UTL = upper tolerance limit

TABLE 6
DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
JOPPA POWER PLANT
401 - EAST ASH POND
JOPPA, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
G51D	Antimony, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.001	0.006	MCL/HBL
G51D	Arsenic, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	100	All ND - Last	0.001	0.010	MCL/HBL
G51D	Arsenic, total	mg/L	A5	12/03/2015 - 03/15/2022	17	100	All ND - Last	0.001	0.010	MCL/HBL
G51D	Arsenic, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	100	All ND - Last	0.0004	0.010	MCL/HBL
G51D	Barium, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	0	CB around T-S line	-0.0301	2	MCL/HBL
G51D	Barium, total	mg/L	A5	12/03/2015 - 03/15/2022	17	0	CB around T-S line	-0.0379	2	MCL/HBL
G51D	Barium, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	0	CB around T-S line	-0.0337	2	MCL/HBL
G51D	Beryllium, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.001	0.004	MCL/HBL
G51D	Cadmium, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.001	0.005	MCL/HBL
G51D	Chromium, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	75	CB around linear reg	0.00149	0.1	MCL/HBL
G51D	Chromium, total	mg/L	A5	12/03/2015 - 03/15/2022	17	71	CB around linear reg	0.00153	0.1	MCL/HBL
G51D	Chromium, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	72	CB around T-S line	0.00100	0.1	MCL/HBL
G51D	Cobalt, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	0	CB around linear reg	-0.00906	0.0366	Background
G51D	Cobalt, total	mg/L	A5	12/03/2015 - 03/15/2022	17	0	CB around linear reg	-0.00887	0.0366	Background
G51D	Cobalt, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	6	CB around linear reg	-0.00895	0.0366	Background
G51D	Fluoride, total	mg/L	A4D	12/03/2015 - 09/20/2021	17	88	CI around median	0.100	4.0	MCL/HBL
G51D	Fluoride, total	mg/L	A5	12/03/2015 - 03/15/2022	18	89	CI around median	0.100	4.0	MCL/HBL
G51D	Fluoride, total	mg/L	A5D	12/03/2015 - 09/20/2022	19	89	CI around median	0.100	4.0	MCL/HBL
G51D	Lead, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	100	All ND - Last	0.001	0.015	MCL/HBL
G51D	Lead, total	mg/L	A5	12/03/2015 - 03/15/2022	17	100	All ND - Last	0.001	0.015	MCL/HBL
G51D	Lead, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	100	All ND - Last	0.0006	0.015	MCL/HBL
G51D	Lithium, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	0	CB around linear reg	0.00578	0.04	MCL/HBL
G51D	Lithium, total	mg/L	A5	12/03/2015 - 03/15/2022	17	0	CB around linear reg	0.00554	0.04	MCL/HBL
G51D	Lithium, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	0	CI around mean	0.00503	0.04	MCL/HBL
G51D	Mercury, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.0002	0.002	MCL/HBL
G51D	Molybdenum, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.0015	0.1	MCL/HBL
G51D	Molybdenum, total	mg/L	A5D	12/03/2015 - 09/20/2022	14	100	All ND - Last	0.0006	0.1	MCL/HBL
G51D	Radium 226 + Radium 228, total	pCi/L	A4D	12/03/2015 - 09/20/2021	16	0	CI around mean	0.379	5	MCL/HBL
G51D	Radium 226 + Radium 228, total	pCi/L	A5	12/03/2015 - 03/15/2022	17	0	CI around mean	0.422	5	MCL/HBL

TABLE 6
DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
JOPPA POWER PLANT
401 - EAST ASH POND
JOPPA, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
G51D	Radium 226 + Radium 228, total	pCi/L	A5D	12/03/2015 - 09/20/2022	18	0	CI around mean	0.404	5	MCL/HBL
G51D	Selenium, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	0	CB around linear reg	0.00484	0.05	MCL/HBL
G51D	Selenium, total	mg/L	A5	12/03/2015 - 03/15/2022	17	0	CB around linear reg	0.00484	0.05	MCL/HBL
G51D	Selenium, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	0	CB around linear reg	0.00477	0.05	MCL/HBL
G51D	Thallium, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.002	0.002	MCL/HBL
G52D	Antimony, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.001	0.006	MCL/HBL
G52D	Arsenic, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	6	CB around linear reg	-0.00172	0.010	MCL/HBL
G52D	Arsenic, total	mg/L	A5	12/03/2015 - 03/15/2022	17	6	CB around linear reg	-0.00160	0.010	MCL/HBL
G52D	Arsenic, total	mg/L	A5D	12/03/2015 - 09/21/2022	18	6	CB around linear reg	-0.00149	0.010	MCL/HBL
G52D	Barium, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	0	CB around T-S line	0.130	2	MCL/HBL
G52D	Barium, total	mg/L	A5	12/03/2015 - 03/15/2022	17	0	CB around T-S line	0.106	2	MCL/HBL
G52D	Barium, total	mg/L	A5D	12/03/2015 - 09/21/2022	18	0	CB around T-S line	0.107	2	MCL/HBL
G52D	Beryllium, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.001	0.004	MCL/HBL
G52D	Cadmium, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.001	0.005	MCL/HBL
G52D	Chromium, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	100	All ND - Last	0.0015	0.1	MCL/HBL
G52D	Chromium, total	mg/L	A5	12/03/2015 - 03/15/2022	17	100	All ND - Last	0.0015	0.1	MCL/HBL
G52D	Chromium, total	mg/L	A5D	12/03/2015 - 09/21/2022	18	100	All ND - Last	0.0007	0.1	MCL/HBL
G52D	Cobalt, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	0	CB around linear reg	-0.00189	0.0366	Background
G52D	Cobalt, total	mg/L	A5	12/03/2015 - 03/15/2022	17	0	Future median	0.00160	0.0366	Background
G52D	Cobalt, total	mg/L	A5D	12/03/2015 - 09/21/2022	18	0	CI around mean	0.00289	0.0366	Background
G52D	Fluoride, total	mg/L	A4D	12/03/2015 - 09/20/2021	17	0	CI around mean	0.251	4.0	MCL/HBL
G52D	Fluoride, total	mg/L	A5	12/03/2015 - 03/15/2022	18	0	CI around mean	0.252	4.0	MCL/HBL
G52D	Fluoride, total	mg/L	A5D	12/03/2015 - 09/21/2022	19	0	CI around mean	0.251	4.0	MCL/HBL
G52D	Lead, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	100	All ND - Last	0.001	0.015	MCL/HBL
G52D	Lead, total	mg/L	A5	12/03/2015 - 03/15/2022	17	100	All ND - Last	0.001	0.015	MCL/HBL
G52D	Lead, total	mg/L	A5D	12/03/2015 - 09/21/2022	18	100	All ND - Last	0.0006	0.015	MCL/HBL
G52D	Lithium, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	31	CI around mean	0.00271	0.04	MCL/HBL
G52D	Lithium, total	mg/L	A5	12/03/2015 - 03/15/2022	17	35	CI around mean	0.00273	0.04	MCL/HBL
G52D	Lithium, total	mg/L	A5D	12/03/2015 - 09/21/2022	18	39	CI around mean	0.00247	0.04	MCL/HBL
G52D	Mercury, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.0002	0.002	MCL/HBL

TABLE 6
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2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
JOPPA POWER PLANT
401 - EAST ASH POND
JOPPA, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
G52D	Molybdenum, total	mg/L	A5	12/03/2015 - 03/15/2022	13	69	CI around mean	0.00112	0.1	MCL/HBL
G52D	Molybdenum, total	mg/L	A5D	12/03/2015 - 09/21/2022	14	71	CI around median	0.00100	0.1	MCL/HBL
G52D	Radium 226 + Radium 228, total	pCi/L	A4D	12/03/2015 - 09/20/2021	16	0	CI around mean	0.816	5	MCL/HBL
G52D	Radium 226 + Radium 228, total	pCi/L	A5	12/03/2015 - 03/15/2022	17	0	CI around mean	0.827	5	MCL/HBL
G52D	Radium 226 + Radium 228, total	pCi/L	A5D	12/03/2015 - 09/21/2022	18	0	CI around mean	0.869	5	MCL/HBL
G52D	Selenium, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	100	All ND - Last	0.001	0.05	MCL/HBL
G52D	Selenium, total	mg/L	A5	12/03/2015 - 03/15/2022	17	100	All ND - Last	0.001	0.05	MCL/HBL
G52D	Selenium, total	mg/L	A5D	12/03/2015 - 09/21/2022	18	100	All ND - Last	0.0006	0.05	MCL/HBL
G52D	Thallium, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.002	0.002	MCL/HBL
G53D	Antimony, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.001	0.006	MCL/HBL
G53D	Arsenic, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	100	All ND - Last	0.001	0.010	MCL/HBL
G53D	Arsenic, total	mg/L	A5	12/03/2015 - 03/15/2022	17	100	All ND - Last	0.001	0.010	MCL/HBL
G53D	Arsenic, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	100	All ND - Last	0.0004	0.010	MCL/HBL
G53D	Barium, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	0	CB around linear reg	-0.000975	2	MCL/HBL
G53D	Barium, total	mg/L	A5	12/03/2015 - 03/15/2022	17	0	CB around linear reg	-0.00113	2	MCL/HBL
G53D	Barium, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	0	CB around linear reg	0.000913	2	MCL/HBL
G53D	Beryllium, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.001	0.004	MCL/HBL
G53D	Cadmium, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.001	0.005	MCL/HBL
G53D	Chromium, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	81	CI around median	0.00100	0.1	MCL/HBL
G53D	Chromium, total	mg/L	A5	12/03/2015 - 03/15/2022	17	82	CI around median	0.00100	0.1	MCL/HBL
G53D	Chromium, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	83	CI around median	0.00100	0.1	MCL/HBL
G53D	Cobalt, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	25	Future median	0.00240	0.0366	Background
G53D	Cobalt, total	mg/L	A5	12/03/2015 - 03/15/2022	17	24	Future median	0.00220	0.0366	Background
G53D	Cobalt, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	22	CI around geomean	0.00134	0.0366	Background
G53D	Fluoride, total	mg/L	A4D	12/03/2015 - 09/20/2021	17	0	CI around mean	0.626	4.0	MCL/HBL
G53D	Fluoride, total	mg/L	A5	12/03/2015 - 03/15/2022	18	0	CI around mean	0.631	4.0	MCL/HBL
G53D	Fluoride, total	mg/L	A5D	12/03/2015 - 09/20/2022	19	0	CI around mean	0.632	4.0	MCL/HBL
G53D	Lead, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	100	All ND - Last	0.001	0.015	MCL/HBL
G53D	Lead, total	mg/L	A5	12/03/2015 - 03/15/2022	17	100	All ND - Last	0.001	0.015	MCL/HBL

TABLE 6
DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
JOPPA POWER PLANT
401 - EAST ASH POND
JOPPA, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
G53D	Lead, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	100	All ND - Last	0.0006	0.015	MCL/HBL
G53D	Lithium, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	38	CB around linear reg	0.00243	0.04	MCL/HBL
G53D	Lithium, total	mg/L	A5	12/03/2015 - 03/15/2022	17	41	CB around linear reg	0.00257	0.04	MCL/HBL
G53D	Lithium, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	44	CB around linear reg	0.00204	0.04	MCL/HBL
G53D	Mercury, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.0002	0.002	MCL/HBL
G53D	Molybdenum, total	mg/L	A5	12/03/2015 - 03/15/2022	13	85	CI around median	0.00100	0.1	MCL/HBL
G53D	Molybdenum, total	mg/L	A5D	12/03/2015 - 09/20/2022	14	86	CI around median	0.00100	0.1	MCL/HBL
G53D	Radium 226 + Radium 228, total	pCi/L	A4D	12/03/2015 - 09/20/2021	16	0	CI around mean	0.309	5	MCL/HBL
G53D	Radium 226 + Radium 228, total	pCi/L	A5	12/03/2015 - 03/15/2022	17	0	CI around mean	0.306	5	MCL/HBL
G53D	Radium 226 + Radium 228, total	pCi/L	A5D	12/03/2015 - 09/20/2022	18	0	CI around mean	0.298	5	MCL/HBL
G53D	Selenium, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	100	All ND - Last	0.001	0.05	MCL/HBL
G53D	Selenium, total	mg/L	A5	12/03/2015 - 03/15/2022	17	100	All ND - Last	0.001	0.05	MCL/HBL
G53D	Selenium, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	100	All ND - Last	0.0006	0.05	MCL/HBL
G53D	Thallium, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.002	0.002	MCL/HBL
G54D	Antimony, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.001	0.006	MCL/HBL
G54D	Arsenic, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	38	CB around linear reg	-0.000196	0.010	MCL/HBL
G54D	Arsenic, total	mg/L	A5	12/03/2015 - 03/15/2022	17	41	CB around linear reg	-0.000166	0.010	MCL/HBL
G54D	Arsenic, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	44	CB around linear reg	-0.000274	0.010	MCL/HBL
G54D	Barium, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	0	CI around mean	0.107	2	MCL/HBL
G54D	Barium, total	mg/L	A5	12/03/2015 - 03/15/2022	17	0	CI around mean	0.103	2	MCL/HBL
G54D	Barium, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	0	CI around mean	0.100	2	MCL/HBL
G54D	Beryllium, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.001	0.004	MCL/HBL
G54D	Cadmium, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.001	0.005	MCL/HBL
G54D	Chromium, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	62	CI around geomean	0.00123	0.1	MCL/HBL
G54D	Chromium, total	mg/L	A5	12/03/2015 - 03/15/2022	17	65	CI around geomean	0.00125	0.1	MCL/HBL
G54D	Chromium, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	67	CI around median	0.00100	0.1	MCL/HBL
G54D	Cobalt, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	0	CB around linear reg	0.00301	0.0366	Background
G54D	Cobalt, total	mg/L	A5	12/03/2015 - 03/15/2022	17	0	CB around linear reg	0.00325	0.0366	Background
G54D	Cobalt, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	0	CB around linear reg	0.00204	0.0366	Background

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401 - EAST ASH POND
JOPPA, IL

Sample Location	Constituent	Result Unit	Event	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Result	GWPS	GWPS Source
G54D	Fluoride, total	mg/L	A4D	12/03/2015 - 09/20/2021	17	0	CI around mean	0.315	4.0	MCL/HBL
G54D	Fluoride, total	mg/L	A5	12/03/2015 - 03/15/2022	18	0	CI around mean	0.314	4.0	MCL/HBL
G54D	Fluoride, total	mg/L	A5D	12/03/2015 - 09/20/2022	19	0	CB around linear reg	0.264	4.0	MCL/HBL
G54D	Lead, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	100	All ND - Last	0.001	0.015	MCL/HBL
G54D	Lead, total	mg/L	A5	12/03/2015 - 03/15/2022	17	100	All ND - Last	0.001	0.015	MCL/HBL
G54D	Lead, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	100	All ND - Last	0.0006	0.015	MCL/HBL
G54D	Lithium, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	0	CB around linear reg	0.00179	0.04	MCL/HBL
G54D	Lithium, total	mg/L	A5	12/03/2015 - 03/15/2022	17	6	CB around linear reg	0.00121	0.04	MCL/HBL
G54D	Lithium, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	11	CB around linear reg	0.000788	0.04	MCL/HBL
G54D	Mercury, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.0002	0.002	MCL/HBL
G54D	Molybdenum, total	mg/L	A5	12/03/2015 - 03/15/2022	13	92	CB around linear reg	0.00138	0.1	MCL/HBL
G54D	Molybdenum, total	mg/L	A5D	12/03/2015 - 09/20/2022	14	93	CB around T-S line	0.00100	0.1	MCL/HBL
G54D	Radium 226 + Radium 228, total	pCi/L	A4D	12/03/2015 - 09/20/2021	16	0	CI around geomean	0.473	5	MCL/HBL
G54D	Radium 226 + Radium 228, total	pCi/L	A5	12/03/2015 - 03/15/2022	17	0	CI around geomean	0.491	5	MCL/HBL
G54D	Radium 226 + Radium 228, total	pCi/L	A5D	12/03/2015 - 09/20/2022	18	0	CI around geomean	0.513	5	MCL/HBL
G54D	Selenium, total	mg/L	A4D	12/03/2015 - 09/20/2021	16	100	All ND - Last	0.001	0.05	MCL/HBL
G54D	Selenium, total	mg/L	A5	12/03/2015 - 03/15/2022	17	100	All ND - Last	0.001	0.05	MCL/HBL
G54D	Selenium, total	mg/L	A5D	12/03/2015 - 09/20/2022	18	100	All ND - Last	0.0006	0.05	MCL/HBL
G54D	Thallium, total	mg/L	A5	12/03/2015 - 03/15/2022	13	100	All ND - Last	0.002	0.002	MCL/HBL

Notes:
mg/L = milligrams per liter
pCi/L = picocuries per liter
Sample Count = number of samples from Sampled Date Range used to calculate the Statistical Result
Statistical Calculation = method used to calculate the statistical result:

- All ND - Last = All results were below the reporting limit, and the last determined reporting limit is shown
- CB around linear reg = Confidence band around linear regression
- CB around T-S line = Confidence band around Thiel-Sen line
- CI around geomean = Confidence interval around the geometric mean
- CI around mean = Confidence interval around the mean
- CI around median = Confidence interval around the median
- Future median = Median of the three most recent samples

Statistical Result = calculated in accordance with Statistical Analysis Plan using constituent concentrations observed at monitoring well during all sampling events within the specified date range
GWPS = Groundwater Protection Standard
GWPS Source:

- MCL/HBL = maximum contaminant level/health-based level
- Background = background concentration

FIGURES

PROJECT: 169000XXXX | DATED: 1/3/2022 | DESIGNER: galarnmc

Y:\Mapping\Projects\22\2285\MXD\2021_AnnualGWM_CAR\Joppa\EAP\Figure 1 JOP EAP MW Location Map.mxd

BACKGROUND WELL

COMPLIANCE WELL

40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)

PROPERTY BOUNDARY

0 200 400 Feet

MONITORING WELL LOCATION MAP

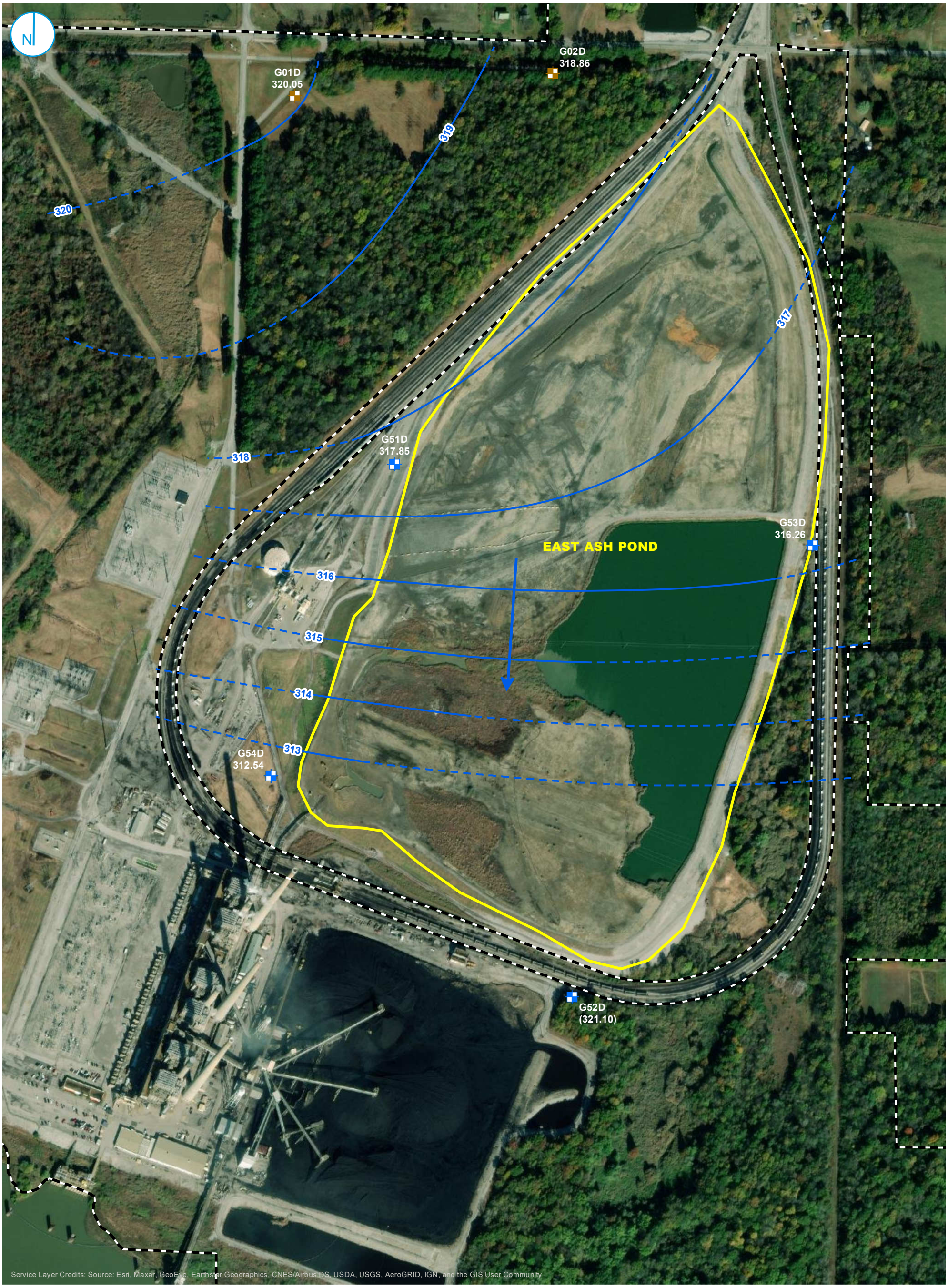
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT EAST ASH POND

JOPPA POWER PLANT
JOPPA, ILLINOIS

FIGURE 1

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL



BACKGROUND WELL
COMPLIANCE WELL
GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION CONTOUR
GROUNDWATER FLOW DIRECTION
40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)
PROPERTY BOUNDARY

0 200 400 Feet

NOTES
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

POTENTIOMETRIC SURFACE MAP SEPTEMBER 20, 2021

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT EAST ASH POND

JOPPA POWER PLANT
JOPPA, ILLINOIS

FIGURE 2

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL

BACKGROUND WELL
COMPLIANCE WELL
PORE WATER WELL
MONITORING WELL

GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION CONTOUR
GROUNDWATER FLOW DIRECTION
40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)
PROPERTY BOUNDARY

0 200 400 Feet

NOTES
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

POTENTIOMETRIC SURFACE MAP MARCH 14, 2022

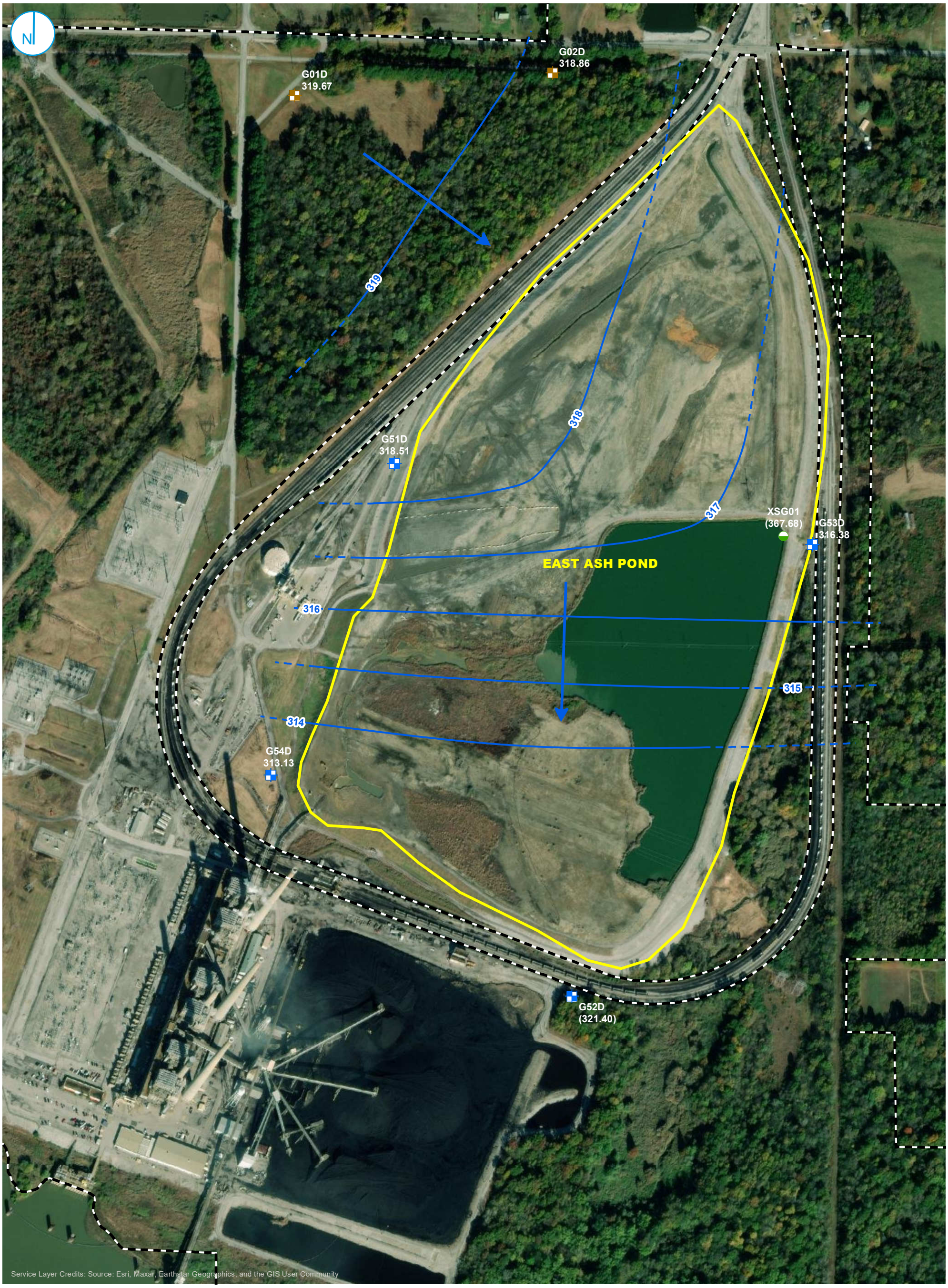
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT EAST ASH POND

JOPPA POWER PLANT
JOPPA, ILLINOIS

FIGURE 3

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL



COMPLIANCE MONITORING WELL
BACKGROUND MONITORING WELL
MONITORING WELL
STAFF GAGE, CCR UNIT

GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)
INFERRED GROUNDWATER ELEVATION CONTOUR
GROUNDWATER FLOW DIRECTION
40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)
PROPERTY BOUNDARY

0 200 400 Feet

NOTES
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

POTENTIOMETRIC SURFACE MAP SEPTEMBER 20 AND 21, 2022

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT EAST ASH POND

JOPPA POWER PLANT
JOPPA, ILLINOIS

FIGURE 4

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

RAMBOLL

APPENDICES

APPENDIX A
LABORATORY REPORTS

October 06, 2021

Steve Wiskes
Ramboll
234 W. Florida St.
5th Floor
Milwaukee, WI 53204
TEL: (414) 837-3614
FAX:

Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: Joppa East Ash Pond CCR 401 **WorkOrder:** 21080628

Dear Steve Wiskes:

TEKLAB, INC received 8 samples on 9/21/2021 10:45:00 for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Aaron Renner
Project Manager
(630)324-6855
arenner@teklabinc.com

Report Contents

Client: Ramboll
Work Order: 21080628
Client Project: Joppa East Ash Pond CCR 401
Report Date: 06-Oct-21

This reporting package includes the following:

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

Abbr Definition

*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

Qualifiers

- # - Unknown hydrocarbon
- B - Analyte detected in associated Method Blank
- C - RL shown is a Client Requested Quantitation Limit
- E - Value above quantitation range
- H - Holding times exceeded
- I - Associated internal standard was outside method criteria
- J - Analyte detected below quantitation limits
- M - Manual Integration used to determine area response
- ND - Not Detected at the Reporting Limit
- R - RPD outside accepted recovery limits
- S - Spike Recovery outside recovery limits
- T - TIC(Tentatively identified compound)
- X - Value exceeds Maximum Contaminant Level

Case Narrative

http://www.teklabinc.com/

Client: Ramboll
Work Order: 21080628
Client Project: Joppa East Ash Pond CCR 401
Report Date: 06-Oct-21

Cooler Receipt Temp: 0.4 °C

An employee of Teklab, Inc. collected the sample(s).

