

APPENDIX D

Terry Creek Road – Private Water Supply Well Investigations

TERRY CREEK ROAD – PRIVATE WATER SUPPLY WELL INVESTIGATIONS

Brunswick, Georgia

January 2022

Introduction and Summary

Several residential properties are present southeast of an industrial facility located at 2801 Cook Street in Brunswick, Glynn County, Georgia (the “Brunswick facility”) outside of the service area for the public water supply system operated by the Brunswick – Glynn County Joint Water and Sewer Commission that serves the Brunswick facility and surrounding areas. These residential properties are located along Terry Creek Road approximately 3,500 feet southeast of source areas at the Brunswick facility. A total of five private water supply wells are present at these residential properties. As a precaution, Hercules LLC (“Hercules”) has been sampling these five private water supply wells on an annual basis since 2015 because information was not readily available regarding the source(s) of groundwater from which the wells withdraw water supplies. The sampling results demonstrate that the water supplies are unimpacted by the Brunswick facility.

In an effort to better assess the depths of the five private water supply wells and the aquifer(s) from which water supplies are obtained, a number of investigative activities were performed. First, inquiries were made to a prominent local water well driller, Woodrow Sapp Well Drilling, (“Woodrow Sapp”), to determine whether Woodrow Sapp might have well construction records for any of the five private water supply wells along Terry Creek Road. Woodrow Sapp located in its files a well construction record for the private water supply well that serves the Terry Creek Mobil Home Park (“TCMHP”), labeled as the TCMHP well as shown on **Figure 1**. This well construction record confirmed that the TCMHP well is 740 feet deep and screened in the Floridan aquifer.

Second, as discussed in more detail below, groundwater samples were collected from all five private water supply wells of interest, three monitoring wells screened in the upper surficial aquifer, one monitoring well screened in the lower surficial aquifer, and two water supply wells at the Brunswick facility which withdraw water from the Floridan aquifer. A surface water sample was also collected from Dupree Creek. All of the aqueous samples were analyzed for geochemical parameters in order to compare the geochemical makeup of these samples and to evaluate whether the geochemical “fingerprint” of samples from the private water supply wells are more consistent with the geochemistry of the surficial aquifer or the deeper Brunswick and Floridan aquifers. In addition, geochemical data were obtained for a groundwater sample collected from the location of a City of Brunswick well (Well J-52) at a depth interval consistent with the Brunswick aquifer depth. The analysis indicated that the geochemical signature of three of the five private water supply wells (including the TCMHP well) were identical to each other and to the geochemical signature of a water supply well at the Brunswick facility completed in the Floridan aquifer. Given

that both the water supply well at the Brunswick facility and the TCMHP well are known to withdraw water from the Floridan aquifer, the fact that the geochemical signatures from those wells are identical to the geochemical signatures of two of the other private water supply wells is compelling evidence that those two private water supply wells also withdraw water from the Floridan aquifer. By contrast, the geochemical signatures of the remaining two private water supply wells (referred to as the Blount 10 well and Spell 5 well) were similar to one another but were distinctly different from the geochemical signatures of the water samples obtained from the Floridan aquifer and the surficial aquifer. Instead, the geochemical signatures of these two private water supply wells more closely match the geochemical signature of the sample collected at the location of the City of Brunswick Well J-52 from a depth consistent with the Brunswick aquifer.

Finally, out of an abundance of caution, the downhole plumbing equipment was removed from the Spell 5 well and the depth of this private water supply was measured. The Spell 5 well is 284 feet deep. Based on this well depth measurement and the similarities in the geochemical signatures among the Blount 10 well, the Spell 5 well and the City of Brunswick Well J-52 samples, the two private water supply wells appear to be drawing water from the Brunswick aquifer system and not from the surficial aquifer.

Sampling and Geochemical Evaluation Approach

On December 19, 2021, groundwater samples were collected from the deep zone of the upper surficial aquifer (i.e., from monitoring wells MW-50D, MW-51D, and MW-61D) and from the lower surficial aquifer (i.e., from monitoring well MW-13). On December 20, 2021, groundwater samples were collected from two water supply wells located at the Brunswick facility (i.e., the V Well and L Well) and the five private water wells located along Terry Creek Road (i.e., the TCMHP well, the Spell 5 well, the Blount 10 well and two other wells designated as the Blount 8 well and the Roberts 22 well). In addition, a surface water sample was collected from Dupree Creek. Locations of the sampled wells and the surface water sampling point are shown on **Figure 1**.

The water supply wells at the Brunswick facility are completed in the Upper Floridan aquifer. The V Well is completed to a total depth of approximately 750 feet below ground surface (“feet bgs”) and the L Well is completed to a depth of approximately 895 feet bgs. Woodrow Sapp located in its files a well construction record for the TCMHP well from 1963 confirming that the TCMHP well was installed in the Upper Floridan aquifer with the casing extending to 518 feet bgs and the open borehole further extending to a depth of 740 feet bgs.

The groundwater samples described above were collected in general accordance with standard operating procedures (“SOPs”) issued by Region 4 of the United States Environmental Protection Agency (“USEPA”) entitled *Groundwater Sampling* (SESDPROC-301-R4; USEPA, 2017), *Potable Water Supply Sampling* (ASBPROC-305-R4; USEPA, 2019), and *Surface Water*

Sampling (SESDPROC-201-R4; USEPA, 2016).¹ The samples were shipped under chain-of-custody protocol to Eurofins TestAmerica Laboratories (“Eurofins”) located in Savannah, Georgia, for the analysis of major cations (i.e., calcium [Ca], magnesium [Mg], sodium [Na] and potassium [K]), anions (i.e., chloride [Cl], sulfate [SO₄] and bicarbonate alkalinity [HCO₃]), as well as total dissolved solids (TDS) and iron (Fe). The analytical results are summarized in **Table 1**. Laboratory analytical reports and data validation reports are provided in **Attachment A**.

A desktop review of publicly available information was conducted to identify available major cation and anion data for wells completed in the Brunswick aquifer in the vicinity of the Brunswick facility. Data collected in 1959 from a City of Brunswick well (i.e., Well J-52) representing groundwater from a depth interval of 310 feet bgs to 420 feet bgs were located during the desktop review. These data were collected as part of an investigation to evaluate increasing levels of chloride in water supply wells in the Brunswick area (Geological Survey, IC-23, 1962)². Well J-52 is reported to have been located at the northeast corner of Norwich and F Streets, approximately 1.3 miles southwest of the Brunswick facility. A boring log for this well was not provided in the report; however, the sample collection interval indicates that the data were obtained from within the Brunswick aquifer system (likely from an interval spanning both the Upper and Lower Brunswick aquifers). The analytical data from Well J-52 are included in **Table 1** to evaluate the geochemistry of the Brunswick aquifer.

Prior to conducting the geochemical evaluation of the water samples, a charge balance of the major ions was conducted for each sample. Generally, a charge balance is the first step in a geochemical evaluation and is mathematically expressed as the percent difference between cation and anion concentrations, expressed as milliequivalents per liter (“meq/L”) according to the following equation:

$$\%Difference = \frac{\sum cations - \sum anions}{\sum (cations + anions)} \times 100$$

The charge balance, which gives an indication of the analytical data quality, should be within ±10%. All data from the water samples discussed herein were within this data quality criterion, including the data from City of Brunswick Well J-52 collected in 1959.

