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**2022 ANNUAL GROUNDWATER
MONITORING AND CORRECTIVE
ACTION REPORT**
LANDFILL
JOPPA POWER PLANT
JOPPA, ILLINOIS
CCR UNIT 402

**2022 ANNUAL GROUNDWATER MONITORING AND
CORRECTIVE ACTION REPORT
JOPPA POWER PLANT LANDFILL**

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ACRONYMS AND ABBREVIATIONS

§	Section
40 C.F.R.	Title 40 of the Code of Federal Regulations
ASD	Alternate Source Demonstration
CCR	coal combustion residuals
GWPS	groundwater protection standard
JPP	Joppa Power Plant
NA	not applicable
NRT/OBG	Natural Resource Technology, an OBG Company
Ramboll	Ramboll Americas Engineering Solutions, Inc.
SAP	Sampling and Analysis Plan
SSI	statistically significant increase
TBD	to be determined

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 Landfill located at the Joppa Power Plant (JPP) near Joppa, Illinois.

Groundwater is being monitored at the Landfill in accordance with the detection monitoring program requirements specified in 40 C.F.R. § 257.94.

No changes were made to the monitoring system in 2022 (no wells were installed or decommissioned).

No Statistically Significant Increases (SSIs) of 40 C.F.R. § 257 Appendix III parameter concentrations greater than background concentrations were determined and the Landfill remains in the detection 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 Landfill 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 [GWPS] 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 Landfill 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 Landfill remains in the detection monitoring program in accordance with 40 C.F.R. § 257.94.

3. KEY ACTIONS COMPLETED IN 2022

The detection 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. 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 and 2**. Laboratory reports for the third quarter of 2021 and both 2022 monitoring events are included in **Appendix A**.

Analytical data were evaluated in accordance with the Statistical Analysis Plan (NRT/OBG, 2017b) to determine any SSIs of Appendix III parameters relative to background concentrations. Statistical background values are provided in **Table 3**. A flow chart showing the statistical methodology for determination of background values is included as **Appendix B**.

The JPP ceased operation on September 1, 2022.

Table A. 2021-2022 Detection Monitoring Program Summary

Sampling Date	Analytical Data Receipt Date	Parameters Collected	SSI(s)	SSI(s) Determination Date	ASD Completion Date
September 20, 2021	October 06, 2021	Appendix III	None	January 04, 2022	NA
March 14-15, 2022	March 29, 2022	Appendix III	None	June 27, 2022	NA
September 20-21, 2022	November 4, 2022	Appendix III	None	January 26, 2023	NA

Notes:

ASD: Alternate Source Demonstration

NA: not applicable

SSI: statistically significant increase

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:

- Continuation of the detection monitoring program with semi-annual sampling scheduled for the first and third quarters of 2023.
- Complete evaluation of analytical data from the compliance wells using background data to determine whether an SSI of Appendix III parameters detected at concentrations greater than background concentrations has occurred.
- If an SSI is identified, potential alternate sources (*i.e.*, a source other than the CCR unit caused the SSI or that the SSI 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 SSI, a written demonstration will be completed within 90 days of SSI 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 SSI, the applicable requirements of 40 C.F.R. §§ 257.94 through 257.98 as may apply in 2023 (*e.g.*, assessment monitoring) will be met, including associated recordkeeping/notifications required by 40 C.F.R. §§ 257.105 through 257.108.
- The following documents were developed in 2022 and will be implemented beginning in the first quarter of 2023:
 - Multi-Site Quality Assurance Project Plan (Ramboll, 2022a)
 - Multi-Site Data Management Plan (Ramboll, 2022b)
 - Multi-Site Statistical Analysis Plan and Certification (Ramboll, 2022c)

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), 2022a. Multi-Site Quality Assurance Project Plan. December 28, 2022.

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

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

TABLES

TABLE 1
GROUNDWATER ELEVATIONS
 2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
 JOPPA POWER PLANT
 402 - LANDFILL
 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)
G101	UA	45.26 - 54.53	Background	37.22860	-88.87309	09/20/2021	44.12	331.17
G101	UA	45.26 - 54.53	Background	37.22860	-88.87309	03/14/2022	45.38	329.91
G101	UA	45.26 - 54.53	Background	37.22860	-88.87309	09/20/2022	46.56	328.73
G102	UA	57.82 - 67.23	Background	37.22868	-88.87503	09/20/2021	58.44	328.87
G102	UA	57.82 - 67.23	Background	37.22868	-88.87503	03/14/2022	57.81	329.50
G102	UA	57.82 - 67.23	Background	37.22868	-88.87503	09/20/2022	58.84	328.47
G105	UA	58.12 - 67.77	Compliance	37.22754	-88.87587	09/20/2021	57.28	323.45
G105	UA	58.12 - 67.77	Compliance	37.22754	-88.87587	03/14/2022	54.51	326.22
G105	UA	58.12 - 67.77	Compliance	37.22754	-88.87587	09/20/2022	56.70	324.03
G107	UA	58.61 - 68	Compliance	37.22589	-88.87558	09/20/2021	57.52	319.81
G107	UA	58.61 - 68	Compliance	37.22589	-88.87558	03/14/2022	50.65	326.68
G107	UA	58.61 - 68	Compliance	37.22589	-88.87558	09/20/2022	56.83	320.50
G109	UA	56.07 - 65.44	Compliance	37.22579	-88.87461	09/20/2021	54.18	321.81
G109	UA	56.07 - 65.44	Compliance	37.22579	-88.87461	03/14/2022	49.56	326.43
G109	UA	56.07 - 65.44	Compliance	37.22579	-88.87461	09/20/2022	53.79	322.20
G111	UA	58.3 - 67.81	Compliance	37.22574	-88.87384	09/20/2021	52.75	320.89
G111	UA	58.3 - 67.81	Compliance	37.22574	-88.87384	03/14/2022	47.31	326.33
G111	UA	58.3 - 67.81	Compliance	37.22574	-88.87384	09/20/2022	51.50	322.14

Notes:
 BGS = below ground surface
 BMP = below measuring point
 NAVD88 = North American Vertical Datum of 1988
 Monitored Unit Abbreviations:
 UA = uppermost aquifer

TABLE 2
ANALYTICAL RESULTS - APPENDIX III PARAMETERS
 2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
 JOPPA POWER PLANT
 402 - LANDFILL
 JOPPA, IL

Well ID	Well Type	Date	Event ID	Parameter	Result	Statistical Background Value
G101	Background	09/20/2021	D9	Boron, total (mg/L)	0.025 U	--
G101	Background	09/20/2021	D9	Calcium, total (mg/L)	9.85	--
G101	Background	09/20/2021	D9	Chloride, total (mg/L)	4.00	--
G101	Background	09/20/2021	D9	Fluoride, total (mg/L)	0.280	--
G101	Background	09/20/2021	D9	pH (field) (SU)	6.4	--
G101	Background	09/20/2021	D9	Sulfate, total (mg/L)	36.0	--
G101	Background	09/20/2021	D9	Total Dissolved Solids (mg/L)	188	--
G101	Background	03/14/2022	D10	Boron, total (mg/L)	0.025 U	--
G101	Background	03/14/2022	D10	Calcium, total (mg/L)	9.93	--
G101	Background	03/14/2022	D10	Chloride, total (mg/L)	4 U	--
G101	Background	03/14/2022	D10	Fluoride, total (mg/L)	0.300	--
G101	Background	03/14/2022	D10	pH (field) (SU)	6.5	--
G101	Background	03/14/2022	D10	Sulfate, total (mg/L)	38.0	--
G101	Background	03/14/2022	D10	Total Dissolved Solids (mg/L)	236	--
G101	Background	09/20/2022	D11	Boron, total (mg/L)	0.0092 U	--
G101	Background	09/20/2022	D11	Calcium, total (mg/L)	9.04	--
G101	Background	09/20/2022	D11	Chloride, total (mg/L)	3 J	--
G101	Background	09/20/2022	D11	Fluoride, total (mg/L)	0.270	--
G101	Background	09/20/2022	D11	pH (field) (SU)	6.6	--
G101	Background	09/20/2022	D11	Sulfate, total (mg/L)	38.0	--
G101	Background	09/20/2022	D11	Total Dissolved Solids (mg/L)	206	--
G102	Background	09/20/2021	D9	Boron, total (mg/L)	0.025 U	--
G102	Background	09/20/2021	D9	Calcium, total (mg/L)	9.00	--
G102	Background	09/20/2021	D9	Chloride, total (mg/L)	4.00	--
G102	Background	09/20/2021	D9	Fluoride, total (mg/L)	0.200	--
G102	Background	09/20/2021	D9	pH (field) (SU)	6.4	--

TABLE 2
ANALYTICAL RESULTS - APPENDIX III PARAMETERS
 2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
 JOPPA POWER PLANT
 402 - LANDFILL
 JOPPA, IL

Well ID	Well Type	Date	Event ID	Parameter	Result	Statistical Background Value
G102	Background	09/20/2021	D9	Sulfate, total (mg/L)	38.0	--
G102	Background	09/20/2021	D9	Total Dissolved Solids (mg/L)	204	--
G102	Background	03/14/2022	D10	Boron, total (mg/L)	0.025 U	--
G102	Background	03/14/2022	D10	Calcium, total (mg/L)	8.30	--
G102	Background	03/14/2022	D10	Chloride, total (mg/L)	4 U	--
G102	Background	03/14/2022	D10	Fluoride, total (mg/L)	0.190	--
G102	Background	03/14/2022	D10	pH (field) (SU)	6.4	--
G102	Background	03/14/2022	D10	Sulfate, total (mg/L)	30.0	--
G102	Background	03/14/2022	D10	Total Dissolved Solids (mg/L)	202	--
G102	Background	09/20/2022	D11	Boron, total (mg/L)	0.0092 U	--
G102	Background	09/20/2022	D11	Calcium, total (mg/L)	8.46	--
G102	Background	09/20/2022	D11	Chloride, total (mg/L)	5.00	--
G102	Background	09/20/2022	D11	Fluoride, total (mg/L)	0.200	--
G102	Background	09/20/2022	D11	pH (field) (SU)	6.4	--
G102	Background	09/20/2022	D11	Sulfate, total (mg/L)	41.0	--
G102	Background	09/20/2022	D11	Total Dissolved Solids (mg/L)	224	--
G105	Compliance	09/20/2021	D9	Boron, total (mg/L)	0.025 U	DQR
G105	Compliance	09/20/2021	D9	Calcium, total (mg/L)	28.5	45.3
G105	Compliance	09/20/2021	D9	Chloride, total (mg/L)	52.0	61.1
G105	Compliance	09/20/2021	D9	Fluoride, total (mg/L)	0.150	0.290
G105	Compliance	09/20/2021	D9	pH (field) (SU)	6.1	5.8/6.7
G105	Compliance	09/20/2021	D9	Sulfate, total (mg/L)	13.0	16.0
G105	Compliance	09/20/2021	D9	Total Dissolved Solids (mg/L)	244	274
G105	Compliance	03/14/2022	D10	Boron, total (mg/L)	0.025 U	DQR
G105	Compliance	03/14/2022	D10	Calcium, total (mg/L)	23.8	45.3
G105	Compliance	03/14/2022	D10	Chloride, total (mg/L)	29.0	59.9

TABLE 2
ANALYTICAL RESULTS - APPENDIX III PARAMETERS
 2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
 JOPPA POWER PLANT
 402 - LANDFILL
 JOPPA, IL

Well ID	Well Type	Date	Event ID	Parameter	Result	Statistical Background Value
G105	Compliance	03/14/2022	D10	Fluoride, total (mg/L)	0.160	0.290
G105	Compliance	03/14/2022	D10	pH (field) (SU)	6.2	5.8/6.6
G105	Compliance	03/14/2022	D10	Sulfate, total (mg/L)	12.0	16.0
G105	Compliance	03/14/2022	D10	Total Dissolved Solids (mg/L)	230	272
G105	Compliance	09/20/2022	D11	Boron, total (mg/L)	0.0092 U	DQR
G105	Compliance	09/20/2022	D11	Calcium, total (mg/L)	24.6	45.3
G105	Compliance	09/20/2022	D11	Chloride, total (mg/L)	39.0	59.3
G105	Compliance	09/20/2022	D11	Fluoride, total (mg/L)	0.140	0.290
G105	Compliance	09/20/2022	D11	pH (field) (SU)	6.1	5.9/6.6
G105	Compliance	09/20/2022	D11	Sulfate, total (mg/L)	11.0	16.0
G105	Compliance	09/20/2022	D11	Total Dissolved Solids (mg/L)	226	271
G107	Compliance	09/20/2021	D9	Boron, total (mg/L)	0.0282	0.0373
G107	Compliance	09/20/2021	D9	Calcium, total (mg/L)	80.9	107
G107	Compliance	09/20/2021	D9	Chloride, total (mg/L)	90.0	142
G107	Compliance	09/20/2021	D9	Fluoride, total (mg/L)	0.200	0.252
G107	Compliance	09/20/2021	D9	pH (field) (SU)	6.6	6.1/7.0
G107	Compliance	09/20/2021	D9	Sulfate, total (mg/L)	67.0	141
G107	Compliance	09/20/2021	D9	Total Dissolved Solids (mg/L)	488	767
G107	Compliance	03/14/2022	D10	Boron, total (mg/L)	0.025 U	0.0373
G107	Compliance	03/14/2022	D10	Calcium, total (mg/L)	84.9	106
G107	Compliance	03/14/2022	D10	Chloride, total (mg/L)	118	142
G107	Compliance	03/14/2022	D10	Fluoride, total (mg/L)	0.190	0.250
G107	Compliance	03/14/2022	D10	pH (field) (SU)	6.4	6.1/7.0
G107	Compliance	03/14/2022	D10	Sulfate, total (mg/L)	40.0	139
G107	Compliance	03/14/2022	D10	Total Dissolved Solids (mg/L)	492	757
G107	Compliance	09/20/2022	D11	Boron, total (mg/L)	0.023 J	0.0373

TABLE 2
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 2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
 JOPPA POWER PLANT
 402 - LANDFILL
 JOPPA, IL

Well ID	Well Type	Date	Event ID	Parameter	Result	Statistical Background Value
G107	Compliance	09/20/2022	D11	Calcium, total (mg/L)	85.6	105
G107	Compliance	09/20/2022	D11	Chloride, total (mg/L)	87.0	141
G107	Compliance	09/20/2022	D11	Fluoride, total (mg/L)	0.170	0.247
G107	Compliance	09/20/2022	D11	pH (field) (SU)	6.6	6.2/7.0
G107	Compliance	09/20/2022	D11	Sulfate, total (mg/L)	49.0	136
G107	Compliance	09/20/2022	D11	Total Dissolved Solids (mg/L)	504	748
G109	Compliance	09/20/2021	D9	Boron, total (mg/L)	0.025 U	0.0315
G109	Compliance	09/20/2021	D9	Calcium, total (mg/L)	17.4	50.8
G109	Compliance	09/20/2021	D9	Chloride, total (mg/L)	17.0	23.5
G109	Compliance	09/20/2021	D9	Fluoride, total (mg/L)	0.210	0.380
G109	Compliance	09/20/2021	D9	pH (field) (SU)	6.5	6.1/7.0
G109	Compliance	09/20/2021	D9	Sulfate, total (mg/L)	27.0	91.3
G109	Compliance	09/20/2021	D9	Total Dissolved Solids (mg/L)	196	495
G109	Compliance	03/14/2022	D10	Boron, total (mg/L)	0.025 U	0.0315
G109	Compliance	03/14/2022	D10	Calcium, total (mg/L)	26.8	49.7
G109	Compliance	03/14/2022	D10	Chloride, total (mg/L)	10.0	24.8
G109	Compliance	03/14/2022	D10	Fluoride, total (mg/L)	0.220	0.374
G109	Compliance	03/14/2022	D10	pH (field) (SU)	6.6	6.1/7.0
G109	Compliance	03/14/2022	D10	Sulfate, total (mg/L)	30.0	89.6
G109	Compliance	03/14/2022	D10	Total Dissolved Solids (mg/L)	258	485
G109	Compliance	09/20/2022	D11	Boron, total (mg/L)	0.014 J	0.0315
G109	Compliance	09/20/2022	D11	Calcium, total (mg/L)	15.8	48.4
G109	Compliance	09/20/2022	D11	Chloride, total (mg/L)	14.0	22.7
G109	Compliance	09/20/2022	D11	Fluoride, total (mg/L)	0.170	0.370
G109	Compliance	09/20/2022	D11	pH (field) (SU)	6.5	6.2/7.0
G109	Compliance	09/20/2022	D11	Sulfate, total (mg/L)	21.0	88.4