Locations

Collinsville

Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425
Phone	(618) 344-1004
Fax	(618) 344-1005
Email	jhriley@teklabinc.com

Springfield

Address	3920 Pintail Dr Springfield, IL 62711-9415
Phone	(217) 698-1004
Fax	(217) 698-1005
Email	KKlostermann@teklabinc.com

Kansas City

Address	8421 Nieman Road Lenexa, KS 66214
Phone	(913) 541-1998
Fax	(913) 541-1998
Email	jhriley@teklabinc.com

Collinsville Air

Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425
Phone	(618) 344-1004
Fax	(618) 344-1005
Email	EHurley@teklabinc.com

Chicago

Address	1319 Butterfield Rd. Downers Grove, IL 60515
Phone	(630) 324-6855
Fax	
Email	arenner@teklabinc.com

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2022	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2022	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2022	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2022	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2022	Collinsville
Arkansas	ADEQ	88-0966		3/14/2022	Collinsville
Illinois	IDPH	17584		5/31/2021	Collinsville
Kentucky	UST	0073		1/31/2022	Collinsville
Missouri	MDNR	00930		5/31/2021	Collinsville
Missouri	MDNR	930		1/31/2022	Collinsville

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

Lab ID: 21080628-001 **Client Sample ID:** 401G01D

Matrix: GROUNDWATER **Collection Date:** 09/20/2021 13:57

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**44.14**	ft	1	09/20/2021 13:57	R299789
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.51**		1	09/20/2021 13:57	R299789
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**28**	NTU	1	09/20/2021 13:57	R299789
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**170**	mV	1	09/20/2021 13:57	R299789
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**630**	µS/cm	1	09/20/2021 13:57	R299789
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**16.7**	°C	1	09/20/2021 13:57	R299789
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**4.55**	mg/L	1	09/20/2021 13:57	R299789
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**215**	mg/L	1	09/21/2021 12:58	R299233
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	09/21/2021 12:58	R299233
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**294**	mg/L	1	09/24/2021 15:23	R299489
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**18**	mg/L	1	09/27/2021 19:47	R299523
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.21**	mg/L	1	09/21/2021 13:44	R299229
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**9**	mg/L	1	09/23/2021 18:55	R299362
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	1.0	J	**0.6**	µg/L	5	09/28/2021 12:41	182203
Barium	NELAP	1.0		**145**	µg/L	5	09/28/2021 12:41	182203
Boron	NELAP	25	J	**14**	µg/L	5	09/30/2021 18:01	182203
Calcium	NELAP	125		**26000**	µg/L	5	09/28/2021 12:41	182203
Chromium	NELAP	1.5		**2.3**	µg/L	5	09/30/2021 18:01	182203
Cobalt	NELAP	1.0	J	**0.7**	µg/L	5	09/28/2021 12:41	182203
Lead	NELAP	1.0	J	**0.7**	µg/L	5	09/28/2021 12:41	182203
Lithium	*	3.0	J	**1.5**	µg/L	5	09/29/2021 14:55	182203
Selenium	NELAP	1.0		**1.6**	µg/L	5	09/28/2021 12:41	182203

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

Lab ID: 21080628-002 **Client Sample ID:** 401G02D

Matrix: GROUNDWATER **Collection Date:** 09/20/2021 13:18

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**44.79**	ft	1	09/20/2021 13:18	R299789
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.32**		1	09/20/2021 13:18	R299789
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**3.1**	NTU	1	09/20/2021 13:18	R299789
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**191**	mV	1	09/20/2021 13:18	R299789
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**544**	µS/cm	1	09/20/2021 13:18	R299789
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**15.7**	°C	1	09/20/2021 13:18	R299789
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**3.57**	mg/L	1	09/20/2021 13:18	R299789
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**156**	mg/L	1	09/21/2021 13:04	R299233
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	09/21/2021 13:04	R299233
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**240**	mg/L	1	09/24/2021 15:23	R299489
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**19**	mg/L	1	09/23/2021 19:18	R299361
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.18**	mg/L	1	09/21/2021 13:45	R299229
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**20**	mg/L	1	09/23/2021 19:19	R299362
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	1.0		**< 1.0**	µg/L	5	09/28/2021 12:55	182203
Barium	NELAP	1.0		**189**	µg/L	5	09/28/2021 12:55	182203
Boron	NELAP	25.0		**31.3**	µg/L	5	09/30/2021 18:07	182203
Calcium	NELAP	125		**34300**	µg/L	5	09/28/2021 12:55	182203
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	09/30/2021 18:07	182203
Cobalt	NELAP	1.0		**< 1.0**	µg/L	5	09/28/2021 12:55	182203
Lead	NELAP	1.0		**< 1.0**	µg/L	5	09/28/2021 12:55	182203
Lithium	*	3.0		**< 3.0**	µg/L	5	09/29/2021 15:02	182203
Selenium	NELAP	1.0		**2.5**	µg/L	5	09/28/2021 12:55	182203

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

Lab ID: 21080628-003 **Client Sample ID:** 401G51D

Matrix: GROUNDWATER **Collection Date:** 09/20/2021 12:44

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**46.00**	ft	1	09/20/2021 12:44	R299789
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**5.46**		1	09/20/2021 12:44	R299789
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**47**	NTU	1	09/20/2021 12:44	R299789
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**238**	mV	1	09/20/2021 12:44	R299789
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**551**	µS/cm	1	09/20/2021 12:44	R299789
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**17.7**	°C	1	09/20/2021 12:44	R299789
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**0.66**	mg/L	1	09/20/2021 12:44	R299789
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**50**	mg/L	1	09/21/2021 13:09	R299233
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	09/21/2021 13:09	R299233
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**312**	mg/L	1	09/24/2021 15:23	R299489
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**131**	mg/L	5	09/23/2021 19:32	R299361
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10	J	**0.08**	mg/L	1	09/21/2021 13:47	R299229
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**6**	mg/L	1	09/23/2021 19:27	R299362
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	1.0	J	**0.5**	µg/L	5	09/28/2021 13:04	182203
Barium	NELAP	1.0		**40.5**	µg/L	5	09/28/2021 13:04	182203
Boron	NELAP	25.0		**689**	µg/L	5	09/30/2021 18:14	182203
Calcium	NELAP	125		**31200**	µg/L	5	09/28/2021 13:04	182203
Chromium	NELAP	1.5		**1.8**	µg/L	5	09/30/2021 18:14	182203
Cobalt	NELAP	1.0		**1.8**	µg/L	5	09/28/2021 13:04	182203
Lead	NELAP	1.0	J	**0.7**	µg/L	5	09/28/2021 13:04	182203
Lithium	*	3.0		**6.5**	µg/L	5	09/29/2021 15:08	182203
Selenium	NELAP	1.0		**4.7**	µg/L	5	09/28/2021 13:04	182203

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

Lab ID: 21080628-004 **Client Sample ID:** 401G52D

Matrix: GROUNDWATER **Collection Date:** 09/20/2021 17:39

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**27.31**	ft	1	09/20/2021 17:39	R299789
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.29**		1	09/20/2021 17:39	R299789
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**3.3**	NTU	1	09/20/2021 17:39	R299789
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**25**	mV	1	09/20/2021 17:39	R299789
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**599**	µS/cm	1	09/20/2021 17:39	R299789
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**18.2**	°C	1	09/20/2021 17:39	R299789
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**2.11**	mg/L	1	09/20/2021 17:39	R299789
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**147**	mg/L	1	09/21/2021 13:14	R299233
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	09/21/2021 13:14	R299233
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**318**	mg/L	1	09/24/2021 15:23	R299489
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**83**	mg/L	5	09/23/2021 19:40	R299361
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.26**	mg/L	1	09/21/2021 13:50	R299229
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**13**	mg/L	1	09/23/2021 19:35	R299362
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	1.0	J	**0.6**	µg/L	5	09/28/2021 13:12	182203
Barium	NELAP	1.0		**232**	µg/L	5	09/28/2021 13:12	182203
Boron	NELAP	25	J	**14**	µg/L	5	09/30/2021 19:00	182203
Calcium	NELAP	125		**47800**	µg/L	5	09/28/2021 13:12	182203
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	09/30/2021 19:00	182203
Cobalt	NELAP	1.0		**1.1**	µg/L	5	09/28/2021 13:12	182203
Lead	NELAP	1.0		**< 1.0**	µg/L	5	09/28/2021 13:12	182203
Lithium	*	3.0	J	**2.9**	µg/L	5	09/29/2021 15:15	182203
Selenium	NELAP	1.0		**< 1.0**	µg/L	5	09/28/2021 13:12	182203

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

Lab ID: 21080628-005 **Client Sample ID:** 401G53D

Matrix: GROUNDWATER **Collection Date:** 09/20/2021 11:29

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**39.21**	ft	1	09/20/2021 11:29	R299789
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.27**		1	09/20/2021 11:29	R299789
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**7.2**	NTU	1	09/20/2021 11:29	R299789
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**66**	mV	1	09/20/2021 11:29	R299789
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**675**	µS/cm	1	09/20/2021 11:29	R299789
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**17.4**	°C	1	09/20/2021 11:29	R299789
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**0.43**	mg/L	1	09/20/2021 11:29	R299789
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**171**	mg/L	1	09/21/2021 13:19	R299233
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	09/21/2021 13:19	R299233
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**324**	mg/L	1	09/24/2021 15:24	R299489
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20		**78**	mg/L	2	09/23/2021 19:42	R299361
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.70**	mg/L	1	09/21/2021 13:52	R299229
SW-846 9251 (TOTAL)								
Chloride	NELAP	2		**19**	mg/L	2	09/23/2021 19:43	R299362
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	1.0	J	**0.4**	µg/L	5	09/28/2021 13:20	182203
Barium	NELAP	1.0		**103**	µg/L	5	09/28/2021 13:20	182203
Boron	NELAP	25.0		**402**	µg/L	5	09/30/2021 19:06	182203
Calcium	NELAP	125		**38500**	µg/L	5	09/28/2021 13:20	182203
Chromium	NELAP	1.5		**3.3**	µg/L	5	09/30/2021 19:06	182203
Cobalt	NELAP	1.0		**2.1**	µg/L	5	09/28/2021 13:20	182203
Lead	NELAP	1.0		**< 1.0**	µg/L	5	09/28/2021 13:20	182203
Lithium	*	3.0		**< 3.0**	µg/L	5	09/29/2021 15:22	182203
Selenium	NELAP	1.0		**< 1.0**	µg/L	5	09/28/2021 13:20	182203

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

Lab ID: 21080628-006 **Client Sample ID:** 401G54D

Matrix: GROUNDWATER **Collection Date:** 09/20/2021 12:04

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**44.49**	ft	1	09/20/2021 12:04	R299789
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.48**		1	09/20/2021 12:04	R299789
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**6.0**	NTU	1	09/20/2021 12:04	R299789
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**27**	mV	1	09/20/2021 12:04	R299789
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**951**	µS/cm	1	09/20/2021 12:04	R299789
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**16.9**	°C	1	09/20/2021 12:04	R299789
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**0.79**	mg/L	1	09/20/2021 12:04	R299789
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**207**	mg/L	1	09/21/2021 13:25	R299233
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	09/21/2021 13:25	R299233
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**474**	mg/L	1	09/24/2021 15:24	R299489
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50	S	**175**	mg/L	5	09/23/2021 19:48	R299361
Matrix spike did not recover within control limits due to matrix interference.								
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.29**	mg/L	1	09/21/2021 13:53	R299229
SW-846 9251 (TOTAL)								
Chloride	NELAP	5		**24**	mg/L	5	09/23/2021 19:48	R299362
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	1.0	J	**0.5**	µg/L	5	09/28/2021 13:27	182203
Barium	NELAP	1.0		**87.9**	µg/L	5	09/28/2021 13:27	182203
Boron	NELAP	25.0		**350**	µg/L	5	09/30/2021 19:19	182203
Calcium	NELAP	125		**72800**	µg/L	5	09/28/2021 13:27	182203
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	09/30/2021 19:19	182203
Cobalt	NELAP	1.0		**8.3**	µg/L	5	09/28/2021 13:27	182203
Lead	NELAP	1.0		**< 1.0**	µg/L	5	09/28/2021 13:27	182203
Lithium	*	3.0		**3.4**	µg/L	5	09/29/2021 15:28	182203
Selenium	NELAP	1.0		**< 1.0**	µg/L	5	09/28/2021 13:27	182203

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

Lab ID: 21080628-007 **Client Sample ID:** FIELD BLANK

Matrix: GROUNDWATER **Collection Date:** 09/20/2021 18:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**1**	mg/L	1	09/21/2021 13:31	R299233
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	09/21/2021 13:31	R299233
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**< 20**	mg/L	1	09/24/2021 15:24	R299489
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**< 10**	mg/L	1	09/27/2021 19:49	R299523
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10	J	**0.02**	mg/L	1	09/21/2021 13:56	R299229
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**< 1**	mg/L	1	09/23/2021 20:23	R299362
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	1.0		**< 1.0**	µg/L	5	09/28/2021 13:35	182203
Barium	NELAP	1.0		**1.5**	µg/L	5	09/28/2021 13:35	182203
Boron	NELAP	25.0		**< 25.0**	µg/L	5	09/30/2021 19:26	182203
Calcium	NELAP	125		**336**	µg/L	5	09/28/2021 13:35	182203
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	09/30/2021 19:26	182203
Cobalt	NELAP	1.0		**< 1.0**	µg/L	5	09/28/2021 13:35	182203
Lead	NELAP	1.0		**< 1.0**	µg/L	5	09/28/2021 13:35	182203
Lithium	*	3.0		**< 3.0**	µg/L	5	09/30/2021 19:26	182203
Selenium	NELAP	1.0		**< 1.0**	µg/L	5	09/28/2021 13:35	182203

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

Lab ID: 21080628-008 **Client Sample ID:** 401G52D DUP

Matrix: GROUNDWATER **Collection Date:** 09/20/2021 17:39

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**27.31**	ft	1	09/20/2021 17:39	R299789
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.29**		1	09/20/2021 17:39	R299789
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**3.3**	NTU	1	09/20/2021 17:39	R299789
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**25**	mV	1	09/20/2021 17:39	R299789
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**599**	µS/cm	1	09/20/2021 17:39	R299789
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**18.2**	°C	1	09/20/2021 17:39	R299789
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**2.11**	mg/L	1	09/20/2021 17:39	R299789
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**148**	mg/L	1	09/21/2021 13:34	R299233
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	09/21/2021 13:34	R299233
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**316**	mg/L	1	09/24/2021 15:25	R299489
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20		**70**	mg/L	2	09/27/2021 19:55	R299523
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.26**	mg/L	1	09/21/2021 13:59	R299229
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		**13**	mg/L	1	09/23/2021 20:25	R299362
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	1.0		**1.8**	µg/L	5	09/28/2021 13:43	182203
Barium	NELAP	1.0		**233**	µg/L	5	09/28/2021 13:43	182203
Boron	NELAP	25	J	**12**	µg/L	5	09/30/2021 19:33	182203
Calcium	NELAP	125	S	**47900**	µg/L	5	09/28/2021 13:43	182203
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	09/30/2021 19:33	182203
Cobalt	NELAP	1.0		**3.8**	µg/L	5	09/28/2021 13:43	182203
Lead	NELAP	1.0		**< 1.0**	µg/L	5	09/28/2021 13:43	182203
Lithium	*	3.0	J	**2.7**	µg/L	5	09/30/2021 19:33	182203
Selenium	NELAP	1.0		**< 1.0**	µg/L	5	09/28/2021 13:43	182203

Matrix spike control limits for Ca are not applicable due to high sample/spike ratio.

Client: Ramboll
Work Order: 21080628
Client Project: Joppa East Ash Pond CCR 401
Report Date: 06-Oct-21

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
21080628-001	401G01D	Groundwater	3	09/20/2021 13:57
21080628-002	401G02D	Groundwater	3	09/20/2021 13:18
21080628-003	401G51D	Groundwater	3	09/20/2021 12:44
21080628-004	401G52D	Groundwater	3	09/20/2021 17:39
21080628-005	401G53D	Groundwater	3	09/20/2021 11:29
21080628-006	401G54D	Groundwater	3	09/20/2021 12:04
21080628-007	FIELD BLANK	Groundwater	3	09/20/2021 18:15
21080628-008	401G52D DUP	Groundwater	3	09/20/2021 17:39

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
21080628-001A	401G01D	09/20/2021 13:57	09/21/2021 10:45		
	Field Elevation Measurements				09/20/2021 13:57
	Standard Method 4500-H B 2001 Field				09/20/2021 13:57
	Standard Methods 2130 B Field				09/20/2021 13:57
	Standard Methods 18th Ed. 2580 B Field				09/20/2021 13:57
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2021 12:58
	Standard Methods 2320 B 1997, 2011				09/21/2021 12:58
	Standard Methods 2510 B Field				09/20/2021 13:57
	Standard Methods 2550 B Field				09/20/2021 13:57
	Standard Methods 4500-O G Field				09/20/2021 13:57
21080628-001B	401G01D	09/20/2021 13:57	09/21/2021 10:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/24/2021 15:23
	SW-846 9036 (Total)				09/27/2021 19:47
	SW-846 9214 (Total)				09/21/2021 13:44
	SW-846 9251 (Total)				09/23/2021 18:55
21080628-001C	401G01D	09/20/2021 13:57	09/21/2021 10:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/28/2021 12:41
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/29/2021 14:55
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/30/2021 18:01
21080628-002A	401G02D	09/20/2021 13:18	09/21/2021 10:45		
	Field Elevation Measurements				09/20/2021 13:18
	Standard Method 4500-H B 2001 Field				09/20/2021 13:18
	Standard Methods 2130 B Field				09/20/2021 13:18
	Standard Methods 18th Ed. 2580 B Field				09/20/2021 13:18
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2021 13:04
	Standard Methods 2320 B 1997, 2011				09/21/2021 13:04
	Standard Methods 2510 B Field				09/20/2021 13:18
	Standard Methods 2550 B Field				09/20/2021 13:18
	Standard Methods 4500-O G Field				09/20/2021 13:18
21080628-002B	401G02D	09/20/2021 13:18	09/21/2021 10:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/24/2021 15:23
	SW-846 9036 (Total)				09/23/2021 19:18
	SW-846 9214 (Total)				09/21/2021 13:45
	SW-846 9251 (Total)				09/23/2021 19:19
21080628-002C	401G02D	09/20/2021 13:18	09/21/2021 10:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/28/2021 12:55
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/29/2021 15:02

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/30/2021 18:07
21080628-003A	401G51D	09/20/2021 12:44	09/21/2021 10:45		
	Field Elevation Measurements				09/20/2021 12:44
	Standard Method 4500-H B 2001 Field				09/20/2021 12:44
	Standard Methods 2130 B Field				09/20/2021 12:44
	Standard Methods 18th Ed. 2580 B Field				09/20/2021 12:44
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2021 13:09
	Standard Methods 2320 B 1997, 2011				09/21/2021 13:09
	Standard Methods 2510 B Field				09/20/2021 12:44
	Standard Methods 2550 B Field				09/20/2021 12:44
	Standard Methods 4500-O G Field				09/20/2021 12:44
21080628-003B	401G51D	09/20/2021 12:44	09/21/2021 10:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/24/2021 15:23
	SW-846 9036 (Total)				09/23/2021 19:32
	SW-846 9214 (Total)				09/21/2021 13:47
	SW-846 9251 (Total)				09/23/2021 19:27
21080628-003C	401G51D	09/20/2021 12:44	09/21/2021 10:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/28/2021 13:04
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/29/2021 15:08
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/30/2021 18:14
21080628-004A	401G52D	09/20/2021 17:39	09/21/2021 10:45		
	Field Elevation Measurements				09/20/2021 17:39
	Standard Method 4500-H B 2001 Field				09/20/2021 17:39
	Standard Methods 2130 B Field				09/20/2021 17:39
	Standard Methods 18th Ed. 2580 B Field				09/20/2021 17:39
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2021 13:14
	Standard Methods 2320 B 1997, 2011				09/21/2021 13:14
	Standard Methods 2510 B Field				09/20/2021 17:39
	Standard Methods 2550 B Field				09/20/2021 17:39
	Standard Methods 4500-O G Field				09/20/2021 17:39
21080628-004B	401G52D	09/20/2021 17:39	09/21/2021 10:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/24/2021 15:23
	SW-846 9036 (Total)				09/23/2021 19:40
	SW-846 9214 (Total)				09/21/2021 13:50
	SW-846 9251 (Total)				09/23/2021 19:35
21080628-004C	401G52D	09/20/2021 17:39	09/21/2021 10:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/28/2021 13:12

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/29/2021 15:15
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/30/2021 19:00
21080628-005A	401G53D	09/20/2021 11:29	09/21/2021 10:45		
	Field Elevation Measurements				09/20/2021 11:29
	Standard Method 4500-H B 2001 Field				09/20/2021 11:29
	Standard Methods 2130 B Field				09/20/2021 11:29
	Standard Methods 18th Ed. 2580 B Field				09/20/2021 11:29
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2021 13:19
	Standard Methods 2320 B 1997, 2011				09/21/2021 13:19
	Standard Methods 2510 B Field				09/20/2021 11:29
	Standard Methods 2550 B Field				09/20/2021 11:29
	Standard Methods 4500-O G Field				09/20/2021 11:29
21080628-005B	401G53D	09/20/2021 11:29	09/21/2021 10:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/24/2021 15:24
	SW-846 9036 (Total)				09/23/2021 19:42
	SW-846 9214 (Total)				09/21/2021 13:52
	SW-846 9251 (Total)				09/23/2021 19:43
21080628-005C	401G53D	09/20/2021 11:29	09/21/2021 10:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/28/2021 13:20
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/29/2021 15:22
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/30/2021 19:06
21080628-006A	401G54D	09/20/2021 12:04	09/21/2021 10:45		
	Field Elevation Measurements				09/20/2021 12:04
	Standard Method 4500-H B 2001 Field				09/20/2021 12:04
	Standard Methods 2130 B Field				09/20/2021 12:04
	Standard Methods 18th Ed. 2580 B Field				09/20/2021 12:04
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2021 13:25
	Standard Methods 2320 B 1997, 2011				09/21/2021 13:25
	Standard Methods 2510 B Field				09/20/2021 12:04
	Standard Methods 2550 B Field				09/20/2021 12:04
	Standard Methods 4500-O G Field				09/20/2021 12:04
21080628-006B	401G54D	09/20/2021 12:04	09/21/2021 10:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/24/2021 15:24
	SW-846 9036 (Total)				09/23/2021 19:48
	SW-846 9214 (Total)				09/21/2021 13:53
	SW-846 9251 (Total)				09/23/2021 19:48
21080628-006C	401G54D	09/20/2021 12:04	09/21/2021 10:45		

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/28/2021 13:27
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/29/2021 15:28
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/30/2021 19:19
21080628-007A	FIELD BLANK	09/20/2021 18:15	09/21/2021 10:45		
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2021 13:31
	Standard Methods 2320 B 1997, 2011				09/21/2021 13:31
21080628-007B	FIELD BLANK	09/20/2021 18:15	09/21/2021 10:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/24/2021 15:24
	SW-846 9036 (Total)				09/27/2021 19:49
	SW-846 9214 (Total)				09/21/2021 13:56
	SW-846 9251 (Total)				09/23/2021 20:23
21080628-007C	FIELD BLANK	09/20/2021 18:15	09/21/2021 10:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/28/2021 13:35
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/30/2021 19:26
21080628-008A	401G52D DUP	09/20/2021 17:39	09/21/2021 10:45		
	Field Elevation Measurements				09/20/2021 17:39
	Standard Method 4500-H B 2001 Field				09/20/2021 17:39
	Standard Methods 2130 B Field				09/20/2021 17:39
	Standard Methods 18th Ed. 2580 B Field				09/20/2021 17:39
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2021 13:34
	Standard Methods 2320 B 1997, 2011				09/21/2021 13:34
	Standard Methods 2510 B Field				09/20/2021 17:39
	Standard Methods 2550 B Field				09/20/2021 17:39
	Standard Methods 4500-O G Field				09/20/2021 17:39
21080628-008B	401G52D DUP	09/20/2021 17:39	09/21/2021 10:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/24/2021 15:25
	SW-846 9036 (Total)				09/27/2021 19:55
	SW-846 9214 (Total)				09/21/2021 13:59
	SW-846 9251 (Total)				09/23/2021 20:25
21080628-008C	401G52D DUP	09/20/2021 17:39	09/21/2021 10:45		
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/28/2021 13:43
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/30/2021 19:33

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

STANDARD METHOD 4500-H B 2001 FIELD

Batch R299789 **SampType:** LCS Units

SampID: LCS-R299789

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
pH	*	1.00		**7.04**	7.000	0	100.6	98.57	101.4	09/20/2021

STANDARD METHODS 2510 B FIELD

Batch R299789 **SampType:** LCS Units **µS/cm**

SampID: LCS-R299789

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Spec. Conductance, Field	*	0		**1480**	1409	0	104.8	90	110	09/20/2021

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R299489 **SampType:** MBLK Units **mg/L**

SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	09/24/2021
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	09/24/2021
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	09/24/2021

Batch R299489 **SampType:** LCS Units **mg/L**

SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		**986**	1000	0	98.6	90	110	09/24/2021
Total Dissolved Solids		20		**932**	1000	0	93.2	90	110	09/24/2021
Total Dissolved Solids		20		**950**	1000	0	95.0	90	110	09/24/2021

Batch R299489 **SampType:** DUP Units **mg/L** RPD Limit **5**

SampID: 21080628-004BDUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20		**330**				318.0	3.70	09/24/2021

SW-846 9036 (TOTAL)

Batch R299361 **SampType:** MBLK Units **mg/L**

SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.140	0	0	-100	100	09/23/2021

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

SW-846 9036 (TOTAL)

Batch R299361 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**20**	20.00	0	99.0	90	110	09/23/2021

Batch R299361 **SampType:** MS Units **mg/L**
SampID: 21080628-006BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		50	E	**264**	100.0	175.0	89.3	85	115	09/23/2021

Batch R299361 **SampType:** MSD Units **mg/L** RPD Limit **10**
SampID: 21080628-006BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		50	SE	**259**	100.0	175.0	83.6	264.4	2.18	09/23/2021

Batch R299523 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.140	0	0	-100	100	09/27/2021

Batch R299523 **SampType:** MBLK Units **mg/L**
SampID: MB-R299523

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	7.620	0	0	-100	100	09/27/2021

Batch R299523 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**19**	20.00	0	92.9	90	110	09/27/2021

Batch R299523 **SampType:** LCS Units **mg/L**
SampID: LCS-R299523

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**19**	20.00	0	92.9	90	110	09/27/2021

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

SW-846 9214 (TOTAL)

Batch R299229 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**< 0.10**	0.0370	0	0	-100	100	09/21/2021

Batch R299229 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**0.95**	1.000	0	94.8	90	110	09/21/2021

Batch R299229 **SampType:** MS Units **mg/L**
SampID: 21080628-008BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.41**	2.000	0.2570	107.8	75	125	09/21/2021

Batch R299229 **SampType:** MSD Units **mg/L** RPD Limit **15**
SampID: 21080628-008BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.45**	2.000	0.2570	109.6	2.414	1.44	09/21/2021

SW-846 9251 (TOTAL)

Batch R299362 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		1		**< 1**	0.5000	0	0	-100	100	09/23/2021

Batch R299362 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		1		**20**	20.00	0	99.7	90	110	09/23/2021

Batch R299362 **SampType:** MS Units **mg/L**
SampID: 21080628-006BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		5		**125**	100.0	23.55	101.7	85	115	09/23/2021

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

SW-846 9251 (TOTAL)

Batch R299362 **SampType:** MSD Units **mg/L** RPD Limit **15**

SampID: 21080628-006BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		5		**127**	100.0	23.55	103.6	125.2	1.54	09/23/2021

Batch R299524 **SampType:** MBLK Units **mg/L**

SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		1		**< 1**	0.5000	0	0	-100	100	09/27/2021

Batch R299524 **SampType:** LCS Units **mg/L**

SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		1		**20**	20.00	0	98.8	90	110	09/27/2021

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 182203 **SampType:** MBLK Units **µg/L**

SampID: MBLK-182203

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic		1.0		**< 1.0**	0.3750	0	0	-100	100	09/28/2021
Barium		1.0		**< 1.0**	0.7000	0	0	-100	100	09/28/2021
Boron		25.0		**< 25.0**	9.250	0	0	-100	100	09/30/2021
Calcium		125		**< 125**	70.00	0	0	-100	100	09/28/2021
Chromium		1.5		**< 1.5**	0.7000	0	0	-100	100	09/30/2021
Cobalt		1.0		**< 1.0**	0.1150	0	0	-100	100	09/28/2021
Lead		1.0		**< 1.0**	0.6000	0	0	-100	100	09/28/2021
Lithium	*	3.0		**< 3.0**	1.450	0	0	-100	100	09/29/2021
Selenium		1.0		**< 1.0**	0.6000	0	0	-100	100	09/28/2021

Client: Ramboll **Work Order:** 21080628

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 06-Oct-21

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 182203 **SampType:** LCS Units µg/L

SampID: LCS-182203

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic		1.0		**516**	500.0	0	103.1	80	120	09/28/2021
Barium		1.0		**2120**	2000	0	106.0	80	120	09/28/2021
Boron		25.0		**499**	500.0	0	99.7	80	120	09/30/2021
Calcium		125		**2550**	2500	0	101.8	80	120	09/28/2021
Chromium		1.5		**204**	200.0	0	102.0	80	120	09/30/2021
Cobalt		1.0		**512**	500.0	0	102.4	80	120	09/28/2021
Lead		1.0		**506**	500.0	0	101.3	80	120	09/28/2021
Lithium	*	3.0		**547**	500.0	0	109.5	80	120	09/29/2021
Selenium		1.0		**484**	500.0	0	96.8	80	120	09/28/2021

Batch 182203 **SampType:** MS Units µg/L

SampID: 21080628-008CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic		1.0		**511**	500.0	1.839	101.9	75	125	09/28/2021
Barium		1.0		**2340**	2000	233.4	105.4	75	125	09/28/2021
Boron		25.0		**548**	500.0	52.74	99.1	75	125	09/30/2021
Calcium		125	S	**48600**	2500	47930	27.5	75	125	09/28/2021
Chromium		1.5		**195**	200.0	38.89	78.2	75	125	09/30/2021
Cobalt		1.0		**507**	500.0	3.768	100.6	75	125	09/28/2021
Lead		1.0		**505**	500.0	0	101.0	75	125	09/28/2021
Lithium	*	3.0		**544**	500.0	56.69	97.4	75	125	09/30/2021
Selenium		1.0		**471**	500.0	0	94.2	75	125	09/28/2021

Batch 182203 **SampType:** MSD Units µg/L RPD Limit **20**

SampID: 21080628-008CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Arsenic		1.0		**525**	500.0	1.839	104.7	511.5	2.70	09/28/2021
Barium		1.0		**2390**	2000	233.4	107.9	2342	2.07	09/28/2021
Boron		25.0		**556**	500.0	52.74	100.7	548.0	1.45	09/30/2021
Calcium		125		**49900**	2500	47930	79.2	48620	2.62	09/28/2021
Chromium		1.5		**211**	200.0	38.89	86.2	195.4	7.84	09/30/2021
Cobalt		1.0		**519**	500.0	3.768	103.1	506.9	2.39	09/28/2021
Lead		1.0		**524**	500.0	0	104.8	505.0	3.72	09/28/2021
Lithium	*	3.0		**558**	500.0	56.69	100.3	543.9	2.62	09/30/2021
Selenium		1.0		**483**	500.0	0	96.6	470.9	2.54	09/28/2021

Receiving Check List

http://www.teklabinc.com/

Client: Ramboll
Work Order: 21080628
Client Project: Joppa East Ash Pond CCR 401
Report Date: 06-Oct-21

Carrier: Joe Riley
Received By: PWR

Completed by: Mary E. Kemp
On: 21-Sep-21
Mary E. Kemp

Reviewed by: Elizabeth A. Hurley
On: 21-Sep-21
Elizabeth A. Hurley

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 0.4
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☑	Lab ☐	NA ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

pH strip #77492. - PR/MKemp - 9/21/2021 11:37:06 AM

CHAIN OF CUSTODY

pg. 1 of 1 Work order # 21080628

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	Ramboll
Address:	234 W. Florida St.
City / State / Zip	Milwaukee, WI 53204
Contact:	Steve Wiskes
Phone:	(414) 837-3614
E-Mail:	steve.wiskes@ramboll.com
Fax:	

Samples on: [X] ICE [ ] BLUE ICE [ ] NO ICE 0.4 °C LTG# 3

Preserved in: [ ] LAB [X] FIELD 77492 **FOR LAB USE ONLY**

Lab Notes: PM 9-21-21

Are these samples known to be involved in litigation? If yes, a surcharge will apply [ ] Yes [X] No

Are these samples known to be hazardous? [ ] Yes [X] No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. [ ] Yes [X] No

Client Comments

Total Metals: ICP/MS 6020A As B Ba Ca Co Cr Pb Li Se

Project Name/Number	Sample Collector's Name
Joppa East Ash Pond CCR 401	J Riley A Bridges

Results Requested

[X] Standard [ ] 1-2 Day (100% Surcharge) [ ] Other ____ [ ] 3 Day (50% Surcharge)

Billing Instructions

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers: UNP	HNO3	MATRIX: Groundwater	Carb/Bicarb M2320B	Chloride 9251	Field Conductivity SM 2510-B	Field DO SM 4500-O	Field ORP SM 2580-B	Field pH SM 4500-H+B	Field Temperature SM 2550	Field Turbidity SM 2130-B	Fluoride 9214	GW Elevations	Sulfate 9036	TDS SM 2540C	Total Metals
21080628-001	401G01D	9/20/21 1357	2	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X
002	401G02D	9/20/21 1318	2	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X
003	401G51D	9/20/21 1247	2	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X
004	401G52D	9/20/21 1739	2	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X
005	401G53D	9/20/21 1129	2	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X
006	401G54D	9/20/21 1204	2	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X
007	FIELD BLANK	9/20/21 1815	2	1	X	X								X		X	X	X
008	401G52D DUP	9/20/21 1739	2	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Relinquished By	Date/Time	Received By	Date/Time
	9/21/21 1045		9/21/21 1045

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 67386 F686D781A 292B2B7A5 C5

October 12, 2021

Steve Wiskes
Ramboll
234 W. Florida St.
5th Floor
Milwaukee, WI 53204
TEL: (414) 837-3614
FAX:

Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: Joppa East Ash Pond CCR 401 **WorkOrder:** 21080629

Dear Steve Wiskes:

TEKLAB, INC received 7 samples on 9/21/2021 10:45:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Elizabeth A. Hurley
Project Manager
(618)344-1004 ex 33
ehurley@teklabinc.com

Report Contents

http://www.teklabinc.com/

Client: Ramboll
Work Order: 21080629
Client Project: Joppa East Ash Pond CCR 401
Report Date: 12-Oct-21

This reporting package includes the following:

Client: Ramboll **Work Order:** 21080629

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 12-Oct-21

Abbr Definition

*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Client: Ramboll **Work Order:** 21080629

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 12-Oct-21

Qualifiers

- # - Unknown hydrocarbon
- B - Analyte detected in associated Method Blank
- C - RL shown is a Client Requested Quantitation Limit
- E - Value above quantitation range
- H - Holding times exceeded
- I - Associated internal standard was outside method criteria
- J - Analyte detected below quantitation limits
- M - Manual Integration used to determine area response
- ND - Not Detected at the Reporting Limit
- R - RPD outside accepted recovery limits
- S - Spike Recovery outside recovery limits
- T - TIC(Tentatively identified compound)
- X - Value exceeds Maximum Contaminant Level

Client: Ramboll

Work Order: 21080629

Client Project: Joppa East Ash Pond CCR 401

Report Date: 12-Oct-21

Cooler Receipt Temp: 0.6 °C

An employee of Teklab, Inc. collected the sample(s).