¹ USEPA Region 4 SOPs and guidance documents that are referenced are available at <https://www.epa.gov/quality/quality-system-and-technical-procedures-lsasd-field-branches>

² Georgia State Division of Conservation, Geological Survey, Information Circular 23 (1962). *Interim Report on Test Drilling and Water Sampling in the Brunswick Area, Glynn County, Georgia*.

Piper and Stiff Diagrams

Piper and Stiff diagrams are among the most common tools for assessing geochemical similarities and differences between aqueous samples. Laboratory data, which are reported in milligrams per liter (“mg/L”), are converted to meq/L when plotted on a Piper or Stiff diagram.

Piper diagrams are trilinear diagrams that plot the relative contributions of major ions to the overall geochemical makeup of a liquid sample. The diagram has three components. The large diamond-shaped component displays the combined cation and anion composition of major solutes. The two smaller triangular components display the cation components and the anion components, separately and in greater detail. The sample data are plotted as a percentage of the total milliequivalents on the diagram with each component reaching 100 percent at its respective corner of the diagram. If the results from discrete samples plot relatively close to each other, their respective chemical compositions are similar, and they might have a similar (or the same) source of solutes. Piper diagrams can also indicate mixing of different waters if the samples fall along straight lines between various water types (e.g., mixing of sodium chloride water with calcium bicarbonate water).

Stiff diagrams plot the chemical composition of each sample as a polygon. Similar-shaped polygons for different samples indicate similar geochemical compositions, and in turn indicate that the samples might have a similar (or the same) source of solutes. The relative size of each polygon is an indication of the ionic strength (or “concentration”) of the respective sample.

The resulting Piper diagram for the water samples that were evaluated is presented as **Figure 2**, and the Stiff diagrams are presented as **Figures 3A** through **3E**.

As can be seen on **Figure 2**, the analysis of the water samples from the V Well and the Blount 8, Roberts 22, and TCMHP wells plot on top of each other in the Piper diagram. The water samples from these four wells can be considered geochemically identical. Based on this line of evidence, the water source for the Blount 8 and Roberts 22 wells is the Floridan aquifer because the geochemical signatures of the water samples from these two wells matches the geochemical signatures of the water samples from the V Well and the TCMHP Well, which are both completed in the Floridan aquifer. The L Well, completed in the Floridan aquifer approximately 150 feet deeper than the V well, plots in a different location and exhibits a geochemical signature reflecting elevated levels of sodium, chloride and TDS, which is likely due to salt-water intrusion in the open borehole interval at this location. This conclusion is supported by the fact that the L Well plots along a mixing line between the other Floridan aquifer wells described above and the highly saline surface water sample from Dupree Creek.

The water samples from groundwater monitoring wells MW-13, MW-50D, and MW-51D are calcium bicarbonate dominated and plot relatively close to each other on the Piper diagram, but

further away on the Piper diagram than the water samples from the water supply wells completed in the Floridan aquifer, mostly due to lower concentrations of magnesium and sulfate. Monitoring well MW-61D has a different geochemical signature than the other wells and is highly saline with a TDS concentration of 1,600 mg/L and concentrations of sodium and chloride that are about an order of magnitude higher than the other monitoring wells sampled for this evaluation. Monitoring well MW-61D is located closer to Dupree Creek than the other monitoring wells that were sampled.

The geochemical signatures of water samples collected from private water supply wells Blount 10 and Spell 5 are different from the geochemical signatures of groundwater samples collected from the monitoring wells installed in the deep zone of the upper surficial aquifer, the monitoring well installed in the lower surficial aquifer, the water supply wells at the Brunswick facility that are completed in the Floridan aquifer, and the other three private water supply wells completed in the Floridan aquifer. However, their geochemical signatures match reasonably well with the geochemical signature of the historical sample from City of Brunswick Well J-52, collected from an interval spanning the Upper and Lower Brunswick aquifers.

Figure 3A depicts the Stiff diagrams for water samples collected from water supply wells completed in the Floridan aquifer. Consistent with the Piper diagram discussed above, it is evident from these diagrams that these wells can be considered geochemically identical. **Figure 3B** represents the Stiff diagrams for the water samples from the Blount 10 and Spell 5 private water supply wells, City of Brunswick Well J-52, and the L Well. The L Well exhibits the previously discussed sodium and chloride “spikes” that indicate a likely salt-water influence. The water samples from the other three wells show strong geochemical similarities with each other, but do not completely match. **Figure 3C** depicts the Stiff diagrams for the water samples from monitoring wells MW-13, MW-50D and MW-51D. Geochemical similarities among the three monitoring wells are apparent as calcium bicarbonate-dominated waters are present at these wells. However, the water samples from these three monitoring wells exhibit differing concentrations of magnesium and sulfate, especially the water sample from monitoring well MW-13, which has lower concentrations of magnesium but higher concentrations of sulfate compared to the other two monitoring wells. For completeness purposes, **Figures 3D** and **3E** were created to depict the geochemical signatures of the water samples from monitoring well MW-61D and Dupree Creek, respectively. There is a significant difference in the scales for the figures; the “ionic strength” of the water sample from monitoring well MW-61D is almost an order of magnitude higher than the ionic strength of the water samples from other monitoring wells and/or water supply wells, while the ionic strength of the water sample from Dupree Creek is more than an order of magnitude higher compared to the groundwater sample from monitoring well MW-61D, consistent with its seawater origin.

Schoeller Diagram

To further demonstrate that the water samples from the Blount 10 and Spell 5 wells are distinctly different from water samples from the surficial aquifer and more consistent with the geochemical signature of the Brunswick aquifer, a Schoeller diagram was created and is depicted on **Figure 4**.

Schoeller diagrams are another graphical approach to show relative concentrations of anions and cations and therefore, geochemical similarities and dissimilarities. Note that **Figure 4** only focuses on three groundwater monitoring wells (monitoring wells MW-13, MW-50D and MW-51D), private water supply wells Blount 10 and Spell 5, and City of Brunswick Well J-52 to allow a better differentiation of the geochemistries of these wells. The water samples from the other wells have either already been demonstrated to be geochemically identical (i.e., the Blount 8 well, the Roberts 22 well, the TCMHP well and the V Well), or are salt-water influenced and therefore dissimilar from the other samples (i.e., the samples from monitoring well MW-61D, the L Well, and Dupree Creek).

As can be seen on **Figure 4**, the water samples from monitoring wells MW-13, MW-50D and MW-51D are relatively similar to each other and distinctly different from the water samples from the private water supply wells. This is especially pronounced for calcium and bicarbonate constituents, which are at lower concentrations in the private water supply wells, and sulfate, which is at higher concentrations in the water supply wells compared to the groundwater monitoring wells. The geochemical analysis, standing alone, indicates that the water source for of the Blount 10 well and the Spell 5 well is not the surficial or Floridan aquifers but the Brunswick aquifer given the similarities of the water samples from those two wells to the water sample from City of Brunswick Well J-52, which was collected from the Brunswick aquifer.