TABLE 2
ANALYTICAL RESULTS - APPENDIX III PARAMETERS
 2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
 JOPPA POWER PLANT
 402 - LANDFILL
 JOPPA, IL

Well ID	Well Type	Date	Event ID	Parameter	Result	Statistical Background Value
G109	Compliance	09/20/2022	D11	Total Dissolved Solids (mg/L)	200	475
G111	Compliance	09/20/2021	D9	Boron, total (mg/L)	0.025 U	0.0404
G111	Compliance	09/20/2021	D9	Calcium, total (mg/L)	17.4	26.8
G111	Compliance	09/20/2021	D9	Chloride, total (mg/L)	9.00	20.6
G111	Compliance	09/20/2021	D9	Fluoride, total (mg/L)	0.250	0.376
G111	Compliance	09/20/2021	D9	pH (field) (SU)	6.5	5.9/6.8
G111	Compliance	09/20/2021	D9	Sulfate, total (mg/L)	21.0	52.4
G111	Compliance	09/20/2021	D9	Total Dissolved Solids (mg/L)	212	363
G111	Compliance	03/14/2022	D10	Boron, total (mg/L)	0.025 U	0.0404
G111	Compliance	03/14/2022	D10	Calcium, total (mg/L)	18.8	26.5
G111	Compliance	03/14/2022	D10	Chloride, total (mg/L)	6.00	20.3
G111	Compliance	03/14/2022	D10	Fluoride, total (mg/L)	0.250	0.375
G111	Compliance	03/14/2022	D10	pH (field) (SU)	6.5	5.9/6.8
G111	Compliance	03/14/2022	D10	Sulfate, total (mg/L)	29.0	51.4
G111	Compliance	03/14/2022	D10	Total Dissolved Solids (mg/L)	240	359
G111	Compliance	09/20/2022	D11	Boron, total (mg/L)	0.013 J	0.0404
G111	Compliance	09/20/2022	D11	Calcium, total (mg/L)	15.1	26.1
G111	Compliance	09/20/2022	D11	Chloride, total (mg/L)	10.0	19.9
G111	Compliance	09/20/2022	D11	Fluoride, total (mg/L)	0.220	0.377
G111	Compliance	09/20/2022	D11	pH (field) (SU)	6.5	5.9/6.8
G111	Compliance	09/20/2022	D11	Sulfate, total (mg/L)	19.0	50.7
G111	Compliance	09/20/2022	D11	Total Dissolved Solids (mg/L)	234	356

Notes:

If an event includes a resample, a statistically significant increase (SSI) is confirmed if both the sample and the resample exceed the background value.

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
STATISTICAL BACKGROUND VALUES
 2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
 JOPPA POWER PLANT
 402 - LANDFILL
 JOPPA, IL

Parameter	Well ID	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Background Value (LPL/UPL)
Boron (mg/L)	G105	12/22/2015 - 09/20/2021	17	100	DQR	DQR
Boron (mg/L)	G105	12/22/2015 - 03/14/2022	18	100	DQR	DQR
Boron (mg/L)	G105	12/22/2015 - 09/20/2022	19	100	DQR	DQR
Boron (mg/L)	G107	12/22/2015 - 09/20/2021	17	53	Non-parametric UPL	0.0373
Boron (mg/L)	G107	12/22/2015 - 03/14/2022	18	56	Non-parametric UPL	0.0373
Boron (mg/L)	G107	12/22/2015 - 09/20/2022	19	58	Non-Parametric UPL	0.0373
Boron (mg/L)	G109	12/22/2015 - 09/20/2021	17	71	Non-parametric UPL	0.0315
Boron (mg/L)	G109	12/22/2015 - 03/14/2022	18	72	Non-parametric UPL	0.0315
Boron (mg/L)	G109	12/22/2015 - 09/20/2022	19	74	Non-Parametric UPL	0.0315
Boron (mg/L)	G111	12/22/2015 - 09/20/2021	17	59	Non-parametric UPL	0.0404
Boron (mg/L)	G111	12/22/2015 - 03/14/2022	18	61	Non-parametric UPL	0.0404
Boron (mg/L)	G111	12/22/2015 - 09/20/2022	19	63	Non-Parametric UPL	0.0404
Calcium (mg/L)	G105	12/22/2015 - 09/20/2021	17	0	Non-parametric UPL	45.3
Calcium (mg/L)	G105	12/22/2015 - 03/14/2022	18	0	Non-parametric UPL	45.3
Calcium (mg/L)	G105	12/22/2015 - 09/20/2022	19	0	Non-Parametric UPL	45.3
Calcium (mg/L)	G107	12/22/2015 - 09/20/2021	17	0	Parametric UPL	107
Calcium (mg/L)	G107	12/22/2015 - 03/14/2022	18	0	Parametric UPL	106
Calcium (mg/L)	G107	12/22/2015 - 09/20/2022	19	0	Parametric UPL	105
Calcium (mg/L)	G109	12/22/2015 - 09/20/2021	17	0	Parametric UPL (log-transformed)	50.8
Calcium (mg/L)	G109	12/22/2015 - 03/14/2022	18	0	Parametric UPL (log-transformed)	49.7
Calcium (mg/L)	G109	12/22/2015 - 09/20/2022	19	0	Parametric UPL (log-transformed)	48.4
Calcium (mg/L)	G111	12/22/2015 - 09/20/2021	17	0	Parametric UPL	26.8
Calcium (mg/L)	G111	12/22/2015 - 03/14/2022	18	0	Parametric UPL	26.5
Calcium (mg/L)	G111	12/22/2015 - 09/20/2022	19	0	Parametric UPL	26.1
Chloride (mg/L)	G105	12/22/2015 - 09/20/2021	17	0	Parametric UPL	61.1
Chloride (mg/L)	G105	12/22/2015 - 03/14/2022	18	0	Parametric UPL	59.9
Chloride (mg/L)	G105	12/22/2015 - 09/20/2022	19	0	Parametric UPL	59.3
Chloride (mg/L)	G107	12/22/2015 - 09/20/2021	17	0	Parametric UPL	142
Chloride (mg/L)	G107	12/22/2015 - 03/14/2022	18	0	Parametric UPL	142
Chloride (mg/L)	G107	12/22/2015 - 09/20/2022	19	0	Parametric UPL	141

TABLE 3
STATISTICAL BACKGROUND VALUES
 2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
 JOPPA POWER PLANT
 402 - LANDFILL
 JOPPA, IL

Parameter	Well ID	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Background Value (LPL/UPL)
Chloride (mg/L)	G109	12/22/2015 - 09/20/2021	18	0	Parametric UPL	23.5
Chloride (mg/L)	G109	12/22/2015 - 03/14/2022	19	0	Parametric UPL (log-transformed)	24.8
Chloride (mg/L)	G109	12/22/2015 - 09/20/2022	20	0	Parametric UPL	22.7
Chloride (mg/L)	G111	12/22/2015 - 09/20/2021	17	12	Parametric UPL	20.6
Chloride (mg/L)	G111	12/22/2015 - 03/14/2022	18	11	Parametric UPL	20.3
Chloride (mg/L)	G111	12/22/2015 - 09/20/2022	19	11	Parametric UPL	19.9
Fluoride (mg/L)	G105	12/22/2015 - 09/20/2021	17	0	Non-parametric UPL	0.290
Fluoride (mg/L)	G105	12/22/2015 - 03/14/2022	18	0	Non-parametric UPL	0.290
Fluoride (mg/L)	G105	12/22/2015 - 09/20/2022	19	0	Non-Parametric UPL	0.290
Fluoride (mg/L)	G107	12/22/2015 - 09/20/2021	17	0	Parametric UPL	0.252
Fluoride (mg/L)	G107	12/22/2015 - 03/14/2022	18	0	Parametric UPL	0.250
Fluoride (mg/L)	G107	12/22/2015 - 09/20/2022	19	0	Parametric UPL	0.247
Fluoride (mg/L)	G109	12/22/2015 - 09/20/2021	18	0	Parametric UPL	0.380
Fluoride (mg/L)	G109	12/22/2015 - 03/14/2022	19	0	Parametric UPL	0.374
Fluoride (mg/L)	G109	12/22/2015 - 09/20/2022	20	0	Parametric UPL	0.370
Fluoride (mg/L)	G111	12/22/2015 - 09/20/2021	17	0	Parametric UPL	0.376
Fluoride (mg/L)	G111	12/22/2015 - 03/14/2022	18	0	Parametric UPL	0.375
Fluoride (mg/L)	G111	12/22/2015 - 09/20/2022	19	0	Parametric UPL	0.377
pH (field) (SU)	G105	12/22/2015 - 09/20/2021	17	0	Parametric LPL/UPL	5.8/6.7
pH (field) (SU)	G105	12/22/2015 - 03/14/2022	18	0	Parametric LPL/UPL	5.8/6.6
pH (field) (SU)	G105	12/22/2015 - 09/20/2022	19	0	Parametric LPL/UPL	5.9/6.6
pH (field) (SU)	G107	12/22/2015 - 09/20/2021	17	0	Parametric LPL/UPL	6.1/7.0
pH (field) (SU)	G107	12/22/2015 - 03/14/2022	18	0	Parametric LPL/UPL	6.1/7.0
pH (field) (SU)	G107	12/22/2015 - 09/20/2022	19	0	Parametric LPL/UPL	6.2/7.0
pH (field) (SU)	G109	12/22/2015 - 09/20/2021	18	0	Parametric LPL/UPL	6.1/7.0
pH (field) (SU)	G109	12/22/2015 - 03/14/2022	19	0	Parametric LPL/UPL	6.1/7.0
pH (field) (SU)	G109	12/22/2015 - 09/20/2022	20	0	Parametric LPL/UPL	6.2/7.0
pH (field) (SU)	G111	12/22/2015 - 09/20/2021	17	0	Non-parametric LPL/UPL	5.9/6.8
pH (field) (SU)	G111	12/22/2015 - 03/14/2022	18	0	Non-parametric LPL/UPL	5.9/6.8
pH (field) (SU)	G111	12/22/2015 - 09/20/2022	19	0	Non-Parametric LPL/UPL	5.9/6.8

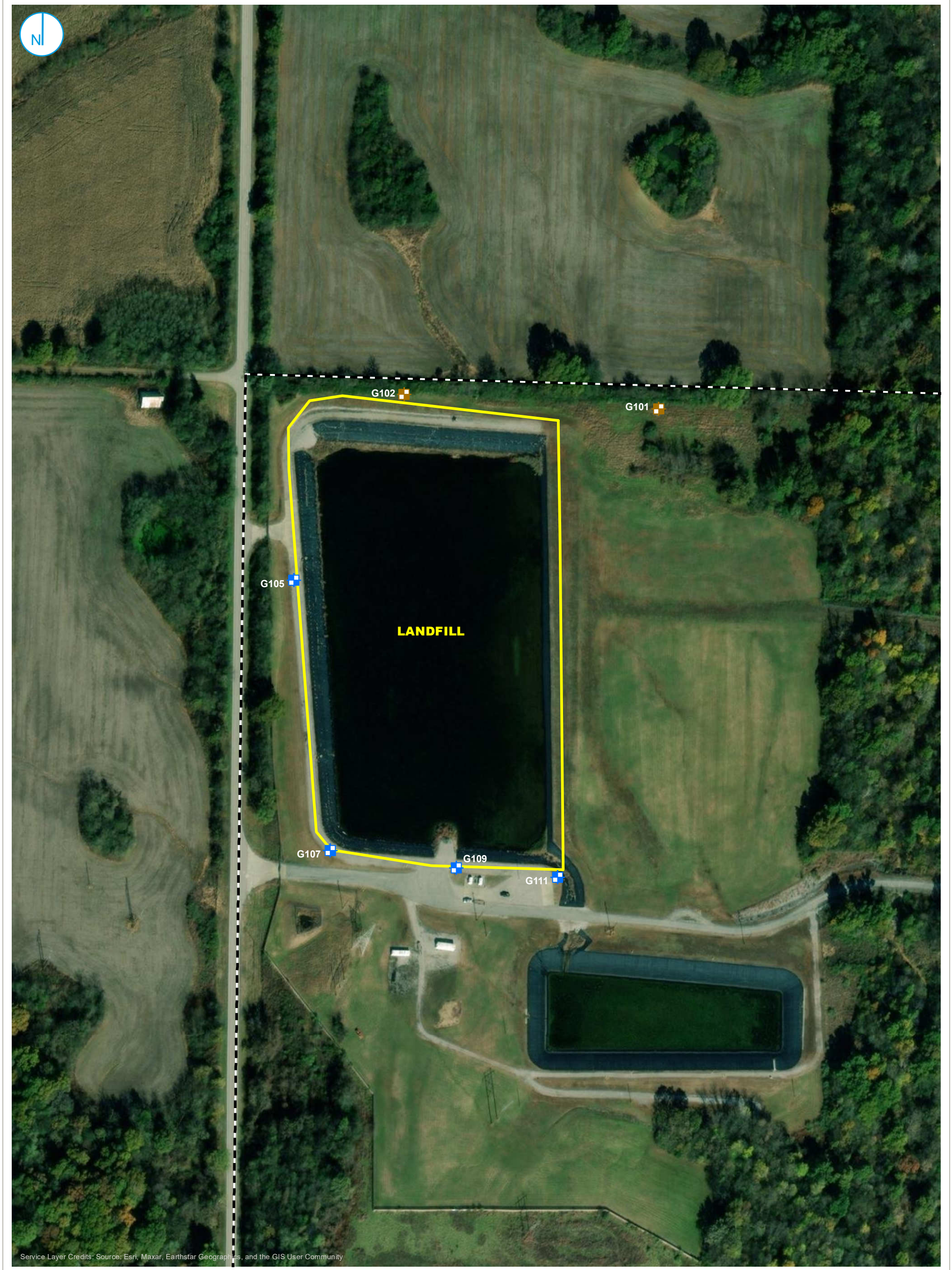
TABLE 3
STATISTICAL BACKGROUND VALUES
 2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
 JOPPA POWER PLANT
 402 - LANDFILL
 JOPPA, IL