Radium-226 and Radium-228 analysis was performed by Pace Analytical Services, LLC. See attached report for

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Client: Ramboll **Work Order:** 21080629

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 12-Oct-21

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2022	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2022	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2022	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2022	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2022	Collinsville
Arkansas	ADEQ	88-0966		3/14/2022	Collinsville
Illinois	IDPH	17584		5/31/2021	Collinsville
Kentucky	UST	0073		1/31/2022	Collinsville
Missouri	MDNR	00930		5/31/2021	Collinsville
Missouri	MDNR	930		1/31/2022	Collinsville

Client: Ramboll **Work Order:** 21080629

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 12-Oct-21

Lab ID: 21080629-001 **Client Sample ID:** 401G01D

Matrix: GROUNDWATER **Collection Date:** 09/20/2021 13:51

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/06/2021 0:00	R301046
Radium-228	*	0		**See Attached**	pci/L	1	10/06/2021 0:00	R301046

Client: Ramboll **Work Order:** 21080629

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 12-Oct-21

Lab ID: 21080629-002 **Client Sample ID:** 401G02D

Matrix: GROUNDWATER **Collection Date:** 09/20/2021 13:18

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/06/2021 0:00	R301046
Radium-228	*	0		**See Attached**	pci/L	1	10/06/2021 0:00	R301046

Client: Ramboll **Work Order:** 21080629

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 12-Oct-21

Lab ID: 21080629-003 **Client Sample ID:** 401G51D

Matrix: GROUNDWATER **Collection Date:** 09/20/2021 12:44

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/06/2021 0:00	R301046
Radium-228	*	0		**See Attached**	pci/L	1	10/06/2021 0:00	R301046

Client: Ramboll **Work Order:** 21080629

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 12-Oct-21

Lab ID: 21080629-004 **Client Sample ID:** 401G52D

Matrix: GROUNDWATER **Collection Date:** 09/20/2021 17:39

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/06/2021 0:00	R301046
Radium-228	*	0		**See Attached**	pci/L	1	10/06/2021 0:00	R301046

Client: Ramboll **Work Order:** 21080629

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 12-Oct-21

Lab ID: 21080629-005 **Client Sample ID:** 401G53D

Matrix: GROUNDWATER **Collection Date:** 09/20/2021 11:29

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/06/2021 0:00	R301046
Radium-228	*	0		**See Attached**	pci/L	1	10/06/2021 0:00	R301046

Client: Ramboll **Work Order:** 21080629

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 12-Oct-21

Lab ID: 21080629-006 **Client Sample ID:** 401G54D

Matrix: GROUNDWATER **Collection Date:** 09/20/2021 12:04

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/06/2021 0:00	R301046
Radium-228	*	0		**See Attached**	pci/L	1	10/06/2021 0:00	R301046

Client: Ramboll **Work Order:** 21080629

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 12-Oct-21

Lab ID: 21080629-007 **Client Sample ID:** FIELD BLANK

Matrix: GROUNDWATER **Collection Date:** 09/20/2021 18:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/06/2021 0:00	R301046
Radium-228	*	0		**See Attached**	pci/L	1	10/06/2021 0:00	R301046

Client: Ramboll
Work Order: 21080629
Client Project: Joppa East Ash Pond CCR 401
Report Date: 12-Oct-21

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
21080629-001	401G01D	Groundwater	1	09/20/2021 13:51
21080629-002	401G02D	Groundwater	1	09/20/2021 13:18
21080629-003	401G51D	Groundwater	1	09/20/2021 12:44
21080629-004	401G52D	Groundwater	1	09/20/2021 17:39
21080629-005	401G53D	Groundwater	1	09/20/2021 11:29
21080629-006	401G54D	Groundwater	1	09/20/2021 12:04
21080629-007	FIELD BLANK	Groundwater	1	09/20/2021 18:15

Client: Ramboll **Work Order:** 21080629

Client Project: Joppa East Ash Pond CCR 401 **Report Date:** 12-Oct-21

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
21080629-001A	401G01D	09/20/2021 13:51	09/21/2021 10:45		
	EPA 903.0/904.0, Radium 226/228				10/06/2021 0:00
21080629-002A	401G02D	09/20/2021 13:18	09/21/2021 10:45		
	EPA 903.0/904.0, Radium 226/228				10/06/2021 0:00
21080629-003A	401G51D	09/20/2021 12:44	09/21/2021 10:45		
	EPA 903.0/904.0, Radium 226/228				10/06/2021 0:00
21080629-004A	401G52D	09/20/2021 17:39	09/21/2021 10:45		
	EPA 903.0/904.0, Radium 226/228				10/06/2021 0:00
21080629-005A	401G53D	09/20/2021 11:29	09/21/2021 10:45		
	EPA 903.0/904.0, Radium 226/228				10/06/2021 0:00
21080629-006A	401G54D	09/20/2021 12:04	09/21/2021 10:45		
	EPA 903.0/904.0, Radium 226/228				10/06/2021 0:00
21080629-007A	FIELD BLANK	09/20/2021 18:15	09/21/2021 10:45		
	EPA 903.0/904.0, Radium 226/228				10/06/2021 0:00

Receiving Check List

Teklab, Inc. Environmental Laboratory

http://www.teklabinc.com/

Client: Ramboll

Work Order: 21080629

Client Project: Joppa East Ash Pond CCR 401

Report Date: 12-Oct-21

Carrier: Joe Riley

Received By: PWR

Completed by: Mary E. Kemp
On: 21-Sep-21
Mary E. Kemp

Reviewed by: Elizabeth A. Hurley
On: 21-Sep-21
Elizabeth A. Hurley

Pages to follow: Chain of custody 1 Extra pages included 16

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 0.6
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.				
Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑	
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐	
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑	

Any No responses must be detailed below or on the COC.

pH strip #77366. - ERH/MKemp - 9/21/2021 11:31:36 AM

CHAIN OF CUSTODY

pg. 1 of 1 Work order # 21080629

TEKLAB, INC. 5445 Horseshoe Lake Road - Collinsville, IL 62234 - Phone: (618) 344-1004 - Fax: (618) 344-1005

Client:	Ramboll
Address:	234 W. Florida St.
City / State / Zip	Milwaukee, WI 53204
Contact:	Steve Wiskes
Phone:	(414) 837-3614
E-Mail:	steve.wiskes@ramboll.com
Fax:	

Samples on: [X] ICE [ ] BLUE ICE [ ] NO ICE 0.6 °C LTG# 3

Preserved in: [ ] LAB [X] FIELD

FOR LAB USE ONLY

Lab Notes: 77360 EH 9/21/21

Client Comments

Are these samples known to be involved in litigation? If yes, a surcharge will apply [ ] Yes [X] No

Are these samples known to be hazardous? [ ] Yes [X] No

Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section. [ ] Yes [X] No

Project Name/Number	Sample Collector's Name
Joppa East Ash Pond CCR 401	J. RILEY A. BARNES

Results Requested

[X] Standard [ ] 1-2 Day (100% Surcharge) [ ] Other ____ [ ] 3 Day (50% Surcharge)

Billing Instructions

Lab Use Only	Sample Identification	Date/Time Sampled	# and Type of Containers HNO3	MATRIX Groundwater	INDICATE ANALYSIS REQUESTED Sub Radium 226/228 EPA 903/904
21080629.001	401G01D	9/20/21 1357	2	X	X
002	401G02D	9/20/21 1318	2	X	X
003	401G51D	9/20/21 1244	2	X	X
004	401G52D	9/20/21 1739	2	X	X
005	401G53D	9/20/21 1129	2	X	X
006	401G54D	9/20/21 1204	2	X	X
007	FIELD BLANK	9/20/21 1819	2	X	X

Relinquished By	Date/Time	Received By	Date/Time
	9/21/21 1045		9/21/21 1045

The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions.

BottleOrder: 67386 F686O781A 292B2B7A5 C5

EH 9/21/21

ANALYTICAL REPORT

October 08, 2021

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

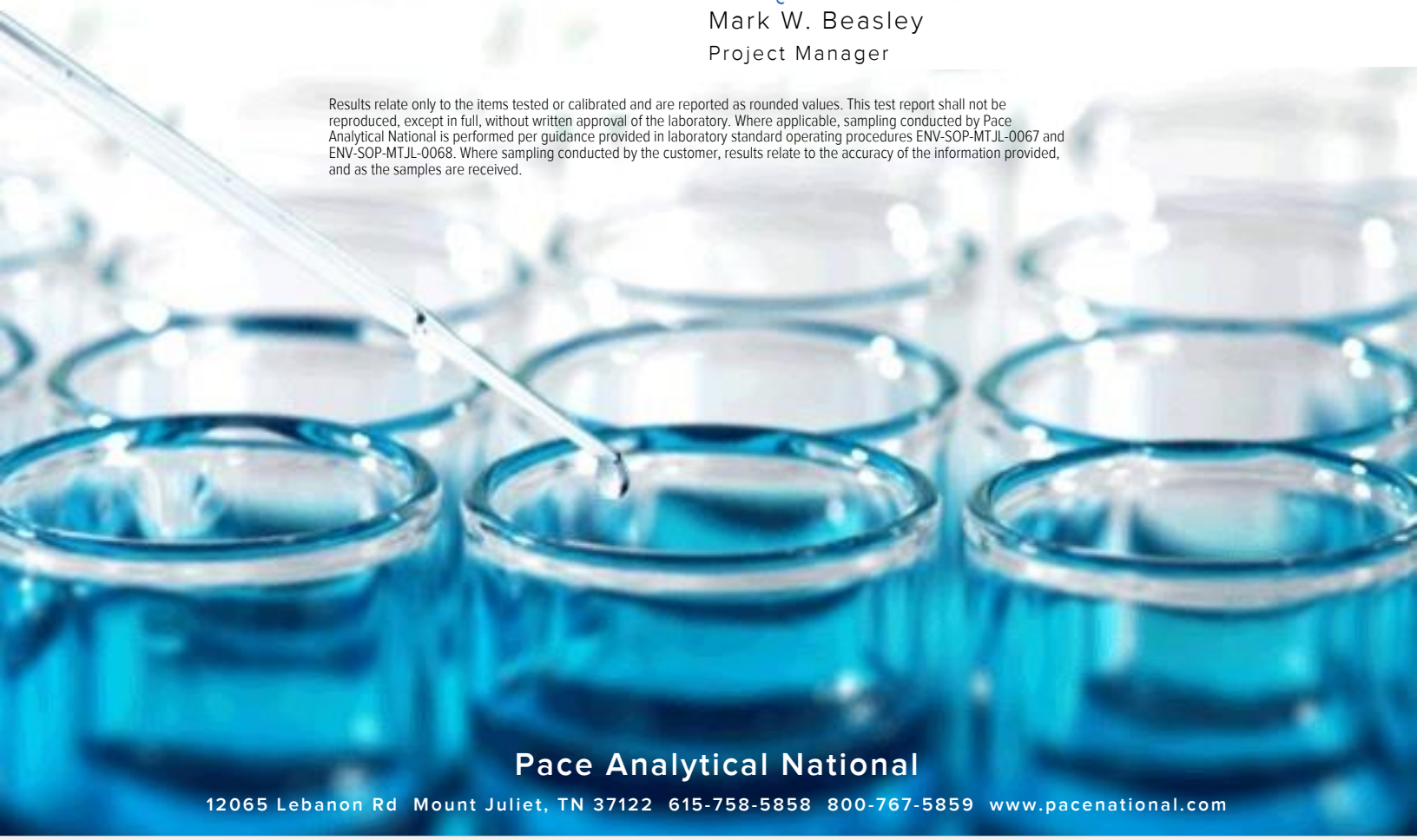
TEKLAB, Inc.

Sample Delivery Group:	L1407782
Samples Received:	09/23/2021
Project Number:	21080629
Description:	

Report To: Elizabeth Hurley
5445 Horseshoe Lake Road
Collinsville, IL 62234

Entire Report Reviewed By:

Mark W. Beasley
Project Manager



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

SAMPLE SUMMARY

21080629-001 L1407782-01 Non-Potable Water

Collected by | Collected date/time 09/20/21 13:51 | Received date/time 09/23/21 11:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method Calculation	WG1747258	1	10/04/21 15:15	10/06/21 13:20	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1747258	1	10/04/21 15:15	10/06/21 11:02	RGT	Mt. Juliet, TN

21080629-002 L1407782-02 Non-Potable Water

Collected by | Collected date/time 09/20/21 13:18 | Received date/time 09/23/21 11:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method Calculation	WG1747258	1	10/04/21 15:15	10/06/21 13:20	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1747258	1	10/04/21 15:15	10/06/21 11:02	RGT	Mt. Juliet, TN

21080629-003 L1407782-03 Non-Potable Water

Collected by | Collected date/time 09/20/21 12:44 | Received date/time 09/23/21 11:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method Calculation	WG1747258	1	10/04/21 15:15	10/06/21 13:20	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1747258	1	10/04/21 15:15	10/06/21 11:02	RGT	Mt. Juliet, TN

21080629-004 L1407782-04 Non-Potable Water

Collected by | Collected date/time 09/20/21 17:39 | Received date/time 09/23/21 11:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method Calculation	WG1747258	1	10/04/21 15:15	10/06/21 13:20	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1747258	1	10/04/21 15:15	10/06/21 11:02	RGT	Mt. Juliet, TN

21080629-005 L1407782-05 Non-Potable Water

Collected by | Collected date/time 09/20/21 11:29 | Received date/time 09/23/21 11:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method Calculation	WG1747258	1	10/04/21 15:15	10/06/21 13:20	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1747258	1	10/04/21 15:15	10/06/21 11:02	RGT	Mt. Juliet, TN

21080629-006 L1407782-06 Non-Potable Water

Collected by | Collected date/time 09/20/21 12:04 | Received date/time 09/23/21 11:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method Calculation	WG1747258	1	10/04/21 15:15	10/06/21 13:20	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1747258	1	10/04/21 15:15	10/06/21 11:02	RGT	Mt. Juliet, TN

21080629-007 L1407782-07 Non-Potable Water

Collected by | Collected date/time 09/20/21 18:15 | Received date/time 09/23/21 11:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method Calculation	WG1747258	1	10/04/21 15:15	10/06/21 13:20	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1747258	1	10/04/21 15:15	10/06/21 11:02	RGT	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.136	U	0.293	0.575	10/06/2021 13:20	WG1747334
(T) Barium	*100*			*62.0-143*	*10/06/2021 13:20*	WG1747334
(T) Yttrium	*107*			*79.0-136*	*10/06/2021 13:20*	WG1747334

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.0588	U	0.426	0.816	10/06/2021 13:20	WG1747258

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0588	U	0.133	0.241	10/06/2021 11:02	WG1747258
(T) Barium-133	*101*			*30.0-143*	*10/06/2021 11:02*	WG1747258

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.494	J	0.275	0.52	10/06/2021 13:20	WG1747334
(T) Barium	*109*			*62.0-143*	*10/06/2021 13:20*	WG1747334
(T) Yttrium	*108*			*79.0-136*	*10/06/2021 13:20*	WG1747334

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.01		0.592	0.805	10/06/2021 13:20	WG1747258

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.515		0.317	0.285	10/06/2021 11:02	WG1747258
(T) Barium-133	*99.6*			*30.0-143*	*10/06/2021 11:02*	WG1747258

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.291	J	0.293	0.562	10/06/2021 13:20	WG1747334
(T) Barium	*95.9*			*62.0-143*	*10/06/2021 13:20*	WG1747334
(T) Yttrium	*103*			*79.0-136*	*10/06/2021 13:20*	WG1747334

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.295	U	0.427	0.877	10/06/2021 13:20	WG1747258

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.00497	U	0.134	0.315	10/06/2021 11:02	WG1747258
(T) Barium-133	*98.3*			*30.0-143*	*10/06/2021 11:02*	WG1747258

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.10		0.290	0.527	10/06/2021 13:20	WG1747334
(T) Barium	*106*			*62.0-143*	*10/06/2021 13:20*	WG1747334
(T) Yttrium	*108*			*79.0-136*	*10/06/2021 13:20*	WG1747334

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.43		0.596	0.908	10/06/2021 13:20	WG1747258

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.324	J	0.306	0.381	10/06/2021 11:02	WG1747258
(T) Barium-133	*90.1*			*30.0-143*	*10/06/2021 11:02*	WG1747258

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.14		0.289	0.524	10/06/2021 13:20	WG1747334
(T) Barium	*105*			*62.0-143*	*10/06/2021 13:20*	WG1747334
(T) Yttrium	*95.9*			*79.0-136*	*10/06/2021 13:20*	WG1747334

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.50		0.549	0.751	10/06/2021 13:20	WG1747258

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.355		0.260	0.227	10/06/2021 11:02	WG1747258
(T) Barium-133	*95.9*			*30.0-143*	*10/06/2021 11:02*	WG1747258

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	3.01		0.324	0.533	10/06/2021 13:20	WG1747334
(T) Barium	*106*			*62.0-143*	*10/06/2021 13:20*	WG1747334
(T) Yttrium	*101*			*79.0-136*	*10/06/2021 13:20*	WG1747334

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	3.17		0.522	0.804	10/06/2021 13:20	WG1747258

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.162	J	0.198	0.271	10/06/2021 11:02	WG1747258
(T) Barium-133	*97.7*			*30.0-143*	*10/06/2021 11:02*	WG1747258

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.322	J	0.261	0.499	10/06/2021 13:20	WG1747334
(T) Barium	*99.7*			*62.0-143*	*10/06/2021 13:20*	WG1747334
(T) Yttrium	*95.8*			*79.0-136*	*10/06/2021 13:20*	WG1747334

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.322	U	0.327	0.747	10/06/2021 13:20	WG1747258

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	-0.0259	U	0.0656	0.248	10/06/2021 11:02	WG1747258
(T) Barium-133	*99.7*			*30.0-143*	*10/06/2021 11:02*	WG1747258

Method Blank (MB)

(MB) R3713537-1 10/06/21 13:20

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-228	0.412		0.409
(T) Barium	*105*		
(T) Yttrium	*97.0*		

Original Sample (OS) • Duplicate (DUP)

(OS) • (DUP) R3713537-5 10/06/21 13:20

Analyte	Original Result	DUP Result pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228		10.7	1	16.0	1.49		20	3
(T) Barium		*160*				C1		
(T) Yttrium		*102*						

Laboratory Control Sample (LCS)

(LCS) R3713537-2 10/06/21 13:20

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.63	92.6	80.0-120	
(T) Barium			*102*		
(T) Yttrium			*105*		

L1407782-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1407782-05 10/06/21 13:20 • (MS) R3713537-3 10/06/21 13:20 • (MSD) R3713537-4 10/06/21 13:20

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	16.7	1.14	20.0	20.2	113	114	1	70.0-130			1.04		20
(T) Barium		*105*			*106*	*105*							
(T) Yttrium		*95.9*			*98.5*	*103*							

Method Blank (MB)

(MB) R3713705-1 10/06/21 17:25

Analyte	MB Result	MB Qualifier	MB MDA
	pCi/l		pCi/l
Radium-226	0.00657	U	0.0328
(T) Barium-133	*116*		

L1407782-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1407782-01 10/06/21 11:02 • (DUP) R3713705-5 10/06/21 17:25

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	pCi/l		%			%	
Radium-226	0.0588	-0.0276	1	200	0.358	U	20	3
(T) Barium-133	*101*	*117*						

Laboratory Control Sample (LCS)

(LCS) R3713705-2 10/06/21 17:25

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-226	5.02	5.03	100	80.0-120	
(T) Barium-133			*119*		

L1408697-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1408697-01 10/06/21 11:02 • (MS) R3713705-3 10/06/21 17:25 • (MSD) R3713705-4 10/06/21 17:25

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-226	20.1	0.140	19.3	17.6	95.2	86.6	1	75.0-125			9.34		20
(T) Barium-133		*98.0*			*120*	*110*							

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
C1	Tracer recovery limits have been exceeded; values are outside upper control limits.
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Pg ___ of ___

TEKLAB, INC. Chain of Custody

5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Are the samples chilled? YES ☐ NO ☑ With: ☐ Ice ☐ Blue Ice Preserved in: ☐ Lab ☐ Field

Teklab Inc
5445 Horseshoe Lake Road
Collinsville, IL 62234

Cooler Temp: ___ Sampler: Teklab QC Level: 3

Comments: **Please Issue reports and invoices via email only**
Please analyze for Radium 22/228 per methods specified for Vistra/Ramboll projects.
IL site
Batch QC is required for all analyses requested.
Any changes to analysis/methods must be approved by Tekl...

Project# 21080629

Contact: Elizabeth A. Hurley Email: ehurley@teklabinc.com
Requested Due Date: 10-15 day TAT Billing/PO: 31843 Phone: (618) 344-1004 ext 33

A123

L1407782

PLEASE NOTE:

NELAP accreditation is required on the requested analytes and must be documented as such on the final report. If your laboratory does not currently hold a NELAP accreditation for the requested method and/or analytes, please contact Teklab immediately. If your laboratory loses accreditation or is suspended for any analyte/method during the life of the contract, you must contact Teklab immediately.

Lab Use	Sample ID	Sample Date/Time	Preservative	Matrix	Ra226/228
-01	21080629-001	9/20/21 1351	HNO3	Groundwater	✔
-02	21080629-002	9/20/21 1318	HNO3	Groundwater	✔
-03	21080629-003	9/20/21 1244	HNO3	Groundwater	✔
-04	21080629-004	9/20/21 1739	HNO3	Groundwater	✔
-05	21080629-005	9/20/21 1129	HNO3	Groundwater	✔
-06	21080629-006	9/20/21 1204	HNO3	Groundwater	✔
-07	21080629-007	9/20/21 1815	HNO3	Groundwater	✔
			NO3	Groundwater	
			NO3	Groundwater	
			NO3	Groundwater	
			NO3	Groundwater	

Sample Receipt Checklist

		If Applicable	
COC Seal Present/Intact:	Y N	VOA Zero Headspace:	Y N
COC Signed/Accurate:	Y N	Pres.Correct/Check:	Y N
Bottles arrive intact:	Y N		
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

*Relinquished By	Date/Time	Received By	Date/Time
Mary Krup	9/21/21 1600		
		[signature]	9/23/21 1145

16.3+0=16.3 A7Oa

March 29, 2022

Eric Bauer
Ramboll
234 W. Florida St.
5th Floor
Milwaukee, WI 53204
TEL: (414) 837-3614
FAX:

Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: Joppa Q1 Groundwater **WorkOrder:** 22030339

Dear Eric Bauer:

TEKLAB, INC received 20 samples on 3/16/2022 12:45:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Elizabeth A. Hurley

Elizabeth A. Hurley
Project Manager
(618)344-1004 ex 33
ehurley@teklabinc.com

Client: Ramboll
Work Order: 22030339
Client Project: Joppa Q1 Groundwater
Report Date: 29-Mar-22

This reporting package includes the following:

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Abbr Definition

*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Qualifiers

- # - Unknown hydrocarbon
- B - Analyte detected in associated Method Blank
- C - RL shown is a Client Requested Quantitation Limit
- E - Value above quantitation range
- H - Holding times exceeded
- I - Associated internal standard was outside method criteria
- J - Analyte detected below quantitation limits
- M - Manual Integration used to determine area response
- ND - Not Detected at the Reporting Limit
- R - RPD outside accepted recovery limits
- S - Spike Recovery outside recovery limits
- T - TIC(Tentatively identified compound)
- X - Value exceeds Maximum Contaminant Level

Case Narrative

http://www.teklabinc.com/

Client: Ramboll
Client Project: Joppa Q1 Groundwater

Work Order: 22030339
Report Date: 29-Mar-22

Cooler Receipt Temp: 2.2 °C

An employee of Teklab, Inc. collected the sample(s).

Joppa East Ash Pond CCR 401 program data is included in this report. EAH 3/29/22

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2023	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2022	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2022	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2022	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2022	Collinsville
Arkansas	ADEQ	88-0966		3/14/2023	Collinsville
Illinois	IDPH	17584		5/31/2023	Collinsville
Kentucky	UST	0073		1/31/2023	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-001 **Client Sample ID:** G01D

Matrix: GROUNDWATER **Collection Date:** 03/14/2022 15:52

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**38.25**	ft	1	03/14/2022 15:52	R308668
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.37**		1	03/14/2022 15:52	R308668
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**76**	NTU	1	03/14/2022 15:52	R308668
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**117**	mV	1	03/14/2022 15:52	R308668
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**652**	µS/cm	1	03/14/2022 15:52	R308668
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**15.9**	°C	1	03/14/2022 15:52	R308668
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**2.67**	mg/L	1	03/14/2022 15:52	R308668
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**223**	mg/L	1	03/21/2022 16:17	R308526
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/21/2022 16:17	R308526
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	*	20		**318**	mg/L	1	03/21/2022 10:52	R308650
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**22**	mg/L	1	03/18/2022 0:02	R308408
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.22**	mg/L	1	03/22/2022 6:56	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**8**	mg/L	1	03/18/2022 0:02	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**26.1**	mg/L	1	03/21/2022 16:54	188680
Magnesium	NELAP	0.050		**7.77**	mg/L	1	03/21/2022 16:54	188680
Potassium	NELAP	0.100		**1.22**	mg/L	1	03/21/2022 16:54	188680
Sodium	NELAP	0.050		**77.2**	mg/L	1	03/21/2022 16:54	188680
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:18	188680
Arsenic	NELAP	1.0	J	**0.7**	µg/L	5	03/21/2022 22:18	188680
Barium	NELAP	1.0		**128**	µg/L	5	03/22/2022 14:04	188680
Beryllium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:18	188680
Boron	NELAP	25.0		**< 25.0**	µg/L	5	03/21/2022 22:18	188680
Cadmium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:18	188680
Chromium	NELAP	1.5		**2.6**	µg/L	5	03/21/2022 22:18	188680
Cobalt	NELAP	1.0	J	**0.8**	µg/L	5	03/21/2022 22:18	188680
Lead	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:18	188680
Lithium	*	3.0		**< 3.0**	µg/L	5	03/21/2022 22:18	188680
Molybdenum	NELAP	1.5		**< 1.5**	µg/L	5	03/21/2022 22:18	188680
Selenium	NELAP	1.0		**1.2**	µg/L	5	03/21/2022 22:18	188680
Thallium	NELAP	2.0		**< 2.0**	µg/L	5	03/21/2022 22:18	188680

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-001 **Client Sample ID:** G01D

Matrix: GROUNDWATER **Collection Date:** 03/14/2022 15:52

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.20		**< 0.20**	µg/L	1	03/21/2022 19:06	188687

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-002 **Client Sample ID:** G02D

Matrix: GROUNDWATER **Collection Date:** 03/14/2022 16:23

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**38.19**	ft	1	03/14/2022 16:23	R308668
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.47**		1	03/14/2022 16:23	R308668
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**< 1.0**	NTU	1	03/14/2022 16:23	R308668
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**138**	mV	1	03/14/2022 16:23	R308668
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**533**	µS/cm	1	03/14/2022 16:23	R308668
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**14.7**	°C	1	03/14/2022 16:23	R308668
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**5.48**	mg/L	1	03/14/2022 16:23	R308668
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**138**	mg/L	1	03/21/2022 16:28	R308526
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/21/2022 16:28	R308526
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	*	20		**260**	mg/L	1	03/21/2022 10:53	R308650
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**11**	mg/L	1	03/18/2022 0:10	R308408
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.23**	mg/L	1	03/22/2022 6:57	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**22**	mg/L	1	03/18/2022 0:10	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**38.2**	mg/L	1	03/21/2022 16:56	188680
Magnesium	NELAP	0.050		**10.6**	mg/L	1	03/21/2022 16:56	188680
Potassium	NELAP	0.100		**1.23**	mg/L	1	03/21/2022 16:56	188680
Sodium	NELAP	0.050		**31.7**	mg/L	1	03/21/2022 16:56	188680
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:24	188680
Arsenic	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:24	188680
Barium	NELAP	1.0		**148**	µg/L	5	03/22/2022 14:07	188680
Beryllium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:24	188680
Boron	NELAP	25.0		**28.3**	µg/L	5	03/21/2022 22:24	188680
Cadmium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:24	188680
Chromium	NELAP	1.5	J	**1.0**	µg/L	5	03/21/2022 22:24	188680
Cobalt	NELAP	1.0	J	**0.1**	µg/L	5	03/21/2022 22:24	188680
Lead	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:24	188680
Lithium	*	3.0		**< 3.0**	µg/L	5	03/21/2022 22:24	188680
Molybdenum	NELAP	1.5		**< 1.5**	µg/L	5	03/21/2022 22:24	188680
Selenium	NELAP	1.0		**1.2**	µg/L	5	03/21/2022 22:24	188680
Thallium	NELAP	2.0		**< 2.0**	µg/L	5	03/21/2022 22:24	188680

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-002 **Client Sample ID:** G02D

Matrix: GROUNDWATER **Collection Date:** 03/14/2022 16:23

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.20		**< 0.20**	µg/L	1	03/21/2022 19:08	188687

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-003 **Client Sample ID:** G51D