Spell 5 Well Depth Measurements

While the geochemical signatures indicate that neither the Blount 10 well nor the Spell 5 well are drawing water from the surficial aquifer, out of an abundance of caution, the total depth of the Spell 5 well was measured on January 25, 2022. The Spell 5 well was selected because it is constructed with a polyvinyl chloride (“PVC”) casing and the well driller (Woodrow Sapp) felt more comfortable removing the plumbing from this well without damaging it than the Blount 10 well which is steel-cased and more susceptible to encrustation. Because the geochemical signature of the Spell 5 well and Blount 10 well are similar, the depth of the Spell 5 well also provides a strong indicator of the depth of the Blount 10 well. Multiple techniques were used to measure the depth of the Spell 5 well including using a weighted tape and using 20-foot long segments of one-inch diameter PVC pipe connected together. Based on the measurements that were obtained, the confirmed depth of the Spell 5 well is 284 feet bgs. Given this well depth information and the similarities of the well geochemistry between the Spell 5 well and the Blount 10 well, as well as with the geochemistry of the water sample collected from City of Brunswick Well J-52 from the

Brunswick aquifer, the Spell 5 well and the Blount 10 well are not completed in the surficial aquifer and are instead installed within the Brunswick aquifer.

Conclusions and Recommendations

In conclusion, three private supply wells - the Blount 8 well, the Roberts 22 well, and the TCMHP well – are geochemically identical to each other and to the V Well at the Brunswick facility. Given that the V Well and the TCMHP well are known to be completed within the Upper Floridan aquifer, this information indicates that the Blount 8 well and the Roberts 22 well are also completed within the Upper Floridan aquifer. Groundwater geochemical signatures for water samples collected from the two remaining private supply wells - the Blount 10 well and the Spell 5 well - are different than the geochemical signatures of the water samples from the Upper Floridan aquifer but are also distinctly different than the geochemical signatures of the groundwater samples from monitoring wells screened within the surficial aquifer. These two private supply wells are instead more geochemically consistent with the Brunswick aquifer, which is represented by a historical water sample collected from City of Brunswick Well J-52. Further, based on actual measurement of the depth of the Spell 5 well, that well is 284 feet deep, a depth that is significantly below the bottom of the surficial aquifer. Given the geochemical similarities between the Blount 10 well and the Spell 5 well, the Blount 10 well is likewise not completed in the surficial aquifer but instead draws water from the Brunswick aquifer.

TABLE

Table 1
Summary of Analytical Results
Terry Creek Road - Private Water Supply Well Investigations
Hercules/Pinova Facility, Brunswick, Georgia

Sampling ID	Bicarbonate Alkalinity (CaCO ₃) (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	TDS (mg/L)	Iron (mg/L)
MW-13	240	15	8.4	78	4.5	1.4	15	270	<0.05
MW-50D	240	65	0.5	77	14	1.4	38	350	1.4
MW-51D	250	73	1.5	77	22	1.5	30	370	0.095
MW-61D	240	990	25	390	20	5.2	240	1,600	12
Spell 5	120	17	86	32	20	2.9	28	250	<0.05
Blount 8	110	16	84	34	20	1.7	13	270	0.36
Blount 10	150	12	79	53	14	4.8	25	330	<0.05
Roberts 22	110	15	80	35	21	1.7	13	260	<0.05
TCMHP	110	16	82	35	21	1.7	13	260	0.51
Dupree Creek	100	18,000	2,400	280	1,000	390	8,400	27,000	<0.05
L Well	110	230	140	55	36	3.5	130	690	<0.05
V Well	110	17	83	36	22	1.8	14	260	<0.05
City of Brunswick J-52 ⁽¹⁾	120	17	73	23	25	2.6	18	345	0.12

Notes:

mg/L - milligrams per liter

⁽¹⁾ Georgia State Division of Conservation, Geological Survey, Information Circular 23 (1962). *Interim Report on Test Drilling and Water Sampling in the Brunswick Area, Glynn County, Georgia.*

FIGURES



- Legend**
- Pinova Groundwater Well Locations
 - <all other values>
 - Terry Creek Road Well
 - Dupree Creek Surface Water Sample Location
 - Surficial Aquifer, Upper Unit Wells
 - Surficial Aquifer, Lower Unit Wells
 - Pinova Property
 - Hercules Property



Notes:
 1. Aerial photograph approximate date - January 2019. Source: Google Earth.

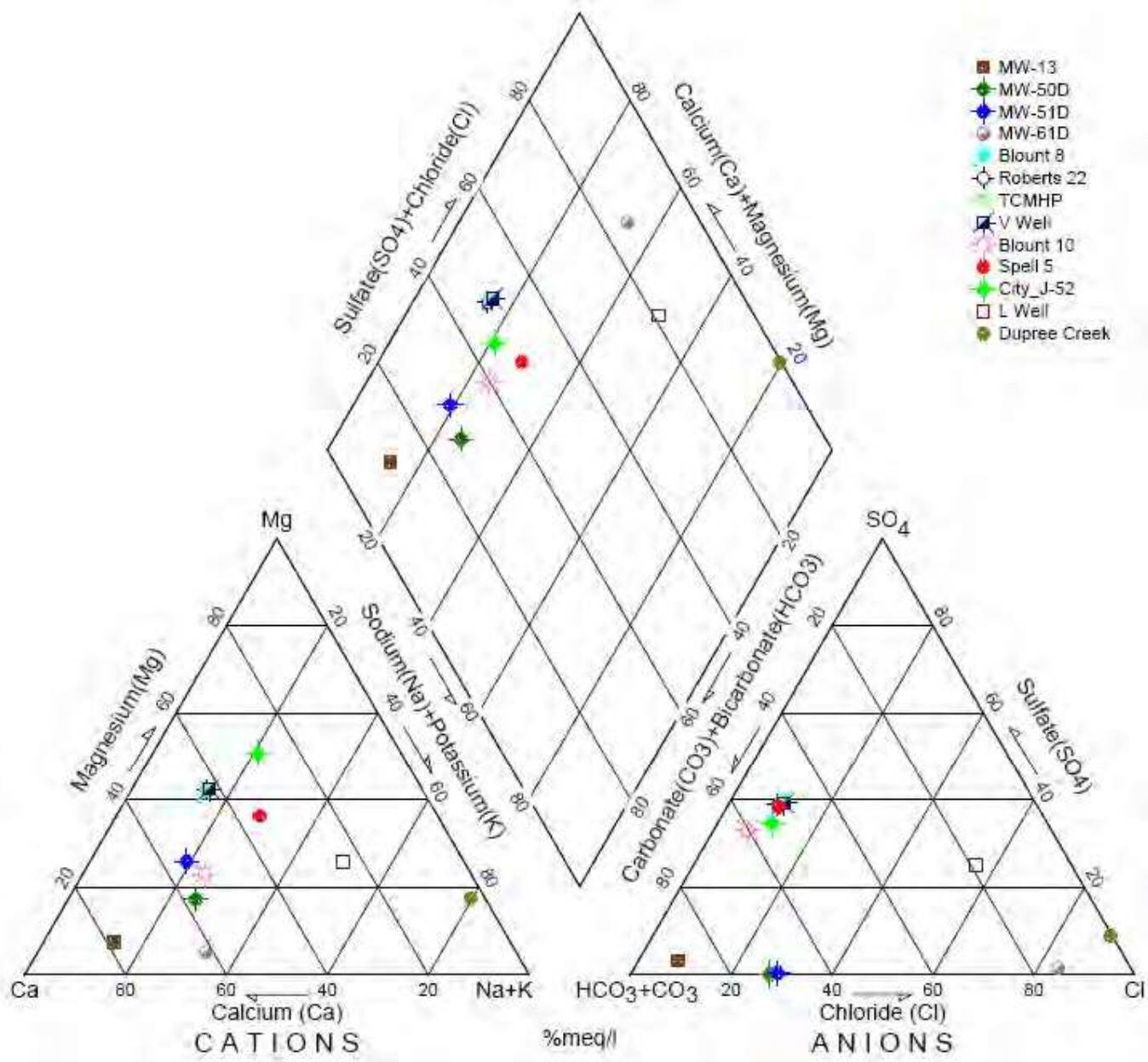
**Sampling Locations for Geochemical Evaluation
 Terry Creek Road - Private Water Supply
 Well Investigations**
 Hercules/Pinova Facility
 Brunswick, Georgia