Parameter	Well ID	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Background Value (LPL/UPL)
Sulfate (mg/L)	G105	12/22/2015 - 09/20/2021	17	0	Non-parametric UPL	16.0
Sulfate (mg/L)	G105	12/22/2015 - 03/14/2022	18	0	Non-parametric UPL	16.0
Sulfate (mg/L)	G105	12/22/2015 - 09/20/2022	19	0	Non-Parametric UPL	16.0
Sulfate (mg/L)	G107	12/22/2015 - 09/20/2021	17	0	Parametric UPL	141
Sulfate (mg/L)	G107	12/22/2015 - 03/14/2022	18	0	Parametric UPL	139
Sulfate (mg/L)	G107	12/22/2015 - 09/20/2022	19	0	Parametric UPL	136
Sulfate (mg/L)	G109	12/22/2015 - 09/20/2021	18	0	Parametric UPL	91.3
Sulfate (mg/L)	G109	12/22/2015 - 03/14/2022	19	0	Parametric UPL	89.6
Sulfate (mg/L)	G109	12/22/2015 - 09/20/2022	20	0	Parametric UPL	88.4
Sulfate (mg/L)	G111	12/22/2015 - 09/20/2021	17	6	Parametric UPL	52.4
Sulfate (mg/L)	G111	12/22/2015 - 03/14/2022	18	6	Parametric UPL	51.4
Sulfate (mg/L)	G111	12/22/2015 - 09/20/2022	19	5	Parametric UPL	50.7
Total Dissolved Solids (mg/L)	G105	12/22/2015 - 09/20/2021	17	0	Parametric UPL	274
Total Dissolved Solids (mg/L)	G105	12/22/2015 - 03/14/2022	18	0	Parametric UPL	272
Total Dissolved Solids (mg/L)	G105	12/22/2015 - 09/20/2022	19	0	Parametric UPL	271
Total Dissolved Solids (mg/L)	G107	12/22/2015 - 09/20/2021	17	0	Parametric UPL	767
Total Dissolved Solids (mg/L)	G107	12/22/2015 - 03/14/2022	18	0	Parametric UPL	757
Total Dissolved Solids (mg/L)	G107	12/22/2015 - 09/20/2022	19	0	Parametric UPL	748
Total Dissolved Solids (mg/L)	G109	12/22/2015 - 09/20/2021	17	6	Parametric UPL	495
Total Dissolved Solids (mg/L)	G109	12/22/2015 - 03/14/2022	18	6	Parametric UPL	485
Total Dissolved Solids (mg/L)	G109	12/22/2015 - 09/20/2022	19	5	Parametric UPL	475
Total Dissolved Solids (mg/L)	G111	12/22/2015 - 09/20/2021	17	0	Parametric UPL	363
Total Dissolved Solids (mg/L)	G111	12/22/2015 - 03/14/2022	18	0	Parametric UPL	359
Total Dissolved Solids (mg/L)	G111	12/22/2015 - 09/20/2022	19	0	Parametric UPL	356





Notes:

DQR = Double Quantification Rule
 LPL = lower prediction limit (applicable for pH only)
 mg/L = milligrams per liter
 SU = standard units
 UPL = upper prediction limit

FIGURES



Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

-  BACKGROUND WELL
-  COMPLIANCE WELL
-  40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)
-  PROPERTY BOUNDARY

0 100 200
 |-----|-----|
 Feet

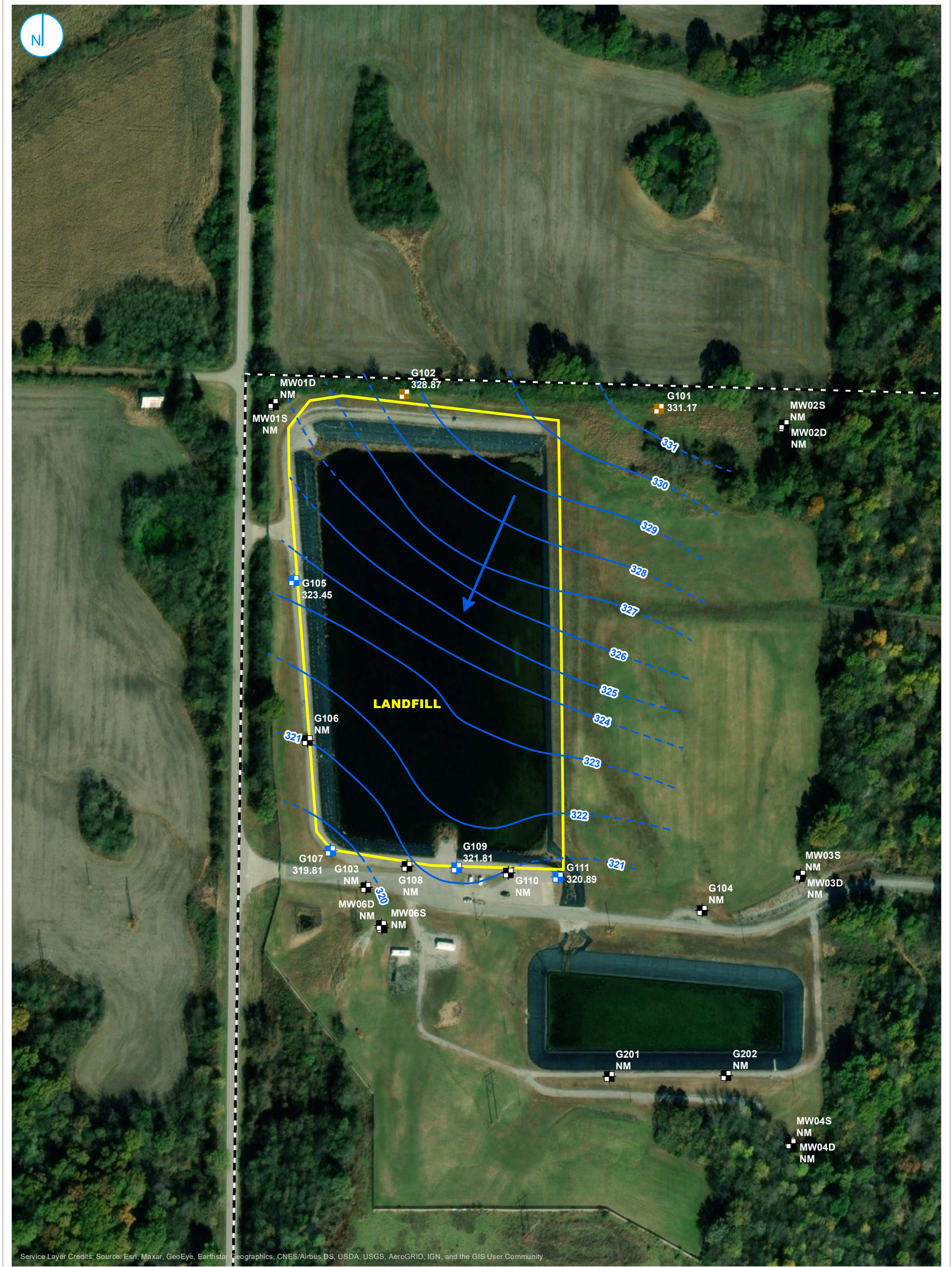
MONITORING WELL LOCATION MAP

FIGURE 1

2022 ANNUAL GROUNDWATER MONITORING
 AND CORRECTIVE ACTION REPORT
LANDFILL
 JOPPA POWER PLANT
 JOPPA, ILLINOIS

RAMBOLL AMERICAS
 ENGINEERING SOLUTIONS, INC.





Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- BACKGROUND WELL
- COMPLIANCE WELL
- MONITORING WELL
- 40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)
- PROPERTY BOUNDARY

- GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

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



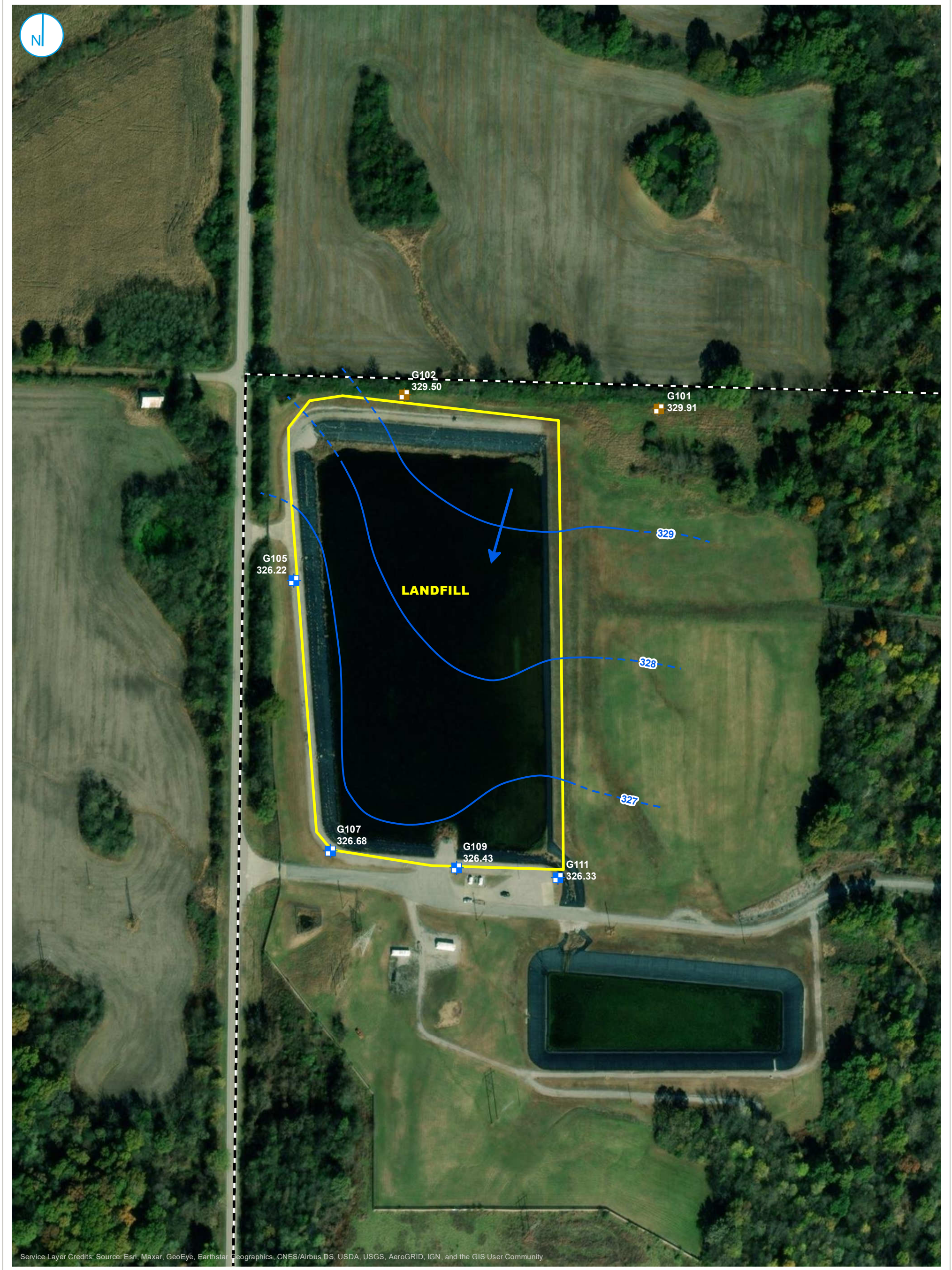
POTENTIOMETRIC SURFACE MAP SEPTEMBER 20, 2021

FIGURE 2

2022 ANNUAL GROUNDWATER MONITORING
AND CORRECTIVE ACTION REPORT
LANDFILL
JOPPA POWER PLANT
JOPPA, ILLINOIS

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.





Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- BACKGROUND WELL
- COMPLIANCE WELL
- MONITORING WELL
- 40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)
- PROPERTY BOUNDARY

- GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)
- INFERRED GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

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



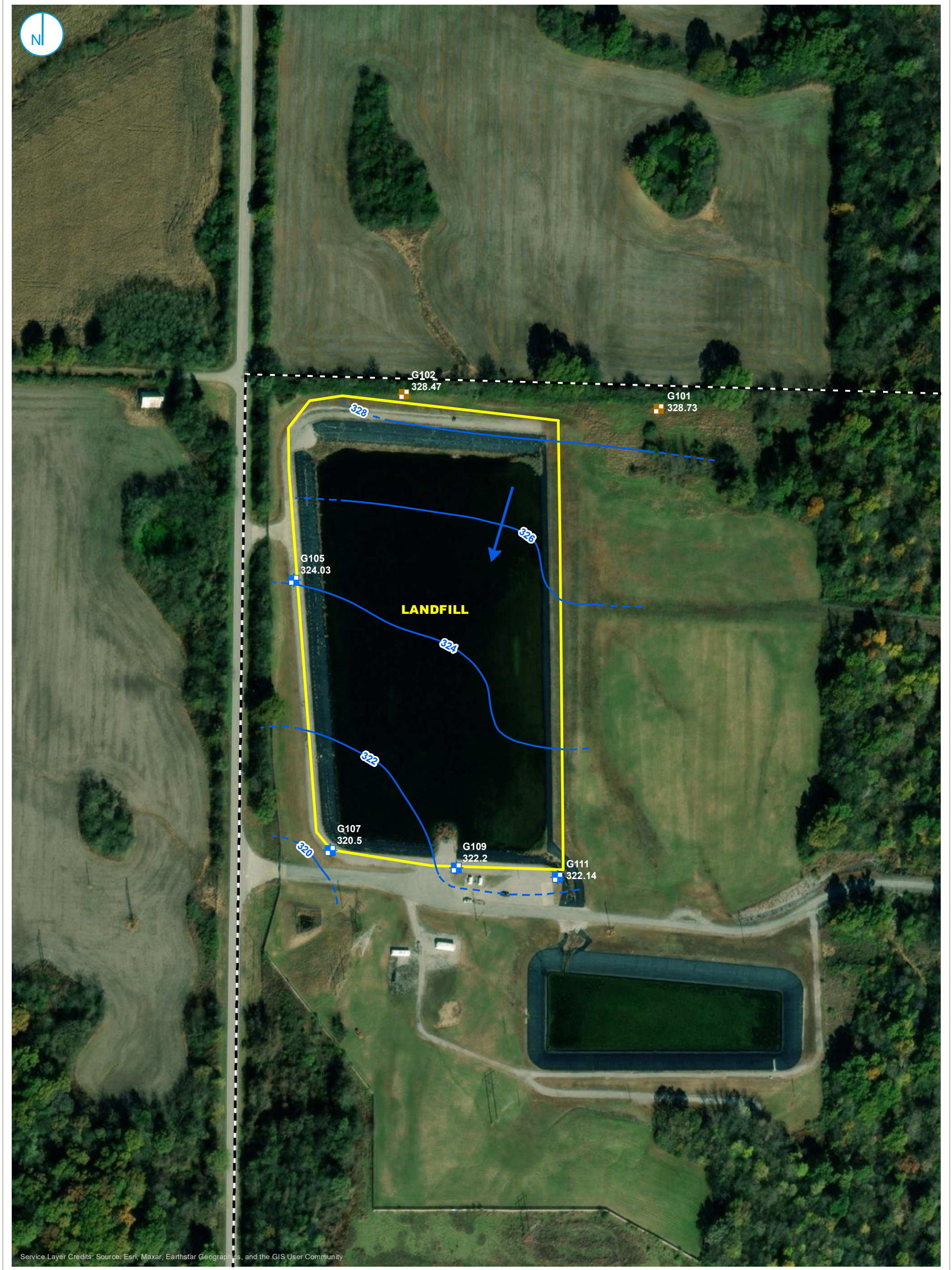
**POTENTIOMETRIC SURFACE MAP
 MARCH 14, 2022**

**2022 ANNUAL GROUNDWATER MONITORING
 AND CORRECTIVE ACTION REPORT**
LANDFILL
 JOPPA POWER PLANT
 JOPPA, ILLINOIS

FIGURE 3

RAMBOLL AMERICAS
 ENGINEERING SOLUTIONS, INC.





Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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

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, 2022**

FIGURE 4

**2022 ANNUAL GROUNDWATER MONITORING
 AND CORRECTIVE ACTION REPORT**
LANDFILL
 JOPPA POWER PLANT
 JOPPA, ILLINOIS

RAMBOLL AMERICAS
 ENGINEERING SOLUTIONS, INC.