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 9:53

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**37.72**	ft	1	03/15/2022 9:53	R308668
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**5.57**		1	03/15/2022 9:53	R308668
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**33**	NTU	1	03/15/2022 9:53	R308668
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**165**	mV	1	03/15/2022 9:53	R308668
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**574**	µS/cm	1	03/15/2022 9:53	R308668
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**16.1**	°C	1	03/15/2022 9:53	R308668
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**2.92**	mg/L	1	03/15/2022 9:53	R308668
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**53**	mg/L	1	03/21/2022 16:33	R308526
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/21/2022 16:33	R308526
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	*	20		**324**	mg/L	1	03/21/2022 17:40	R308650
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**123**	mg/L	5	03/18/2022 0:26	R308408
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10	J	**0.09**	mg/L	1	03/22/2022 6:59	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**5**	mg/L	1	03/18/2022 0:20	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**31.0**	mg/L	1	03/21/2022 16:58	188680
Magnesium	NELAP	0.050		**12.9**	mg/L	1	03/21/2022 16:58	188680
Potassium	NELAP	0.100		**0.442**	mg/L	1	03/21/2022 16:58	188680
Sodium	NELAP	0.050		**35.5**	mg/L	1	03/21/2022 16:58	188680
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:31	188680
Arsenic	NELAP	1.0	J	**0.7**	µg/L	5	03/21/2022 22:31	188680
Barium	NELAP	1.0		**43.3**	µg/L	5	03/22/2022 14:11	188680
Beryllium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:31	188680
Boron	NELAP	25.0		**689**	µg/L	5	03/21/2022 22:31	188680
Cadmium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:31	188680
Chromium	NELAP	1.5		**1.7**	µg/L	5	03/21/2022 22:31	188680
Cobalt	NELAP	1.0		**1.6**	µg/L	5	03/21/2022 22:31	188680
Lead	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:31	188680
Lithium	*	3.0		**5.5**	µg/L	5	03/21/2022 22:31	188680
Molybdenum	NELAP	1.5		**< 1.5**	µg/L	5	03/21/2022 22:31	188680
Selenium	NELAP	1.0		**4.9**	µg/L	5	03/21/2022 22:31	188680
Thallium	NELAP	2.0		**< 2.0**	µg/L	5	03/21/2022 22:31	188680

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-003 **Client Sample ID:** G51D

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 9:53

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.20		**< 0.20**	µg/L	1	03/21/2022 19:10	188687

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-004 **Client Sample ID:** G52D

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 10:31

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**25.28**	ft	1	03/15/2022 10:31	R308668
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.22**		1	03/15/2022 10:31	R308668
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**< 1.0**	NTU	1	03/15/2022 10:31	R308668
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**-48**	mV	1	03/15/2022 10:31	R308668
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**623**	µS/cm	1	03/15/2022 10:31	R308668
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**14.7**	°C	1	03/15/2022 10:31	R308668
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**0.37**	mg/L	1	03/15/2022 10:31	R308668
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**151**	mg/L	1	03/21/2022 16:38	R308526
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/21/2022 16:38	R308526
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	*	20		**350**	mg/L	1	03/21/2022 17:40	R308650
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**68**	mg/L	5	03/18/2022 0:34	R308408
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.29**	mg/L	1	03/22/2022 7:02	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**12**	mg/L	1	03/18/2022 0:28	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**48.3**	mg/L	1	03/21/2022 16:59	188680
Magnesium	NELAP	0.050		**15.1**	mg/L	1	03/21/2022 16:59	188680
Potassium	NELAP	0.100		**0.743**	mg/L	1	03/21/2022 16:59	188680
Sodium	NELAP	0.050		**29.0**	mg/L	1	03/21/2022 16:59	188680
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:37	188680
Arsenic	NELAP	1.0		**1.8**	µg/L	5	03/21/2022 22:37	188680
Barium	NELAP	1.0		**208**	µg/L	5	03/22/2022 14:14	188680
Beryllium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:37	188680
Boron	NELAP	25	J	**10**	µg/L	5	03/21/2022 22:37	188680
Cadmium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:37	188680
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	03/21/2022 22:37	188680
Cobalt	NELAP	1.0		**6.3**	µg/L	5	03/21/2022 22:37	188680
Lead	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:37	188680
Lithium	*	3.0	J	**2.3**	µg/L	5	03/21/2022 22:37	188680
Molybdenum	NELAP	1.5	J	**0.9**	µg/L	5	03/21/2022 22:37	188680
Selenium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:37	188680
Thallium	NELAP	2.0		**< 2.0**	µg/L	5	03/21/2022 22:37	188680

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-004 **Client Sample ID:** G52D

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 10:31

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.20		**< 0.20**	µg/L	1	03/21/2022 19:12	188687

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-005 **Client Sample ID:** G52D Duplicate

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 10:31

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**25.28**	ft	1	03/15/2022 10:31	R308668
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.22**		1	03/15/2022 10:31	R308668
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**< 1.0**	NTU	1	03/15/2022 10:31	R308668
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**-48**	mV	1	03/15/2022 10:31	R308668
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**623**	µS/cm	1	03/15/2022 10:31	R308668
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**14.7**	°C	1	03/15/2022 10:31	R308668
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**0.37**	mg/L	1	03/15/2022 10:31	R308668
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**148**	mg/L	1	03/21/2022 16:43	R308526
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/21/2022 16:43	R308526
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	*	20		**346**	mg/L	1	03/21/2022 17:40	R308650
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**64**	mg/L	5	03/18/2022 0:58	R308408
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.29**	mg/L	1	03/22/2022 7:04	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**12**	mg/L	1	03/18/2022 0:52	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**47.6**	mg/L	1	03/21/2022 17:01	188680
Magnesium	NELAP	0.050		**14.9**	mg/L	1	03/21/2022 17:01	188680
Potassium	NELAP	0.100		**0.729**	mg/L	1	03/21/2022 17:01	188680
Sodium	NELAP	0.050		**28.6**	mg/L	1	03/21/2022 17:01	188680
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:43	188680
Arsenic	NELAP	1.0		**1.6**	µg/L	5	03/21/2022 22:43	188680
Barium	NELAP	1.0		**211**	µg/L	5	03/22/2022 14:18	188680
Beryllium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:43	188680
Boron	NELAP	25.0		**< 25.0**	µg/L	5	03/21/2022 22:43	188680
Cadmium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:43	188680
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	03/21/2022 22:43	188680
Cobalt	NELAP	1.0		**6.0**	µg/L	5	03/21/2022 22:43	188680
Lead	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:43	188680
Lithium	*	3.0	J	**2.3**	µg/L	5	03/21/2022 22:43	188680
Molybdenum	NELAP	1.5	J	**0.9**	µg/L	5	03/21/2022 22:43	188680
Selenium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:43	188680
Thallium	NELAP	2.0		**< 2.0**	µg/L	5	03/21/2022 22:43	188680

Client: Ramboll
Work Order: 22030339
Client Project: Joppa Q1 Groundwater
Report Date: 29-Mar-22
Lab ID: 22030339-005
Client Sample ID: G52D Duplicate
Matrix: GROUNDWATER
Collection Date: 03/15/2022 10:31

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.20		**< 0.20**	µg/L	1	03/21/2022 19:15	188687

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-006 **Client Sample ID:** G53D

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 13:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**30.63**	ft	1	03/15/2022 13:20	R308668
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.50**		1	03/15/2022 13:20	R308668
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**4.9**	NTU	1	03/15/2022 13:20	R308668
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**5**	mV	1	03/15/2022 13:20	R308668
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**713**	µS/cm	1	03/15/2022 13:20	R308668
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**16.2**	°C	1	03/15/2022 13:20	R308668
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**0.21**	mg/L	1	03/15/2022 13:20	R308668
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**176**	mg/L	1	03/21/2022 16:48	R308526
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/21/2022 16:48	R308526
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	*	20		**342**	mg/L	1	03/22/2022 12:06	R308720
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**74**	mg/L	5	03/18/2022 1:06	R308408
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.71**	mg/L	1	03/22/2022 7:06	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**18**	mg/L	1	03/18/2022 1:00	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**38.1**	mg/L	1	03/21/2022 17:03	188680
Magnesium	NELAP	0.050		**16.5**	mg/L	1	03/21/2022 17:03	188680
Potassium	NELAP	0.100		**0.317**	mg/L	1	03/21/2022 17:03	188680
Sodium	NELAP	0.050		**51.3**	mg/L	1	03/21/2022 17:03	188680
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:49	188680
Arsenic	NELAP	1.0	J	**0.5**	µg/L	5	03/21/2022 22:49	188680
Barium	NELAP	1.0		**92.2**	µg/L	5	03/22/2022 14:47	188680
Beryllium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:49	188680
Boron	NELAP	25.0		**332**	µg/L	5	03/21/2022 22:49	188680
Cadmium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:49	188680
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	03/21/2022 22:49	188680
Cobalt	NELAP	1.0		**2.2**	µg/L	5	03/21/2022 22:49	188680
Lead	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:49	188680
Lithium	*	3.0		**< 3.0**	µg/L	5	03/21/2022 22:49	188680
Molybdenum	NELAP	1.5		**< 1.5**	µg/L	5	03/21/2022 22:49	188680
Selenium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 22:49	188680
Thallium	NELAP	2.0		**< 2.0**	µg/L	5	03/21/2022 22:49	188680

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-006 **Client Sample ID:** G53D

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 13:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.20		**< 0.20**	µg/L	1	03/21/2022 19:17	188687

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-007 **Client Sample ID:** G54D

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 12:51

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**31.84**	ft	1	03/15/2022 12:51	R308668
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.61**		1	03/15/2022 12:51	R308668
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**5.5**	NTU	1	03/15/2022 12:51	R308668
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**-2**	mV	1	03/15/2022 12:51	R308668
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**1100**	µS/cm	1	03/15/2022 12:51	R308668
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**15.9**	°C	1	03/15/2022 12:51	R308668
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**2.90**	mg/L	1	03/15/2022 12:51	R308668
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**208**	mg/L	1	03/21/2022 16:53	R308526
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/21/2022 16:53	R308526
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	*	20		**524**	mg/L	1	03/22/2022 12:05	R308720
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**213**	mg/L	5	03/18/2022 1:14	R308408
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.31**	mg/L	1	03/22/2022 7:08	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**21**	mg/L	1	03/18/2022 1:08	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**83.4**	mg/L	1	03/21/2022 19:27	188680
Magnesium	NELAP	0.050		**25.8**	mg/L	1	03/21/2022 19:27	188680
Potassium	NELAP	0.100		**1.21**	mg/L	1	03/21/2022 19:27	188680
Sodium	NELAP	0.050		**54.2**	mg/L	1	03/21/2022 19:27	188680
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 23:20	188680
Arsenic	NELAP	1.0	J	**0.6**	µg/L	5	03/21/2022 23:20	188680
Barium	NELAP	1.0		**64.0**	µg/L	5	03/24/2022 11:12	188680
Beryllium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 23:20	188680
Boron	NELAP	25.0		**451**	µg/L	5	03/21/2022 23:20	188680
Cadmium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 23:20	188680
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	03/21/2022 23:20	188680
Cobalt	NELAP	1.0		**11.0**	µg/L	5	03/21/2022 23:20	188680
Lead	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 23:20	188680
Lithium	*	3.0	J	**2.9**	µg/L	5	03/21/2022 23:20	188680
Molybdenum	NELAP	1.5		**< 1.5**	µg/L	5	03/21/2022 23:20	188680
Selenium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 23:20	188680
Thallium	NELAP	2.0		**< 2.0**	µg/L	5	03/21/2022 23:20	188680

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-007 **Client Sample ID:** G54D

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 12:51

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.20		**< 0.20**	µg/L	1	03/21/2022 19:19	188687

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-008 **Client Sample ID:** Field Blank

Matrix: AQUEOUS **Collection Date:** 03/15/2022 10:37

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**2**	mg/L	1	03/21/2022 16:58	R308526
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/21/2022 16:58	R308526
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	*	20		**< 20**	mg/L	1	03/21/2022 17:40	R308650
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**< 10**	mg/L	1	03/18/2022 1:19	R308408
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**< 0.10**	mg/L	1	03/22/2022 7:10	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**< 4**	mg/L	1	03/18/2022 1:19	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**< 0.100**	mg/L	1	03/21/2022 10:19	188685
Magnesium	NELAP	0.050		**< 0.050**	mg/L	1	03/21/2022 10:19	188685
Potassium	NELAP	0.100		**< 0.100**	mg/L	1	03/21/2022 10:19	188685
Sodium	NELAP	0.050	J	**0.019**	mg/L	1	03/21/2022 10:19	188685
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 17:39	188685
Arsenic	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 17:39	188685
Barium	NELAP	1.0		**< 1.0**	µg/L	5	03/22/2022 12:16	188685
Beryllium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 17:39	188685
Boron	NELAP	25.0		**< 25.0**	µg/L	5	03/21/2022 17:39	188685
Cadmium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 17:39	188685
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	03/21/2022 17:39	188685
Cobalt	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 17:39	188685
Lead	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 17:39	188685
Lithium	*	3.0		**< 3.0**	µg/L	5	03/21/2022 17:39	188685
Molybdenum	NELAP	1.5		**< 1.5**	µg/L	5	03/21/2022 17:39	188685
Selenium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 17:39	188685
Thallium	NELAP	2.0		**< 2.0**	µg/L	5	03/21/2022 17:39	188685
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.20		**< 0.20**	µg/L	1	03/21/2022 19:26	188687

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-016 **Client Sample ID:** XPW01

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 8:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**13.79**	ft	1	03/15/2022 8:40	R308668
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**8.33**		1	03/15/2022 8:40	R308668
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**4.0**	NTU	1	03/15/2022 8:40	R308668
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**-155**	mV	1	03/15/2022 8:40	R308668
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**1260**	µS/cm	1	03/15/2022 8:40	R308668
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**15.8**	°C	1	03/15/2022 8:40	R308668
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**1.35**	mg/L	1	03/15/2022 8:40	R308668
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**104**	mg/L	1	03/21/2022 18:09	R308526
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**11**	mg/L	1	03/21/2022 18:09	R308526
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	*	20		**698**	mg/L	1	03/21/2022 10:56	R308650
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**360**	mg/L	10	03/18/2022 2:38	R308408
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.25**	mg/L	1	03/22/2022 7:34	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**5**	mg/L	1	03/18/2022 2:20	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**159**	mg/L	1	03/21/2022 10:48	188685
Magnesium	NELAP	0.050		**0.443**	mg/L	1	03/21/2022 10:48	188685
Potassium	NELAP	1.00		**36.9**	mg/L	10	03/21/2022 11:42	188685
Sodium	NELAP	0.050		**27.4**	mg/L	1	03/21/2022 10:48	188685
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 18:53	188685
Arsenic	NELAP	1.0		**52.9**	µg/L	5	03/21/2022 18:53	188685
Barium	NELAP	1.0		**113**	µg/L	5	03/22/2022 12:20	188685
Beryllium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 18:53	188685
Boron	NELAP	25.0		**10400**	µg/L	5	03/21/2022 18:53	188685
Cadmium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 18:53	188685
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	03/21/2022 18:53	188685
Cobalt	NELAP	1.0	J	**0.1**	µg/L	5	03/21/2022 18:53	188685
Lead	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 18:53	188685
Lithium	*	3.0		**< 3.0**	µg/L	5	03/21/2022 18:53	188685
Molybdenum	NELAP	1.5		**333**	µg/L	5	03/21/2022 18:53	188685
Selenium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 18:53	188685
Thallium	NELAP	2.0		**< 2.0**	µg/L	5	03/21/2022 18:53	188685

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-016 **Client Sample ID:** XPW01

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 8:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.20		**< 0.20**	µg/L	1	03/21/2022 19:28	188687

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-017 **Client Sample ID:** XPW02

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 9:18

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**3.48**	ft	1	03/15/2022 9:18	R308668
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**7.74**		1	03/15/2022 9:18	R308668
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**13**	NTU	1	03/15/2022 9:18	R308668
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**-213**	mV	1	03/15/2022 9:18	R308668
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**6590**	µS/cm	1	03/15/2022 9:18	R308668
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**16.2**	°C	1	03/15/2022 9:18	R308668
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**0.20**	mg/L	1	03/15/2022 9:18	R308668
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**144**	mg/L	1	03/21/2022 18:09	R308526
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/21/2022 18:09	R308526
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	*	50	H	**4050**	mg/L	2.5	03/24/2022 10:21	R308809
Sample required re-analysis out of hold time.								
SW-846 9036 (TOTAL)								
Sulfate	NELAP	1000		**2590**	mg/L	100	03/21/2022 14:42	R308553
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.48**	mg/L	1	03/22/2022 7:49	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	40		**115**	mg/L	10	03/18/2022 2:47	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100	S	**483**	mg/L	1	03/21/2022 13:40	188685
Magnesium	NELAP	0.050		**10.7**	mg/L	1	03/21/2022 13:40	188685
Potassium	NELAP	1.00		**27.1**	mg/L	10	03/23/2022 10:38	188685
Sodium	NELAP	0.050	S	**828**	mg/L	1	03/21/2022 13:40	188685
Matrix spike control limits for Ca and Na are not applicable due to high sample/spike ratio.								
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 19:00	188685
Arsenic	NELAP	1.0		**51.0**	µg/L	5	03/21/2022 19:00	188685
Barium	NELAP	4.0		**23.0**	µg/L	20	03/23/2022 15:42	188685
Beryllium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 19:00	188685
Boron	NELAP	25.0	S	**16000**	µg/L	5	03/21/2022 19:00	188685
Cadmium	NELAP	1.0	J	**0.4**	µg/L	5	03/21/2022 19:00	188685
Chromium	NELAP	1.5	J	**1.4**	µg/L	5	03/21/2022 19:00	188685
Cobalt	NELAP	1.0	J	**0.5**	µg/L	5	03/21/2022 19:00	188685
Lead	NELAP	4.0		**< 4.0**	µg/L	20	03/23/2022 15:42	188685
Lithium	*	3.0		**84.1**	µg/L	5	03/21/2022 19:00	188685
Molybdenum	NELAP	6.0		**1060**	µg/L	20	03/23/2022 15:42	188685
Selenium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 19:00	188685

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-017 **Client Sample ID:** XPW02

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 9:18

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Thallium	NELAP	8.0		**< 8.0**	µg/L	20	03/23/2022 15:42	188685
Matrix spike control limits for B are not applicable due to high sample/spike ratio.								
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.20		**< 0.20**	µg/L	1	03/21/2022 19:31	188687

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-018 **Client Sample ID:** XPW03

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 8:14

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**7.79**	ft	1	03/15/2022 8:14	R308668
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**10.5**		1	03/15/2022 8:14	R308668
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**< 1.0**	NTU	1	03/15/2022 8:14	R308668
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**-127**	mV	1	03/15/2022 8:14	R308668
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**885**	µS/cm	1	03/15/2022 8:14	R308668
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**14.6**	°C	1	03/15/2022 8:14	R308668
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**1.12**	mg/L	1	03/15/2022 8:14	R308668
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		**0**	mg/L	1	03/21/2022 18:09	R308526
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO3)	NELAP	0		**79**	mg/L	1	03/21/2022 18:09	R308526
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	*	20		**414**	mg/L	1	03/21/2022 17:26	R308650
SW-846 9036 (TOTAL)								
Sulfate	NELAP	100		**152**	mg/L	10	03/18/2022 2:55	R308408
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.27**	mg/L	1	03/22/2022 7:51	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**25**	mg/L	1	03/18/2022 2:50	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**12.9**	mg/L	1	03/21/2022 13:51	188685
Magnesium	NELAP	0.050	J	**0.012**	mg/L	1	03/21/2022 13:51	188685
Potassium	NELAP	1.00		**27.6**	mg/L	10	03/23/2022 10:43	188685
Sodium	NELAP	0.050		**104**	mg/L	1	03/21/2022 13:51	188685
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Antimony	NELAP	1.0		**12.4**	µg/L	5	03/21/2022 19:06	188685
Arsenic	NELAP	1.0		**533**	µg/L	5	03/21/2022 19:06	188685
Barium	NELAP	1.0		**9.5**	µg/L	5	03/22/2022 12:23	188685
Beryllium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 19:06	188685
Boron	NELAP	25.0		**11100**	µg/L	5	03/21/2022 19:06	188685
Cadmium	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 19:06	188685
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	03/21/2022 19:06	188685
Cobalt	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 19:06	188685
Lead	NELAP	1.0		**< 1.0**	µg/L	5	03/21/2022 19:06	188685
Lithium	*	3.0		**185**	µg/L	5	03/21/2022 19:06	188685
Molybdenum	NELAP	1.5		**346**	µg/L	5	03/21/2022 19:06	188685
Selenium	NELAP	1.0		**26.6**	µg/L	5	03/21/2022 19:06	188685
Thallium	NELAP	2.0		**< 2.0**	µg/L	5	03/21/2022 19:06	188685

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-018 **Client Sample ID:** XPW03

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 8:14

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
SW-846 7470A (TOTAL)								
Mercury	NELAP	0.20		**< 0.20**	µg/L	1	03/21/2022 19:33	188687

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-019 **Client Sample ID:** XSG01

Matrix: GROUNDWATER **Collection Date:** 03/14/2022 16:41

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**4.50**	ft	1	03/14/2022 16:41	R308668

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Lab ID: 22030339-020 **Client Sample ID:** SG02

Matrix: GROUNDWATER **Collection Date:** 03/14/2022 12:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**322.00**	ft	1	03/14/2022 12:00	R308668

Client: Ramboll
Client Project: Joppa Q1 Groundwater

Work Order: 22030339
Report Date: 29-Mar-22

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
22030339-001	G01D	Groundwater	3	03/14/2022 15:52
22030339-002	G02D	Groundwater	3	03/14/2022 16:23
22030339-003	G51D	Groundwater	3	03/15/2022 9:53
22030339-004	G52D	Groundwater	3	03/15/2022 10:31
22030339-005	G52D Duplicate	Groundwater	3	03/15/2022 10:31
22030339-006	G53D	Groundwater	3	03/15/2022 13:20
22030339-007	G54D	Groundwater	3	03/15/2022 12:51
22030339-008	Field Blank	Aqueous	3	03/15/2022 10:37
22030339-016	XPW01	Groundwater	3	03/15/2022 8:40
22030339-017	XPW02	Groundwater	3	03/15/2022 9:18
22030339-018	XPW03	Groundwater	3	03/15/2022 8:14
22030339-019	XSG01	Groundwater	1	03/14/2022 16:41
22030339-020	SG02	Groundwater	1	03/14/2022 12:00

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
22030339-001A	G01D	03/14/2022 15:52	03/16/2022 12:45		
	Field Elevation Measurements				03/14/2022 15:52
	Standard Method 4500-H B 2001 Field				03/14/2022 15:52
	Standard Methods 2130 B Field				03/14/2022 15:52
	Standard Methods 18th Ed. 2580 B Field				03/14/2022 15:52
	Standard Methods 2320 B (Total) 1997, 2011				03/21/2022 16:17
	Standard Methods 2320 B 1997, 2011				03/21/2022 16:17
	Standard Methods 2510 B Field				03/14/2022 15:52
	Standard Methods 2540 C (Total) 1997, 2011				03/21/2022 10:52
	Standard Methods 2550 B Field				03/14/2022 15:52
	Standard Methods 4500-O G Field				03/14/2022 15:52
	SW-846 9214 (Total)				03/22/2022 6:56
22030339-001B	G01D	03/14/2022 15:52	03/16/2022 12:45		
	SW-846 9036 (Total)				03/18/2022 0:02
	SW-846 9251 (Total)				03/18/2022 0:02
22030339-001C	G01D	03/14/2022 15:52	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 2:34	03/21/2022 16:54
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 2:34	03/21/2022 22:18
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 2:34	03/22/2022 14:04
	SW-846 7470A (Total)			03/17/2022 7:59	03/21/2022 19:06
22030339-002A	G02D	03/14/2022 16:23	03/16/2022 12:45		
	Field Elevation Measurements				03/14/2022 16:23
	Standard Method 4500-H B 2001 Field				03/14/2022 16:23
	Standard Methods 2130 B Field				03/14/2022 16:23
	Standard Methods 18th Ed. 2580 B Field				03/14/2022 16:23
	Standard Methods 2320 B (Total) 1997, 2011				03/21/2022 16:28
	Standard Methods 2320 B 1997, 2011				03/21/2022 16:28
	Standard Methods 2510 B Field				03/14/2022 16:23
	Standard Methods 2540 C (Total) 1997, 2011				03/21/2022 10:53
	Standard Methods 2550 B Field				03/14/2022 16:23
	Standard Methods 4500-O G Field				03/14/2022 16:23
	SW-846 9214 (Total)				03/22/2022 6:57
22030339-002B	G02D	03/14/2022 16:23	03/16/2022 12:45		
	SW-846 9036 (Total)				03/18/2022 0:10
	SW-846 9251 (Total)				03/18/2022 0:10
22030339-002C	G02D	03/14/2022 16:23	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 2:34	03/21/2022 16:56

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 2:34	03/21/2022 22:24
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 2:34	03/22/2022 14:07
	SW-846 7470A (Total)			03/17/2022 7:59	03/21/2022 19:08
22030339-003A	G51D	03/15/2022 9:53	03/16/2022 12:45		
	Field Elevation Measurements				03/15/2022 9:53
	Standard Method 4500-H B 2001 Field				03/15/2022 9:53
	Standard Methods 2130 B Field				03/15/2022 9:53
	Standard Methods 18th Ed. 2580 B Field				03/15/2022 9:53
	Standard Methods 2320 B (Total) 1997, 2011				03/21/2022 16:33
	Standard Methods 2320 B 1997, 2011				03/21/2022 16:33
	Standard Methods 2510 B Field				03/15/2022 9:53
	Standard Methods 2540 C (Total) 1997, 2011				03/21/2022 17:40
	Standard Methods 2550 B Field				03/15/2022 9:53
	Standard Methods 4500-O G Field				03/15/2022 9:53
	SW-846 9214 (Total)				03/22/2022 6:59
22030339-003B	G51D	03/15/2022 9:53	03/16/2022 12:45		
	SW-846 9036 (Total)				03/18/2022 0:26
	SW-846 9251 (Total)				03/18/2022 0:20
22030339-003C	G51D	03/15/2022 9:53	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 2:34	03/21/2022 16:58
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 2:34	03/21/2022 22:31
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 2:34	03/22/2022 14:11
	SW-846 7470A (Total)			03/17/2022 7:59	03/21/2022 19:10
22030339-004A	G52D	03/15/2022 10:31	03/16/2022 12:45		
	Field Elevation Measurements				03/15/2022 10:31
	Standard Method 4500-H B 2001 Field				03/15/2022 10:31
	Standard Methods 2130 B Field				03/15/2022 10:31
	Standard Methods 18th Ed. 2580 B Field				03/15/2022 10:31
	Standard Methods 2320 B (Total) 1997, 2011				03/21/2022 16:38
	Standard Methods 2320 B 1997, 2011				03/21/2022 16:38
	Standard Methods 2510 B Field				03/15/2022 10:31
	Standard Methods 2540 C (Total) 1997, 2011				03/21/2022 17:40
	Standard Methods 2550 B Field				03/15/2022 10:31
	Standard Methods 4500-O G Field				03/15/2022 10:31
	SW-846 9214 (Total)				03/22/2022 7:02
22030339-004B	G52D	03/15/2022 10:31	03/16/2022 12:45		
	SW-846 9036 (Total)				03/18/2022 0:34

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 9251 (Total)				03/18/2022 0:28
22030339-004C	G52D	03/15/2022 10:31	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 2:34	03/21/2022 16:59
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 2:34	03/21/2022 22:37
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 2:34	03/22/2022 14:14
	SW-846 7470A (Total)			03/17/2022 7:59	03/21/2022 19:12
22030339-005A	G52D Duplicate	03/15/2022 10:31	03/16/2022 12:45		
	Field Elevation Measurements				03/15/2022 10:31
	Standard Method 4500-H B 2001 Field				03/15/2022 10:31
	Standard Methods 2130 B Field				03/15/2022 10:31
	Standard Methods 18th Ed. 2580 B Field				03/15/2022 10:31
	Standard Methods 2320 B (Total) 1997, 2011				03/21/2022 16:43
	Standard Methods 2320 B 1997, 2011				03/21/2022 16:43
	Standard Methods 2510 B Field				03/15/2022 10:31
	Standard Methods 2540 C (Total) 1997, 2011				03/21/2022 17:40
	Standard Methods 2550 B Field				03/15/2022 10:31
	Standard Methods 4500-O G Field				03/15/2022 10:31
	SW-846 9214 (Total)				03/22/2022 7:04
22030339-005B	G52D Duplicate	03/15/2022 10:31	03/16/2022 12:45		
	SW-846 9036 (Total)				03/18/2022 0:58
	SW-846 9251 (Total)				03/18/2022 0:52
22030339-005C	G52D Duplicate	03/15/2022 10:31	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 2:34	03/21/2022 17:01
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 2:34	03/21/2022 22:43
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 2:34	03/22/2022 14:18
	SW-846 7470A (Total)			03/17/2022 7:59	03/21/2022 19:15
22030339-006A	G53D	03/15/2022 13:20	03/16/2022 12:45		
	Field Elevation Measurements				03/15/2022 13:20
	Standard Method 4500-H B 2001 Field				03/15/2022 13:20
	Standard Methods 2130 B Field				03/15/2022 13:20
	Standard Methods 18th Ed. 2580 B Field				03/15/2022 13:20
	Standard Methods 2320 B (Total) 1997, 2011				03/21/2022 16:48
	Standard Methods 2320 B 1997, 2011				03/21/2022 16:48
	Standard Methods 2510 B Field				03/15/2022 13:20
	Standard Methods 2540 C (Total) 1997, 2011				03/22/2022 12:06
	Standard Methods 2550 B Field				03/15/2022 13:20
	Standard Methods 4500-O G Field				03/15/2022 13:20

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 9214 (Total)				03/22/2022 7:06
22030339-006B	G53D	03/15/2022 13:20	03/16/2022 12:45		
	SW-846 9036 (Total)				03/18/2022 1:06
	SW-846 9251 (Total)				03/18/2022 1:00
22030339-006C	G53D	03/15/2022 13:20	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 2:34	03/21/2022 17:03
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 2:34	03/21/2022 22:49
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 2:34	03/22/2022 14:47
	SW-846 7470A (Total)			03/17/2022 7:59	03/21/2022 19:17
22030339-007A	G54D	03/15/2022 12:51	03/16/2022 12:45		
	Field Elevation Measurements				03/15/2022 12:51
	Standard Method 4500-H B 2001 Field				03/15/2022 12:51
	Standard Methods 2130 B Field				03/15/2022 12:51
	Standard Methods 18th Ed. 2580 B Field				03/15/2022 12:51
	Standard Methods 2320 B (Total) 1997, 2011				03/21/2022 16:53
	Standard Methods 2320 B 1997, 2011				03/21/2022 16:53
	Standard Methods 2510 B Field				03/15/2022 12:51
	Standard Methods 2540 C (Total) 1997, 2011				03/22/2022 12:05
	Standard Methods 2550 B Field				03/15/2022 12:51
	Standard Methods 4500-O G Field				03/15/2022 12:51
	SW-846 9214 (Total)				03/22/2022 7:08
22030339-007B	G54D	03/15/2022 12:51	03/16/2022 12:45		
	SW-846 9036 (Total)				03/18/2022 1:14
	SW-846 9251 (Total)				03/18/2022 1:08
22030339-007C	G54D	03/15/2022 12:51	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 2:34	03/21/2022 19:27
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 2:34	03/21/2022 23:20
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 2:34	03/24/2022 11:12
	SW-846 7470A (Total)			03/17/2022 7:59	03/21/2022 19:19
22030339-008A	Field Blank	03/15/2022 10:37	03/16/2022 12:45		
	Standard Methods 2320 B (Total) 1997, 2011				03/21/2022 16:58
	Standard Methods 2320 B 1997, 2011				03/21/2022 16:58
	Standard Methods 2540 C (Total) 1997, 2011				03/21/2022 17:40
	SW-846 9214 (Total)				03/22/2022 7:10
22030339-008B	Field Blank	03/15/2022 10:37	03/16/2022 12:45		
	SW-846 9036 (Total)				03/18/2022 1:19
	SW-846 9251 (Total)				03/18/2022 1:19