Kennesaw, GA January 2022

Figure
1

File Path: I:\Projects\2022\Geochem\GP\Geochem\January 2022\Geochem\1\Aerial\Terry Creek Rd\10222022\1 Sample Locations.mxd



Piper Diagram
Terry Creek Road – Private Water Supply
Well Investigations
Hercules/Pinova Facility
Brunswick, Georgia

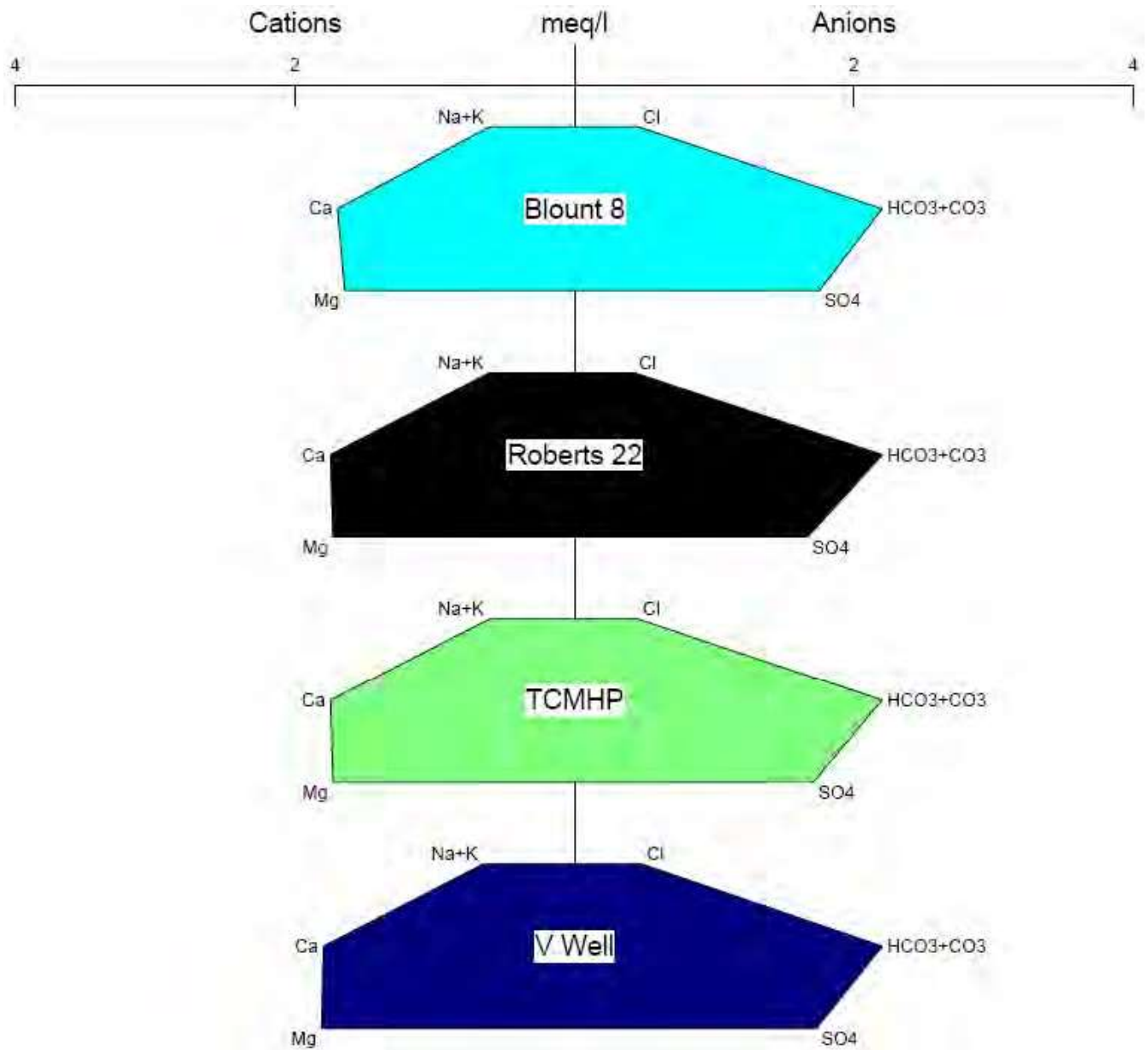
Geosyntec
consultants

Figure

2

Kennesaw, GA

January 2022



Stiff Diagrams
Terry Creek Road – Private Water Supply
Well Investigations

Hercules/Pinova Facility
 Brunswick, Georgia

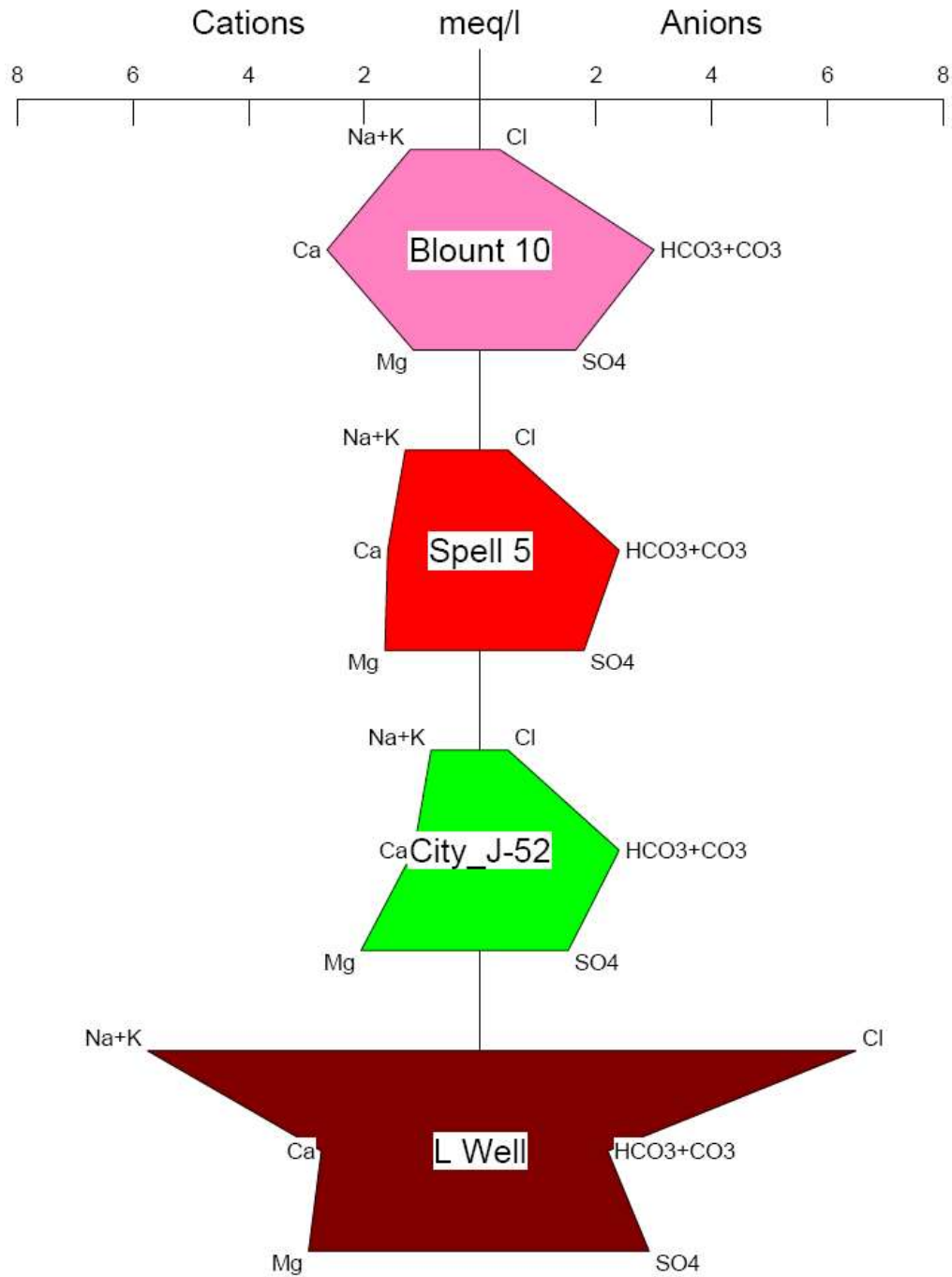
Geosyntec
 consultants

Figure

3A

Kennesaw, GA

January 2022



Stiff Diagrams
Terry Creek Road – Private Water Supply
Well Investigations

Hercules/Pinova Facility
 Brunswick, Georgia

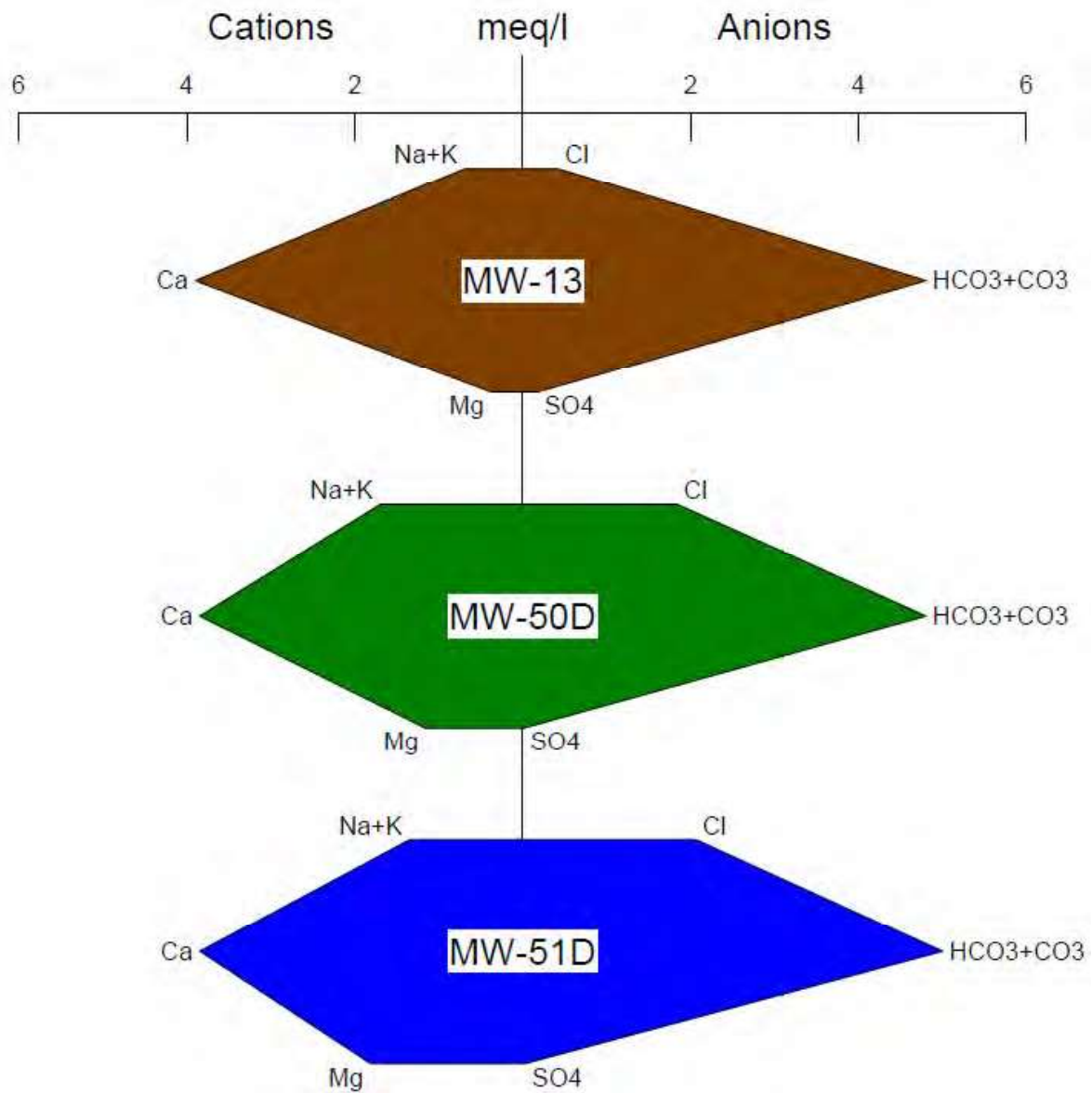
Geosyntec
 consultants

Figure

3B

Kennesaw, GA

January 2022



Stiff Diagrams
Terry Creek Road – Private Water Supply
Well Investigations

Hercules/Pinova Facility
 Brunswick, Georgia

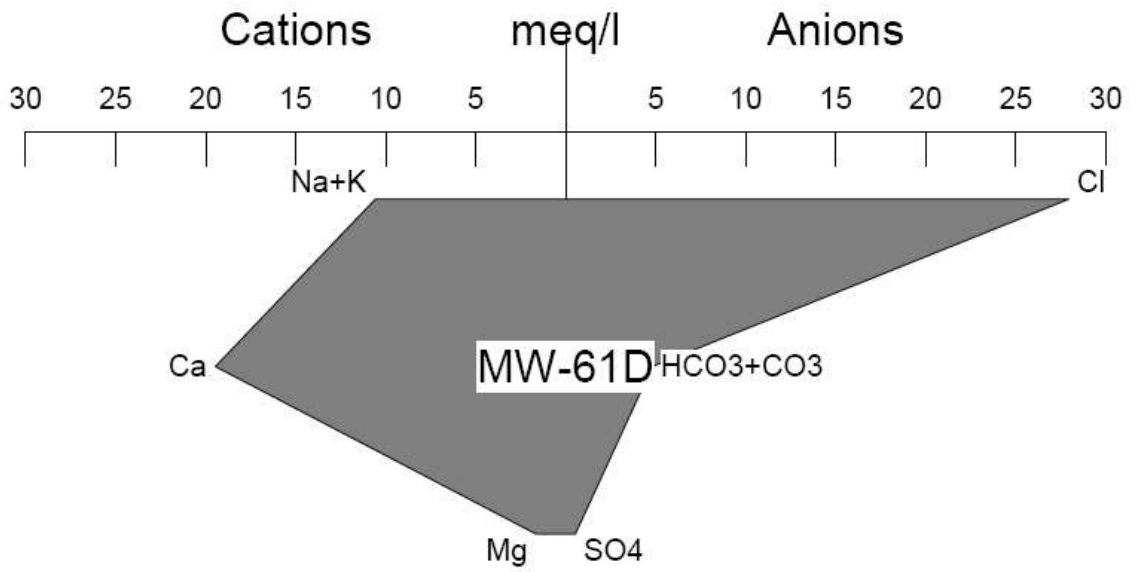
Geosyntec
 consultants

Figure

3C

Kennesaw, GA

January 2022



Stiff Diagram
Terry Creek Road – Private Water Supply
Well Investigations

Hercules/Pinova Facility
 Brunswick, Georgia

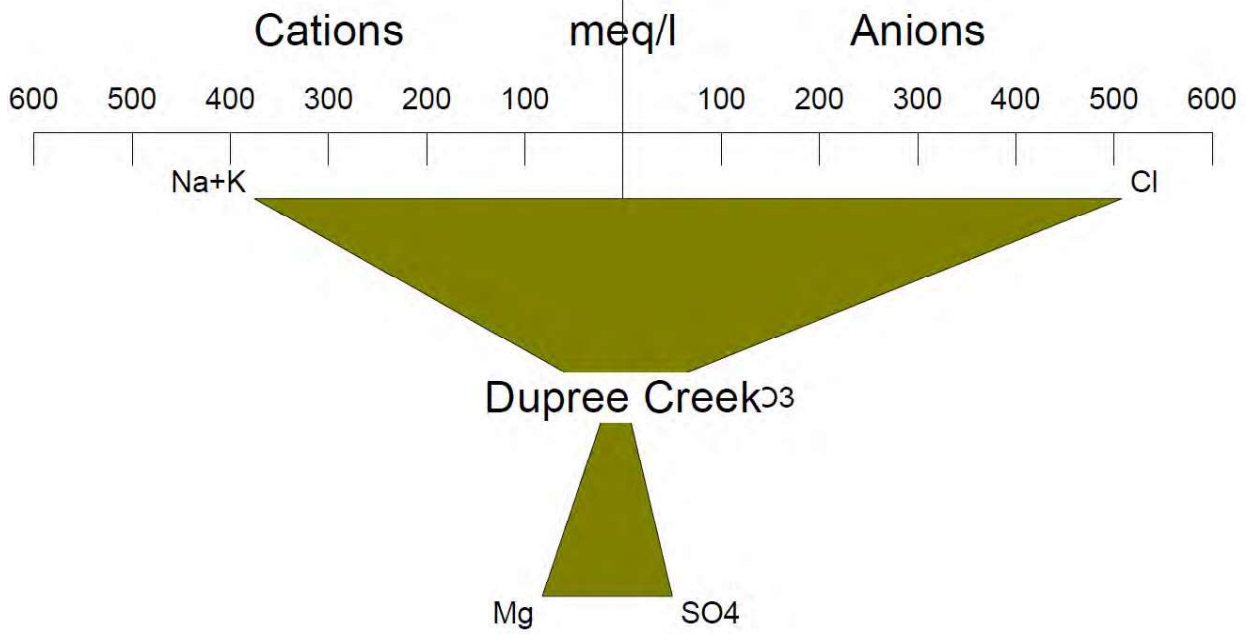
Geosyntec
 consultants

Figure

Kennesaw, GA

January 2022

3D



Dupree Creek⁰³

Mg SO4

Stiff Diagram
Terry Creek Road – Private Water Supply
Well Investigations

Hercules/Pinova Facility
 Brunswick, Georgia

Geosyntec
 consultants

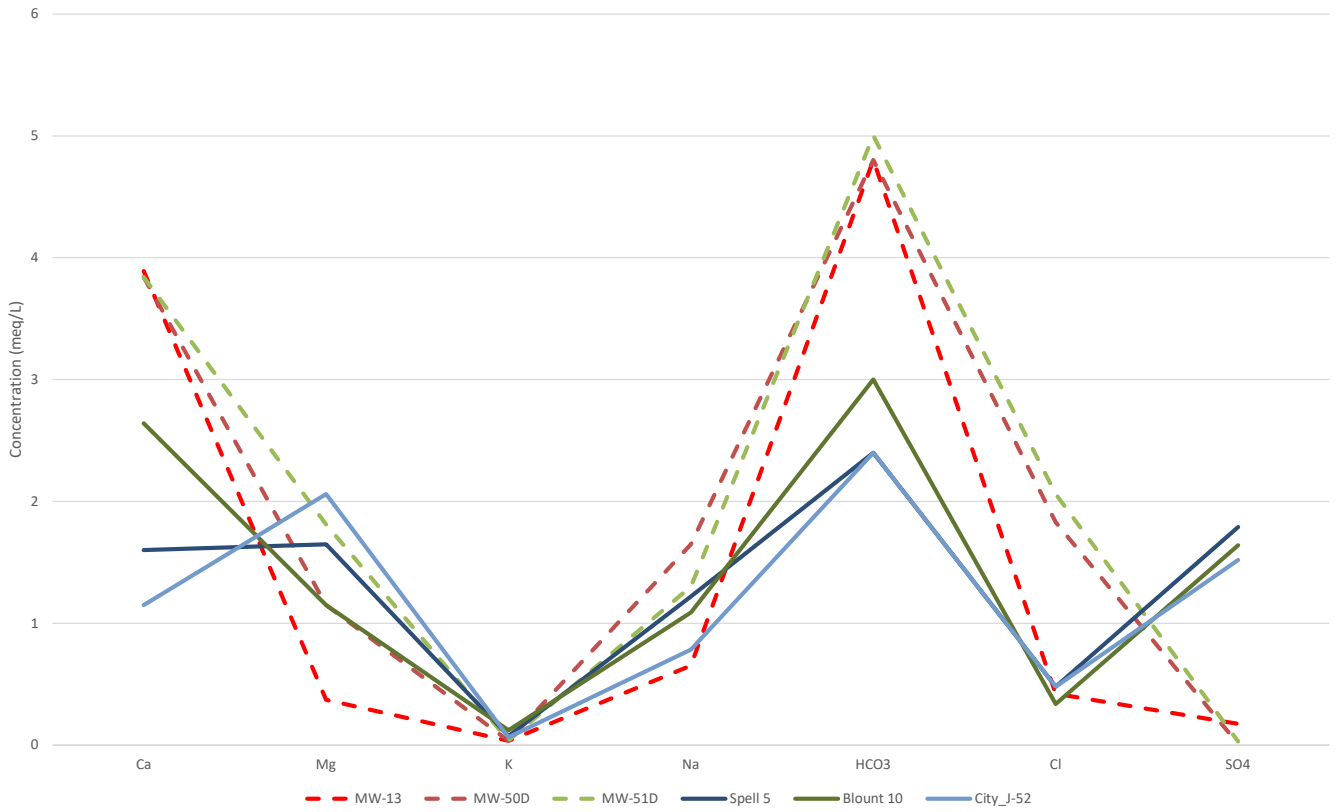
Figure

3E

Kennesaw, GA

January 2022

Path: H:\Brentwick_Planet_310_Analyis\and\Documents\Groundwater\Terry_Creek_Supply\MW\Geosyntec_Consultants\summary



meq/L = milliequivalents per liter

Schoeller Diagram