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 Landfill CCR 402

WorkOrder: 21080630

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

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 21080630

Client Project: Joppa Landfill CCR 402

Report Date: 06-Oct-21

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Sample Summary	15
Dates Report	16
Quality Control Results	20
Receiving Check List	26
Chain of Custody	Appended

Client: Ramboll

Work Order: 21080630

Client Project: Joppa Landfill CCR 402

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: 21080630

Client Project: Joppa Landfill CCR 402

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 | |

Client: Ramboll

Work Order: 21080630

Client Project: Joppa Landfill CCR 402

Report Date: 06-Oct-21

Cooler Receipt Temp: 0.7 °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

Collinsville Air

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

Springfield

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

Chicago

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

Kansas City

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



Accreditations

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 21080630

Client Project: Joppa Landfill CCR 402

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



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Landfill CCR 402
 Lab ID: 21080630-001
 Matrix: GROUNDWATER

Work Order: 21080630
 Report Date: 06-Oct-21
 Client Sample ID: 402G101
 Collection Date: 09/20/2021 17:08

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		44.12	ft	1	09/20/2021 17:08	R299791
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.40		1	09/20/2021 17:08	R299791
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		14	NTU	1	09/20/2021 17:08	R299791
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		108	mV	1	09/20/2021 17:08	R299791
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		402	µS/cm	1	09/20/2021 17:08	R299791
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		16.0	°C	1	09/20/2021 17:08	R299791
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		5.96	mg/L	1	09/20/2021 17:08	R299791
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		115	mg/L	1	09/21/2021 13:44	R299233
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	09/21/2021 13:44	R299233
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		188	mg/L	1	09/24/2021 16:14	R299489
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		36	mg/L	1	09/27/2021 19:57	R299523
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.28	mg/L	1	09/21/2021 14:10	R299229
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		4	mg/L	1	09/23/2021 20:33	R299362
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		9.85	mg/L	1	09/29/2021 13:17	182394
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25	J	16	µg/L	5	09/30/2021 19:59	182203



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Landfill CCR 402
 Lab ID: 21080630-002
 Matrix: GROUNDWATER

Work Order: 21080630
 Report Date: 06-Oct-21
 Client Sample ID: 402G102
 Collection Date: 09/20/2021 14:39

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		58.44	ft	1	09/20/2021 14:39	R299791
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.38		1	09/20/2021 14:39	R299791
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		6.0	NTU	1	09/20/2021 14:39	R299791
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		170	mV	1	09/20/2021 14:39	R299791
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		399	µS/cm	1	09/20/2021 14:39	R299791
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		18.8	°C	1	09/20/2021 14:39	R299791
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		6.74	mg/L	1	09/20/2021 14:39	R299791
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		101	mg/L	1	09/21/2021 13:49	R299233
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	09/21/2021 13:49	R299233
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		204	mg/L	1	09/24/2021 16:14	R299489
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		38	mg/L	1	09/27/2021 20:03	R299523
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.20	mg/L	1	09/21/2021 14:12	R299229
SW-846 9251 (TOTAL)								
Chloride	NELAP	2		4	mg/L	2	09/23/2021 20:39	R299362
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		9.00	mg/L	1	09/29/2021 13:19	182394
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25	J	14	µg/L	5	09/30/2021 20:06	182203



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Landfill CCR 402
 Lab ID: 21080630-003
 Matrix: GROUNDWATER

Work Order: 21080630
 Report Date: 06-Oct-21
 Client Sample ID: 402G105
 Collection Date: 09/20/2021 16:17

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		57.28	ft	1	09/20/2021 16:17	R299791
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.06		1	09/20/2021 16:17	R299791
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		4.0	NTU	1	09/20/2021 16:17	R299791
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		206	mV	1	09/20/2021 16:17	R299791
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		632	µS/cm	1	09/20/2021 16:17	R299791
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		21.6	°C	1	09/20/2021 16:17	R299791
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		6.78	mg/L	1	09/20/2021 16:17	R299791
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		109	mg/L	1	09/21/2021 13:54	R299233
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	09/21/2021 13:54	R299233
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		244	mg/L	1	09/24/2021 16:15	R299489
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		13	mg/L	1	09/27/2021 20:05	R299523
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.15	mg/L	1	09/21/2021 14:14	R299229
SW-846 9251 (TOTAL)								
Chloride	NELAP	2		52	mg/L	2	09/23/2021 20:47	R299362
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		28.5	mg/L	1	09/29/2021 13:21	182394
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		< 25.0	µg/L	5	09/30/2021 20:12	182203



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Landfill CCR 402
 Lab ID: 21080630-004
 Matrix: GROUNDWATER

Work Order: 21080630
 Report Date: 06-Oct-21
 Client Sample ID: 402G107
 Collection Date: 09/20/2021 15:08

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		57.52	ft	1	09/20/2021 15:08	R299791
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.64		1	09/20/2021 15:08	R299791
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		7.8	NTU	1	09/20/2021 15:08	R299791
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		172	mV	1	09/20/2021 15:08	R299791
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		1130	µS/cm	1	09/20/2021 15:08	R299791
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		19.7	°C	1	09/20/2021 15:08	R299791
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		2.43	mg/L	1	09/20/2021 15:08	R299791
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		258	mg/L	1	09/21/2021 13:59	R299233
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	09/21/2021 13:59	R299233
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		488	mg/L	1	09/24/2021 16:15	R299489
SW-846 9036 (TOTAL)								
Sulfate	NELAP	50		67	mg/L	5	09/29/2021 16:15	R299631
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.20	mg/L	1	09/21/2021 14:16	R299229
SW-846 9251 (TOTAL)								
Chloride	NELAP	5		90	mg/L	5	09/23/2021 21:05	R299362
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		80.9	mg/L	1	09/29/2021 13:22	182394
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		28.2	µg/L	5	09/30/2021 20:52	182203



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Landfill CCR 402
 Lab ID: 21080630-005
 Matrix: GROUNDWATER

Work Order: 21080630
 Report Date: 06-Oct-21
 Client Sample ID: 402G109
 Collection Date: 09/20/2021 15:39

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		54.18	ft	1	09/20/2021 15:39	R299791
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.54		1	09/20/2021 15:39	R299791
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		9.8	NTU	1	09/20/2021 15:39	R299791
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		177	mV	1	09/20/2021 15:39	R299791
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		426	µS/cm	1	09/20/2021 15:39	R299791
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		18.7	°C	1	09/20/2021 15:39	R299791
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		5.39	mg/L	1	09/20/2021 15:39	R299791
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		96	mg/L	1	09/21/2021 14:08	R299233
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	09/21/2021 14:08	R299233
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		196	mg/L	1	09/24/2021 16:15	R299489
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		27	mg/L	1	09/27/2021 20:29	R299523
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.21	mg/L	1	09/21/2021 14:17	R299229
SW-846 9251 (TOTAL)								
Chloride	NELAP	2		17	mg/L	2	09/23/2021 21:27	R299362
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		17.4	mg/L	1	09/29/2021 13:24	182394
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25	J	20	µg/L	5	09/30/2021 20:58	182203



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Landfill CCR 402
 Lab ID: 21080630-006
 Matrix: GROUNDWATER

Work Order: 21080630
 Report Date: 06-Oct-21
 Client Sample ID: 402G111
 Collection Date: 09/20/2021 15:57

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		52.75	ft	1	09/20/2021 15:57	R299791
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.51		1	09/20/2021 15:57	R299791
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		3.7	NTU	1	09/20/2021 15:57	R299791
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		182	mV	1	09/20/2021 15:57	R299791
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		492	µS/cm	1	09/20/2021 15:57	R299791
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		18.5	°C	1	09/20/2021 15:57	R299791
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		2.44	mg/L	1	09/20/2021 15:57	R299791
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		149	mg/L	1	09/21/2021 14:13	R299233
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	09/21/2021 14:13	R299233
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		212	mg/L	1	09/24/2021 16:16	R299489
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		21	mg/L	1	09/27/2021 20:32	R299523
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.25	mg/L	1	09/21/2021 14:19	R299229
SW-846 9251 (TOTAL)								
Chloride	NELAP	2		9	mg/L	2	09/23/2021 21:32	R299362
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		17.4	mg/L	1	09/29/2021 13:26	182394
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25	J	19	µg/L	5	09/30/2021 21:05	182203



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Landfill CCR 402
 Lab ID: 21080630-007
 Matrix: GROUNDWATER

Work Order: 21080630
 Report Date: 06-Oct-21
 Client Sample ID: 402G105 Field Duplicate
 Collection Date: 09/20/2021 16:17

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		57.28	ft	1	09/20/2021 16:17	R299791
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.06		1	09/20/2021 16:17	R299791
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		4.0	NTU	1	09/20/2021 16:17	R299791
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		206	mV	1	09/20/2021 16:17	R299791
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		632	µS/cm	1	09/20/2021 16:17	R299791
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		21.6	°C	1	09/20/2021 16:17	R299791
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		6.78	mg/L	1	09/20/2021 16:17	R299791
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		116	mg/L	1	09/21/2021 14:18	R299233
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	09/21/2021 14:18	R299233
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		248	mg/L	1	09/24/2021 16:16	R299489
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		12	mg/L	1	09/27/2021 20:37	R299523
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.15	mg/L	1	09/21/2021 14:20	R299229
SW-846 9251 (TOTAL)								
Chloride	NELAP	2		50	mg/L	2	09/23/2021 21:35	R299362
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		27.0	mg/L	1	09/29/2021 13:56	182394
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		< 25.0	µg/L	5	09/30/2021 21:11	182203



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Landfill CCR 402
 Lab ID: 21080630-008
 Matrix: GROUNDWATER

Work Order: 21080630
 Report Date: 06-Oct-21
 Client Sample ID: FIELD BLANK
 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 CaCO ₃)	NELAP	0		1	mg/L	1	09/21/2021 14:23	R299233
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	09/21/2021 14:23	R299233
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		< 20	mg/L	1	09/24/2021 16:17	R299489
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		< 10	mg/L	1	09/27/2021 20:40	R299523
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10	J	0.02	mg/L	1	09/21/2021 14:22	R299229
SW-846 9251 (TOTAL)								
Chloride	NELAP	1		< 1	mg/L	1	09/23/2021 21:58	R299362
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		< 0.100	mg/L	1	09/29/2021 13:57	182394
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		< 25.0	µg/L	5	09/30/2021 21:18	182203



Sample Summary

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 21080630

Client Project: Joppa Landfill CCR 402

Report Date: 06-Oct-21

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
21080630-001	402G101	Groundwater	3	09/20/2021 17:08
21080630-002	402G102	Groundwater	3	09/20/2021 14:39
21080630-003	402G105	Groundwater	3	09/20/2021 16:17
21080630-004	402G107	Groundwater	3	09/20/2021 15:08
21080630-005	402G109	Groundwater	3	09/20/2021 15:39
21080630-006	402G111	Groundwater	3	09/20/2021 15:57
21080630-007	402G105 Field Duplicate	Groundwater	3	09/20/2021 16:17
21080630-008	FIELD BLANK	Groundwater	3	09/20/2021 18:15



Dates Report

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 21080630

Client Project: Joppa Landfill CCR 402

Report Date: 06-Oct-21

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
21080630-001A	402G101	09/20/2021 17:08	09/21/2021 10:45		
	Field Elevation Measurements				09/20/2021 17:08
	Standard Method 4500-H B 2001 Field				09/20/2021 17:08
	Standard Methods 2130 B Field				09/20/2021 17:08
	Standard Methods 18th Ed. 2580 B Field				09/20/2021 17:08
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2021 13:44
	Standard Methods 2320 B 1997, 2011				09/21/2021 13:44
	Standard Methods 2510 B Field				09/20/2021 17:08
	Standard Methods 2550 B Field				09/20/2021 17:08
	Standard Methods 4500-O G Field				09/20/2021 17:08
21080630-001B	402G101	09/20/2021 17:08	09/21/2021 10:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/24/2021 16:14
	SW-846 9036 (Total)				09/27/2021 19:57
	SW-846 9214 (Total)				09/21/2021 14:10
	SW-846 9251 (Total)				09/23/2021 20:33
21080630-001C	402G101	09/20/2021 17:08	09/21/2021 10:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/23/2021 15:18	09/29/2021 13:17
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/30/2021 19:59
21080630-002A	402G102	09/20/2021 14:39	09/21/2021 10:45		
	Field Elevation Measurements				09/20/2021 14:39
	Standard Method 4500-H B 2001 Field				09/20/2021 14:39
	Standard Methods 2130 B Field				09/20/2021 14:39
	Standard Methods 18th Ed. 2580 B Field				09/20/2021 14:39
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2021 13:49
	Standard Methods 2320 B 1997, 2011				09/21/2021 13:49
	Standard Methods 2510 B Field				09/20/2021 14:39
	Standard Methods 2550 B Field				09/20/2021 14:39
	Standard Methods 4500-O G Field				09/20/2021 14:39
21080630-002B	402G102	09/20/2021 14:39	09/21/2021 10:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/24/2021 16:14
	SW-846 9036 (Total)				09/27/2021 20:03
	SW-846 9214 (Total)				09/21/2021 14:12
	SW-846 9251 (Total)				09/23/2021 20:39
21080630-002C	402G102	09/20/2021 14:39	09/21/2021 10:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/23/2021 15:18	09/29/2021 13:19
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/30/2021 20:06
21080630-003A	402G105	09/20/2021 16:17	09/21/2021 10:45		



Dates Report

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 21080630

Client Project: Joppa Landfill CCR 402

Report Date: 06-Oct-21

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
	Field Elevation Measurements				09/20/2021 16:17
	Standard Method 4500-H B 2001 Field				09/20/2021 16:17
	Standard Methods 2130 B Field				09/20/2021 16:17
	Standard Methods 18th Ed. 2580 B Field				09/20/2021 16:17
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2021 13:54
	Standard Methods 2320 B 1997, 2011				09/21/2021 13:54
	Standard Methods 2510 B Field				09/20/2021 16:17
	Standard Methods 2550 B Field				09/20/2021 16:17
	Standard Methods 4500-O G Field				09/20/2021 16:17
21080630-003B	402G105	09/20/2021 16:17	09/21/2021 10:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/24/2021 16:15
	SW-846 9036 (Total)				09/27/2021 20:05
	SW-846 9214 (Total)				09/21/2021 14:14
	SW-846 9251 (Total)				09/23/2021 20:47
21080630-003C	402G105	09/20/2021 16:17	09/21/2021 10:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/23/2021 15:18	09/29/2021 13:21
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/30/2021 20:12
21080630-004A	402G107	09/20/2021 15:08	09/21/2021 10:45		
	Field Elevation Measurements				09/20/2021 15:08
	Standard Method 4500-H B 2001 Field				09/20/2021 15:08
	Standard Methods 2130 B Field				09/20/2021 15:08
	Standard Methods 18th Ed. 2580 B Field				09/20/2021 15:08
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2021 13:59
	Standard Methods 2320 B 1997, 2011				09/21/2021 13:59
	Standard Methods 2510 B Field				09/20/2021 15:08
	Standard Methods 2550 B Field				09/20/2021 15:08
	Standard Methods 4500-O G Field				09/20/2021 15:08
21080630-004B	402G107	09/20/2021 15:08	09/21/2021 10:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/24/2021 16:15
	SW-846 9036 (Total)				09/29/2021 16:15
	SW-846 9214 (Total)				09/21/2021 14:16
	SW-846 9251 (Total)				09/23/2021 21:05
21080630-004C	402G107	09/20/2021 15:08	09/21/2021 10:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/23/2021 15:18	09/29/2021 13:22
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/30/2021 20:52
21080630-005A	402G109	09/20/2021 15:39	09/21/2021 10:45		
	Field Elevation Measurements				09/20/2021 15:39