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
22030339-008C	Field Blank	03/15/2022 10:37	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 7:47	03/21/2022 10:19
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 7:47	03/21/2022 17:39
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 7:47	03/22/2022 12:16
	SW-846 7470A (Total)			03/17/2022 7:59	03/21/2022 19:26
22030339-016A	XPW01	03/15/2022 8:40	03/16/2022 12:45		
	Field Elevation Measurements				03/15/2022 8:40
	Standard Method 4500-H B 2001 Field				03/15/2022 8:40
	Standard Methods 2130 B Field				03/15/2022 8:40
	Standard Methods 18th Ed. 2580 B Field				03/15/2022 8:40
	Standard Methods 2320 B (Total) 1997, 2011				03/21/2022 18:09
	Standard Methods 2320 B 1997, 2011				03/21/2022 18:09
	Standard Methods 2510 B Field				03/15/2022 8:40
	Standard Methods 2540 C (Total) 1997, 2011				03/21/2022 10:56
	Standard Methods 2550 B Field				03/15/2022 8:40
	Standard Methods 4500-O G Field				03/15/2022 8:40
	SW-846 9214 (Total)				03/22/2022 7:34
22030339-016B	XPW01	03/15/2022 8:40	03/16/2022 12:45		
	SW-846 9036 (Total)				03/18/2022 2:38
	SW-846 9251 (Total)				03/18/2022 2:20
22030339-016C	XPW01	03/15/2022 8:40	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 7:47	03/21/2022 10:48
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 7:47	03/21/2022 11:42
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 7:47	03/21/2022 18:53
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 7:47	03/22/2022 12:20
	SW-846 7470A (Total)			03/17/2022 7:59	03/21/2022 19:28
22030339-017A	XPW02	03/15/2022 9:18	03/16/2022 12:45		
	Field Elevation Measurements				03/15/2022 9:18
	Standard Method 4500-H B 2001 Field				03/15/2022 9:18
	Standard Methods 2130 B Field				03/15/2022 9:18
	Standard Methods 18th Ed. 2580 B Field				03/15/2022 9:18
	Standard Methods 2320 B (Total) 1997, 2011				03/21/2022 18:09
	Standard Methods 2320 B 1997, 2011				03/21/2022 18:09
	Standard Methods 2510 B Field				03/15/2022 9:18
	Standard Methods 2540 C (Total) 1997, 2011				03/24/2022 10:21
	Standard Methods 2550 B Field				03/15/2022 9:18
	Standard Methods 4500-O G Field				03/15/2022 9:18

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 9214 (Total)				03/22/2022 7:49
22030339-017B	XPW02	03/15/2022 9:18	03/16/2022 12:45		
	SW-846 9036 (Total)				03/21/2022 14:42
	SW-846 9251 (Total)				03/18/2022 2:47
22030339-017C	XPW02	03/15/2022 9:18	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 7:47	03/21/2022 13:40
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 7:47	03/23/2022 10:38
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 7:47	03/21/2022 19:00
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 7:47	03/23/2022 15:42
	SW-846 7470A (Total)			03/17/2022 7:59	03/21/2022 19:31
22030339-018A	XPW03	03/15/2022 8:14	03/16/2022 12:45		
	Field Elevation Measurements				03/15/2022 8:14
	Standard Method 4500-H B 2001 Field				03/15/2022 8:14
	Standard Methods 2130 B Field				03/15/2022 8:14
	Standard Methods 18th Ed. 2580 B Field				03/15/2022 8:14
	Standard Methods 2320 B (Total) 1997, 2011				03/21/2022 18:09
	Standard Methods 2320 B 1997, 2011				03/21/2022 18:09
	Standard Methods 2510 B Field				03/15/2022 8:14
	Standard Methods 2540 C (Total) 1997, 2011				03/21/2022 17:26
	Standard Methods 2550 B Field				03/15/2022 8:14
	Standard Methods 4500-O G Field				03/15/2022 8:14
	SW-846 9214 (Total)				03/22/2022 7:51
22030339-018B	XPW03	03/15/2022 8:14	03/16/2022 12:45		
	SW-846 9036 (Total)				03/18/2022 2:55
	SW-846 9251 (Total)				03/18/2022 2:50
22030339-018C	XPW03	03/15/2022 8:14	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 7:47	03/21/2022 13:51
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 7:47	03/23/2022 10:43
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 7:47	03/21/2022 19:06
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 7:47	03/22/2022 12:23
	SW-846 7470A (Total)			03/17/2022 7:59	03/21/2022 19:33
22030339-019A	XSG01	03/14/2022 16:41	03/16/2022 12:45		
	Field Elevation Measurements				03/14/2022 16:41
22030339-020A	SG02	03/14/2022 12:00	03/16/2022 12:45		
	Field Elevation Measurements				03/14/2022 12:00

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

STANDARD METHOD 4500-H B 2001 FIELD

Batch R308668 **SampType:** LCS Units

SampID: LCS-R308668

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
pH	*	1.00		**7.03**	7.000	0	100.4	98.57	101.4	03/14/2022
pH	*	1.00		**7.06**	7.000	0	100.9	98.57	101.4	03/15/2022

STANDARD METHODS 2510 B FIELD

Batch R308668 **SampType:** LCS Units **µS/cm**

SampID: LCS-R308668

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Spec. Conductance, Field	*	0		**1340**	1409	0	95.4	90	110	03/15/2022
Spec. Conductance, Field	*	0		**1450**	1409	0	102.8	90	110	03/14/2022

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R308650 **SampType:** MBLK Units **mg/L**

SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids	*	20		**< 20**	16.00	0	0	-100	100	03/21/2022
Total Dissolved Solids	*	20		**< 20**	16.00	0	0	-100	100	03/21/2022

Batch R308650 **SampType:** LCS Units **mg/L**

SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids	*	20		**956**	1000	0	95.6	90	110	03/21/2022
Total Dissolved Solids	*	20		**970**	1000	0	97.0	90	110	03/21/2022

Batch R308650 **SampType:** DUP Units **mg/L** RPD Limit: **5**

SampID: 22030339-001ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids	*	20		**330**				318.0	3.70	03/21/2022

Batch R308650 **SampType:** DUP Units **mg/L** RPD Limit: **5**

SampID: 22030339-008ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids	*	20		**< 20**				0	0.00	03/21/2022

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R308720 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids	*	20		**< 20**	16.00	0	0	-100	100	03/22/2022

Batch R308720 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids	*	20		**956**	1000	0	95.6	90	110	03/22/2022

Batch R308720 **SampType:** DUP Units **mg/L** RPD Limit: **5**
SampID: 22030339-006ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids	*	20		**326**				342.0	4.79	03/22/2022

Batch R308809 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids	*	20		**< 20**	16.00	0	0	-100	100	03/24/2022
Total Dissolved Solids	*	20		**< 20**	16.00	0	0	-100	100	03/24/2022

Batch R308809 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids	*	20		**924**	1000	0	92.4	90	110	03/24/2022
Total Dissolved Solids	*	20		**960**	1000	0	96.0	90	110	03/24/2022

SW-846 9036 (TOTAL)

Batch R308408 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.140	0	0	-100	100	03/17/2022

Batch R308408 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**18**	20.00	0	91.4	90	110	03/17/2022

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

SW-846 9036 (TOTAL)

Batch R308408 **SampType:** MS Units **mg/L**
SampID: 22030339-002BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**31**	20.00	11.03	98.4	85	115	03/18/2022

Batch R308408 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 22030339-002BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		10		**30**	20.00	11.03	97.2	30.70	0.75	03/18/2022

Batch R308553 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.140	0	0	-100	100	03/21/2022

Batch R308553 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**20**	20.00	0	99.0	90	110	03/21/2022

Batch R308553 **SampType:** MS Units **mg/L**
SampID: 22030339-010BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		20		**68**	40.00	29.90	96.3	85	115	03/21/2022

Batch R308553 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 22030339-010BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		20		**70**	40.00	29.90	101.1	68.43	2.77	03/21/2022

SW-846 9214 (TOTAL)

Batch R308531 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**< 0.10**	0.0370	0	0	-100	100	03/21/2022

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

SW-846 9214 (TOTAL)

Batch R308531 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**1.01**	1.000	0	101.3	90	110	03/21/2022

Batch R308531 **SampType:** MS Units **mg/L**
SampID: 22030339-008AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.18**	2.000	0	108.9	75	125	03/22/2022

Batch R308531 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 22030339-008AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.18**	2.000	0	109.0	2.178	0.05	03/22/2022

Batch R308531 **SampType:** MS Units **mg/L**
SampID: 22030339-016AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.38**	2.000	0.2500	106.7	75	125	03/22/2022

Batch R308531 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 22030339-016AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.36**	2.000	0.2500	105.6	2.384	0.88	03/22/2022

SW-846 9251 (TOTAL)

Batch R308409 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**< 4**	0.5000	0	0	-100	100	03/17/2022

Batch R308409 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**20**	20.00	0	100.7	90	110	03/17/2022

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

SW-846 9251 (TOTAL)

Batch R308409 **SampType:** MS Units **mg/L**
SampID: 22030339-002BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**41**	20.00	22.30	93.2	85	115	03/18/2022

Batch R308409 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 22030339-002BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		4		**41**	20.00	22.30	91.9	40.95	0.66	03/18/2022

Batch R308409 **SampType:** MS Units **mg/L**
SampID: 22030339-010BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**23**	20.00	3.770	97.8	85	115	03/18/2022

Batch R308409 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 22030339-010BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		4		**23**	20.00	3.770	98.4	23.34	0.47	03/18/2022

Batch R308507 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		1		**< 1**	0.5000	0	0	-100	100	03/21/2022

Batch R308507 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		1		**20**	20.00	0	101.6	90	110	03/21/2022

SW-846 3005A, 6010B, METALS BY ICP (TOTAL)

Batch 188680 **SampType:** MBLK Units **mg/L**
SampID: MBLK-188680

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**< 0.100**	0.0350	0	0	-100	100	03/17/2022
Magnesium		0.0500		**< 0.0500**	0.0055	0	0	-100	100	03/17/2022
Potassium		0.100		**< 0.100**	0.0400	0	0	-100	100	03/17/2022
Sodium		0.0500		**< 0.0500**	0.0180	0	0	-100	100	03/17/2022

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

SW-846 3005A, 6010B, METALS BY ICP (TOTAL)

Batch 188680 **SampType:** LCS Units **mg/L**

SampID: LCS-188680

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**2.57**	2.500	0	102.7	85	115	03/17/2022
Magnesium		0.0500		**2.47**	2.500	0	98.9	85	115	03/17/2022
Potassium		0.100		**2.63**	2.500	0	105.2	85	115	03/17/2022
Sodium		0.0500		**2.56**	2.500	0	102.5	85	115	03/17/2022

Batch 188680 **SampType:** MS Units **mg/L**

SampID: 22030339-007CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**86.3**	2.500	83.41	116.4	75	125	03/21/2022
Magnesium		0.050		**28.4**	2.500	25.76	105.6	75	125	03/21/2022
Potassium		0.100		**3.78**	2.500	1.210	102.9	75	125	03/21/2022
Sodium		0.050		**57.1**	2.500	54.19	116.0	75	125	03/21/2022

Batch 188680 **SampType:** MSD Units **mg/L** RPD Limit: **20**

SampID: 22030339-007CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100		**85.9**	2.500	83.41	98.4	86.32	0.52	03/21/2022
Magnesium		0.050		**28.2**	2.500	25.76	97.9	28.40	0.68	03/21/2022
Potassium		0.100		**3.76**	2.500	1.210	101.9	3.782	0.63	03/21/2022
Sodium		0.050		**56.8**	2.500	54.19	103.6	57.09	0.54	03/21/2022

Batch 188685 **SampType:** MBLK Units **mg/L**

SampID: MBLK-188685

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**< 0.100**	0.0350	0	0	-100	100	03/23/2022
Calcium		0.100		**< 0.100**	0.0350	0	0	-100	100	03/21/2022
Magnesium		0.0500		**< 0.0500**	0.0055	0	0	-100	100	03/21/2022
Potassium		0.100		**< 0.100**	0.0400	0	0	-100	100	03/21/2022
Potassium		0.100		**< 0.100**	0.0400	0	0	-100	100	03/23/2022
Sodium		0.0500		**< 0.0500**	0.0180	0	0	-100	100	03/23/2022
Sodium		0.0500		**< 0.0500**	0.0180	0	0	-100	100	03/21/2022

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

SW-846 3005A, 6010B, METALS BY ICP (TOTAL)

Batch 188685 **SampType:** LCS Units **mg/L**

SampID: LCS-188685

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**2.61**	2.500	0	104.5	85	115	03/23/2022
Calcium		0.100		**2.54**	2.500	0	101.6	85	115	03/21/2022
Magnesium		0.0500		**2.63**	2.500	0	105.3	85	115	03/21/2022
Potassium		0.100		**2.66**	2.500	0	106.2	85	115	03/23/2022
Potassium		0.100		**2.40**	2.500	0	95.9	85	115	03/21/2022
Sodium		0.0500		**2.61**	2.500	0	104.2	85	115	03/23/2022
Sodium		0.0500		**2.35**	2.500	0	94.0	85	115	03/21/2022

Batch 188685 **SampType:** MS Units **mg/L**

SampID: 22030339-017CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100	S	**487**	2.500	483.3	156.0	75	125	03/21/2022
Magnesium		0.050		**13.3**	2.500	10.74	101.2	75	125	03/21/2022
Potassium		1.00		**29.4**	2.500	27.06	95.6	75	125	03/23/2022
Sodium		0.050	S	**823**	2.500	827.6	-180.0	75	125	03/21/2022

Batch 188685 **SampType:** MSD Units **mg/L** RPD Limit: **20**

SampID: 22030339-017CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100	S	**493**	2.500	483.3	388.0	487.2	1.18	03/21/2022
Magnesium		0.050		**13.4**	2.500	10.74	107.6	13.27	1.20	03/21/2022
Potassium		1.00		**30.0**	2.500	27.06	116.5	29.44	1.76	03/23/2022
Sodium		0.050	S	**831**	2.500	827.6	136.0	823.1	0.96	03/21/2022

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 188680 **SampType:** MBLK Units µg/L

SampID: MBLK-188680

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0		**< 1.0**	0.4500	0	0	-100	100	03/21/2022
Arsenic		1.0		**< 1.0**	0.3750	0	0	-100	100	03/21/2022
Barium		1.0		**< 1.0**	0.7000	0	0	-100	100	03/22/2022
Beryllium		1.0		**< 1.0**	0.2500	0	0	-100	100	03/21/2022
Boron		25.0		**< 25.0**	9.250	0	0	-100	100	03/21/2022
Cadmium		1.0		**< 1.0**	0.1340	0	0	-100	100	03/21/2022
Chromium		1.5		**< 1.5**	0.7000	0	0	-100	100	03/21/2022
Cobalt		1.0		**< 1.0**	0.1150	0	0	-100	100	03/21/2022
Lead		1.0		**< 1.0**	0.6000	0	0	-100	100	03/21/2022
Lithium	*	3.0		**< 3.0**	1.450	0	0	-100	100	03/21/2022
Molybdenum		1.5		**< 1.5**	0.6000	0	0	-100	100	03/21/2022
Selenium		1.0		**< 1.0**	0.6000	0	0	-100	100	03/21/2022
Thallium		2.0		**< 2.0**	0.9500	0	0	-100	100	03/21/2022

Batch 188680 **SampType:** LCS Units µg/L

SampID: LCS-188680

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0		**495**	500.0	0	99.1	80	120	03/21/2022
Arsenic		1.0		**519**	500.0	0	103.8	80	120	03/21/2022
Barium		1.0		**1960**	2000	0	98.2	80	120	03/23/2022
Beryllium		1.0		**49.7**	50.00	0	99.3	80	120	03/21/2022
Boron		25.0		**508**	500.0	0	101.7	80	120	03/21/2022
Cadmium		1.0		**48.1**	50.00	0	96.3	80	120	03/21/2022
Chromium		1.5		**206**	200.0	0	102.8	80	120	03/21/2022
Cobalt		1.0		**526**	500.0	0	105.1	80	120	03/21/2022
Lead		1.0		**511**	500.0	0	102.3	80	120	03/21/2022
Lithium	*	3.0		**538**	500.0	0	107.6	80	120	03/21/2022
Molybdenum		1.5		**503**	500.0	0	100.7	80	120	03/21/2022
Selenium		1.0		**488**	500.0	0	97.7	80	120	03/21/2022
Thallium		2.0		**259**	250.0	0	103.8	80	120	03/21/2022

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 188680 **SampType:** MS Units **µg/L**

SampID: 22030339-007CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0		**465**	500.0	0	93.1	75	125	03/21/2022
Arsenic		1.0		**491**	500.0	0.6045	98.1	75	125	03/21/2022
Barium		1.0		**1890**	2000	63.95	91.3	75	125	03/24/2022
Beryllium		1.0		**45.7**	50.00	0	91.4	75	125	03/21/2022
Boron		25.0		**930**	500.0	451.5	95.8	75	125	03/21/2022
Cadmium		1.0		**45.5**	50.00	0	90.9	75	125	03/21/2022
Chromium		1.5		**188**	200.0	0	94.0	75	125	03/21/2022
Cobalt		1.0		**491**	500.0	11.01	96.0	75	125	03/21/2022
Lead		1.0		**475**	500.0	0	95.0	75	125	03/21/2022
Lithium	*	3.0		**478**	500.0	2.903	95.0	75	125	03/21/2022
Molybdenum		1.5		**482**	500.0	0	96.3	75	125	03/21/2022
Selenium		1.0		**458**	500.0	0	91.5	75	125	03/21/2022
Thallium		2.0		**245**	250.0	0	98.1	75	125	03/21/2022

Batch 188680 **SampType:** MSD Units **µg/L** RPD Limit: **20**

SampID: 22030339-007CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		1.0		**466**	500.0	0	93.2	465.4	0.14	03/21/2022
Arsenic		1.0		**486**	500.0	0.6045	97.2	491.1	0.95	03/21/2022
Barium		1.0		**1860**	2000	63.95	90.0	1890	1.34	03/24/2022
Beryllium		1.0		**45.8**	50.00	0	91.5	45.69	0.19	03/21/2022
Boron		25.0		**930**	500.0	451.5	95.6	930.2	0.06	03/21/2022
Cadmium		1.0		**45.6**	50.00	0	91.1	45.46	0.22	03/21/2022
Chromium		1.5		**188**	200.0	0	93.9	188.0	0.11	03/21/2022
Cobalt		1.0		**494**	500.0	11.01	96.7	490.9	0.69	03/21/2022
Lead		1.0		**478**	500.0	0	95.7	475.2	0.70	03/21/2022
Lithium	*	3.0		**498**	500.0	2.903	98.9	478.1	3.99	03/21/2022
Molybdenum		1.5		**481**	500.0	0	96.2	481.6	0.16	03/21/2022
Selenium		1.0		**452**	500.0	0	90.4	457.6	1.19	03/21/2022
Thallium		2.0		**244**	250.0	0	97.5	245.3	0.66	03/21/2022

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 188685 **SampType:** MBLK Units µg/L

SampID: MBLK-188685

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0		**< 1.0**	0.4500	0	0	-100	100	03/21/2022
Arsenic		1.0		**< 1.0**	0.3750	0	0	-100	100	03/21/2022
Barium		1.0		**< 1.0**	0.7000	0	0	-100	100	03/22/2022
Beryllium		1.0		**< 1.0**	0.2500	0	0	-100	100	03/21/2022
Boron		25.0		**< 25.0**	9.250	0	0	-100	100	03/21/2022
Cadmium		1.0		**< 1.0**	0.1340	0	0	-100	100	03/21/2022
Chromium		1.5		**< 1.5**	0.7000	0	0	-100	100	03/21/2022
Cobalt		1.0		**< 1.0**	0.1150	0	0	-100	100	03/21/2022
Lead		1.0		**< 1.0**	0.6000	0	0	-100	100	03/21/2022
Lithium	*	3.0		**< 3.0**	1.450	0	0	-100	100	03/21/2022
Molybdenum		1.5		**< 1.5**	0.6000	0	0	-100	100	03/21/2022
Selenium		1.0		**< 1.0**	0.6000	0	0	-100	100	03/21/2022
Thallium		2.0		**< 2.0**	0.9500	0	0	-100	100	03/21/2022

Batch 188685 **SampType:** LCS Units µg/L

SampID: LCS-188685

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0		**461**	500.0	0	92.2	80	120	03/21/2022
Arsenic		1.0		**478**	500.0	0	95.6	80	120	03/21/2022
Barium		1.0		**1970**	2000	0	98.7	80	120	03/23/2022
Beryllium		1.0		**44.7**	50.00	0	89.3	80	120	03/21/2022
Boron		25.0		**448**	500.0	0	89.6	80	120	03/21/2022
Cadmium		1.0		**44.6**	50.00	0	89.2	80	120	03/21/2022
Chromium		1.5		**188**	200.0	0	93.9	80	120	03/21/2022
Cobalt		1.0		**485**	500.0	0	96.9	80	120	03/21/2022
Lead		1.0		**470**	500.0	0	94.0	80	120	03/21/2022
Lithium	*	3.0		**486**	500.0	0	97.1	80	120	03/21/2022
Molybdenum		1.5		**461**	500.0	0	92.2	80	120	03/21/2022
Selenium		1.0		**448**	500.0	0	89.6	80	120	03/21/2022
Thallium		2.0		**236**	250.0	0	94.3	80	120	03/21/2022

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 188685 **SampType:** MS Units **µg/L**

SampID: 22030339-017CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Antimony		1.0		**458**	500.0	0	91.7	75	125	03/21/2022
Arsenic		1.0		**535**	500.0	51.02	96.9	75	125	03/21/2022
Barium		4.0		**2050**	2000	22.99	101.2	75	125	03/23/2022
Beryllium		1.0		**45.1**	50.00	0	90.1	75	125	03/21/2022
Boron		25.0	S	**12600**	500.0	16050	-679.8	75	125	03/21/2022
Cadmium		1.0		**42.7**	50.00	0.3654	84.7	75	125	03/21/2022
Chromium		1.5		**180**	200.0	1.413	89.4	75	125	03/21/2022
Cobalt		1.0		**473**	500.0	0.4515	94.5	75	125	03/21/2022
Lead		4.0		**525**	500.0	0	105.1	75	125	03/23/2022
Lithium	*	3.0		**573**	500.0	84.12	97.7	75	125	03/21/2022
Molybdenum		6.0		**1660**	500.0	1058	120.8	75	125	03/23/2022
Selenium		1.0		**442**	500.0	0	88.5	75	125	03/21/2022
Thallium		8.0		**261**	250.0	0	104.3	75	125	03/23/2022

Batch 188685 **SampType:** MSD Units **µg/L** RPD Limit: **20**

SampID: 22030339-017CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Antimony		1.0		**454**	500.0	0	90.8	458.3	0.91	03/21/2022
Arsenic		1.0		**528**	500.0	51.02	95.3	535.3	1.44	03/21/2022
Barium		4.0		**2020**	2000	22.99	99.6	2048	1.60	03/23/2022
Beryllium		1.0		**45.1**	50.00	0	90.1	45.06	0.02	03/21/2022
Boron		25.0	S	**12700**	500.0	16050	-667.6	12650	0.48	03/21/2022
Cadmium		1.0		**42.8**	50.00	0.3654	84.9	42.73	0.24	03/21/2022
Chromium		1.5		**178**	200.0	1.413	88.2	180.3	1.42	03/21/2022
Cobalt		1.0		**478**	500.0	0.4515	95.5	472.9	1.00	03/21/2022
Lead		4.0		**511**	500.0	0	102.1	525.4	2.87	03/23/2022
Lithium	*	3.0		**562**	500.0	84.12	95.7	572.8	1.82	03/21/2022
Molybdenum		6.0		**1620**	500.0	1058	112.5	1662	2.53	03/23/2022
Selenium		1.0		**437**	500.0	0	87.4	442.3	1.17	03/21/2022
Thallium		8.0		**252**	250.0	0	100.8	260.8	3.43	03/23/2022

SW-846 7470A (TOTAL)

Batch 188687 **SampType:** MBLK Units **µg/L**

SampID: MBLK-188687

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.20		**< 0.20**	0.0550	0	0	-100	100	03/21/2022

Client: Ramboll **Work Order:** 22030339

Client Project: Joppa Q1 Groundwater **Report Date:** 29-Mar-22

SW-846 7470A (TOTAL)

Batch 188687 **SampType:** LCS Units **µg/L**

SampID: LCS-188687

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.20		**4.99**	5.000	0	99.7	85	115	03/21/2022

Batch 188687 **SampType:** MS Units **µg/L**

SampID: 22030339-018CMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Mercury		0.20		**4.90**	5.000	0	97.9	75	125	03/21/2022

Batch 188687 **SampType:** MSD Units **µg/L** RPD Limit: **15**

SampID: 22030339-018CMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Mercury		0.20		**4.66**	5.000	0	93.3	4.897	4.90	03/21/2022

Receiving Check List

http://www.teklabinc.com/

Client: Ramboll
Work Order: 22030339
Client Project: Joppa Q1 Groundwater
Report Date: 29-Mar-22

Carrier: Adam Bridges
Received By: MEK

Completed by: Mary E. Kemp
On: 16-Mar-22
Mary E. Kemp

Reviewed by: Elizabeth A. Hurley
On: 16-Mar-22
Elizabeth A. Hurley

Pages to follow: Chain of custody 2 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 2.2
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☑	Lab ☐	NA ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.				
Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑	
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐	
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑	

Any No responses must be detailed below or on the COC.

pH strip #78011. - PRY/MKemp - 3/16/2022 1:38:31 PM

CHAIN OF CUSTODY

Pg 1 of 2 Workorder # 22030339

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: Ramboll / Vistra
Address: 234 W. Florida St.
City/State/Zip: Milwaukee, WI 53204
Contact: Eric Bauer Phone: (414) 837-3607
Email: eric.bauer@ramboll.com Fax:

Samples on: [X] ICE [ ] BLUE ICE [ ] NO ICE 2.2 °C LTG# 3
Preserved in: [ ] LAB [X] FIELD
FOR LAB USE ONLY
LAB NOTES: pH, TSOH, PNT 3/16/22

Are these samples known to be involved in litigation? If yes, a surcharge will apply: [ ] Yes [X] No
Are these samples known to be hazardous? [ ] Yes [X] No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: [ ] Yes [X] No

Client Comments:
Field = pH, DO, ORP, Conductivity, Temp., Turbidity, DTW
Metals reported as "total."
2 program reports will be generated

PROJECT NAME/NUMBER
Joppa Q1 Groundwater

SAMPLE COLLECTOR'S NAME
T. RILEY A. BRIDGES

RESULTS REQUESTED
[X] Standard [ ] 1-2 Day (100% Surcharge)
[ ] Other _____ [ ] 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers									INDICATE ANALYSIS REQUESTED																	
				UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	Field Analyses	Total Chloride	Total Sulfate	TDS Fluoride	Bicarb/Carb	B Ca Mg K Na	Sb As Ba Be B	Cd Cr Co Pb Li	Hg Mo Se Tl								
22030339-001	G01D	03/14/22 1552	Groundwater	2	1								✓	✓	✓	✓	✓	✓	✓	✓	✓								
002	G02D	03/14/22 1623	Groundwater	2	1								✓	✓	✓	✓	✓	✓	✓	✓	✓								
003	G51D	03/15/22 0953	Groundwater	2	1								✓	✓	✓	✓	✓	✓	✓	✓	✓								
004	G52D	03/15/22 1031	Groundwater	2	1								✓	✓	✓	✓	✓	✓	✓	✓	✓								
005	G52D Duplicate	03/15/22 1037	Groundwater	2	1								✓	✓	✓	✓	✓	✓	✓	✓	✓								
006	G53D	03/15/22 1320	Groundwater	2	1								✓	✓	✓	✓	✓	✓	✓	✓	✓								
007	G54D	03/15/22 1251	Groundwater	2	1								✓	✓	✓	✓	✓	✓	✓	✓	✓								
008	Field Blank	03/15/22 1031	Aqueous	2	1								✓	✓	✓	✓	✓	✓	✓	✓	✓								
009	G101	03/14/22 1230	Groundwater	2	1								✓	✓	✓	✓	✓	✓											
010	G102	03/14/22 1256	Groundwater	2	1								✓	✓	✓	✓	✓	✓											
011	G105	03/14/22 1321	Groundwater	2	1								✓	✓	✓	✓	✓	✓											

Relinquished By	Date/Time	Received By	Date/Time
	3-16-22 1245	Mary Kemp	3/16/22 1245

*The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions

PNT 3/16/22

CHAIN OF CUSTODY

Pg 2 of 2 Workorder # 22030339

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: Ramboll / Vistra
Address: 234 W. Florida St.
City/State/Zip: Milwaukee, WI 53204
Contact: Eric Bauer Phone: (414) 837-3607
Email: eric.bauer@ramboll.com Fax:

Are these samples known to be involved in litigation? If yes, a surcharge will apply: ☐ Yes ☑ No
Are these samples known to be hazardous? ☐ Yes ☑ No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: ☐ Yes ☑ No

Samples on: ☐ ICE ☐ BLUE ICE ☐ NO ICE ____ °C LTG# ____
Preserved in: ☐ LAB ☐ FIELD FOR LAB USE ONLY
LAB NOTES:

Client Comments:
Field = pH, DO, ORP, Conductivity, Temp., Turbidity, DTW
Metals reported as "total."
2 program reports will be generated

PROJECT NAME/NUMBER
Joppa Q1 Groundwater

SAMPLE COLLECTOR'S NAME

RESULTS REQUESTED
☑ Standard ☐ 1-2 Day (100% Surcharge)
☐ Other ____ ☐ 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers									INDICATE ANALYSIS REQUESTED													
				UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	Field Analyses	Total Chloride	Total Sulfate	TDS, Chloride	Bicarb/Carb	B Ca Mg K Na	Sb As Ba Be B	Cd Cr Co Pb Li	Hg Mo Se Tl	DTW, only					
22030339-012	G105 Duplicate	03/14/22 1321	Groundwater	2	1								✓	✓	✓	✓	✓	✓									
013	G107	03/14/22 1404	Groundwater	2	1								✓	✓	✓	✓	✓	✓									
014	G109	03/14/22 1429	Groundwater	2	1								✓	✓	✓	✓	✓	✓									
015	G111	03/14/22 1456	Groundwater	2	1								✓	✓	✓	✓	✓	✓									
016	XPW01	03/15/22 0840	Groundwater	2	1								✓	✓	✓	✓	✓	✓	✓	✓	✓						
017	XPW02	03/15/22 0916	Groundwater	2	1								✓	✓	✓	✓	✓	✓	✓	✓	✓						
018	XPW03	03/15/22 0814	Groundwater	2	1								✓	✓	✓	✓	✓	✓	✓	✓	✓						
019	XSG01	03/14/22 1641	Groundwater	0																		✓					
020	SG02	16	Groundwater	0																		✓					
			Groundwater																								
			Groundwater																								

Relinquished By	Date/Time	Received By	Date/Time
[signature]	3-16-22 1245	Mary Kemp	3/16/22 1245

*The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions

April 06, 2022

Eric Bauer
Ramboll
234 W. Florida St.
5th Floor
Milwaukee, WI 53204
TEL: (414) 837-3614
FAX:

Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: Joppa Q1 Groundwater **WorkOrder:** 22030340

Dear Eric Bauer:

TEKLAB, INC received 8 samples on 3/16/2022 12:45:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Elizabeth A. Hurley

Elizabeth A. Hurley
Project Manager
(618)344-1004 ex 33
ehurley@teklabinc.com

Report Contents

Client: Ramboll
Work Order: 22030340
Client Project: Joppa Q1 Groundwater
Report Date: 06-Apr-22

This reporting package includes the following:

Client: Ramboll **Work Order:** 22030340

Client Project: Joppa Q1 Groundwater **Report Date:** 06-Apr-22

Abbr	Definition
*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Client: Ramboll **Work Order:** 22030340

Client Project: Joppa Q1 Groundwater **Report Date:** 06-Apr-22

Qualifiers

- # - Unknown hydrocarbon
- B - Analyte detected in associated Method Blank
- C - RL shown is a Client Requested Quantitation Limit
- E - Value above quantitation range
- H - Holding times exceeded
- I - Associated internal standard was outside method criteria
- J - Analyte detected below quantitation limits
- M - Manual Integration used to determine area response
- ND - Not Detected at the Reporting Limit
- R - RPD outside accepted recovery limits
- S - Spike Recovery outside recovery limits
- T - TIC(Tentatively identified compound)
- X - Value exceeds Maximum Contaminant Level

Case Narrative

http://www.teklabinc.com/

Client: Ramboll
Client Project: Joppa Q1 Groundwater

Work Order: 22030340
Report Date: 06-Apr-22

Cooler Receipt Temp: 2.2 °C

An employee of Teklab, Inc. collected the sample(s).