Terry Creek Road – Private Water Supply
Well Investigations
 Hercules/Pinova Facility
 Brunswick, GA

Geosyntec
 consultants

Figure

Kennesaw, GA

January 2022

4

ATTACHMENT A

Laboratory Analytical Report and Data Validation

ANALYTICAL REPORT

Eurofins TestAmerica, Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

Laboratory Job ID: 680-209193-1
Client Project/Site: Brunswick TC Well Evaluation

For:
Geosyntec Consultants, Inc.
1255 Roberts Blvd, NW
Suite 200
Kennesaw, Georgia 30144

Attn: Mr. Greg Roush



Authorized for release by:
12/30/2021 11:25:29 AM

David Fuller, Project Manager
(770)344-8986
David.Fuller@Eurofinset.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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



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Case Narrative

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Job ID: 680-209193-1

Laboratory: Eurofins TestAmerica, Savannah

Narrative

Receipt

The samples were received on 12/21/2021 12:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.2° C, 1.9° C and 2.8° C.

HPLC/IC

Method 300.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 680-700414 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Sulfate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Metals

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

General Chemistry

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

- 1
- 2
- 3
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- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Sample Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-209193-1	MW-13 20211219	Water	12/19/21 09:57	12/21/21 12:00
680-209193-2	MW-50D 20211219	Water	12/19/21 08:55	12/21/21 12:00