Dates Report

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 21080630

Client Project: Joppa Landfill CCR 402

Report Date: 06-Oct-21

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
	Standard Method 4500-H B 2001 Field				09/20/2021 15:39
	Standard Methods 2130 B Field				09/20/2021 15:39
	Standard Methods 18th Ed. 2580 B Field				09/20/2021 15:39
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2021 14:08
	Standard Methods 2320 B 1997, 2011				09/21/2021 14:08
	Standard Methods 2510 B Field				09/20/2021 15:39
	Standard Methods 2550 B Field				09/20/2021 15:39
	Standard Methods 4500-O G Field				09/20/2021 15:39
21080630-005B	402G109	09/20/2021 15:39	09/21/2021 10:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/24/2021 16:15
	SW-846 9036 (Total)				09/27/2021 20:29
	SW-846 9214 (Total)				09/21/2021 14:17
	SW-846 9251 (Total)				09/23/2021 21:27
21080630-005C	402G109	09/20/2021 15:39	09/21/2021 10:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/23/2021 15:18	09/29/2021 13:24
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/30/2021 20:58
21080630-006A	402G111	09/20/2021 15:57	09/21/2021 10:45		
	Field Elevation Measurements				09/20/2021 15:57
	Standard Method 4500-H B 2001 Field				09/20/2021 15:57
	Standard Methods 2130 B Field				09/20/2021 15:57
	Standard Methods 18th Ed. 2580 B Field				09/20/2021 15:57
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2021 14:13
	Standard Methods 2320 B 1997, 2011				09/21/2021 14:13
	Standard Methods 2510 B Field				09/20/2021 15:57
	Standard Methods 2550 B Field				09/20/2021 15:57
	Standard Methods 4500-O G Field				09/20/2021 15:57
21080630-006B	402G111	09/20/2021 15:57	09/21/2021 10:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/24/2021 16:16
	SW-846 9036 (Total)				09/27/2021 20:32
	SW-846 9214 (Total)				09/21/2021 14:19
	SW-846 9251 (Total)				09/23/2021 21:32
21080630-006C	402G111	09/20/2021 15:57	09/21/2021 10:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/23/2021 15:18	09/29/2021 13:26
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/30/2021 21:05
21080630-007A	402G105 Field Duplicate	09/20/2021 16:17	09/21/2021 10:45		
	Field Elevation Measurements				09/20/2021 16:17
	Standard Method 4500-H B 2001 Field				09/20/2021 16:17



Dates Report

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 21080630

Client Project: Joppa Landfill CCR 402

Report Date: 06-Oct-21

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
	Standard Methods 2130 B Field				09/20/2021 16:17
	Standard Methods 18th Ed. 2580 B Field				09/20/2021 16:17
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2021 14:18
	Standard Methods 2320 B 1997, 2011				09/21/2021 14:18
	Standard Methods 2510 B Field				09/20/2021 16:17
	Standard Methods 2550 B Field				09/20/2021 16:17
	Standard Methods 4500-O G Field				09/20/2021 16:17
21080630-007B	402G105 Field Duplicate	09/20/2021 16:17	09/21/2021 10:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/24/2021 16:16
	SW-846 9036 (Total)				09/27/2021 20:37
	SW-846 9214 (Total)				09/21/2021 14:20
	SW-846 9251 (Total)				09/23/2021 21:35
21080630-007C	402G105 Field Duplicate	09/20/2021 16:17	09/21/2021 10:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/23/2021 15:18	09/29/2021 13:56
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/30/2021 21:11
21080630-008A	FIELD BLANK	09/20/2021 18:15	09/21/2021 10:45		
	Standard Methods 2320 B (Total) 1997, 2011				09/21/2021 14:23
	Standard Methods 2320 B 1997, 2011				09/21/2021 14:23
21080630-008B	FIELD BLANK	09/20/2021 18:15	09/21/2021 10:45		
	Standard Methods 2540 C (Total) 1997, 2011				09/24/2021 16:17
	SW-846 9036 (Total)				09/27/2021 20:40
	SW-846 9214 (Total)				09/21/2021 14:22
	SW-846 9251 (Total)				09/23/2021 21:58
21080630-008C	FIELD BLANK	09/20/2021 18:15	09/21/2021 10:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/23/2021 15:18	09/29/2021 13:57
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/24/2021 09:21	09/30/2021 21:18



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 21080630

Client Project: Joppa Landfill CCR 402

Report Date: 06-Oct-21

STANDARD METHOD 4500-H B 2001 FIELD

Batch R299791		SampType: LCS		Units							
SampID: LCS-R299791											
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 R299791		SampType: LCS		Units $\mu\text{S/cm}$							
SampID: LCS-R299791											
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		950	1000	0	95.0	90	110	09/24/2021	
Total Dissolved Solids		20		932	1000	0	93.2	90	110	09/24/2021	
Total Dissolved Solids		20		986	1000	0	98.6	90	110	09/24/2021	

Batch R299489		SampType: DUP		Units mg/L							
SampID: 21080630-004BDUP											
										RPD Limit 5	
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Total Dissolved Solids		20		466				488.0	4.61	09/24/2021	

Batch R299489		SampType: DUP		Units mg/L							
SampID: 21080630-008BDUP											
										RPD Limit 5	
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Total Dissolved Solids		20		< 20				0	0.00	09/24/2021	



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 21080630

Client Project: Joppa Landfill CCR 402

Report Date: 06-Oct-21

STANDARD METHODS 2540 C (TOTAL) 1997, 2011

Batch R299553 **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	09/27/2021
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	09/27/2021
Total Dissolved Solids		20		< 20	16.00	0	0	-100	100	09/27/2021

Batch R299553 **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		942	1000	0	94.2	90	110	09/27/2021
Total Dissolved Solids		20		928	1000	0	92.8	90	110	09/27/2021
Total Dissolved Solids		20		980	1000	0	98.0	90	110	09/27/2021

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

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 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



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 21080630

Client Project: Joppa Landfill CCR 402

Report Date: 06-Oct-21

SW-846 9036 (TOTAL)

Batch R299523		SampType: LCS		Units mg/L							Date Analyzed
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	

Batch R299631		SampType: MBLK		Units mg/L							Date Analyzed
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	09/29/2021	

Batch R299631		SampType: LCS		Units mg/L							Date Analyzed
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	96.7	90	110	09/29/2021	

Batch R299631		SampType: MS		Units mg/L							Date Analyzed
SampID: 21080630-004BMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Sulfate		50		169	100.0	66.52	102.8	85	115	09/29/2021	

Batch R299631		SampType: MSD		Units mg/L							RPD Limit 10	Date Analyzed
SampID: 21080630-004BMSD												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed		
Sulfate		50		179	100.0	66.52	112.3	169.3	5.46	09/29/2021		

SW-846 9214 (TOTAL)

Batch R299229		SampType: MBLK		Units mg/L							Date Analyzed
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							Date Analyzed
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	



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 21080630

Client Project: Joppa Landfill CCR 402

Report Date: 06-Oct-21

SW-846 9214 (TOTAL)

Batch R299229		SampType: MS		Units mg/L							Date Analyzed
SampID: 21080630-008BMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Fluoride		0.10		2.11	2.000	0.01900	104.6	75	125	09/21/2021	

Batch R299229		SampType: MSD		Units mg/L							RPD Limit 15	Date Analyzed
SampID: 21080630-008BMSD												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Fluoride		0.10		2.15	2.000	0.01900	106.4	2.111	1.64	09/21/2021		

SW-846 9251 (TOTAL)

Batch R299362		SampType: MBLK		Units mg/L							Date Analyzed
SampID: ICB/MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride		1		< 1	0.5000	0	0	-100	100	09/23/2021	

Batch R299362		SampType: LCS		Units mg/L							Date Analyzed
SampID: ICB/LCS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride		1		20	20.00	0	99.7	90	110	09/23/2021	

Batch R299362		SampType: MS		Units mg/L							Date Analyzed
SampID: 21080630-004BMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride		5		185	100.0	90.32	95.1	85	115	09/23/2021	

Batch R299362		SampType: MSD		Units mg/L							RPD Limit 15	Date Analyzed
SampID: 21080630-004BMSD												
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD			
Chloride		5		188	100.0	90.32	97.4	185.4	1.20	09/23/2021		

Batch R299524		SampType: MBLK		Units mg/L							Date Analyzed
SampID: ICB/MBLK											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit		
Chloride		1		< 1	0.5000	0	0	-100	100	09/27/2021	



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 21080630

Client Project: Joppa Landfill CCR 402

Report Date: 06-Oct-21

SW-846 9251 (TOTAL)

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	

Batch R299632		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	09/29/2021	

Batch R299632		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	100.1	90	110	09/29/2021	

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

Batch 182394		SampType: MBLK		Units mg/L							
SampID: MBLK-182394											
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	09/29/2021	

Batch 182394		SampType: LCS		Units mg/L							
SampID: LCS-182394											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Calcium		0.100		2.66	2.500	0	106.2	85	115	09/29/2021	

Batch 182394		SampType: MS		Units mg/L							
SampID: 21080630-008CMS											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
Calcium		0.100		2.64	2.500	0	105.7	75	125	09/29/2021	

Batch 182394		SampType: MSD		Units mg/L							
SampID: 21080630-008CMSD											
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Calcium		0.100		2.67	2.500	0	106.7	2.642	0.91	09/29/2021	



Quality Control Results

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 21080630

Client Project: Joppa Landfill CCR 402

Report Date: 06-Oct-21

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
Boron		25.0		< 25.0	9.250	0	0	-100	100	09/30/2021

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
Boron		25.0		499	500.0	0	99.7	80	120	09/30/2021

Batch 182203		SampType: MS		Units µg/L						
SampID: 21080630-008CMS										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Boron		25.0		539	500.0	0	107.7	75	125	09/30/2021

Batch 182203		SampType: MSD		Units µg/L						
SampID: 21080630-008CMSD										
Analyses	Cert	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Boron		25.0		547	500.0	0	109.3	538.7	1.48	09/30/2021



Receiving Check List

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 21080630

Client Project: Joppa Landfill CCR 402

Report Date: 06-Oct-21

Carrier: Joe Riley

Received By: PWR

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

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

Pages to follow: Chain of custody

Extra pages included

- | | | | | |
|---|---|---|--------------------------------------|----------------------------------|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> | Temp °C 0.7 |
| Type of thermal preservation? | None <input type="checkbox"/> | Ice <input checked="" type="checkbox"/> | Blue Ice <input type="checkbox"/> | Dry Ice <input type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Reported field parameters measured: | Field <input checked="" type="checkbox"/> | Lab <input type="checkbox"/> | NA <input type="checkbox"/> | |
| Container/Temp Blank temperature in compliance? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |

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 <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials <input checked="" type="checkbox"/> |
| Water - TOX containers have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No TOX containers <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | NA <input type="checkbox"/> |
| NPDES/CWA TCN interferences checked/treated in the field? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |

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

pH strip #77492. - PR/MKemp - 9/21/2021 11:51:32 AM

Additional nitric acid (78366) was needed in 402G05 Field Duplicate upon arrival at the laboratory. - PR/MKemp - 9/21/2021 11:51:34 AM

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



Report Contents

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030339

Client Project: Joppa Q1 Groundwater

Report Date: 29-Mar-22

This reporting package includes the following:

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Chain of Custody	Appended

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

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 Landfill CCR 402 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

Collinsville Air

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

Springfield

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

Chicago

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

Kansas City

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



Accreditations

<http://www.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



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Q1 Groundwater
 Lab ID: 22030339-008
 Matrix: AQUEOUS

Work Order: 22030339
 Report Date: 29-Mar-22
 Client Sample ID: Field Blank
 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 CaCO ₃)	NELAP	0		2	mg/L	1	03/21/2022 16:58	R308526
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	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)								
Boron	NELAP	25.0		< 25.0	µg/L	5	03/21/2022 17:39	188685



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Q1 Groundwater
 Lab ID: 22030339-009
 Matrix: GROUNDWATER

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

Client Sample ID: G101

Collection Date: 03/14/2022 12:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		45.38	ft	1	03/14/2022 12:30	R308668
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.48		1	03/14/2022 12:30	R308668
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		9.0	NTU	1	03/14/2022 12:30	R308668
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		134	mV	1	03/14/2022 12:30	R308668
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		417	µS/cm	1	03/14/2022 12:30	R308668
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		15.1	°C	1	03/14/2022 12:30	R308668
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		6.94	mg/L	1	03/14/2022 12:30	R308668
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		113	mg/L	1	03/21/2022 18:09	R308526
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	03/21/2022 18:09	R308526
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	*	20		236	mg/L	1	03/21/2022 10:53	R308650
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		38	mg/L	1	03/18/2022 1:22	R308408
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.30	mg/L	1	03/22/2022 7:21	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	4	J	3	mg/L	1	03/18/2022 1:22	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		9.93	mg/L	1	03/21/2022 10:22	188685
Magnesium	NELAP	0.050		4.34	mg/L	1	03/21/2022 10:22	188685
Potassium	NELAP	0.100		0.322	mg/L	1	03/21/2022 10:22	188685
Sodium	NELAP	0.050		56.2	mg/L	1	03/21/2022 10:22	188685
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		< 25.0	µg/L	5	03/21/2022 17:45	188685



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Q1 Groundwater
 Lab ID: 22030339-010
 Matrix: GROUNDWATER

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

Client Sample ID: G102

Collection Date: 03/14/2022 12:56

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		57.81	ft	1	03/14/2022 12:56	R308668
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.37		1	03/14/2022 12:56	R308668
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		5.6	NTU	1	03/14/2022 12:56	R308668
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		129	mV	1	03/14/2022 12:56	R308668
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		381	µS/cm	1	03/14/2022 12:56	R308668
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		16.5	°C	1	03/14/2022 12:56	R308668
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		7.33	mg/L	1	03/14/2022 12:56	R308668
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		99	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	*	20		202	mg/L	1	03/21/2022 10:53	R308650
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20		30	mg/L	2	03/21/2022 14:31	R308553
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.19	mg/L	1	03/22/2022 7:23	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	4	J	4	mg/L	1	03/18/2022 1:30	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		8.30	mg/L	1	03/21/2022 10:26	188685
Magnesium	NELAP	0.050		3.21	mg/L	1	03/21/2022 10:26	188685
Potassium	NELAP	0.100		0.412	mg/L	1	03/21/2022 10:26	188685
Sodium	NELAP	0.050		49.3	mg/L	1	03/21/2022 10:26	188685
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		< 25.0	µg/L	5	03/21/2022 17:51	188685



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Q1 Groundwater
 Lab ID: 22030339-011
 Matrix: GROUNDWATER

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

Client Sample ID: G105

Collection Date: 03/14/2022 13:21

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		54.51	ft	1	03/14/2022 13:21	R308668
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.18		1	03/14/2022 13:21	R308668
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		2.3	NTU	1	03/14/2022 13:21	R308668
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		134	mV	1	03/14/2022 13:21	R308668
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		494	µS/cm	1	03/14/2022 13:21	R308668
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		16.7	°C	1	03/14/2022 13:21	R308668
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		7.59	mg/L	1	03/14/2022 13:21	R308668
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		110	mg/L	1	03/21/2022 18:09	R308526
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	03/21/2022 18:09	R308526
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	*	20		230	mg/L	1	03/21/2022 10:54	R308650
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		12	mg/L	1	03/18/2022 1:56	R308408
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.16	mg/L	1	03/22/2022 7:25	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		29	mg/L	1	03/18/2022 1:56	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		23.8	mg/L	1	03/21/2022 10:30	188685
Magnesium	NELAP	0.050		8.95	mg/L	1	03/21/2022 10:30	188685
Potassium	NELAP	0.100		0.318	mg/L	1	03/21/2022 10:30	188685
Sodium	NELAP	0.050		42.9	mg/L	1	03/21/2022 10:30	188685
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		< 25.0	µg/L	5	03/21/2022 17:57	188685