Radium-226 and Radium-228 analysis was performed by Pace Analytical Services, LLC. See attached report for results.

Joppa East Ash Pond CCR 401 data is included in this report. EAH 4/6/22

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Client: Ramboll **Work Order:** 22030340

Client Project: Joppa Q1 Groundwater **Report Date:** 06-Apr-22

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2023	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2022	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2022	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2022	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2022	Collinsville
Arkansas	ADEQ	88-0966		3/14/2023	Collinsville
Illinois	IDPH	17584		5/31/2023	Collinsville
Kentucky	UST	0073		1/31/2023	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville

Client: Ramboll **Work Order:** 22030340

Client Project: Joppa Q1 Groundwater **Report Date:** 06-Apr-22

Lab ID: 22030340-001 **Client Sample ID:** G01D

Matrix: GROUNDWATER **Collection Date:** 03/14/2022 15:52

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	03/25/2022 0:00	R309150
Radium-228	*	0		**See Attached**	pci/L	1	03/25/2022 0:00	R309150

Client: Ramboll **Work Order:** 22030340

Client Project: Joppa Q1 Groundwater **Report Date:** 06-Apr-22

Lab ID: 22030340-002 **Client Sample ID:** G02D

Matrix: GROUNDWATER **Collection Date:** 03/14/2022 16:23

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	03/25/2022 0:00	R309150
Radium-228	*	0		**See Attached**	pci/L	1	03/25/2022 0:00	R309150

Client: Ramboll **Work Order:** 22030340

Client Project: Joppa Q1 Groundwater **Report Date:** 06-Apr-22

Lab ID: 22030340-003 **Client Sample ID:** G51D

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 9:53

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	03/25/2022 0:00	R309150
Radium-228	*	0		**See Attached**	pci/L	1	03/25/2022 0:00	R309150

Client: Ramboll **Work Order:** 22030340

Client Project: Joppa Q1 Groundwater **Report Date:** 06-Apr-22

Lab ID: 22030340-004 **Client Sample ID:** G52D

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 10:31

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	03/25/2022 0:00	R309150
Radium-228	*	0		**See Attached**	pci/L	1	03/25/2022 0:00	R309150

Client: Ramboll **Work Order:** 22030340

Client Project: Joppa Q1 Groundwater **Report Date:** 06-Apr-22

Lab ID: 22030340-005 **Client Sample ID:** G52D Duplicate

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 10:31

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	03/25/2022 0:00	R309150
Radium-228	*	0		**See Attached**	pci/L	1	03/25/2022 0:00	R309150

Client: Ramboll **Work Order:** 22030340

Client Project: Joppa Q1 Groundwater **Report Date:** 06-Apr-22

Lab ID: 22030340-006 **Client Sample ID:** G53D

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 13:20

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	03/25/2022 0:00	R309150
Radium-228	*	0		**See Attached**	pci/L	1	03/25/2022 0:00	R309150

Client: Ramboll **Work Order:** 22030340

Client Project: Joppa Q1 Groundwater **Report Date:** 06-Apr-22

Lab ID: 22030340-007 **Client Sample ID:** G54D

Matrix: GROUNDWATER **Collection Date:** 03/15/2022 12:51

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	03/25/2022 0:00	R309150
Radium-228	*	0		**See Attached**	pci/L	1	03/25/2022 0:00	R309150

Client: Ramboll **Work Order:** 22030340

Client Project: Joppa Q1 Groundwater **Report Date:** 06-Apr-22

Lab ID: 22030340-008 **Client Sample ID:** Field Blank

Matrix: AQUEOUS **Collection Date:** 03/15/2022 10:37

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	03/25/2022 0:00	R309150
Radium-228	*	0		**See Attached**	pci/L	1	03/25/2022 0:00	R309150

Client: Ramboll
Client Project: Joppa Q1 Groundwater

Work Order: 22030340
Report Date: 06-Apr-22

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
22030340-001	G01D	Groundwater	1	03/14/2022 15:52
22030340-002	G02D	Groundwater	1	03/14/2022 16:23
22030340-003	G51D	Groundwater	1	03/15/2022 9:53
22030340-004	G52D	Groundwater	1	03/15/2022 10:31
22030340-005	G52D Duplicate	Groundwater	1	03/15/2022 10:31
22030340-006	G53D	Groundwater	1	03/15/2022 13:20
22030340-007	G54D	Groundwater	1	03/15/2022 12:51
22030340-008	Field Blank	Aqueous	1	03/15/2022 10:37

Client: Ramboll **Work Order:** 22030340

Client Project: Joppa Q1 Groundwater **Report Date:** 06-Apr-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
22030340-001A	G01D	03/14/2022 15:52	03/16/2022 12:45		
	EPA 903.0/904.0, Radium 226/228				03/25/2022 0:00
22030340-002A	G02D	03/14/2022 16:23	03/16/2022 12:45		
	EPA 903.0/904.0, Radium 226/228				03/25/2022 0:00
22030340-003A	G51D	03/15/2022 9:53	03/16/2022 12:45		
	EPA 903.0/904.0, Radium 226/228				03/25/2022 0:00
22030340-004A	G52D	03/15/2022 10:31	03/16/2022 12:45		
	EPA 903.0/904.0, Radium 226/228				03/25/2022 0:00
22030340-005A	G52D Duplicate	03/15/2022 10:31	03/16/2022 12:45		
	EPA 903.0/904.0, Radium 226/228				03/25/2022 0:00
22030340-006A	G53D	03/15/2022 13:20	03/16/2022 12:45		
	EPA 903.0/904.0, Radium 226/228				03/25/2022 0:00
22030340-007A	G54D	03/15/2022 12:51	03/16/2022 12:45		
	EPA 903.0/904.0, Radium 226/228				03/25/2022 0:00
22030340-008A	Field Blank	03/15/2022 10:37	03/16/2022 12:45		
	EPA 903.0/904.0, Radium 226/228				03/25/2022 0:00

Receiving Check List

http://www.teklabinc.com/

Client: Ramboll
Work Order: 22030340
Client Project: Joppa Q1 Groundwater
Report Date: 06-Apr-22

Carrier: Adam Bridges
Received By: MEK

Completed by: Mary E. Kemp
On: 16-Mar-22

Reviewed by: Elizabeth A. Hurley
On: 16-Mar-22

Pages to follow: Chain of custody 1 Extra pages included 18

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 2.2
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.				
Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑	
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☑	NA ☐	
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑	

Any No responses must be detailed below or on the COC.

pH strip #78011. - MKemp - 3/16/2022 1:37:28 PM

Additional nitric acid (80810) was needed in G01D upon arrival at the laboratory. - MKemp - 3/16/2022 1:37:30 PM

CHAIN OF CUSTODY

Pg 1 of 1 Workorder # 22030340

TEKLAB INC, 5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Client: Ramboll / Vistra
Address: 234 W. Florida St.
City/State/Zip: Milwaukee, WI 53204
Contact: Eric Bauer Phone: (414) 837-3607
Email: eric.bauer@ramboll.com Fax:

Samples on: [X] ICE [ ] BLUE ICE [ ] NO ICE 2.2 °C LTG# 3
Preserved in: [/] LAB [ ] FIELD FOR LAB USE ONLY
LAB NOTES: 78011, additional HNO3 (80810) to G01D MEK 3/16/22

Are these samples known to be involved in litigation? If yes, a surcharge will apply: [ ] Yes [✓] No
Are these samples known to be hazardous? [ ] Yes [✓] No
Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: [ ] Yes [✓] No

Client Comments:
Subcontracted to Pace-National.

PROJECT NAME/NUMBER: Joppa Q1 Groundwater
SAMPLE COLLECTOR'S NAME: J. RILEY A. BRUGS

RESULTS REQUESTED
[✓] Standard [ ] 1-2 Day (100% Surcharge)
[ ] Other _____ [ ] 3 Day (50% Surcharge)

BILLING INSTRUCTIONS

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	# and Type of Containers: UNP	HNO3	NaOH	H2SO4	HCL	MeOH	NaHSO4	TSP	Other	INDICATE ANALYSIS REQUESTED: Ra226/228
22030340-001	G01D	03/14/22 1552	Groundwater		2								✓
002	G02D	03/14/22 1623	Groundwater		2								✓
003	G51D	03/15/22 0953	Groundwater		2								✓
004	G52D	03/15/22 1031	Groundwater		2								✓
005	G52D Duplicate	03/15/22 1031	Groundwater		2								✓
006	G53D	03/15/22 1320	Groundwater		2								✓
007	G54D	03/15/22 1251	Groundwater		2								✓
008	Field Blank	03/15/22 1037	Aqueous		2								✓
			Aqueous										
			Aqueous										
			Aqueous										

Relinquished By	Date/Time	Received By	Date/Time
[signature]	3-16-22 1245	Mary Kump	3/16/22 1245

*The individual signing this agreement on behalf of the client, acknowledges that he/she has read and understands the terms and conditions of this agreement, and that he/she has the authority to sign on behalf of the client. See www.teklabinc.com for terms and conditions

CoC Rev C Aug 2020

MEK 3/16/22

ANALYTICAL REPORT

April 01, 2022

TEKLAB, Inc.

Sample Delivery Group:	L1472934
Samples Received:	03/18/2022
Project Number:	22030340
Description:	

Report To: Elizabeth Hurley
5445 Horseshoe Lake Road
Collinsville, IL 62234

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

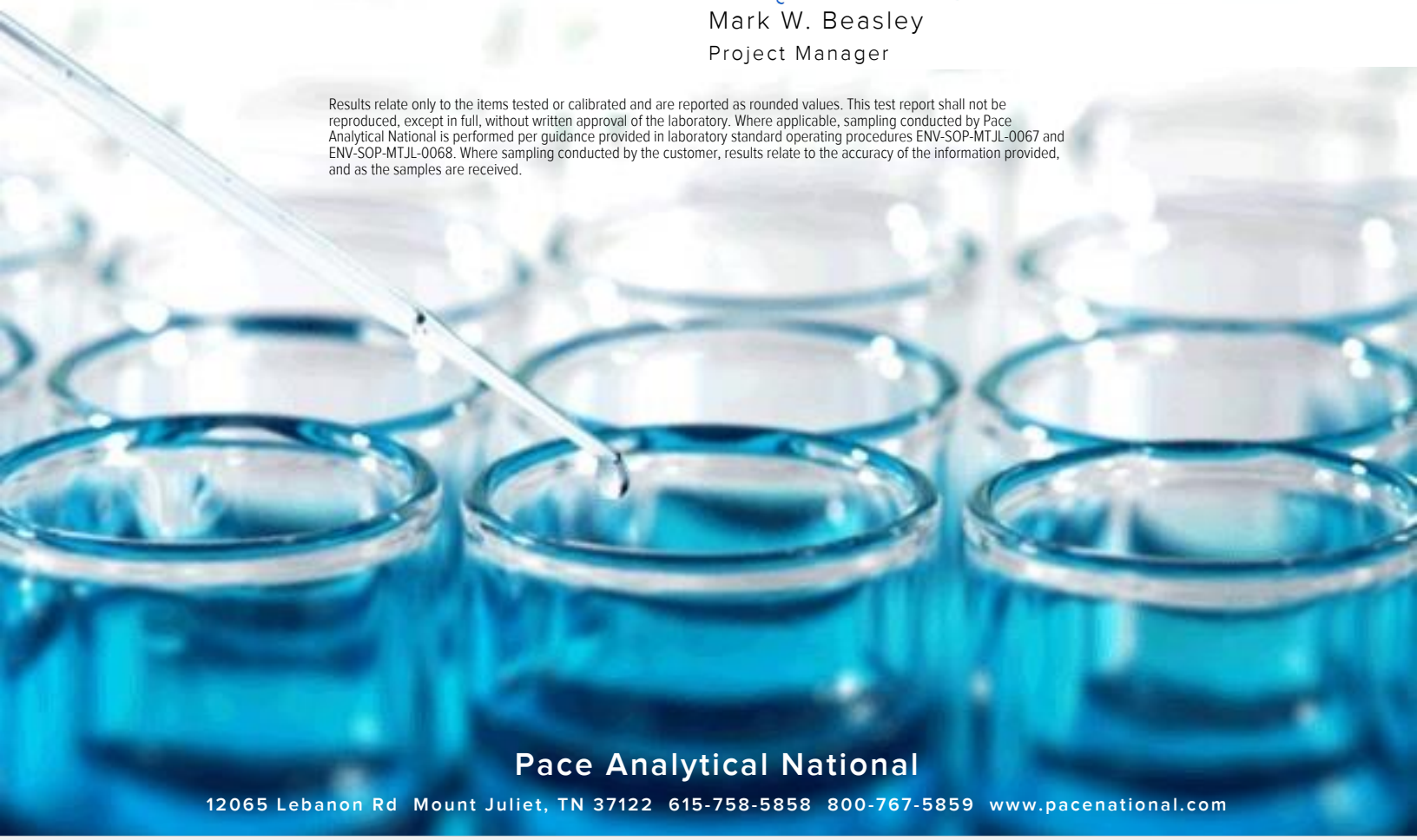


TABLE OF CONTENTS

SAMPLE SUMMARY

22030340-001A L1472934-01 Non-Potable Water

Collected by: JR/AB | Collected date/time: 03/14/22 15:52 | Received date/time: 03/18/22 13:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1837027	1	03/24/22 14:47	03/30/22 11:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1835601	1	03/23/22 14:22	03/30/22 11:35	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1835601	1	03/23/22 14:22	03/25/22 21:18	RGT	Mt. Juliet, TN

22030340-002A L1472934-02 Non-Potable Water

Collected by: JR/AB | Collected date/time: 03/14/22 16:23 | Received date/time: 03/18/22 13:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1837027	1	03/24/22 14:47	03/30/22 11:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1835601	1	03/23/22 14:22	03/30/22 11:35	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1835601	1	03/23/22 14:22	03/25/22 21:18	RGT	Mt. Juliet, TN

22030340-003A L1472934-03 Non-Potable Water

Collected by: JR/AB | Collected date/time: 03/15/22 09:53 | Received date/time: 03/18/22 13:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1837027	1	03/24/22 14:47	03/30/22 11:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1835601	1	03/23/22 14:22	03/30/22 11:35	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1835601	1	03/23/22 14:22	03/25/22 21:18	RGT	Mt. Juliet, TN

22030340-004A L1472934-04 Non-Potable Water

Collected by: JR/AB | Collected date/time: 03/15/22 10:31 | Received date/time: 03/18/22 13:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1837027	1	03/24/22 14:47	03/30/22 11:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1835601	1	03/23/22 14:22	03/30/22 11:35	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1835601	1	03/23/22 14:22	03/25/22 21:18	RGT	Mt. Juliet, TN

22030340-005A L1472934-05 Non-Potable Water

Collected by: JR/AB | Collected date/time: 03/15/22 10:31 | Received date/time: 03/18/22 13:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1837027	1	03/24/22 14:47	03/30/22 11:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1835601	1	03/23/22 14:22	03/30/22 11:35	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1835601	1	03/23/22 14:22	03/25/22 21:18	RGT	Mt. Juliet, TN

22030340-006A L1472934-06 Non-Potable Water

Collected by: JR/AB | Collected date/time: 03/15/22 13:20 | Received date/time: 03/18/22 13:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1837027	1	03/24/22 14:47	03/29/22 15:05	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1835601	1	03/23/22 14:22	03/29/22 15:05	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1835601	1	03/23/22 14:22	03/25/22 21:18	RGT	Mt. Juliet, TN

22030340-007A L1472934-07 Non-Potable Water

Collected by: JR/AB
Collected date/time: 03/15/22 12:51
Received date/time: 03/18/22 13:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1837027	1	03/24/22 14:47	03/29/22 15:05	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1835601	1	03/23/22 14:22	03/29/22 15:05	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1835601	1	03/23/22 14:22	03/25/22 21:18	RGT	Mt. Juliet, TN

22030340-008A L1472934-08 Non-Potable Water

Collected by: JR/AB
Collected date/time: 03/15/22 10:37
Received date/time: 03/18/22 13:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1837027	1	03/24/22 14:47	03/29/22 15:05	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1835601	1	03/23/22 14:22	03/29/22 15:05	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1835601	1	03/23/22 14:22	03/25/22 21:18	RGT	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.10		0.307	0.559	03/30/2022 11:35	WG1837027
(T) Barium	*91.5*			*62.0-143*	*03/30/2022 11:35*	WG1837027
(T) Yttrium	*107*			*79.0-136*	*03/30/2022 11:35*	WG1837027

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.10		0.308	0.582	03/30/2022 11:35	WG1835601

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	-0.00559	U	0.0283	0.163	03/25/2022 21:18	WG1835601
(T) Barium-133	*98.8*			*30.0-143*	*03/25/2022 21:18*	WG1835601

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.629	J	0.334	0.631	03/30/2022 11:35	WG1837027
(T) Barium	*98.8*			*62.0-143*	*03/30/2022 11:35*	WG1837027
(T) Yttrium	*92.6*			*79.0-136*	*03/30/2022 11:35*	WG1837027

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.905		0.399	0.663	03/30/2022 11:35	WG1835601

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.276		0.218	0.203	03/25/2022 21:18	WG1835601
(T) Barium-133	*98.5*			*30.0-143*	*03/25/2022 21:18*	WG1835601

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.974		0.299	0.548	03/30/2022 11:35	WG1837027
(T) Barium	*89.0*			*62.0-143*	*03/30/2022 11:35*	WG1837027
(T) Yttrium	*105*			*79.0-136*	*03/30/2022 11:35*	WG1837027

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.21		0.395	0.643	03/30/2022 11:35	WG1835601

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.239	J	0.258	0.337	03/25/2022 21:18	WG1835601
(T) Barium-133	*97.4*			*30.0-143*	*03/25/2022 21:18*	WG1835601

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.626		0.279	0.521	03/30/2022 11:35	WG1837027
(T) Barium	*104*			*62.0-143*	*03/30/2022 11:35*	WG1837027
(T) Yttrium	*104*			*79.0-136*	*03/30/2022 11:35*	WG1837027

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.975		0.374	0.556	03/30/2022 11:35	WG1835601

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.349		0.249	0.194	03/25/2022 21:18	WG1835601
(T) Barium-133	*95.7*			*30.0-143*	*03/25/2022 21:18*	WG1835601

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.15		0.292	0.526	03/30/2022 11:35	WG1837027
(T) Barium	*92.3*			*62.0-143*	*03/30/2022 11:35*	WG1837027
(T) Yttrium	*102*			*79.0-136*	*03/30/2022 11:35*	WG1837027

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.88		0.473	0.600	03/30/2022 11:35	WG1835601

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.737		0.372	0.288	03/25/2022 21:18	WG1835601
(T) Barium-133	*95.9*			*30.0-143*	*03/25/2022 21:18*	WG1835601

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.253	U	0.264	0.521	03/29/2022 15:05	WG1837027
(T) Barium	*100*			*62.0-143*	*03/29/2022 15:05*	WG1837027
(T) Yttrium	*98.4*			*79.0-136*	*03/29/2022 15:05*	WG1837027

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.285	U	0.319	0.629	03/29/2022 15:05	WG1835601

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0323	U	0.179	0.353	03/25/2022 21:18	WG1835601
(T) Barium-133	*92.8*			*30.0-143*	*03/25/2022 21:18*	WG1835601

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.843		0.288	0.544	03/29/2022 15:05	WG1837027
(T) Barium	*86.9*			*62.0-143*	*03/29/2022 15:05*	WG1837027
(T) Yttrium	*101*			*79.0-136*	*03/29/2022 15:05*	WG1837027

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.843		0.293	0.589	03/29/2022 15:05	WG1835601

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	-0.0189	U	0.0551	0.225	03/25/2022 21:18	WG1835601
(T) Barium-133	*94.9*			*30.0-143*	*03/25/2022 21:18*	WG1835601

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.766		0.230	0.430	03/29/2022 15:05	WG1837027
(T) Barium	*108*			*62.0-143*	*03/29/2022 15:05*	WG1837027
(T) Yttrium	*103*			*79.0-136*	*03/29/2022 15:05*	WG1837027

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.803		0.248	0.471	03/29/2022 15:05	WG1835601

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.0371	U	0.0917	0.191	03/25/2022 21:18	WG1835601
(T) Barium-133	*91.3*			*30.0-143*	*03/25/2022 21:18*	WG1835601

QUALITY CONTROL SUMMARY

L1472934-01,02,03,04,05,06,07,08

Method Blank (MB)

(MB) R3776688-1 03/30/22 11:35

Analyte	MB Result	MB Qualifier	MB Uncertainty	MB MDA
	pCi/l		+ / -	pCi/l
Radium-228	0.128	U	0.226	0.435
(T) Barium	*95.6*		*95.6*	
(T) Yttrium	*103*		*103*	

L1472932-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1472932-04 03/30/22 11:35 • (DUP) R3776688-5 03/30/22 11:35

Analyte	Original Result	Original Uncertainty	Original MDA	DUP Result	DUP Uncertainty	DUP MDA	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	+ / -	pCi/l		%			%	
Radium-228	0.357	0.287	0.547	1.07	0.875	0.547	1	100	0.778	J	20	3
(T) Barium	*92.2*			*101*	*101*							
(T) Yttrium	*104*			*96.3*	*96.3*							

Laboratory Control Sample (LCS)

(LCS) R3776688-2 03/30/22 11:35

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-228	5.00	5.77	115	80.0-120	
(T) Barium			*107*		
(T) Yttrium			*95.9*		

L1472932-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1472932-03 03/30/22 11:35 • (MS) R3776688-3 03/30/22 11:35 • (MSD) R3776688-4 03/30/22 11:35

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-228	16.7	0.297	19.2	21.2	113	125	1	70.0-130			9.65		20
(T) Barium		*97.1*			*99.0*	*94.0*							
(T) Yttrium		*112*			*98.1*	*104*							

Method Blank (MB)

(MB) R3776719-1 03/25/22 21:18

Analyte	MB Result	MB Qualifier	MB Uncertainty	MB MDA
	pCi/l		+ / -	pCi/l
Radium-226	-0.00169	U	0.0105	0.0269
(T) Barium-133	*98.8*		*98.8*	

L1472934-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1472934-08 03/25/22 21:18 • (DUP) R3776719-5 03/25/22 21:18

Analyte	Original Result	Original Uncertainty	Original MDA	DUP Result	DUP Uncertainty	DUP MDA	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	+ / -	pCi/l		%			%	
Radium-226	0.0371	0.0917	0.191	0.0169	0.105	0.191	1	74.7	0.145	U	20	3
(T) Barium-133	*91.3*			*95.5*	*95.5*							

Laboratory Control Sample (LCS)

(LCS) R3776719-2 03/25/22 21:18

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-226	5.01	5.58	111	80.0-120	
(T) Barium-133			*95.6*		

L1472934-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1472934-01 03/25/22 21:18 • (MS) R3776719-3 03/25/22 21:18 • (MSD) R3776719-4 03/25/22 21:18

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-226	20.0	-0.00559	21.1	19.6	106	98.2	1	75.0-125			7.27		20
(T) Barium-133		*98.8*			*96.3*	*96.9*							

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

A128

TEKLAB, INC. Chain of Custody

5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Are the samples chilled? YES ☐ NO ☑ With: ☐ Ice ☐ Blue Ice Preserved in: ☐ Lab ☐ Field

Teklab Inc
5445 Horseshoe Lake Road
Collinsville, IL 62234

Cooler Temp: ______ Sampler: Joseph Riley/Adam Bridges QC Level: 3

Comments: **Please Issue reports and invoices via email only**
Please analyze for Radium 226/228 on your standard turn around time.
Samples collected from an ~~MO~~ site. IL
Batch QC is required for all analyses requested. EDD requested..

Project# 22030340

Contact: Elizabeth Hurley
Requested Due Date: Standard TAT
Email: EHurley@TekLabInc.com
Billing/PO: 32574
Phone: (618) 344-1004 ext 33

U472934

PLEASE NOTE:

NELAP accreditation is required on the requested analytes and must be documented as such on the final report. If your laboratory does not currently hold a NELAP accreditation for the requested method and/or analytes, please contact Teklab immediately. If your laboratory loses accreditation or is suspended for any analyte/method during the life of the contract, you must contact Teklab immediately.

Any changes to analysis/methods must be approved by Teklab, Inc.

Lab Use	Sample ID	Sample Date/Time	Preservative	Matrix	Ra226/228
-01	22030340-001A	3/14/22 1552	HNO3	Groundwater	✔
-02	22030340-002A	3/14/22 1623	HNO3	Groundwater	✔
-03	22030340-003A	3/15/22 0953	HNO3	Groundwater	✔
-04	22030340-004A	3/15/22 1031	HNO3	Groundwater	✔
-05	22030340-005A	3/15/22 1031	HNO3	Groundwater	✔
-06	22030340-006A	3/15/22 1320	HNO3	Groundwater	✔
-07	22030340-007A	3/15/22 1251	HNO3	Groundwater	✔
-08	22030340-008A	3/15/22 1037	HNO3	Groundwater	✔
			HNO3	Groundwater	
			HNO3	Groundwater	
			HNO3	Groundwater	

*Relinquished By	Date/Time	Received By	Date/Time
Mary Hup	3/16/22 1600	[signature]	3/18/22 1300

Sample Receipt Checklist

COC Seal Present/Intact: Y ✓ N
COC Signed/Accurate: ✓ Y N
Bottles arrive intact: ✓ Y N
Correct bottles used: ✓ Y N
Sufficient volume sent: ✓ Y N
RAD Screen <0.5 mR/hr: ✓ Y N

If Applicable
VOA Zero Headspace: Y ✓ N
Pres.Correct/Check: ✓ Y N

12.4to12.4 DRA2

November 04, 2022

Eric Bauer
Ramboll
234 W. Florida St.
5th Floor
Milwaukee, WI 53204
TEL: (414) 837-3614
FAX:

Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: Joppa Q3 Groundwater **WorkOrder:** 22090653

Dear Eric Bauer:

TEKLAB, INC received 17 samples on 9/21/2022 1:50:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Elizabeth A. Hurley
Director of Customer Service
(618)344-1004 ex 33
ehurley@teklabinc.com

Report Contents

Client: Ramboll
Work Order: 22090653
Client Project: Joppa Q3 Groundwater
Report Date: 04-Nov-22

This reporting package includes the following:

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

Abbr Definition

*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

Qualifiers

- # - Unknown hydrocarbon
- B - Analyte detected in associated Method Blank
- C - RL shown is a Client Requested Quantitation Limit
- E - Value above quantitation range
- H - Holding times exceeded
- I - Associated internal standard was outside method criteria
- J - Analyte detected below quantitation limits
- M - Manual Integration used to determine area response
- ND - Not Detected at the Reporting Limit
- R - RPD outside accepted recovery limits
- S - Spike Recovery outside recovery limits
- T - TIC(Tentatively identified compound)
- X - Value exceeds Maximum Contaminant Level

Case Narrative

http://www.teklabinc.com/

Client: Ramboll
Work Order: 22090653
Client Project: Joppa Q3 Groundwater
Report Date: 04-Nov-22

Cooler Receipt Temp: 5.0 °C

An employee of Teklab, Inc. collected the sample(s).