680-209193-3	MW-51D 20211219	Water	12/19/21 08:50	12/21/21 12:00
680-209193-4	MW-61D 20211219	Water	12/19/21 09:07	12/21/21 12:00
680-209193-5	Spell 5 20211220	Water	12/20/21 08:57	12/21/21 12:00
680-209193-6	Blount 8 20211220	Water	12/20/21 09:22	12/21/21 12:00
680-209193-7	Blount 10 20211220	Water	12/20/21 09:51	12/21/21 12:00
680-209193-8	Roberts 22 20211220	Water	12/20/21 08:51	12/21/21 12:00
680-209193-9	TCMHP 20211220	Water	12/20/21 09:25	12/21/21 12:00
680-209193-10	Dupree Creek 20211220	Water	12/20/21 10:50	12/21/21 12:00
680-209193-11	L Well 20211220	Water	12/20/21 12:00	12/21/21 12:00
680-209193-12	V Well 20211220	Water	12/20/21 12:55	12/21/21 12:00



Method Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Method	Method Description	Protocol	Laboratory
300.0-1993 R2.1	Anions, Ion Chromatography	MCAWW	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
2320B-2011	Alkalinity, Total	SM	TAL SAV
2540C-2011	Total Dissolved Solids (Dried at 180 °C)	SM	TAL SAV
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	TAL SAV
FILTRATION	Sample Filtration	None	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

None = None

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

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

Laboratory References:

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Definitions/Glossary

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Detection Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: MW-13 20211219

Lab Sample ID: 680-209193-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	15		0.50		mg/L	1		300.0-1993 R2.1	Total/NA
Sulfate	8.4		1.0		mg/L	1		300.0-1993 R2.1	Total/NA
Calcium	78000		500		ug/L	1		6010C	Total Recoverable