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Q1 Groundwater
 Lab ID: 22030339-012
 Matrix: GROUNDWATER

Work Order: 22030339
 Report Date: 29-Mar-22
 Client Sample ID: G105 Duplicate
 Collection Date: 03/14/2022 13:21

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		54.51	ft	1	03/14/2022 13:21	R308668
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.18		1	03/14/2022 13:21	R308668
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		2.3	NTU	1	03/14/2022 13:21	R308668
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		134	mV	1	03/14/2022 13:21	R308668
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		494	µS/cm	1	03/14/2022 13:21	R308668
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		16.7	°C	1	03/14/2022 13:21	R308668
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		7.59	mg/L	1	03/14/2022 13:21	R308668
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		111	mg/L	1	03/21/2022 18:09	R308526
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	03/21/2022 18:09	R308526
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	*	20		234	mg/L	1	03/21/2022 10:54	R308650
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		13	mg/L	1	03/18/2022 1:59	R308408
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.16	mg/L	1	03/22/2022 7:27	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		31	mg/L	1	03/18/2022 1:59	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		24.0	mg/L	1	03/21/2022 10:34	188685
Magnesium	NELAP	0.050		9.04	mg/L	1	03/21/2022 10:34	188685
Potassium	NELAP	0.100		0.325	mg/L	1	03/21/2022 10:34	188685
Sodium	NELAP	0.050		43.0	mg/L	1	03/21/2022 10:34	188685
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		< 25.0	µg/L	5	03/21/2022 18:04	188685



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Q1 Groundwater
 Lab ID: 22030339-013
 Matrix: GROUNDWATER

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

Client Sample ID: G107

Collection Date: 03/14/2022 14:04

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		50.65	ft	1	03/14/2022 14:04	R308668
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.42		1	03/14/2022 14:04	R308668
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		17	NTU	1	03/14/2022 14:04	R308668
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		116	mV	1	03/14/2022 14:04	R308668
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		1120	µS/cm	1	03/14/2022 14:04	R308668
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		16.8	°C	1	03/14/2022 14:04	R308668
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		4.69	mg/L	1	03/14/2022 14:04	R308668
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		224	mg/L	1	03/21/2022 18:09	R308526
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	03/21/2022 18:09	R308526
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	*	20		492	mg/L	1	03/21/2022 10:55	R308650
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		40	mg/L	1	03/18/2022 2:02	R308408
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.19	mg/L	1	03/22/2022 7:28	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	20		118	mg/L	5	03/18/2022 2:07	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		84.9	mg/L	1	03/21/2022 10:37	188685
Magnesium	NELAP	0.050		21.3	mg/L	1	03/21/2022 10:37	188685
Potassium	NELAP	0.100		2.73	mg/L	1	03/21/2022 10:37	188685
Sodium	NELAP	0.050		66.6	mg/L	1	03/21/2022 10:37	188685
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25	J	15	µg/L	5	03/21/2022 18:10	188685



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Q1 Groundwater
 Lab ID: 22030339-014
 Matrix: GROUNDWATER

Work Order: 22030339
 Report Date: 29-Mar-22
 Client Sample ID: G109
 Collection Date: 03/14/2022 14:29

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		49.56	ft	1	03/14/2022 14:29	R308668
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.55		1	03/14/2022 14:29	R308668
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		4.8	NTU	1	03/14/2022 14:29	R308668
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		120	mV	1	03/14/2022 14:29	R308668
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		501	µS/cm	1	03/14/2022 14:29	R308668
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		17.2	°C	1	03/14/2022 14:29	R308668
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		6.20	mg/L	1	03/14/2022 14:29	R308668
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO ₃)	NELAP	0		143	mg/L	1	03/21/2022 18:09	R308526
STANDARD METHODS 2320 B 1997, 2011								
Alkalinity, Carbonate (as CaCO ₃)	NELAP	0		0	mg/L	1	03/21/2022 18:09	R308526
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	*	20		258	mg/L	1	03/21/2022 10:55	R308650
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		30	mg/L	1	03/18/2022 2:10	R308408
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.22	mg/L	1	03/22/2022 7:30	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		10	mg/L	1	03/18/2022 2:10	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		26.8	mg/L	1	03/21/2022 10:41	188685
Magnesium	NELAP	0.050		7.91	mg/L	1	03/21/2022 10:41	188685
Potassium	NELAP	0.100		3.94	mg/L	1	03/21/2022 10:41	188685
Sodium	NELAP	0.050		54.4	mg/L	1	03/21/2022 10:41	188685
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25	J	12	µg/L	5	03/21/2022 18:16	188685



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Q1 Groundwater
 Lab ID: 22030339-015
 Matrix: GROUNDWATER

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

Client Sample ID: G111

Collection Date: 03/14/2022 14:56

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		47.31	ft	1	03/14/2022 14:56	R308668
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.49		1	03/14/2022 14:56	R308668
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		2.2	NTU	1	03/14/2022 14:56	R308668
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		98	mV	1	03/14/2022 14:56	R308668
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		507	µS/cm	1	03/14/2022 14:56	R308668
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		16.8	°C	1	03/14/2022 14:56	R308668
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		2.33	mg/L	1	03/14/2022 14:56	R308668
STANDARD METHODS 2320 B (TOTAL) 1997, 2011								
Alkalinity, Bicarbonate (as CaCO3)	NELAP	0		141	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	*	20		240	mg/L	1	03/21/2022 10:56	R308650
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		29	mg/L	1	03/18/2022 2:18	R308408
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.25	mg/L	1	03/22/2022 7:32	R308531
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		6	mg/L	1	03/18/2022 2:18	R308409
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		18.8	mg/L	1	03/21/2022 10:45	188685
Magnesium	NELAP	0.050		6.03	mg/L	1	03/21/2022 10:45	188685
Potassium	NELAP	0.100		1.72	mg/L	1	03/21/2022 10:45	188685
Sodium	NELAP	0.050		61.7	mg/L	1	03/21/2022 10:45	188685
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25	J	14	µg/L	5	03/21/2022 18:22	188685



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
Client Project: Joppa Q1 Groundwater
Lab ID: 22030339-020
Matrix: GROUNDWATER

Work Order: 22030339
Report Date: 29-Mar-22
Client Sample ID: SG02
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



Sample Summary

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030339

Client Project: Joppa Q1 Groundwater

Report Date: 29-Mar-22

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
22030339-008	Field Blank	Aqueous	3	03/15/2022 10:37
22030339-009	G101	Groundwater	3	03/14/2022 12:30
22030339-010	G102	Groundwater	3	03/14/2022 12:56
22030339-011	G105	Groundwater	3	03/14/2022 13:21
22030339-012	G105 Duplicate	Groundwater	3	03/14/2022 13:21
22030339-013	G107	Groundwater	3	03/14/2022 14:04
22030339-014	G109	Groundwater	3	03/14/2022 14:29
22030339-015	G111	Groundwater	3	03/14/2022 14:56
22030339-020	SG02	Groundwater	1	03/14/2022 12:00



Dates Report

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030339

Client Project: Joppa Q1 Groundwater

Report Date: 29-Mar-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
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
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
22030339-009A	G101	03/14/2022 12:30	03/16/2022 12:45		
	Field Elevation Measurements				03/14/2022 12:30
	Standard Method 4500-H B 2001 Field				03/14/2022 12:30
	Standard Methods 2130 B Field				03/14/2022 12:30
	Standard Methods 18th Ed. 2580 B Field				03/14/2022 12:30
	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				03/14/2022 12:30
	Standard Methods 2540 C (Total) 1997, 2011				03/21/2022 10:53
	Standard Methods 2550 B Field				03/14/2022 12:30
	Standard Methods 4500-O G Field				03/14/2022 12:30
	SW-846 9214 (Total)				03/22/2022 7:21
22030339-009B	G101	03/14/2022 12:30	03/16/2022 12:45		
	SW-846 9036 (Total)				03/18/2022 1:22
	SW-846 9251 (Total)				03/18/2022 1:22
22030339-009C	G101	03/14/2022 12:30	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 7:47	03/21/2022 10:22
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 7:47	03/21/2022 17:45
22030339-010A	G102	03/14/2022 12:56	03/16/2022 12:45		
	Field Elevation Measurements				03/14/2022 12:56
	Standard Method 4500-H B 2001 Field				03/14/2022 12:56
	Standard Methods 2130 B Field				03/14/2022 12:56
	Standard Methods 18th Ed. 2580 B Field				03/14/2022 12:56
	Standard Methods 2320 B (Total) 1997, 2011				03/21/2022 18:09



Dates Report

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030339

Client Project: Joppa Q1 Groundwater

Report Date: 29-Mar-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
	Standard Methods 2320 B 1997, 2011				03/21/2022 18:09
	Standard Methods 2510 B Field				03/14/2022 12:56
	Standard Methods 2540 C (Total) 1997, 2011				03/21/2022 10:53
	Standard Methods 2550 B Field				03/14/2022 12:56
	Standard Methods 4500-O G Field				03/14/2022 12:56
	SW-846 9214 (Total)				03/22/2022 7:23
22030339-010B	G102	03/14/2022 12:56	03/16/2022 12:45		
	SW-846 9036 (Total)				03/21/2022 14:31
	SW-846 9251 (Total)				03/18/2022 1:30
22030339-010C	G102	03/14/2022 12:56	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 7:47	03/21/2022 10:26
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 7:47	03/21/2022 17:51
22030339-011A	G105	03/14/2022 13:21	03/16/2022 12:45		
	Field Elevation Measurements				03/14/2022 13:21
	Standard Method 4500-H B 2001 Field				03/14/2022 13:21
	Standard Methods 2130 B Field				03/14/2022 13:21
	Standard Methods 18th Ed. 2580 B Field				03/14/2022 13:21
	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				03/14/2022 13:21
	Standard Methods 2540 C (Total) 1997, 2011				03/21/2022 10:54
	Standard Methods 2550 B Field				03/14/2022 13:21
	Standard Methods 4500-O G Field				03/14/2022 13:21
	SW-846 9214 (Total)				03/22/2022 7:25
22030339-011B	G105	03/14/2022 13:21	03/16/2022 12:45		
	SW-846 9036 (Total)				03/18/2022 1:56
	SW-846 9251 (Total)				03/18/2022 1:56
22030339-011C	G105	03/14/2022 13:21	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 7:47	03/21/2022 10:30
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 7:47	03/21/2022 17:57
22030339-012A	G105 Duplicate	03/14/2022 13:21	03/16/2022 12:45		
	Field Elevation Measurements				03/14/2022 13:21
	Standard Method 4500-H B 2001 Field				03/14/2022 13:21
	Standard Methods 2130 B Field				03/14/2022 13:21
	Standard Methods 18th Ed. 2580 B Field				03/14/2022 13:21
	Standard Methods 2320 B (Total) 1997, 2011				03/21/2022 18:09
	Standard Methods 2320 B 1997, 2011				03/21/2022 18:09



Dates Report

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030339

Client Project: Joppa Q1 Groundwater

Report Date: 29-Mar-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
	Test Name				
	Standard Methods 2510 B Field				03/14/2022 13:21
	Standard Methods 2540 C (Total) 1997, 2011				03/21/2022 10:54
	Standard Methods 2550 B Field				03/14/2022 13:21
	Standard Methods 4500-O G Field				03/14/2022 13:21
	SW-846 9214 (Total)				03/22/2022 7:27
22030339-012B	G105 Duplicate	03/14/2022 13:21	03/16/2022 12:45		
	SW-846 9036 (Total)				03/18/2022 1:59
	SW-846 9251 (Total)				03/18/2022 1:59
22030339-012C	G105 Duplicate	03/14/2022 13:21	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 7:47	03/21/2022 10:34
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 7:47	03/21/2022 18:04
22030339-013A	G107	03/14/2022 14:04	03/16/2022 12:45		
	Field Elevation Measurements				03/14/2022 14:04
	Standard Method 4500-H B 2001 Field				03/14/2022 14:04
	Standard Methods 2130 B Field				03/14/2022 14:04
	Standard Methods 18th Ed. 2580 B Field				03/14/2022 14:04
	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				03/14/2022 14:04
	Standard Methods 2540 C (Total) 1997, 2011				03/21/2022 10:55
	Standard Methods 2550 B Field				03/14/2022 14:04
	Standard Methods 4500-O G Field				03/14/2022 14:04
	SW-846 9214 (Total)				03/22/2022 7:28
22030339-013B	G107	03/14/2022 14:04	03/16/2022 12:45		
	SW-846 9036 (Total)				03/18/2022 2:02
	SW-846 9251 (Total)				03/18/2022 2:07
22030339-013C	G107	03/14/2022 14:04	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 7:47	03/21/2022 10:37
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 7:47	03/21/2022 18:10
22030339-014A	G109	03/14/2022 14:29	03/16/2022 12:45		
	Field Elevation Measurements				03/14/2022 14:29
	Standard Method 4500-H B 2001 Field				03/14/2022 14:29
	Standard Methods 2130 B Field				03/14/2022 14:29
	Standard Methods 18th Ed. 2580 B Field				03/14/2022 14:29
	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				03/14/2022 14:29



Dates Report

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22030339

Client Project: Joppa Q1 Groundwater

Report Date: 29-Mar-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
	Standard Methods 2540 C (Total) 1997, 2011				03/21/2022 10:55
	Standard Methods 2550 B Field				03/14/2022 14:29
	Standard Methods 4500-O G Field				03/14/2022 14:29
	SW-846 9214 (Total)				03/22/2022 7:30
22030339-014B	G109	03/14/2022 14:29	03/16/2022 12:45		
	SW-846 9036 (Total)				03/18/2022 2:10
	SW-846 9251 (Total)				03/18/2022 2:10
22030339-014C	G109	03/14/2022 14:29	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 7:47	03/21/2022 10:41
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 7:47	03/21/2022 18:16
22030339-015A	G111	03/14/2022 14:56	03/16/2022 12:45		
	Field Elevation Measurements				03/14/2022 14:56
	Standard Method 4500-H B 2001 Field				03/14/2022 14:56
	Standard Methods 2130 B Field				03/14/2022 14:56
	Standard Methods 18th Ed. 2580 B Field				03/14/2022 14:56
	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				03/14/2022 14:56
	Standard Methods 2540 C (Total) 1997, 2011				03/21/2022 10:56
	Standard Methods 2550 B Field				03/14/2022 14:56
	Standard Methods 4500-O G Field				03/14/2022 14:56
	SW-846 9214 (Total)				03/22/2022 7:32
22030339-015B	G111	03/14/2022 14:56	03/16/2022 12:45		
	SW-846 9036 (Total)				03/18/2022 2:18
	SW-846 9251 (Total)				03/18/2022 2:18
22030339-015C	G111	03/14/2022 14:56	03/16/2022 12:45		
	SW-846 3005A, 6010B, Metals by ICP (Total)			03/17/2022 7:47	03/21/2022 10:45
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			03/17/2022 7:47	03/21/2022 18:22
22030339-020A	SG02	03/14/2022 12:00	03/16/2022 12:45		
	Field Elevation Measurements				03/14/2022 12:00



Quality Control Results

<http://www.teklabinc.com/>

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							Date Analyzed
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 $\mu\text{S/cm}$							Date Analyzed
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							Date Analyzed
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							Date Analyzed
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		Date Analyzed
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		Date Analyzed
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



Quality Control Results

<http://www.teklabinc.com/>

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

SampID: 22030339-006ADUP

RPD Limit: 5

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: ICB/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