JOP-22Q3-JOP-257-401 is included in this report. EAH 10/28/22

This WO was revised on November 4, 2022, per Eric Bauer's request. The reason for this revision is correct the elevations reported for SG02 and XSG01. Please replace report dated October 28, 2022 with this report. EAH 11/4/22

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2023	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2023	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2023	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2023	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2023	Collinsville
Arkansas	ADEQ	88-0966		3/14/2023	Collinsville
Illinois	IDPH	17584		5/31/2023	Collinsville
Iowa	IDNR	430		6/1/2024	Collinsville
Kentucky	UST	0073		1/31/2023	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

Lab ID: 22090653-001 **Client Sample ID:** G01D

Matrix: GROUNDWATER **Collection Date:** 09/20/2022 11:33

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**44.52**	ft	1	09/20/2022 11:33	R319136
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.50**		1	09/20/2022 11:33	R319136
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**30**	NTU	1	09/20/2022 11:33	R319136
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**173**	mV	1	09/20/2022 11:33	R319136
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**491**	µS/cm	1	09/20/2022 11:33	R319136
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**19.6**	°C	1	09/20/2022 11:33	R319136
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**2.67**	mg/L	1	09/20/2022 11:33	R319136
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**302**	mg/L	1	09/26/2022 10:49	R318645
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**23**	mg/L	1	09/28/2022 12:59	R318683
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.19**	mg/L	1	09/26/2022 9:31	R318565
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**8**	mg/L	1	09/28/2022 12:59	R318718
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**25.5**	mg/L	1	09/22/2022 18:39	197876
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	1.0	J	**0.5**	µg/L	5	09/23/2022 19:53	197876
Barium	NELAP	1.0		**142**	µg/L	5	09/23/2022 19:53	197876
Boron	NELAP	25	J	**14**	µg/L	5	09/23/2022 19:53	197876
Chromium	NELAP	1.5		**2.5**	µg/L	5	09/26/2022 14:35	197876
Cobalt	NELAP	1.0	J	**0.7**	µg/L	5	09/23/2022 19:53	197876
Lead	NELAP	1.0	J	**0.6**	µg/L	5	09/23/2022 19:53	197876
Lithium	*	3.0		**< 3.0**	µg/L	5	09/23/2022 19:53	197876
Molybdenum	NELAP	1.5	J	**0.7**	µg/L	5	09/26/2022 14:35	197876
Selenium	NELAP	1.0		**1.2**	µg/L	5	09/23/2022 19:53	197876

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

Lab ID: 22090653-002 **Client Sample ID:** G02D

Matrix: GROUNDWATER **Collection Date:** 09/21/2022 9:24

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**44.79**	ft	1	09/21/2022 9:24	R319136
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.48**		1	09/21/2022 9:24	R319136
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**< 1.0**	NTU	1	09/21/2022 9:24	R319136
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**199**	mV	1	09/21/2022 9:24	R319136
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**410**	µS/cm	1	09/21/2022 9:24	R319136
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**15.5**	°C	1	09/21/2022 9:24	R319136
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**5.29**	mg/L	1	09/21/2022 9:24	R319136
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**220**	mg/L	1	09/26/2022 10:49	R318645
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**15**	mg/L	1	09/28/2022 13:36	R318683
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.19**	mg/L	1	09/26/2022 9:34	R318565
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**21**	mg/L	1	09/28/2022 13:36	R318718
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**35.3**	mg/L	1	09/22/2022 18:42	197876
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 19:59	197876
Barium	NELAP	1.0		**171**	µg/L	5	09/23/2022 19:59	197876
Boron	NELAP	25.0		**26.6**	µg/L	5	09/23/2022 19:59	197876
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	09/26/2022 14:41	197876
Cobalt	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 19:59	197876
Lead	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 19:59	197876
Lithium	*	3.0		**< 3.0**	µg/L	5	09/23/2022 19:59	197876
Molybdenum	NELAP	1.5		**< 1.5**	µg/L	5	09/26/2022 14:41	197876
Selenium	NELAP	1.0		**1.2**	µg/L	5	09/23/2022 19:59	197876

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

Lab ID: 22090653-009 **Client Sample ID:** G51D

Matrix: GROUNDWATER **Collection Date:** 09/20/2022 12:19

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**45.34**	ft	1	09/20/2022 12:19	R319136
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**5.58**		1	09/20/2022 12:19	R319136
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**1.8**	NTU	1	09/20/2022 12:19	R319136
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**215**	mV	1	09/20/2022 12:19	R319136
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**403**	µS/cm	1	09/20/2022 12:19	R319136
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**20.7**	°C	1	09/20/2022 12:19	R319136
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**3.47**	mg/L	1	09/20/2022 12:19	R319136
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**322**	mg/L	1	09/26/2022 10:51	R318645
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**125**	mg/L	5	09/28/2022 14:53	R318683
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10	J	**0.08**	mg/L	1	09/26/2022 10:22	R318565
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**4**	mg/L	1	09/28/2022 14:48	R318718
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**28.9**	mg/L	1	09/22/2022 19:31	197876
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 21:03	197876
Barium	NELAP	1.0		**32.1**	µg/L	5	09/23/2022 21:03	197876
Boron	NELAP	25.0		**551**	µg/L	5	09/23/2022 21:03	197876
Chromium	NELAP	1.5	J	**1.4**	µg/L	5	09/26/2022 14:48	197876
Cobalt	NELAP	1.0	J	**0.9**	µg/L	5	09/23/2022 21:03	197876
Lead	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 21:03	197876
Lithium	*	3.0		**5.3**	µg/L	5	09/23/2022 21:03	197876
Molybdenum	NELAP	1.5		**< 1.5**	µg/L	5	09/26/2022 14:48	197876
Selenium	NELAP	1.0		**4.7**	µg/L	5	09/23/2022 21:03	197876

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

Lab ID: 22090653-010 **Client Sample ID:** G52D

Matrix: GROUNDWATER **Collection Date:** 09/21/2022 10:01

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**27.01**	ft	1	09/21/2022 10:01	R319136
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.26**		1	09/21/2022 10:01	R319136
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**< 1.0**	NTU	1	09/21/2022 10:01	R319136
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**122**	mV	1	09/21/2022 10:01	R319136
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**460**	µS/cm	1	09/21/2022 10:01	R319136
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**17.4**	°C	1	09/21/2022 10:01	R319136
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**0.50**	mg/L	1	09/21/2022 10:01	R319136
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**334**	mg/L	1	09/26/2022 10:51	R318645
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20		**72**	mg/L	2	09/28/2022 15:01	R318683
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.24**	mg/L	1	09/26/2022 10:24	R318565
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**12**	mg/L	1	09/28/2022 14:56	R318718
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**45.6**	mg/L	1	09/22/2022 19:34	197876
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	1.0		**1.9**	µg/L	5	09/23/2022 21:09	197876
Barium	NELAP	1.0		**225**	µg/L	5	09/23/2022 21:09	197876
Boron	NELAP	25	J	**11**	µg/L	5	09/23/2022 21:09	197876
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	09/26/2022 14:54	197876
Cobalt	NELAP	1.0		**4.4**	µg/L	5	09/23/2022 21:09	197876
Lead	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 21:09	197876
Lithium	*	3.0	J	**2.5**	µg/L	5	09/23/2022 21:09	197876
Molybdenum	NELAP	1.5	J	**0.7**	µg/L	5	09/26/2022 14:54	197876
Selenium	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 21:09	197876

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

Lab ID: 22090653-011 **Client Sample ID:** G53D

Matrix: GROUNDWATER **Collection Date:** 09/20/2022 13:39

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**39.09**	ft	1	09/20/2022 13:39	R319136
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.48**		1	09/20/2022 13:39	R319136
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**< 1.0**	NTU	1	09/20/2022 13:39	R319136
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**183**	mV	1	09/20/2022 13:39	R319136
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**491**	µS/cm	1	09/20/2022 13:39	R319136
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**18.1**	°C	1	09/20/2022 13:39	R319136
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**2.05**	mg/L	1	09/20/2022 13:39	R319136
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**350**	mg/L	1	09/26/2022 10:52	R318645
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**79**	mg/L	5	09/28/2022 15:30	R318683
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.66**	mg/L	1	09/26/2022 10:26	R318565
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**18**	mg/L	1	09/28/2022 15:20	R318718
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**35.9**	mg/L	1	09/22/2022 19:38	197876
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 21:16	197876
Barium	NELAP	1.0		**109**	µg/L	5	09/23/2022 21:16	197876
Boron	NELAP	25.0		**431**	µg/L	5	09/23/2022 21:16	197876
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	09/26/2022 15:00	197876
Cobalt	NELAP	1.0		**1.7**	µg/L	5	09/23/2022 21:16	197876
Lead	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 21:16	197876
Lithium	*	3.0		**< 3.0**	µg/L	5	09/23/2022 21:16	197876
Molybdenum	NELAP	1.5		**< 1.5**	µg/L	5	09/26/2022 15:00	197876
Selenium	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 21:16	197876

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

Lab ID: 22090653-012 **Client Sample ID:** G54D

Matrix: GROUNDWATER **Collection Date:** 09/20/2022 12:59

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**43.90**	ft	1	09/20/2022 12:59	R319136
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.50**		1	09/20/2022 12:59	R319136
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**9.0**	NTU	1	09/20/2022 12:59	R319136
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**184**	mV	1	09/20/2022 12:59	R319136
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**737**	µS/cm	1	09/20/2022 12:59	R319136
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**18.4**	°C	1	09/20/2022 12:59	R319136
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**0.88**	mg/L	1	09/20/2022 12:59	R319136
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**518**	mg/L	1	09/26/2022 10:52	R318645
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		**218**	mg/L	5	09/28/2022 15:46	R318683
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.27**	mg/L	1	09/26/2022 10:28	R318565
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**22**	mg/L	1	09/28/2022 15:41	R318718
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**69.7**	mg/L	1	09/22/2022 19:42	197876
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 21:22	197876
Barium	NELAP	1.0		**76.8**	µg/L	5	09/23/2022 21:22	197876
Boron	NELAP	25.0		**252**	µg/L	5	09/23/2022 21:22	197876
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	09/26/2022 15:07	197876
Cobalt	NELAP	1.0		**4.8**	µg/L	5	09/23/2022 21:22	197876
Lead	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 21:22	197876
Lithium	*	3.0	J	**2.7**	µg/L	5	09/23/2022 21:22	197876
Molybdenum	NELAP	1.5		**< 1.5**	µg/L	5	09/26/2022 15:07	197876
Selenium	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 21:22	197876

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

Lab ID: 22090653-013 **Client Sample ID:** SG02

Matrix: GROUNDWATER **Collection Date:** 09/21/2022 12:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**302.60**	ft	1	09/21/2022 12:15	R319136

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

Lab ID: 22090653-014 **Client Sample ID:** XSG01

Matrix: GROUNDWATER **Collection Date:** 09/20/2022 12:34

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**4.10**	ft	1	09/20/2022 12:34	R319136

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

Lab ID: 22090653-015 **Client Sample ID:** Field Blank

Matrix: AQUEOUS **Collection Date:** 09/21/2022 10:05

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**< 20**	mg/L	1	09/26/2022 10:52	R318645
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		**< 10**	mg/L	1	09/28/2022 15:52	R318683
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**< 0.10**	mg/L	1	09/26/2022 10:34	R318565
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**< 4**	mg/L	1	09/28/2022 15:52	R318718
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**< 0.100**	mg/L	1	09/22/2022 20:00	197876
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 22:13	197876
Barium	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 22:13	197876
Boron	NELAP	25.0		**< 25.0**	µg/L	5	09/23/2022 22:13	197876
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	09/26/2022 15:13	197876
Cobalt	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 22:13	197876
Lead	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 22:13	197876
Lithium	*	3.0		**< 3.0**	µg/L	5	09/23/2022 22:13	197876
Molybdenum	NELAP	1.5		**< 1.5**	µg/L	5	09/26/2022 15:13	197876
Selenium	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 22:13	197876

CCV recovered outside the upper control limits for B and Li. Sample results are below the reporting limit. Data is reportable per the TNI standard.

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

Lab ID: 22090653-016 **Client Sample ID:** G52D Duplicate

Matrix: GROUNDWATER **Collection Date:** 09/21/2022 10:01

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		**27.01**	ft	1	09/21/2022 10:01	R319136
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		**6.26**		1	09/21/2022 10:01	R319136
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		**< 1.0**	NTU	1	09/21/2022 10:01	R319136
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		**122**	mV	1	09/21/2022 10:01	R319136
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		**460**	µS/cm	1	09/21/2022 10:01	R319136
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		**17.4**	°C	1	09/21/2022 10:01	R319136
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		**0.50**	mg/L	1	09/21/2022 10:01	R319136
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		**328**	mg/L	1	09/26/2022 11:03	R318645
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20		**68**	mg/L	2	09/28/2022 16:13	R318683
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		**0.23**	mg/L	1	09/26/2022 10:37	R318565
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		**12**	mg/L	1	09/28/2022 15:55	R318718
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		**45.6**	mg/L	1	09/22/2022 20:04	197876
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Arsenic	NELAP	1.0		**2.0**	µg/L	5	09/23/2022 22:20	197876
Barium	NELAP	1.0		**226**	µg/L	5	09/23/2022 22:20	197876
Boron	NELAP	25	J	**10**	µg/L	5	09/23/2022 22:20	197876
Chromium	NELAP	1.5		**< 1.5**	µg/L	5	09/26/2022 15:20	197876
Cobalt	NELAP	1.0		**4.2**	µg/L	5	09/23/2022 22:20	197876
Lead	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 22:20	197876
Lithium	*	3.0	J	**2.8**	µg/L	5	09/23/2022 22:20	197876
Molybdenum	NELAP	1.5	J	**0.6**	µg/L	5	09/26/2022 15:20	197876
Selenium	NELAP	1.0		**< 1.0**	µg/L	5	09/23/2022 22:20	197876

CCV recovered outside the upper control limits for B and Li. Sample results are below the reporting limit. Data is reportable per the TNI standard.

Client: Ramboll
Work Order: 22090653
Client Project: Joppa Q3 Groundwater
Report Date: 04-Nov-22

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
22090653-001	G01D	Groundwater	2	09/20/2022 11:33
22090653-002	G02D	Groundwater	2	09/21/2022 9:24
22090653-009	G51D	Groundwater	2	09/20/2022 12:19
22090653-010	G52D	Groundwater	2	09/21/2022 10:01
22090653-011	G53D	Groundwater	2	09/20/2022 13:39
22090653-012	G54D	Groundwater	2	09/20/2022 12:59
22090653-013	SG02	Groundwater	1	09/21/2022 12:15
22090653-014	XSG01	Groundwater	1	09/20/2022 12:34
22090653-015	Field Blank	Aqueous	2	09/21/2022 10:05
22090653-016	G52D Duplicate	Groundwater	2	09/21/2022 10:01

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
22090653-001A	G01D	09/20/2022 11:33	09/21/2022 13:50		
	Field Elevation Measurements				09/20/2022 11:33
	Standard Method 4500-H B 2001 Field				09/20/2022 11:33
	Standard Methods 2130 B Field				09/20/2022 11:33
	Standard Methods 18th Ed. 2580 B Field				09/20/2022 11:33
	Standard Methods 2510 B Field				09/20/2022 11:33
	Standard Methods 2540 C (Total) 1997, 2011				09/26/2022 10:49
	Standard Methods 2550 B Field				09/20/2022 11:33
	Standard Methods 4500-O G Field				09/20/2022 11:33
	SW-846 9036 (Total)				09/28/2022 12:59
	SW-846 9214 (Total)				09/26/2022 9:31
	SW-846 9251 (Total)				09/28/2022 12:59
22090653-001B	G01D	09/20/2022 11:33	09/21/2022 13:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/21/2022 15:50	09/22/2022 18:39
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/23/2022 19:53
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/26/2022 14:35
22090653-002A	G02D	09/21/2022 9:24	09/21/2022 13:50		
	Field Elevation Measurements				09/21/2022 9:24
	Standard Method 4500-H B 2001 Field				09/21/2022 9:24
	Standard Methods 2130 B Field				09/21/2022 9:24
	Standard Methods 18th Ed. 2580 B Field				09/21/2022 9:24
	Standard Methods 2510 B Field				09/21/2022 9:24
	Standard Methods 2540 C (Total) 1997, 2011				09/26/2022 10:49
	Standard Methods 2550 B Field				09/21/2022 9:24
	Standard Methods 4500-O G Field				09/21/2022 9:24
	SW-846 9036 (Total)				09/28/2022 13:36
	SW-846 9214 (Total)				09/26/2022 9:34
	SW-846 9251 (Total)				09/28/2022 13:36
22090653-002B	G02D	09/21/2022 9:24	09/21/2022 13:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/21/2022 15:50	09/22/2022 18:42
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/23/2022 19:59
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/26/2022 14:41
22090653-009A	G51D	09/20/2022 12:19	09/21/2022 13:50		
	Field Elevation Measurements				09/20/2022 12:19
	Standard Method 4500-H B 2001 Field				09/20/2022 12:19
	Standard Methods 2130 B Field				09/20/2022 12:19
	Standard Methods 18th Ed. 2580 B Field				09/20/2022 12:19

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	Standard Methods 2510 B Field				09/20/2022 12:19
	Standard Methods 2540 C (Total) 1997, 2011				09/26/2022 10:51
	Standard Methods 2550 B Field				09/20/2022 12:19
	Standard Methods 4500-O G Field				09/20/2022 12:19
	SW-846 9036 (Total)				09/28/2022 14:53
	SW-846 9214 (Total)				09/26/2022 10:22
	SW-846 9251 (Total)				09/28/2022 14:48
22090653-009B	G51D	09/20/2022 12:19	09/21/2022 13:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/21/2022 15:50	09/22/2022 19:31
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/23/2022 21:03
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/26/2022 14:48
22090653-010A	G52D	09/21/2022 10:01	09/21/2022 13:50		
	Field Elevation Measurements				09/21/2022 10:01
	Standard Method 4500-H B 2001 Field				09/21/2022 10:01
	Standard Methods 2130 B Field				09/21/2022 10:01
	Standard Methods 18th Ed. 2580 B Field				09/21/2022 10:01
	Standard Methods 2510 B Field				09/21/2022 10:01
	Standard Methods 2540 C (Total) 1997, 2011				09/26/2022 10:51
	Standard Methods 2550 B Field				09/21/2022 10:01
	Standard Methods 4500-O G Field				09/21/2022 10:01
	SW-846 9036 (Total)				09/28/2022 15:01
	SW-846 9214 (Total)				09/26/2022 10:24
	SW-846 9251 (Total)				09/28/2022 14:56
22090653-010B	G52D	09/21/2022 10:01	09/21/2022 13:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/21/2022 15:50	09/22/2022 19:34
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/23/2022 21:09
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/26/2022 14:54
22090653-011A	G53D	09/20/2022 13:39	09/21/2022 13:50		
	Field Elevation Measurements				09/20/2022 13:39
	Standard Method 4500-H B 2001 Field				09/20/2022 13:39
	Standard Methods 2130 B Field				09/20/2022 13:39
	Standard Methods 18th Ed. 2580 B Field				09/20/2022 13:39
	Standard Methods 2510 B Field				09/20/2022 13:39
	Standard Methods 2540 C (Total) 1997, 2011				09/26/2022 10:52
	Standard Methods 2550 B Field				09/20/2022 13:39
	Standard Methods 4500-O G Field				09/20/2022 13:39
	SW-846 9036 (Total)				09/28/2022 15:30

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	SW-846 9214 (Total)				09/26/2022 10:26
	SW-846 9251 (Total)				09/28/2022 15:20
22090653-011B	G53D	09/20/2022 13:39	09/21/2022 13:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/21/2022 15:50	09/22/2022 19:38
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/23/2022 21:16
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/26/2022 15:00
22090653-012A	G54D	09/20/2022 12:59	09/21/2022 13:50		
	Field Elevation Measurements				09/20/2022 12:59
	Standard Method 4500-H B 2001 Field				09/20/2022 12:59
	Standard Methods 2130 B Field				09/20/2022 12:59
	Standard Methods 18th Ed. 2580 B Field				09/20/2022 12:59
	Standard Methods 2510 B Field				09/20/2022 12:59
	Standard Methods 2540 C (Total) 1997, 2011				09/26/2022 10:52
	Standard Methods 2550 B Field				09/20/2022 12:59
	Standard Methods 4500-O G Field				09/20/2022 12:59
	SW-846 9036 (Total)				09/28/2022 15:46
	SW-846 9214 (Total)				09/26/2022 10:28
	SW-846 9251 (Total)				09/28/2022 15:41
22090653-012B	G54D	09/20/2022 12:59	09/21/2022 13:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/21/2022 15:50	09/22/2022 19:42
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/23/2022 21:22
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/26/2022 15:07
22090653-013A	SG02	09/21/2022 12:15	09/21/2022 13:50		
	Field Elevation Measurements				09/21/2022 12:15
22090653-014A	XSG01	09/20/2022 12:34	09/21/2022 13:50		
	Field Elevation Measurements				09/20/2022 12:34
22090653-015A	Field Blank	09/21/2022 10:05	09/21/2022 13:50		
	Standard Methods 2540 C (Total) 1997, 2011				09/26/2022 10:52
	SW-846 9036 (Total)				09/28/2022 15:52
	SW-846 9214 (Total)				09/26/2022 10:34
	SW-846 9251 (Total)				09/28/2022 15:52
22090653-015B	Field Blank	09/21/2022 10:05	09/21/2022 13:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/21/2022 15:50	09/22/2022 20:00
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/23/2022 22:13
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/26/2022 15:13
22090653-016A	G52D Duplicate	09/21/2022 10:01	09/21/2022 13:50		
	Field Elevation Measurements				09/21/2022 10:01

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			**Prep Date/Time**	**Analysis Date/Time**
	Standard Method 4500-H B 2001 Field				09/21/2022 10:01
	Standard Methods 2130 B Field				09/21/2022 10:01
	Standard Methods 18th Ed. 2580 B Field				09/21/2022 10:01
	Standard Methods 2510 B Field				09/21/2022 10:01
	Standard Methods 2540 C (Total) 1997, 2011				09/26/2022 11:03
	Standard Methods 2550 B Field				09/21/2022 10:01
	Standard Methods 4500-O G Field				09/21/2022 10:01
	SW-846 9036 (Total)				09/28/2022 16:13
	SW-846 9214 (Total)				09/26/2022 10:37
	SW-846 9251 (Total)				09/28/2022 15:55
22090653-016B	G52D Duplicate	09/21/2022 10:01	09/21/2022 13:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/21/2022 15:50	09/22/2022 20:04
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/23/2022 22:20
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/26/2022 15:20

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

STANDARD METHOD 4500-H B 2001 FIELD

Batch R319136 **SampType:** LCS Units

SampID: LCS-R319136

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
pH	*	1.00		**7.00**	7.000	0	100.0	98.57	101.4	09/20/2022
pH	*	1.00		**7.07**	7.000	0	101.0	98.57	101.4	09/21/2022

STANDARD METHODS 2510 B FIELD

Batch R319136 **SampType:** LCS Units **µS/cm**

SampID: LCS-R319136

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Spec. Conductance, Field	*	0		**1510**	1409	0	107.0	90	110	09/21/2022
Spec. Conductance, Field	*	0		**1430**	1409	0	101.3	90	110	09/20/2022

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R318645 **SampType:** MBLK Units **mg/L**

SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	09/26/2022
Total Dissolved Solids		20		**< 20**	16.00	0	0	-100	100	09/26/2022

Batch R318645 **SampType:** LCS Units **mg/L**

SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Total Dissolved Solids		20		**974**	1000	0	97.4	90	110	09/26/2022
Total Dissolved Solids		20		**952**	1000	0	95.2	90	110	09/26/2022

Batch R318645 **SampType:** DUP Units **mg/L** RPD Limit: **5**

SampID: 22090653-001ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20		**314**				302.0	3.90	09/26/2022

Batch R318645 **SampType:** DUP Units **mg/L** RPD Limit: **5**

SampID: 22090653-007ADUP

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Total Dissolved Solids		20		**192**				200.0	4.08	09/26/2022

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

SW-846 9036 (TOTAL)

Batch R318683 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**< 10**	6.140	0	0	-100	100	09/28/2022

Batch R318683 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**20**	20.00	0	98.4	90	110	09/28/2022

Batch R318683 **SampType:** MS Units **mg/L**
SampID: 22090653-001AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		10		**44**	20.00	22.72	105.8	85	115	09/28/2022

Batch R318683 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 22090653-001AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		10		**45**	20.00	22.72	110.6	43.88	2.16	09/28/2022

Batch R318683 **SampType:** MS Units **mg/L**
SampID: 22090653-011AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Sulfate		50		**177**	100.0	79.30	97.2	85	115	09/28/2022

Batch R318683 **SampType:** MSD Units **mg/L** RPD Limit: **10**
SampID: 22090653-011AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Sulfate		50		**181**	100.0	79.30	101.5	176.6	2.36	09/28/2022

SW-846 9214 (TOTAL)

Batch R318565 **SampType:** MBLK Units **mg/L**
SampID: MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**< 0.10**	0.0370	0	0	-100	100	09/26/2022

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

SW-846 9214 (TOTAL)

Batch R318565 **SampType:** LCS Units **mg/L**
SampID: LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**0.98**	1.000	0	98.0	90	110	09/26/2022

Batch R318565 **SampType:** MS Units **mg/L**
SampID: 22090653-006AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.18**	2.000	0.1670	100.8	75	125	09/26/2022

Batch R318565 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 22090653-006AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.14**	2.000	0.1670	98.9	2.183	1.76	09/26/2022

Batch R318565 **SampType:** MS Units **mg/L**
SampID: 22090653-016AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.22**	2.000	0.2320	99.2	75	125	09/26/2022

Batch R318565 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 22090653-016AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.20**	2.000	0.2320	98.4	2.215	0.72	09/26/2022

Batch R318565 **SampType:** MS Units **mg/L**
SampID: 22090653-017AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Fluoride		0.10		**2.10**	2.000	0.1450	97.5	75	125	09/26/2022

Batch R318565 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 22090653-017AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Fluoride		0.10		**2.12**	2.000	0.1450	98.8	2.095	1.28	09/26/2022

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

SW-846 9251 (TOTAL)

Batch R318718 **SampType:** MBLK Units **mg/L**
SampID: ICB/MBLK

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**< 4**	0.5000	0	0	-100	100	09/28/2022

Batch R318718 **SampType:** LCS Units **mg/L**
SampID: ICV/LCS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**20**	20.00	0	97.6	90	110	09/28/2022

Batch R318718 **SampType:** MS Units **mg/L**
SampID: 22090653-001AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**27**	20.00	7.960	95.2	85	115	09/28/2022

Batch R318718 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 22090653-001AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		4		**27**	20.00	7.960	96.3	27.00	0.81	09/28/2022

Batch R318718 **SampType:** MS Units **mg/L**
SampID: 22090653-011AMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Chloride		4		**36**	20.00	17.58	90.1	85	115	09/28/2022

Batch R318718 **SampType:** MSD Units **mg/L** RPD Limit: **15**
SampID: 22090653-011AMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Chloride		4		**36**	20.00	17.58	90.6	35.60	0.28	09/28/2022

SW-846 3005A, 6010B, METALS BY ICP (TOTAL)

Batch 197876 **SampType:** MBLK Units **mg/L**
SampID: MBLK-197876

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**< 0.100**	0.0350	0	0	-100	100	09/22/2022

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

SW-846 3005A, 6010B, METALS BY ICP (TOTAL)

Batch 197876 **SampType:** LCS Units **mg/L**

SampID: LCS-197876

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**2.43**	2.500	0	97.2	85	115	09/22/2022

Batch 197876 **SampType:** MS Units **mg/L**

SampID: 22090653-004BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Calcium		0.100		**11.1**	2.500	8.464	105.4	75	125	09/22/2022

Batch 197876 **SampType:** MSD Units **mg/L** RPD Limit: **20**

SampID: 22090653-004BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Calcium		0.100		**11.1**	2.500	8.464	104.6	11.10	0.18	09/22/2022

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 197876 **SampType:** MBLK Units **µg/L**

SampID: MBLK-197876

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic		1.0		**< 1.0**	0.3750	0	0	-100	100	09/23/2022
Barium		1.0		**< 1.0**	0.7000	0	0	-100	100	09/23/2022
Boron		25.0		**< 25.0**	9.250	0	0	-100	100	09/23/2022
Chromium		1.5		**< 1.5**	0.7000	0	0	-100	100	09/23/2022
Cobalt		1.0		**< 1.0**	0.1150	0	0	-100	100	09/23/2022
Lead		1.0		**< 1.0**	0.6000	0	0	-100	100	09/23/2022
Lithium	*	3.0		**< 3.0**	1.450	0	0	-100	100	09/23/2022
Molybdenum		1.5		**< 1.5**	0.6000	0	0	-100	100	09/26/2022
Selenium		1.0		**< 1.0**	0.6000	0	0	-100	100	09/23/2022

Client: Ramboll **Work Order:** 22090653

Client Project: Joppa Q3 Groundwater **Report Date:** 04-Nov-22

SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)

Batch 197876 **SampType:** LCS Units **µg/L**

SampID: LCS-197876

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Arsenic		1.0		**503**	500.0	0	100.5	80	120	09/23/2022
Barium		1.0		**1990**	2000	0	99.7	80	120	09/23/2022
Boron		25.0		**479**	500.0	0	95.9	80	120	09/23/2022
Chromium		1.5		**198**	200.0	0	99.1	80	120	09/26/2022
Cobalt		1.0		**490**	500.0	0	98.1	80	120	09/23/2022
Lead		1.0		**496**	500.0	0	99.2	80	120	09/23/2022
Lithium	*	3.0		**483**	500.0	0	96.6	80	120	09/23/2022
Molybdenum		1.5		**481**	500.0	0	96.1	80	120	09/26/2022
Selenium		1.0		**469**	500.0	0	93.7	80	120	09/23/2022

Batch 197876 **SampType:** MS Units **µg/L**

SampID: 22090653-004BMS

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron		25.0		**505**	500.0	0	101.0	75	125	09/23/2022

Batch 197876 **SampType:** MSD Units **µg/L** RPD Limit: **20**

SampID: 22090653-004BMSD

Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Boron		25.0		**508**	500.0	0	101.5	504.8	0.55	09/23/2022

Receiving Check List

http://www.teklabinc.com/

Client: Ramboll
Work Order: 22090653
Client Project: Joppa Q3 Groundwater
Report Date: 04-Nov-22

Carrier: Joe Riley
Received By: PRY

Completed by: Payton Yoch
On: 21-Sep-22

Reviewed by: Elizabeth A. Hurley
On: 21-Sep-22

Pages to follow: Chain of custody 2 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 5.0
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☑	Lab ☐	NA ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

pH strip 82999 - CET/pyoch - 9/21/2022 3:16:46 PM

22090653

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 2

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Vistra Corp	Report To: Brian Voelker	Attention: Jason Stuckey
Address: 13498 E. 900th St	Copy To: Jason Stuckey	Company Name: Vistra Corp
		Address: see Section A
Email To: Brian.Voelker@VistraCorp.com	Purchase Order No.:	Quote Reference:
Phone: (217) 753-8911 Fax:	Project Name:	Project Manager:
Requested Due Date/TAT: standard	Project Number: 2285	Profile #:

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: JOP-257-401	JOP-257-402	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	22090653-001 G01D		G	09/20/22	1133		2	1		1						✓			22090653-001
2	002 G02D			09/21/22	0929		2	1		1						✓			002
3	003 G101			09/20/22	1522		2	1		1							✓		003
4	004 G102			09/20/22	1446		2	1		1							✓		004
5	005 G105			09/20/22	1513		2	1		1							✓		005
6	006 G107			09/20/22	1540		2	1		1							✓		006
7	007 G109			09/20/22	1603		2	1		1							✓		007
8	008 G111			09/20/22	1624		2	1		1							✓		008
9	009 G51D			09/20/22	1219		2	1		1						✓			009
10	0010 G52D			09/21/22	1001		2	1		1						✓			010
11	011 G53D			09/20/22	1339		2	1		1						✓			011
12	012 G54D			09/20/22	1259		2	1		1						✓			012
13	013 SG02			09/20/22	1234	*	0									✓	✓		013
14	014 XSG01			09/21/22	1215	*	0									✓			014
15	015 Field Blank			09/21/22	1105		2	1		1						✓	✓		015
16	016 G52D ~~G050~~ Duplicate			09/21/22	1001		2	1		1						✓			016

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
JOP-Q3-2022	[signature] Tetra Tech	09/21/22	1350	[signature]	9/21/22	1350	5.2	Y	N	Y
FB and Duplicates per history.										

EAH 9/12/22

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joe Riley

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 09/21/22

* Dates / times switched per Joe Riley. EAH 11/4/22

PM 82999. CES 9-21-22

22090653

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information:

Company:	Vistra Corp
Address:	13498 E. 900th St
Email To:	Brian.Voelker@VistraCorp.com
Phone: (217) 753-8911	Fax:
Requested Due Date/TAT:	standard

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Jason Stuckey
Purchase Order No.:	
Project Name:	
Project Number:	2285

Section C Invoice Information:

Attention:	Jason Stuckey
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	JOP-257-401	JOP-257-402	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	017 G105 Duplicate		G	9/19/22	1513		2	1		1								✓		22090653-017
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
JOP-Q3-2022	Joe Riley	09/21/22	1350		9/21/22	1350	

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joe Riley

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 09/21/22

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

PW 9/22/22. AT 9-21-22.