Magnesium	4500		500		ug/L	1		6010C	Total Recoverable
Potassium	1400		1000		ug/L	1		6010C	Total Recoverable
Sodium	15000		1000		ug/L	1		6010C	Total Recoverable
ALKALINITY TO PH 4.5	240		5.0		mg/L	1		2320B-2011	Total/NA
Bicarbonate Alkalinity as CaCO3	240		5.0		mg/L	1		2320B-2011	Total/NA
Total Dissolved Solids	270		20		mg/L	1		2540C-2011	Total/NA

Client Sample ID: MW-50D 20211219

Lab Sample ID: 680-209193-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	65		0.50		mg/L	1		300.0-1993 R2.1	Total/NA
Calcium	77000		500		ug/L	1		6010C	Total Recoverable
Iron	1400		50		ug/L	1		6010C	Total Recoverable
Magnesium	14000		500		ug/L	1		6010C	Total Recoverable
Potassium	1400		1000		ug/L	1		6010C	Total Recoverable
Sodium	38000		1000		ug/L	1		6010C	Total Recoverable
Iron	110		50		ug/L	1		6010C	Dissolved
ALKALINITY TO PH 4.5	250		5.0		mg/L	1		2320B-2011	Total/NA
Bicarbonate Alkalinity as CaCO3	240		5.0		mg/L	1		2320B-2011	Total/NA
Total Dissolved Solids	350		20		mg/L	1		2540C-2011	Total/NA

Client Sample ID: MW-51D 20211219

Lab Sample ID: 680-209193-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	73		0.50		mg/L	1		300.0-1993 R2.1	Total/NA
Sulfate	1.5		1.0		mg/L	1		300.0-1993 R2.1	Total/NA
Calcium	77000		500		ug/L	1		6010C	Total Recoverable
Iron	950		50		ug/L	1		6010C	Total Recoverable
Magnesium	22000		500		ug/L	1		6010C	Total Recoverable
Potassium	1500		1000		ug/L	1		6010C	Total Recoverable
Sodium	30000		1000		ug/L	1		6010C	Total Recoverable
Iron	95		50		ug/L	1		6010C	Dissolved
ALKALINITY TO PH 4.5	250		5.0		mg/L	1		2320B-2011	Total/NA
Bicarbonate Alkalinity as CaCO3	250		5.0		mg/L	1		2320B-2011	Total/NA
Total Dissolved Solids	370		20		mg/L	1		2540C-2011	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Savannah