Quality Control Results

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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						
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						
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



Quality Control Results

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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							
SampID: 22030339-008AMSD											
										RPD Limit: 15	
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							
SampID: 22030339-016AMSD											
										RPD Limit: 15	
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	



Quality Control Results

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Client: Ramboll

Work Order: 22030339

Client Project: Joppa Q1 Groundwater

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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



Quality Control Results

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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



Quality Control Results

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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



Quality Control Results

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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



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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							Date Analyzed
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	Date Analyzed
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		



Quality Control Results

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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



Quality Control Results

<http://www.teklabinc.com/>

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



Quality Control Results

<http://www.teklabinc.com/>

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

Extra pages included

- | | | | | |
|---|---|---|--------------------------------------|----------------------------------|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> | Temp °C 2.2 |
| Type of thermal preservation? | None <input type="checkbox"/> | Ice <input checked="" type="checkbox"/> | Blue Ice <input type="checkbox"/> | Dry Ice <input type="checkbox"/> |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Reported field parameters measured: | Field <input checked="" type="checkbox"/> | Lab <input type="checkbox"/> | NA <input type="checkbox"/> | |
| Container/Temp Blank temperature in compliance? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |

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 <input type="checkbox"/> | No <input type="checkbox"/> | No VOA vials <input checked="" type="checkbox"/> |
| Water - TOX containers have zero headspace? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | No TOX containers <input checked="" type="checkbox"/> |
| Water - pH acceptable upon receipt? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | NA <input type="checkbox"/> |
| NPDES/CWA TCN interferences checked/treated in the field? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |

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: <u>Ramboll / Vistra</u> Address: <u>234 W. Florida St.</u> City/State/Zip: <u>Milwaukee, WI 53204</u> Contact: <u>Eric Bauer</u> Phone: <u>(414) 837-3607</u>	Samples on: <input checked="" type="checkbox"/> ICE <input type="checkbox"/> BLUE ICE <input type="checkbox"/> NO ICE <u>2.2°C</u> LTG# <u>3</u> Preserved in: <input type="checkbox"/> LAB <input checked="" type="checkbox"/> FIELD FOR LAB USE ONLY LAB NOTES: <u>PAV 7800L, PAV 3/16/22</u>
--	--

Email: <u>eric.bauer@ramboll.com</u> Fax: _____ Are these samples known to be involved in litigation? If yes, a surcharge will apply: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Are these samples known to be hazardous? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Are there any required reporting limits to be met on the requested analysis? If yes, please provide limits in the comment section: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Client Comments: Field = pH, DO, ORP, Conductivity, Temp., Turbidity, DTW Metals reported as "total." 2 program reports will be generated
--	--

PROJECT NAME/NUMBER <u>Joppa Q1 Groundwater</u>	SAMPLE COLLECTOR'S NAME <u>J. RILEY A. BRIDGES</u>	# and Type of Containers	INDICATE ANALYSIS REQUESTED
--	---	--------------------------	-----------------------------

RESULTS REQUESTED <input checked="" type="checkbox"/> Standard <input type="checkbox"/> 1-2 Day (100% Surcharge) <input type="checkbox"/> Other <input type="checkbox"/> 3 Day (50% Surcharge)	BILLING INSTRUCTIONS	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 Ti
--	----------------------	---

Lab Use Only	Sample ID	Date/Time Sampled	Matrix	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 Ti		
	<u>22030339-001 G01D</u>	<u>03/14/22 1552</u>	<u>Groundwater</u>	<u>2</u>	<u>1</u>								<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	
	<u>002 G02D</u>	<u>03/14/22 1623</u>	<u>Groundwater</u>	<u>2</u>	<u>1</u>								<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	
	<u>003 G51D</u>	<u>03/15/22 0953</u>	<u>Groundwater</u>	<u>2</u>	<u>1</u>								<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	
	<u>004 G52D</u>	<u>03/15/22 1037</u>	<u>Groundwater</u>	<u>2</u>	<u>1</u>								<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	
	<u>005 G52D Duplicate</u>	<u>03/15/22 1037</u>	<u>Groundwater</u>	<u>2</u>	<u>1</u>								<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	
	<u>006 G53D</u>	<u>03/15/22 1320</u>	<u>Groundwater</u>	<u>2</u>	<u>1</u>								<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	
	<u>007 G54D</u>	<u>03/15/22 1251</u>	<u>Groundwater</u>	<u>2</u>	<u>1</u>								<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	
	<u>008 Field Blank</u>	<u>03/15/22 1037</u>	<u>Aqueous</u>	<u>2</u>	<u>1</u>								<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	
	<u>009 G101</u>	<u>03/14/22 1230</u>	<u>Groundwater</u>	<u>2</u>	<u>1</u>								<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	
	<u>010 G102</u>	<u>03/14/22 1256</u>	<u>Groundwater</u>	<u>2</u>	<u>1</u>								<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	
	<u>011 G105</u>	<u>03/14/22 1321</u>	<u>Groundwater</u>	<u>2</u>	<u>1</u>								<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	<u>✓</u>	

Relinquished By	Date/Time	Received By	Date/Time
<u>[Signature]</u>	<u>3-16-22 1245</u>	<u>Mary Kemp</u>	<u>3/16/22 1245</u>

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: <u>Ramboll / Vistra</u> Address: <u>234 W. Florida St.</u> City/State/Zip: <u>Milwaukee, WI 53204</u> Contact: <u>Eric Bauer</u> Phone: <u>(414) 837-3607</u> Email: <u>eric.bauer@ramboll.com</u> Fax: _____				Samples on: <input type="checkbox"/> ICE <input type="checkbox"/> BLUE ICE <input type="checkbox"/> NO ICE _____ °C LTG# _____ Preserved in: <input type="checkbox"/> LAB <input type="checkbox"/> FIELD <u>FOR LAB USE ONLY</u> LAB NOTES: _____								
Are these samples known to be involved in litigation? If yes, a surcharge will apply: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Are these samples known to be hazardous? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Are there any required reporting limits to be met on the requested analysis?. If yes, please provide limits in the comment section: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				Client Comments: Field = pH, DO, ORP, Conductivity, Temp., Turbidity, DTW Metals reported as "total." 2 program reports will be generated								
PROJECT NAME/NUMBER <u>Joppa Q1 Groundwater</u>		SAMPLE COLLECTOR'S NAME _____		# and Type of Containers		INDICATE ANALYSIS REQUESTED						
RESULTS REQUESTED <input checked="" type="checkbox"/> Standard <input type="checkbox"/> 1-2 Day (100% Surcharge) <input type="checkbox"/> Other _____ <input type="checkbox"/> 3 Day (50% Surcharge)		BILLING INSTRUCTIONS _____		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 Ti DTW, only						
Lab Use Only	Sample ID	Date/Time Sampled	Matrix									
<u>22030339-012</u>	<u>G105 Duplicate</u>	<u>03/11/22 1321</u>	Groundwater	2	1							
<u>013</u>	<u>G107</u>	<u>03/14/22 1401</u>	Groundwater	2	1							
<u>014</u>	<u>G109</u>	<u>03/14/22 1429</u>	Groundwater	2	1							
<u>015</u>	<u>G111</u>	<u>03/14/22 1456</u>	Groundwater	2	1							
<u>016</u>	<u>XPW01</u>	<u>03/15/22 0840</u>	Groundwater	2	1							
<u>017</u>	<u>XPW02</u>	<u>03/15/22 0918</u>	Groundwater	2	1							
<u>018</u>	<u>XPW03</u>	<u>03/15/22 0814</u>	Groundwater	2	1							
<u>019</u>	<u>XSG01</u>	<u>03/14/22 1641</u>	Groundwater	0								
<u>020</u>	<u>SG02</u>	<u>16</u>	Groundwater	0								
Relinquished By 			Date/Time <u>3-16-22 1245</u>	Received By <u>Mary Kemp</u>			Date/Time <u>3/16/22 1245</u>					

*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

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

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22090653

Client Project: Joppa Q3 Groundwater

Report Date: 04-Nov-22

This reporting package includes the following:

Cover Letter	1
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Definitions	3
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Accreditations	6
Laboratory Results	7
Sample Summary	16
Dates Report	17
Quality Control Results	21
Receiving Check List	27
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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
- C - RL shown is a Client Requested Quantitation Limit
- H - Holding times exceeded
- J - Analyte detected below quantitation limits
- ND - Not Detected at the Reporting Limit
- S - Spike Recovery outside recovery limits
- X - Value exceeds Maximum Contaminant Level
- B - Analyte detected in associated Method Blank
- E - Value above quantitation range
- I - Associated internal standard was outside method criteria
- M - Manual Integration used to determine area response
- R - RPD outside accepted recovery limits
- T - TIC(Tentatively identified compound)

Client: Ramboll
Client Project: Joppa Q3 Groundwater

Work Order: 22090653
Report Date: 04-Nov-22

Cooler Receipt Temp: 5.0 °C

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

JOP-22Q3-JOP-257-402 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

Collinsville Air

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

Springfield

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

Chicago

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

Kansas City

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



Accreditations

<http://www.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



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Q3 Groundwater
 Lab ID: 22090653-003
 Matrix: GROUNDWATER

Work Order: 22090653
 Report Date: 04-Nov-22

Client Sample ID: G101

Collection Date: 09/20/2022 14:22

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		46.56	ft	1	09/20/2022 14:22	R319136
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.58		1	09/20/2022 14:22	R319136
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		< 1.0	NTU	1	09/20/2022 14:22	R319136
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		189	mV	1	09/20/2022 14:22	R319136
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		303	µS/cm	1	09/20/2022 14:22	R319136
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		18.1	°C	1	09/20/2022 14:22	R319136
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		5.54	mg/L	1	09/20/2022 14:22	R319136
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		206	mg/L	1	09/26/2022 10:49	R318645
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		38	mg/L	1	09/28/2022 13:44	R318683
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.27	mg/L	1	09/26/2022 9:36	R318565
SW-846 9251 (TOTAL)								
Chloride	NELAP	4	J	3	mg/L	1	09/28/2022 13:44	R318718
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		9.04	mg/L	1	09/22/2022 18:46	197876
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		< 25.0	µg/L	5	09/23/2022 20:05	197876



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Q3 Groundwater
 Lab ID: 22090653-004
 Matrix: GROUNDWATER

Work Order: 22090653
 Report Date: 04-Nov-22

Client Sample ID: G102

Collection Date: 09/20/2022 14:46

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		58.84	ft	1	09/20/2022 14:46	R319136
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.44		1	09/20/2022 14:46	R319136
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		1.2	NTU	1	09/20/2022 14:46	R319136
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		198	mV	1	09/20/2022 14:46	R319136
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		322	µS/cm	1	09/20/2022 14:46	R319136
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		19.9	°C	1	09/20/2022 14:46	R319136
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		7.24	mg/L	1	09/20/2022 14:46	R319136
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		224	mg/L	1	09/26/2022 10:50	R318645
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		41	mg/L	1	09/28/2022 13:52	R318683
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.20	mg/L	1	09/26/2022 9:37	R318565
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		5	mg/L	1	09/28/2022 13:52	R318718
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		8.46	mg/L	1	09/22/2022 19:12	197876
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		< 25.0	µg/L	5	09/23/2022 21:28	197876



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Q3 Groundwater
 Lab ID: 22090653-005
 Matrix: GROUNDWATER

Work Order: 22090653
 Report Date: 04-Nov-22

Client Sample ID: G105

Collection Date: 09/20/2022 15:13

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		56.70	ft	1	09/20/2022 15:13	R319136
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.14		1	09/20/2022 15:13	R319136
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		1.1	NTU	1	09/20/2022 15:13	R319136
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		212	mV	1	09/20/2022 15:13	R319136
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		388	µS/cm	1	09/20/2022 15:13	R319136
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		20.5	°C	1	09/20/2022 15:13	R319136
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		7.56	mg/L	1	09/20/2022 15:13	R319136
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		226	mg/L	1	09/26/2022 10:50	R318645
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		11	mg/L	1	09/28/2022 14:00	R318683
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.14	mg/L	1	09/26/2022 9:39	R318565
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		39	mg/L	1	09/28/2022 14:00	R318718
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		24.6	mg/L	1	09/22/2022 18:50	197876
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		< 25.0	µg/L	5	09/23/2022 20:12	197876



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Q3 Groundwater
 Lab ID: 22090653-006
 Matrix: GROUNDWATER

Work Order: 22090653
 Report Date: 04-Nov-22

Client Sample ID: G107

Collection Date: 09/20/2022 15:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		56.83	ft	1	09/20/2022 15:40	R319136
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.59		1	09/20/2022 15:40	R319136
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		7.3	NTU	1	09/20/2022 15:40	R319136
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		206	mV	1	09/20/2022 15:40	R319136
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		848	µS/cm	1	09/20/2022 15:40	R319136
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		20.6	°C	1	09/20/2022 15:40	R319136
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		3.22	mg/L	1	09/20/2022 15:40	R319136
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		504	mg/L	1	09/26/2022 10:50	R318645
SW-846 9036 (TOTAL)								
Sulfate	NELAP	20		49	mg/L	2	09/28/2022 14:29	R318683
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.17	mg/L	1	09/26/2022 9:42	R318565
SW-846 9251 (TOTAL)								
Chloride	NELAP	8		87	mg/L	2	09/28/2022 14:29	R318718
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		85.6	mg/L	1	09/22/2022 18:53	197876
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25	J	23	µg/L	5	09/23/2022 20:44	197876



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Q3 Groundwater
 Lab ID: 22090653-007
 Matrix: GROUNDWATER

Work Order: 22090653
 Report Date: 04-Nov-22
 Client Sample ID: G109
 Collection Date: 09/20/2022 16:03

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		53.79	ft	1	09/20/2022 16:03	R319136
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.49		1	09/20/2022 16:03	R319136
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		8.3	NTU	1	09/20/2022 16:03	R319136
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		204	mV	1	09/20/2022 16:03	R319136
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		283	µS/cm	1	09/20/2022 16:03	R319136
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		21.6	°C	1	09/20/2022 16:03	R319136
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		5.74	mg/L	1	09/20/2022 16:03	R319136
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		200	mg/L	1	09/26/2022 10:50	R318645
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		21	mg/L	1	09/28/2022 14:32	R318683
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.17	mg/L	1	09/26/2022 10:18	R318565
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		14	mg/L	1	09/28/2022 14:32	R318718
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		15.8	mg/L	1	09/22/2022 19:23	197876
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25	J	14	µg/L	5	09/23/2022 20:50	197876



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Q3 Groundwater
 Lab ID: 22090653-008
 Matrix: GROUNDWATER

Work Order: 22090653
 Report Date: 04-Nov-22

Client Sample ID: G111

Collection Date: 09/20/2022 16:24

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		51.50	ft	1	09/20/2022 16:24	R319136
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.53		1	09/20/2022 16:24	R319136
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		6.5	NTU	1	09/20/2022 16:24	R319136
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		206	mV	1	09/20/2022 16:24	R319136
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		334	µS/cm	1	09/20/2022 16:24	R319136
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		19.1	°C	1	09/20/2022 16:24	R319136
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		2.95	mg/L	1	09/20/2022 16:24	R319136
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		234	mg/L	1	09/26/2022 10:51	R318645
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		19	mg/L	1	09/28/2022 14:40	R318683
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.22	mg/L	1	09/26/2022 10:20	R318565
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		10	mg/L	1	09/28/2022 14:40	R318718
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		15.1	mg/L	1	09/22/2022 19:27	197876
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25	J	13	µg/L	5	09/23/2022 20:57	197876



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
Client Project: Joppa Q3 Groundwater
Lab ID: 22090653-013
Matrix: GROUNDWATER

Work Order: 22090653
Report Date: 04-Nov-22
Client Sample ID: SG02
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