October 26, 2022

Eric Bauer
Ramboll
234 W. Florida St.
5th Floor
Milwaukee, WI 53204
TEL: (414) 837-3614
FAX:

Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: Joppa Q3 Groundwater **WorkOrder:** 22090654

Dear Eric Bauer:

TEKLAB, INC received 7 samples on 9/21/2022 1:50:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Elizabeth A. Hurley

Elizabeth A. Hurley
Director of Customer Service
(618)344-1004 ex 33
ehurley@teklabinc.com

Report Contents

Client: Ramboll
Work Order: 22090654
Client Project: Joppa Q3 Groundwater
Report Date: 26-Oct-22

This reporting package includes the following:

Client: Ramboll **Work Order:** 22090654

Client Project: Joppa Q3 Groundwater **Report Date:** 26-Oct-22

Abbr Definition

*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
NC	Data is not acceptable for compliance purposes
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Client: Ramboll **Work Order:** 22090654

Client Project: Joppa Q3 Groundwater **Report Date:** 26-Oct-22

Qualifiers

- # - Unknown hydrocarbon
- B - Analyte detected in associated Method Blank
- C - RL shown is a Client Requested Quantitation Limit
- E - Value above quantitation range
- H - Holding times exceeded
- I - Associated internal standard was outside method criteria
- J - Analyte detected below quantitation limits
- M - Manual Integration used to determine area response
- ND - Not Detected at the Reporting Limit
- R - RPD outside accepted recovery limits
- S - Spike Recovery outside recovery limits
- T - TIC(Tentatively identified compound)
- X - Value exceeds Maximum Contaminant Level

Case Narrative

http://www.teklabinc.com/

Client: Ramboll
Client Project: Joppa Q3 Groundwater

Work Order: 22090654
Report Date: 26-Oct-22

Cooler Receipt Temp: 5.0 °C

An employee of Teklab, Inc. collected the sample(s).

Radium-226 and Radium-228 analysis was performed by Pace Analytical Services, LLC. See attached report for results.

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Client: Ramboll **Work Order:** 22090654

Client Project: Joppa Q3 Groundwater **Report Date:** 26-Oct-22

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2023	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2023	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2023	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2023	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2023	Collinsville
Arkansas	ADEQ	88-0966		3/14/2023	Collinsville
Illinois	IDPH	17584		5/31/2023	Collinsville
Iowa	IDNR	430		6/1/2024	Collinsville
Kentucky	UST	0073		1/31/2023	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville

Client: Ramboll **Work Order:** 22090654

Client Project: Joppa Q3 Groundwater **Report Date:** 26-Oct-22

Lab ID: 22090654-001 **Client Sample ID:** G01D

Matrix: GROUNDWATER **Collection Date:** 09/20/2022 11:33

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/07/2022 0:00	R319831
Radium-228	*	0		**See Attached**	pci/L	1	10/07/2022 0:00	R319831

Client: Ramboll **Work Order:** 22090654

Client Project: Joppa Q3 Groundwater **Report Date:** 26-Oct-22

Lab ID: 22090654-002 **Client Sample ID:** G02D

Matrix: GROUNDWATER **Collection Date:** 09/21/2022 9:24

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/07/2022 0:00	R319831
Radium-228	*	0		**See Attached**	pci/L	1	10/07/2022 0:00	R319831

Client: Ramboll **Work Order:** 22090654

Client Project: Joppa Q3 Groundwater **Report Date:** 26-Oct-22

Lab ID: 22090654-003 **Client Sample ID:** G51D

Matrix: GROUNDWATER **Collection Date:** 09/20/2022 12:19

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/07/2022 0:00	R319831
Radium-228	*	0		**See Attached**	pci/L	1	10/07/2022 0:00	R319831

Client: Ramboll **Work Order:** 22090654

Client Project: Joppa Q3 Groundwater **Report Date:** 26-Oct-22

Lab ID: 22090654-004 **Client Sample ID:** G52D

Matrix: GROUNDWATER **Collection Date:** 09/21/2022 10:01

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/07/2022 0:00	R319831
Radium-228	*	0		**See Attached**	pci/L	1	10/07/2022 0:00	R319831

Client: Ramboll **Work Order:** 22090654

Client Project: Joppa Q3 Groundwater **Report Date:** 26-Oct-22

Lab ID: 22090654-005 **Client Sample ID:** G53D

Matrix: GROUNDWATER **Collection Date:** 09/20/2022 13:39

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/07/2022 0:00	R319831
Radium-228	*	0		**See Attached**	pci/L	1	10/07/2022 0:00	R319831

Client: Ramboll **Work Order:** 22090654

Client Project: Joppa Q3 Groundwater **Report Date:** 26-Oct-22

Lab ID: 22090654-006 **Client Sample ID:** G54D

Matrix: GROUNDWATER **Collection Date:** 09/20/2022 12:59

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/07/2022 0:00	R319831
Radium-228	*	0		**See Attached**	pci/L	1	10/07/2022 0:00	R319831

Client: Ramboll **Work Order:** 22090654

Client Project: Joppa Q3 Groundwater **Report Date:** 26-Oct-22

Lab ID: 22090654-007 **Client Sample ID:** Field Blank

Matrix: GROUNDWATER **Collection Date:** 09/21/2022 10:05

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 903.0/904.0, RADIUM 226/228								
Radium-226	*	0		**See Attached**	pci/L	1	10/07/2022 0:00	R319831
Radium-228	*	0		**See Attached**	pci/L	1	10/07/2022 0:00	R319831

Client: Ramboll
Client Project: Joppa Q3 Groundwater

Work Order: 22090654
Report Date: 26-Oct-22

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
22090654-001	G01D	Groundwater	1	09/20/2022 11:33
22090654-002	G02D	Groundwater	1	09/21/2022 9:24
22090654-003	G51D	Groundwater	1	09/20/2022 12:19
22090654-004	G52D	Groundwater	1	09/21/2022 10:01
22090654-005	G53D	Groundwater	1	09/20/2022 13:39
22090654-006	G54D	Groundwater	1	09/20/2022 12:59
22090654-007	Field Blank	Groundwater	1	09/21/2022 10:05

Client: Ramboll **Work Order:** 22090654

Client Project: Joppa Q3 Groundwater **Report Date:** 26-Oct-22

Sample ID	Client Sample ID	Collection Date	Received Date		
	Test Name			Prep Date/Time	Analysis Date/Time
22090654-001A	G01D	09/20/2022 11:33	09/21/2022 13:50		
	EPA 903.0/904.0, Radium 226/228				10/07/2022 0:00
22090654-002A	G02D	09/21/2022 9:24	09/21/2022 13:50		
	EPA 903.0/904.0, Radium 226/228				10/07/2022 0:00
22090654-003A	G51D	09/20/2022 12:19	09/21/2022 13:50		
	EPA 903.0/904.0, Radium 226/228				10/07/2022 0:00
22090654-004A	G52D	09/21/2022 10:01	09/21/2022 13:50		
	EPA 903.0/904.0, Radium 226/228				10/07/2022 0:00
22090654-005A	G53D	09/20/2022 13:39	09/21/2022 13:50		
	EPA 903.0/904.0, Radium 226/228				10/07/2022 0:00
22090654-006A	G54D	09/20/2022 12:59	09/21/2022 13:50		
	EPA 903.0/904.0, Radium 226/228				10/07/2022 0:00
22090654-007A	Field Blank	09/21/2022 10:05	09/21/2022 13:50		
	EPA 903.0/904.0, Radium 226/228				10/07/2022 0:00

Receiving Check List

http://www.teklabinc.com/

Client: Ramboll
Work Order: 22090654
Client Project: Joppa Q3 Groundwater
Report Date: 26-Oct-22

Carrier: Joe Riley
Received By: PRY

Completed by: Payton Yoch
On: 21-Sep-22

Reviewed by: Elizabeth A. Hurley
On: 21-Sep-22

Pages to follow: Chain of custody 1 Extra pages included 17

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 5.0
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☐	No ☐	No VOA vials ☑
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

pH strip 82999 - CET/pyoch - 9/21/2022 3:22:10 PM

22090654

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A Required Client Information:

Company:	Vistra Corp
Address:	13498 E. 900th St
Email To:	Brian.Voelker@VistraCorp.com
Phone:	(217) 753-8911 Fax:
Requested Due Date/TAT:	standard

Section B Required Project Information:

Report To:	Brian Voelker
Copy To:	Jason Stuckey
Purchase Order No.:	
Project Name:	
Project Number:	2285

Section C Invoice Information:

Attention:	Jason Stuckey
Company Name:	Vistra Corp
Address:	see Section A
Quote Reference:	
Project Manager:	
Profile #:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
UST RCRA OTHER

Site Location STATE: IL

Section D Required Client Information

Valid Matrix Codes: DRINKING WATER DW, WATER WT, WASTE WATER WW, PRODUCT P, SOIL/SOLID SL, OIL OL, WIPE WP, AIR AR, OTHER OT, TISSUE TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED DATE	COLLECTED TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	JOP-257-401	JOP-257-402	Residual Chlorine (Y/N)	Project No./ Lab I.D.
1	22090654-001 G01D		G	09/20/22	1133		2			2							✓			22090654-001
2	002 GD2D			09/21/22	0924		2			2							✓			002
3	003 G51D			09/21/22	1219		2			2							✓			003
4	004 G52D			09/21/22	1001		2			2							✓			004
5	005 G53D			09/20/22	1339		2			2							✓			005
6	006 G54D			09/20/22	1259		2			2							✓			006
7	007 Field Blank			09/21/22	1005		2			2							✓			007
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
JOP-Q3-2022	[signature] Teklab	09/21/22	1350	[signature]	9/21/22	1350	Gh1			
Field Blank per history. EAH 9/12/22							5.0	Y	N	Y
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Joe Riley

SIGNATURE of SAMPLER: [signature]

DATE Signed (MM/DD/YY): 09/21/22

PW 82999.CGJ 9-12-22

ANALYTICAL REPORT

October 19, 2022

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

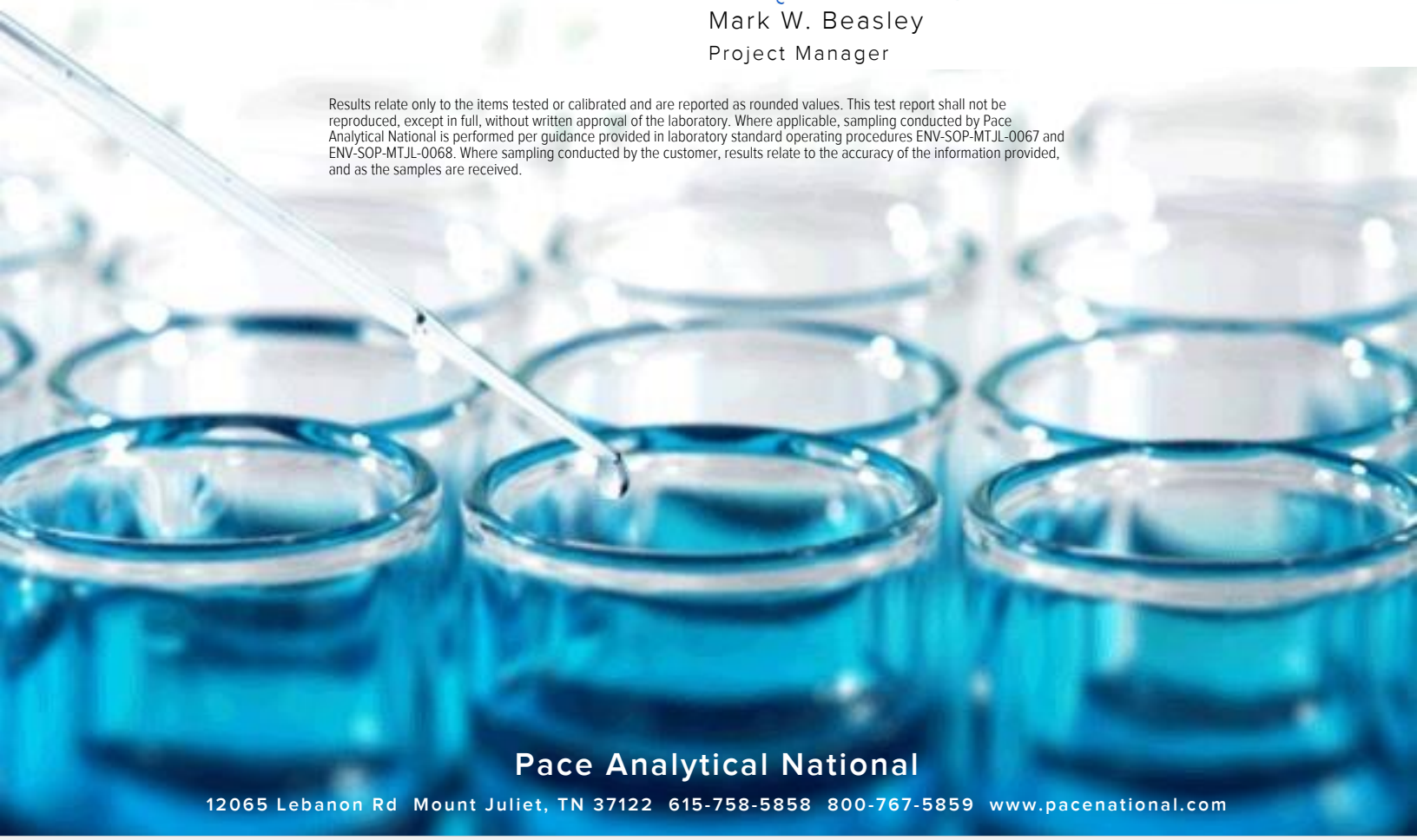
TEKLAB, Inc.

Sample Delivery Group:	L1539734
Samples Received:	09/26/2022
Project Number:	22090654
Description:	

Report To: Elizabeth Hurley
5445 Horseshoe Lake Road
Collinsville, IL 62234

Entire Report Reviewed By:

Mark W. Beasley
Project Manager



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

SAMPLE SUMMARY

22090654-001 L1539734-01 Non-Potable Water

Collected by | Collected date/time 09/20/22 11:33 | Received date/time 09/26/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1937885	1	10/06/22 14:39	10/12/22 15:36	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933261	1	10/06/22 15:00	10/12/22 15:36	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933261	1	10/06/22 15:00	10/07/22 12:15	RGT	Mt. Juliet, TN

22090654-002 L1539734-02 Non-Potable Water

Collected by | Collected date/time 09/21/22 09:24 | Received date/time 09/26/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1937885	1	10/06/22 14:39	10/12/22 15:36	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933261	1	10/06/22 15:00	10/12/22 15:36	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933261	1	10/06/22 15:00	10/07/22 12:15	RGT	Mt. Juliet, TN

22090654-003 L1539734-03 Non-Potable Water

Collected by | Collected date/time 09/20/22 12:19 | Received date/time 09/26/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1937885	1	10/06/22 14:39	10/12/22 15:36	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933261	1	10/06/22 15:00	10/12/22 15:36	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933261	1	10/06/22 15:00	10/07/22 12:15	RGT	Mt. Juliet, TN

22090654-004 L1539734-04 Non-Potable Water

Collected by | Collected date/time 09/21/22 10:01 | Received date/time 09/26/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1937885	1	10/06/22 14:39	10/12/22 15:36	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933261	1	10/06/22 15:00	10/12/22 15:36	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933261	1	10/06/22 15:00	10/07/22 12:15	RGT	Mt. Juliet, TN

22090654-005 L1539734-05 Non-Potable Water

Collected by | Collected date/time 09/20/22 13:39 | Received date/time 09/26/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1937885	1	10/06/22 14:39	10/12/22 15:36	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933261	1	10/06/22 15:00	10/12/22 15:36	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933261	1	10/06/22 15:00	10/07/22 12:15	RGT	Mt. Juliet, TN

22090654-006 L1539734-06 Non-Potable Water

Collected by | Collected date/time 09/20/22 12:59 | Received date/time 09/26/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1937885	1	10/06/22 14:39	10/12/22 15:36	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933261	1	10/06/22 15:00	10/12/22 15:36	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933261	1	10/06/22 15:00	10/07/22 12:15	RGT	Mt. Juliet, TN

SAMPLE SUMMARY

	Collected by	Collected date/time	Received date/time
22090654-007 L1539734-07 Non-Potable Water		09/21/22 10:05	09/26/22 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG1937885	1	10/06/22 14:39	10/12/22 15:36	SWM	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1933261	1	10/06/22 15:00	10/12/22 15:36	SWM	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1933261	1	10/06/22 15:00	10/07/22 12:15	RGT	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.01		0.217	0.368	10/12/2022 15:36	WG1937885
(T) Barium	*108*			*30.0-143*	*10/12/2022 15:36*	WG1937885
(T) Yttrium	*96.3*			*30.0-136*	*10/12/2022 15:36*	WG1937885

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.16		0.293	0.464	10/12/2022 15:36	WG1933261

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.151	J	0.197	0.282	10/07/2022 12:15	WG1933261
(T) Barium-133	*110*			*30.0-143*	*10/07/2022 12:15*	WG1933261

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.146	U	0.242	0.446	10/12/2022 15:36	WG1937885
(T) Barium	*117*			*30.0-143*	*10/12/2022 15:36*	WG1937885
(T) Yttrium	*101*			*30.0-136*	*10/12/2022 15:36*	WG1937885

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.663		0.369	0.501	10/12/2022 15:36	WG1933261

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.517		0.279	0.228	10/07/2022 12:15	WG1933261
(T) Barium-133	*107*			*30.0-143*	*10/07/2022 12:15*	WG1933261

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.0869	U	0.228	0.421	10/12/2022 15:36	WG1937885
(T) Barium	*98.7*			*30.0-143*	*10/12/2022 15:36*	WG1937885
(T) Yttrium	*103*			*30.0-136*	*10/12/2022 15:36*	WG1937885

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.215	J	0.275	0.471	10/12/2022 15:36	WG1933261

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.128	J	0.154	0.212	10/07/2022 12:15	WG1933261
(T) Barium-133	*107*			*30.0-143*	*10/07/2022 12:15*	WG1933261

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	1.25		0.266	0.452	10/12/2022 15:36	WG1937885
(T) Barium	*107*			*30.0-143*	*10/12/2022 15:36*	WG1937885
(T) Yttrium	*104*			*30.0-136*	*10/12/2022 15:36*	WG1937885

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.81		0.397	0.514	10/12/2022 15:36	WG1933261

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.558		0.295	0.245	10/07/2022 12:15	WG1933261
(T) Barium-133	*112*			*30.0-143*	*10/07/2022 12:15*	WG1933261

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	-0.0680	U	0.299	0.558	10/12/2022 15:36	WG1937885
(T) Barium	*114*			*30.0-143*	*10/12/2022 15:36*	WG1937885
(T) Yttrium	*97.4*			*30.0-136*	*10/12/2022 15:36*	WG1937885

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.221	U	0.348	0.590	10/12/2022 15:36	WG1933261

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.221		0.178	0.191	10/07/2022 12:15	WG1933261
(T) Barium-133	*108*			*30.0-143*	*10/07/2022 12:15*	WG1933261

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.913		0.258	0.450	10/12/2022 15:36	WG1937885
(T) Barium	*92.5*			*30.0-143*	*10/12/2022 15:36*	WG1937885
(T) Yttrium	*97.4*			*30.0-136*	*10/12/2022 15:36*	WG1937885

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.11		0.305	0.486	10/12/2022 15:36	WG1933261

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.195		0.163	0.184	10/07/2022 12:15	WG1933261
(T) Barium-133	*111*			*30.0-143*	*10/07/2022 12:15*	WG1933261

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.804		0.208	0.359	10/12/2022 15:36	WG1937885
(T) Barium	*116*			*30.0-143*	*10/12/2022 15:36*	WG1937885
(T) Yttrium	*106*			*30.0-136*	*10/12/2022 15:36*	WG1937885

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.810		0.223	0.407	10/12/2022 15:36	WG1933261

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.00615	U	0.0808	0.191	10/07/2022 12:15	WG1933261
(T) Barium-133	*108*			*30.0-143*	*10/07/2022 12:15*	WG1933261

QUALITY CONTROL SUMMARY

L1539734-01,02,03,04,05,06,07

Method Blank (MB)

(MB) R3850041-1 10/12/22 15:36

Analyte	MB Result	MB Qualifier	MB Uncertainty	MB MDA
	pCi/l		+ / -	pCi/l
Radium-228	0.300		0.126	0.227
(T) Barium	*108*		*108*	
(T) Yttrium	*101*		*101*	

L1539734-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1539734-02 10/12/22 15:36 • (DUP) R3850041-5 10/12/22 15:36

Analyte	Original Result	Original Uncertainty	Original MDA	DUP Result	DUP Uncertainty	DUP MDA	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	+ / -	pCi/l		%			%	
Radium-228	0.146	0.242	0.446	0.775	0.252	0.446	1	137	1.80		20	3
(T) Barium	*117*			*113*	*113*							
(T) Yttrium	*101*			*96.4*	*96.4*							

Laboratory Control Sample (LCS)

(LCS) R3850041-2 10/12/22 15:36

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-228	5.00	4.33	86.7	80.0-120	
(T) Barium			*108*		
(T) Yttrium			*102*		

L1535096-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1535096-02 10/12/22 15:36 • (MS) R3850041-3 10/12/22 15:36 • (MSD) R3850041-4 10/12/22 15:36

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-228	10.0	3.27	10.7	11.3	74.7	79.8	1	70.0-130			4.64		20
(T) Barium		*120*			*113*	*121*							
(T) Yttrium		*99.6*			*97.8*	*103*							

Method Blank (MB)

(MB) R3846799-1 10/07/22 12:15

Analyte	MB Result	MB Qualifier	MB Uncertainty	MB MDA
	pCi/l		+ / -	pCi/l
Radium-226	0.00347	U	0.0323	0.0656
(T) Barium-133	*108*		*108*	

L1534671-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1534671-13 10/07/22 12:15 • (DUP) R3846799-5 10/07/22 12:15

Analyte	Original Result	Original Uncertainty	Original MDA	DUP Result	DUP Uncertainty	DUP MDA	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	+ / -	pCi/l		%			%	
Radium-226	0.836	0.341	0.221	0.0365	0.160	0.221	1	183	2.12	U	20	3
(T) Barium-133	*100*			*109*	*109*							

Laboratory Control Sample (LCS)

(LCS) R3846799-2 10/07/22 12:15

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-226	5.02	4.67	93.1	80.0-120	
(T) Barium-133			*107*		

L1539734-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1539734-07 10/07/22 12:15 • (MS) R3846799-3 10/07/22 12:15 • (MSD) R3846799-4 10/07/22 12:15

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-226	20.0	0.00615	16.4	15.8	82.0	78.9	1	75.0-125			3.91		20
(T) Barium-133		*108*			*105*	*98.4*							

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

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TEKLAB, INC. Chain of Custody

5445 Horseshoe Lake Road, Collinsville, IL 62234 Phone (618) 344-1004 Fax (618) 344-1005

Are the samples chilled? YES ☐ NO ☑ With: ☐ Ice ☐ Blue Ice Preserved in: ☐ Lab ☐ Field

Teklab Inc
5445 Horseshoe Lake Road
Collinsville, IL 62234

Cooler Temp: Sampler: QC Level: 3

Comments: **Please Issue reports and invoices via email only**
Please analyze for Radium 226/228 on your standard turn around time.
Samples collected from an IL site.
Batch QC is required for all analyses requested. EDD requested..

Project# 22090654

Contact: Marvin L. Darling Email: mdarling@TekLabInc.com
Requested Due Date: Standard TAT Billing/PO: 33371
Phone: (618) 344-1004

L1539734

PLEASE NOTE:

NELAP accreditation is required on the requested analytes and must be documented as such on the final report. If your laboratory does not currently hold a NELAP accreditation for the requested method and/or analytes, please contact Teklab immediately. If your laboratory loses accreditation or is suspended for any analyte/method during the life of the contract, you must contact Teklab immediately.

Any changes to analysis/methods must be approved by Teklab, Inc.

Lab Use	Sample ID	Sample Date/Time	Preservative	Matrix	Ra226/228
-01	22090654 - 001	9/20/22 1133	HNO3	Groundwater	✔
-02	22090654 - 002	9/21/22 0924	HNO3	Groundwater	✔
-03	22090654 - 003	9/20/22 1229	HNO3	Groundwater	✔
-04	22090654 - 004	9/21/22 1001	HNO3	Groundwater	✔
-05	22090654 - 005	9/20/22 1339	HNO3	Groundwater	✔
-06	22090654 - 006	9/20/22 1259	HNO3	Groundwater	✔
-07	22090654 - 007	9/20/22 1005	HNO3	Groundwater	✔
				Groundwater	
				Groundwater	
				Groundwater	
				Groundwater	

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

22

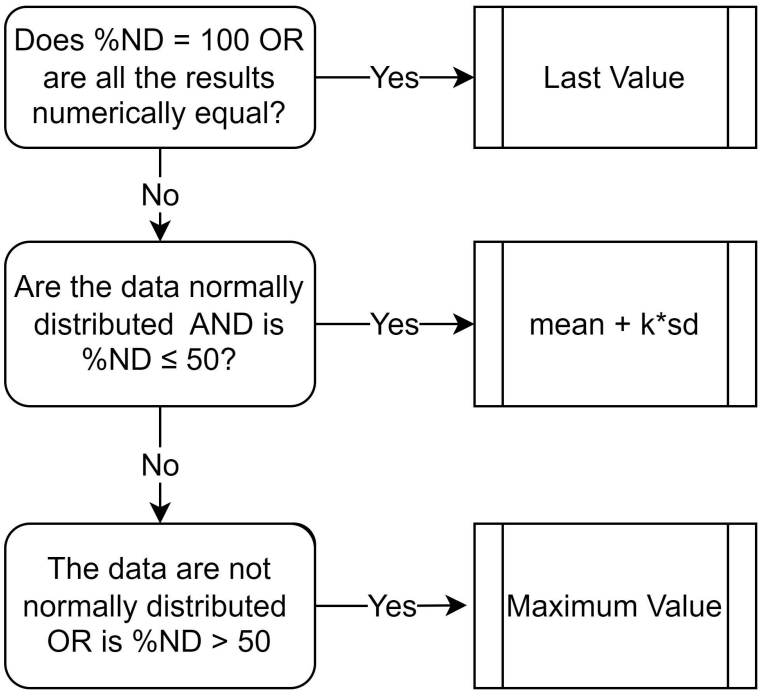
*Relinquished By	Date/Time	Received By	Date/Time
FedEx HOPLWS			9/26/22 1000

Teklab maintains a strict policy of client confidentiality and as such does not provide client/sampler information without proper authorization. and proprietary rights, Teklab, Inc. protects clients' confidential information as directed by local, state or federal laws. (Teklab QAM Section 9.1, TNI V1 M2 Section 4.1.5 c)

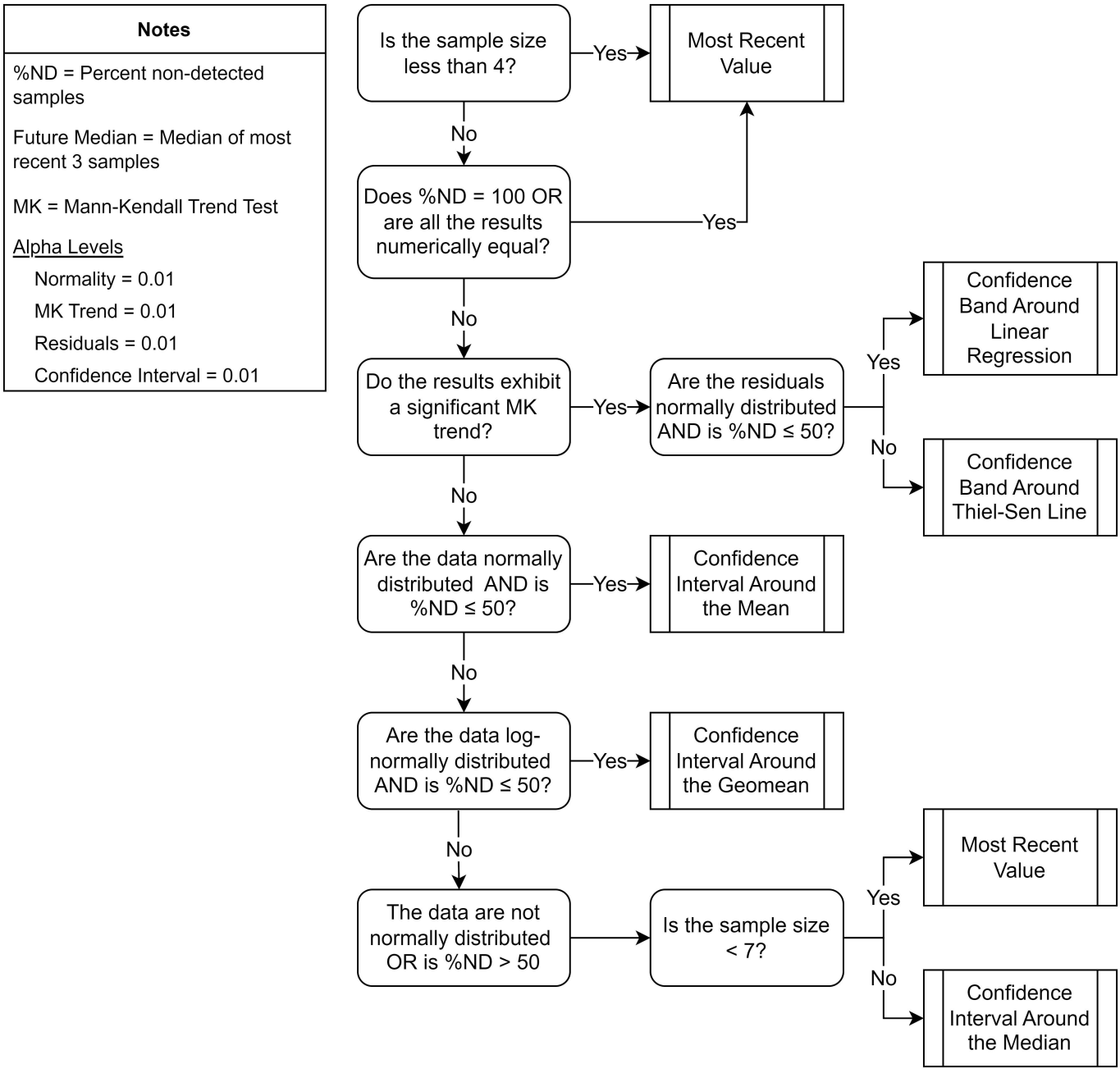
SubCocRevA
3/2/2016

APPENDIX B
STATISTICAL METHODOLGY FOR DETERMINATION OF BACKGROUND VALUES

Notes
%ND = Percent non-detected samples sd = standard deviation k = kappa for tolerance limit (95% confidence/95% coverage)



APPENDIX C
STATISTICAL METHODOLGY FOR DETERMINATION OF STATISTICALLY SIGNIFICANT LEVELS


Notes
%ND = Percent non-detected samples
Future Median = Median of most recent 3 samples
MK = Mann-Kendall Trend Test
Alpha Levels
Normality = 0.01
MK Trend = 0.01
Residuals = 0.01
Confidence Interval = 0.01
Is the sample size less than 4?
Yes
Most Recent Value
No
Does %ND = 100 OR are all the results numerically equal?
Yes
No
Do the results exhibit a significant MK trend?
Yes
Are the residuals normally distributed AND is %ND ≤ 50?
Yes
Confidence Band Around Linear Regression
No
Confidence Band Around Thiel-Sen Line
No
Are the data normally distributed AND is %ND ≤ 50?
Yes
Confidence Interval Around the Mean
No
Are the data log-normally distributed AND is %ND ≤ 50?
Yes
Confidence Interval Around the Geomean
No
The data are not normally distributed OR is %ND > 50
Is the sample size < 7?
Yes
Most Recent Value
No
Confidence Interval Around the Median