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Q3 Groundwater
 Lab ID: 22090653-015
 Matrix: AQUEOUS

Work Order: 22090653
 Report Date: 04-Nov-22
 Client Sample ID: Field Blank
 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)								
Boron	NELAP	25.0		< 25.0	µg/L	5	09/23/2022 22:13	197876
<i>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.</i>								



Laboratory Results

<http://www.teklabinc.com/>

Client: Ramboll
 Client Project: Joppa Q3 Groundwater
 Lab ID: 22090653-017
 Matrix: GROUNDWATER

Work Order: 22090653
 Report Date: 04-Nov-22
 Client Sample ID: G105 Duplicate
 Collection Date: 09/20/2022 15:13

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
FIELD ELEVATION MEASUREMENTS								
Depth to water from measuring point	*	0		56.70	ft	1	09/20/2022 15:13	R319136
STANDARD METHOD 4500-H B 2001 FIELD								
pH	*	1.00		6.14		1	09/20/2022 15:13	R319136
STANDARD METHODS 2130 B FIELD								
Turbidity	*	1.0		1.1	NTU	1	09/20/2022 15:13	R319136
STANDARD METHODS 18TH ED. 2580 B FIELD								
Oxidation-Reduction Potential	*	-300		212	mV	1	09/20/2022 15:13	R319136
STANDARD METHODS 2510 B FIELD								
Spec. Conductance, Field	*	0		388	µS/cm	1	09/20/2022 15:13	R319136
STANDARD METHODS 2550 B FIELD								
Temperature	*	0		20.5	°C	1	09/20/2022 15:13	R319136
STANDARD METHODS 4500-O G FIELD								
Oxygen, Dissolved	*	0		7.56	mg/L	1	09/20/2022 15:13	R319136
STANDARD METHODS 2540 C (TOTAL) 1997, 2011								
Total Dissolved Solids	NELAP	20		238	mg/L	1	09/26/2022 11:03	R318645
SW-846 9036 (TOTAL)								
Sulfate	NELAP	10		12	mg/L	1	09/28/2022 16:16	R318683
SW-846 9214 (TOTAL)								
Fluoride	NELAP	0.10		0.15	mg/L	1	09/26/2022 10:47	R318565
SW-846 9251 (TOTAL)								
Chloride	NELAP	4		39	mg/L	1	09/28/2022 16:16	R318718
SW-846 3005A, 6010B, METALS BY ICP (TOTAL)								
Calcium	NELAP	0.100		23.7	mg/L	1	09/22/2022 20:08	197876
SW-846 3005A, 6020A, METALS BY ICPMS (TOTAL)								
Boron	NELAP	25.0		< 25.0	µg/L	5	09/23/2022 22:26	197876

CCV recovered outside the upper control limits for B. Sample results are below the reporting limit. Data is reportable per the TNI standard.



Sample Summary

<http://www.teklabinc.com/>

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
22090653-003	G101	Groundwater	2	09/20/2022 14:22
22090653-004	G102	Groundwater	2	09/20/2022 14:46
22090653-005	G105	Groundwater	2	09/20/2022 15:13
22090653-006	G107	Groundwater	2	09/20/2022 15:40
22090653-007	G109	Groundwater	2	09/20/2022 16:03
22090653-008	G111	Groundwater	2	09/20/2022 16:24
22090653-013	SG02	Groundwater	1	09/21/2022 12:15
22090653-015	Field Blank	Aqueous	2	09/21/2022 10:05
22090653-017	G105 Duplicate	Groundwater	2	09/20/2022 15:13



Dates Report

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22090653

Client Project: Joppa Q3 Groundwater

Report Date: 04-Nov-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
22090653-003A	G101	09/20/2022 14:22	09/21/2022 13:50		
	Field Elevation Measurements				09/20/2022 14:22
	Standard Method 4500-H B 2001 Field				09/20/2022 14:22
	Standard Methods 2130 B Field				09/20/2022 14:22
	Standard Methods 18th Ed. 2580 B Field				09/20/2022 14:22
	Standard Methods 2510 B Field				09/20/2022 14:22
	Standard Methods 2540 C (Total) 1997, 2011				09/26/2022 10:49
	Standard Methods 2550 B Field				09/20/2022 14:22
	Standard Methods 4500-O G Field				09/20/2022 14:22
	SW-846 9036 (Total)				09/28/2022 13:44
	SW-846 9214 (Total)				09/26/2022 9:36
	SW-846 9251 (Total)				09/28/2022 13:44
22090653-003B	G101	09/20/2022 14:22	09/21/2022 13:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/21/2022 15:50	09/22/2022 18:46
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/23/2022 20:05
22090653-004A	G102	09/20/2022 14:46	09/21/2022 13:50		
	Field Elevation Measurements				09/20/2022 14:46
	Standard Method 4500-H B 2001 Field				09/20/2022 14:46
	Standard Methods 2130 B Field				09/20/2022 14:46
	Standard Methods 18th Ed. 2580 B Field				09/20/2022 14:46
	Standard Methods 2510 B Field				09/20/2022 14:46
	Standard Methods 2540 C (Total) 1997, 2011				09/26/2022 10:50
	Standard Methods 2550 B Field				09/20/2022 14:46
	Standard Methods 4500-O G Field				09/20/2022 14:46
	SW-846 9036 (Total)				09/28/2022 13:52
	SW-846 9214 (Total)				09/26/2022 9:37
	SW-846 9251 (Total)				09/28/2022 13:52
22090653-004B	G102	09/20/2022 14:46	09/21/2022 13:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/21/2022 15:50	09/22/2022 19:12
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/23/2022 21:28
22090653-005A	G105	09/20/2022 15:13	09/21/2022 13:50		
	Field Elevation Measurements				09/20/2022 15:13
	Standard Method 4500-H B 2001 Field				09/20/2022 15:13
	Standard Methods 2130 B Field				09/20/2022 15:13
	Standard Methods 18th Ed. 2580 B Field				09/20/2022 15:13
	Standard Methods 2510 B Field				09/20/2022 15:13
	Standard Methods 2540 C (Total) 1997, 2011				09/26/2022 10:50



Dates Report

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22090653

Client Project: Joppa Q3 Groundwater

Report Date: 04-Nov-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
	Standard Methods 2550 B Field				09/20/2022 15:13
	Standard Methods 4500-O G Field				09/20/2022 15:13
	SW-846 9036 (Total)				09/28/2022 14:00
	SW-846 9214 (Total)				09/26/2022 9:39
	SW-846 9251 (Total)				09/28/2022 14:00
22090653-005B	G105	09/20/2022 15:13	09/21/2022 13:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/21/2022 15:50	09/22/2022 18:50
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/23/2022 20:12
22090653-006A	G107	09/20/2022 15:40	09/21/2022 13:50		
	Field Elevation Measurements				09/20/2022 15:40
	Standard Method 4500-H B 2001 Field				09/20/2022 15:40
	Standard Methods 2130 B Field				09/20/2022 15:40
	Standard Methods 18th Ed. 2580 B Field				09/20/2022 15:40
	Standard Methods 2510 B Field				09/20/2022 15:40
	Standard Methods 2540 C (Total) 1997, 2011				09/26/2022 10:50
	Standard Methods 2550 B Field				09/20/2022 15:40
	Standard Methods 4500-O G Field				09/20/2022 15:40
	SW-846 9036 (Total)				09/28/2022 14:29
	SW-846 9214 (Total)				09/26/2022 9:42
	SW-846 9251 (Total)				09/28/2022 14:29
22090653-006B	G107	09/20/2022 15:40	09/21/2022 13:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/21/2022 15:50	09/22/2022 18:53
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/23/2022 20:44
22090653-007A	G109	09/20/2022 16:03	09/21/2022 13:50		
	Field Elevation Measurements				09/20/2022 16:03
	Standard Method 4500-H B 2001 Field				09/20/2022 16:03
	Standard Methods 2130 B Field				09/20/2022 16:03
	Standard Methods 18th Ed. 2580 B Field				09/20/2022 16:03
	Standard Methods 2510 B Field				09/20/2022 16:03
	Standard Methods 2540 C (Total) 1997, 2011				09/26/2022 10:50
	Standard Methods 2550 B Field				09/20/2022 16:03
	Standard Methods 4500-O G Field				09/20/2022 16:03
	SW-846 9036 (Total)				09/28/2022 14:32
	SW-846 9214 (Total)				09/26/2022 10:18
	SW-846 9251 (Total)				09/28/2022 14:32
22090653-007B	G109	09/20/2022 16:03	09/21/2022 13:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/21/2022 15:50	09/22/2022 19:23



Dates Report

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22090653

Client Project: Joppa Q3 Groundwater

Report Date: 04-Nov-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/23/2022 20:50
22090653-008A	G111	09/20/2022 16:24	09/21/2022 13:50		
	Field Elevation Measurements				09/20/2022 16:24
	Standard Method 4500-H B 2001 Field				09/20/2022 16:24
	Standard Methods 2130 B Field				09/20/2022 16:24
	Standard Methods 18th Ed. 2580 B Field				09/20/2022 16:24
	Standard Methods 2510 B Field				09/20/2022 16:24
	Standard Methods 2540 C (Total) 1997, 2011				09/26/2022 10:51
	Standard Methods 2550 B Field				09/20/2022 16:24
	Standard Methods 4500-O G Field				09/20/2022 16:24
	SW-846 9036 (Total)				09/28/2022 14:40
	SW-846 9214 (Total)				09/26/2022 10:20
	SW-846 9251 (Total)				09/28/2022 14:40
22090653-008B	G111	09/20/2022 16:24	09/21/2022 13:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/21/2022 15:50	09/22/2022 19:27
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/23/2022 20:57
22090653-013A	SG02	09/21/2022 12:15	09/21/2022 13:50		
	Field Elevation Measurements				09/21/2022 12:15
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
22090653-017A	G105 Duplicate	09/20/2022 15:13	09/21/2022 13:50		
	Field Elevation Measurements				09/20/2022 15:13
	Standard Method 4500-H B 2001 Field				09/20/2022 15:13
	Standard Methods 2130 B Field				09/20/2022 15:13
	Standard Methods 18th Ed. 2580 B Field				09/20/2022 15:13
	Standard Methods 2510 B Field				09/20/2022 15:13
	Standard Methods 2540 C (Total) 1997, 2011				09/26/2022 11:03
	Standard Methods 2550 B Field				09/20/2022 15:13
	Standard Methods 4500-O G Field				09/20/2022 15:13
	SW-846 9036 (Total)				09/28/2022 16:16



Dates Report

<http://www.teklabinc.com/>

Client: Ramboll

Work Order: 22090653

Client Project: Joppa Q3 Groundwater

Report Date: 04-Nov-22

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
	SW-846 9214 (Total)				09/26/2022 10:47
	SW-846 9251 (Total)				09/28/2022 16:16
22090653-017B	G105 Duplicate	09/20/2022 15:13	09/21/2022 13:50		
	SW-846 3005A, 6010B, Metals by ICP (Total)			09/21/2022 15:50	09/22/2022 20:08
	SW-846 3005A, 6020A, Metals by ICPMS (Total)			09/21/2022 15:50	09/23/2022 22:26



Quality Control Results

<http://www.teklabinc.com/>

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							Date Analyzed
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 $\mu\text{S/cm}$							Date Analyzed
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							Date Analyzed
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							Date Analyzed
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		Date Analyzed
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		Date Analyzed
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



Quality Control Results

<http://www.teklabinc.com/>

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: ICB/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		Date Analyzed
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		Date Analyzed
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	



Quality Control Results

<http://www.teklabinc.com/>

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							
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							
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							
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	



Quality Control Results

<http://www.teklabinc.com/>

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: ICB/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							
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							
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	



Quality Control Results

<http://www.teklabinc.com/>

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
 SampID: 22090653-004BMSD

RPD Limit: **20**

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



Quality Control Results

<http://www.teklabinc.com/>

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
 SampID: 22090653-004BMSD

RPD Limit: 20

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:

Reviewed by:

On:

On:

21-Sep-22

21-Sep-22

Payton Yoch

Elizabeth A. Hurley

Pages to follow: Chain of custody

Extra pages included

- 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

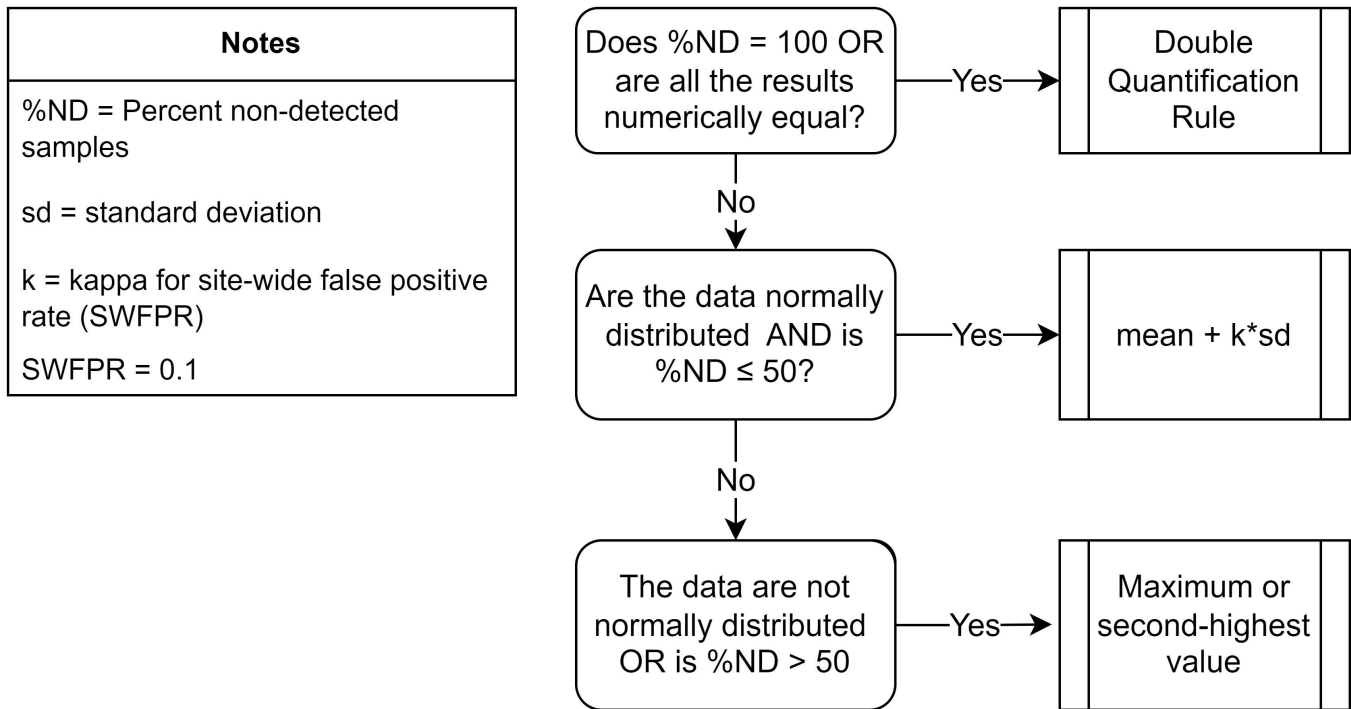
When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

- 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

**APPENDIX B
STATISTICAL METHODOLOGY FOR DETERMINATION OF
BACKGROUND VALUES**



When data are not normally distributed or %ND > 50, the maximum value is used if the background sample size is < 60. Where the background sample size is ≥ 60, the achievable per-constituent false positive rates for the maximum and second-highest background values will be compared, and the background value with the achievable per-constituent false positive rate that is closest to, but does not exceed, the target per-constituent false positive rate of 0.015% is used.