Detection Summary

Client: Geosyntec Consultants, Inc.
 Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: MW-61D 20211219

Lab Sample ID: 680-209193-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	990		5.0		mg/L	10		300.0-1993 R2.1	Total/NA
Sulfate	25		10		mg/L	10		300.0-1993 R2.1	Total/NA
Calcium	390000		500		ug/L	1		6010C	Total Recoverable
Iron	12000		50		ug/L	1		6010C	Total Recoverable
Magnesium	20000		500		ug/L	1		6010C	Total Recoverable
Potassium	5200		1000		ug/L	1		6010C	Total Recoverable
Sodium	240000		10000		ug/L	10		6010C	Total Recoverable
Iron	3300		50		ug/L	1		6010C	Dissolved
ALKALINITY TO PH 4.5	240		5.0		mg/L	1		2320B-2011	Total/NA
Bicarbonate Alkalinity as CaCO3	240		5.0		mg/L	1		2320B-2011	Total/NA
Total Dissolved Solids	1600		40		mg/L	1		2540C-2011	Total/NA

Client Sample ID: Spell 5 20211220

Lab Sample ID: 680-209193-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	17		0.50		mg/L	1		300.0-1993 R2.1	Total/NA
Sulfate	86		1.0		mg/L	1		300.0-1993 R2.1	Total/NA
Calcium	32000		500		ug/L	1		6010C	Total Recoverable
Magnesium	20000		500		ug/L	1		6010C	Total Recoverable
Potassium	2900		1000		ug/L	1		6010C	Total Recoverable
Sodium	28000		1000		ug/L	1		6010C	Total Recoverable
ALKALINITY TO PH 4.5	120		5.0		mg/L	1		2320B-2011	Total/NA
Bicarbonate Alkalinity as CaCO3	120		5.0		mg/L	1		2320B-2011	Total/NA
Total Dissolved Solids	250		20		mg/L	1		2540C-2011	Total/NA

Client Sample ID: Blount 8 20211220

Lab Sample ID: 680-209193-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	16		0.50		mg/L	1		300.0-1993 R2.1	Total/NA
Sulfate	84		1.0		mg/L	1		300.0-1993 R2.1	Total/NA
Calcium	34000		500		ug/L	1		6010C	Total Recoverable
Iron	380		50		ug/L	1		6010C	Total Recoverable
Magnesium	20000		500		ug/L	1		6010C	Total Recoverable
Potassium	1700		1000		ug/L	1		6010C	Total Recoverable
Sodium	13000		1000		ug/L	1		6010C	Total Recoverable
Iron	360		50		ug/L	1		6010C	Dissolved
ALKALINITY TO PH 4.5	120		5.0		mg/L	1		2320B-2011	Total/NA
Bicarbonate Alkalinity as CaCO3	110		5.0		mg/L	1		2320B-2011	Total/NA
Total Dissolved Solids	270		20		mg/L	1		2540C-2011	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Savannah

Detection Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: Blount 10 20211220

Lab Sample ID: 680-209193-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	12		0.50		mg/L	1		300.0-1993 R2.1	Total/NA
Sulfate	79		1.0		mg/L	1		300.0-1993 R2.1	Total/NA
Calcium	53000		500		ug/L	1		6010C	Total Recoverable
Iron	170		50		ug/L	1		6010C	Total Recoverable
Magnesium	14000		500		ug/L	1		6010C	Total Recoverable
Potassium	4800		1000		ug/L	1		6010C	Total Recoverable
Sodium	25000		1000		ug/L	1		6010C	Total Recoverable
ALKALINITY TO PH 4.5	160		5.0		mg/L	1		2320B-2011	Total/NA
Bicarbonate Alkalinity as CaCO3	150		5.0		mg/L	1		2320B-2011	Total/NA
Total Dissolved Solids	330		20		mg/L	1		2540C-2011	Total/NA

Client Sample ID: Roberts 22 20211220

Lab Sample ID: 680-209193-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	15		0.50		mg/L	1		300.0-1993 R2.1	Total/NA
Sulfate	80		1.0		mg/L	1		300.0-1993 R2.1	Total/NA
Calcium	35000		500		ug/L	1		6010C	Total Recoverable
Magnesium	21000		500		ug/L	1		6010C	Total Recoverable
Potassium	1700		1000		ug/L	1		6010C	Total Recoverable
Sodium	13000		1000		ug/L	1		6010C	Total Recoverable
ALKALINITY TO PH 4.5	120		5.0		mg/L	1		2320B-2011	Total/NA
Bicarbonate Alkalinity as CaCO3	110		5.0		mg/L	1		2320B-2011	Total/NA
Total Dissolved Solids	260		20		mg/L	1		2540C-2011	Total/NA

Client Sample ID: TCMHP 20211220

Lab Sample ID: 680-209193-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	16		0.50		mg/L	1		300.0-1993 R2.1	Total/NA
Sulfate	82		1.0		mg/L	1		300.0-1993 R2.1	Total/NA
Calcium	35000		500		ug/L	1		6010C	Total Recoverable
Iron	580		50		ug/L	1		6010C	Total Recoverable
Magnesium	21000		500		ug/L	1		6010C	Total Recoverable
Potassium	1700		1000		ug/L	1		6010C	Total Recoverable
Sodium	13000		1000		ug/L	1		6010C	Total Recoverable
Iron	510		50		ug/L	1		6010C	Dissolved
ALKALINITY TO PH 4.5	120		5.0		mg/L	1		2320B-2011	Total/NA
Bicarbonate Alkalinity as CaCO3	110		5.0		mg/L	1		2320B-2011	Total/NA
Total Dissolved Solids	260		20		mg/L	1		2540C-2011	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Savannah

Detection Summary

Client: Geosyntec Consultants, Inc.
 Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: Dupree Creek 20211220

Lab Sample ID: 680-209193-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	18000		100		mg/L	200		300.0-1993 R2.1	Total/NA
Sulfate	2400		200		mg/L	200		300.0-1993 R2.1	Total/NA
Calcium	280000		500		ug/L	1		6010C	Total Recoverable
Iron	740		50		ug/L	1		6010C	Total Recoverable
Magnesium	1000000		50000		ug/L	100		6010C	Total Recoverable
Potassium	390000		100000		ug/L	100		6010C	Total Recoverable
Sodium	8400000		500000		ug/L	500		6010C	Total Recoverable
ALKALINITY TO PH 4.5	110		5.0		mg/L	1		2320B-2011	Total/NA
Bicarbonate Alkalinity as CaCO3	100		5.0		mg/L	1		2320B-2011	Total/NA
Total Dissolved Solids	27000		1000		mg/L	1		2540C-2011	Total/NA

Client Sample ID: L Well 20211220

Lab Sample ID: 680-209193-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	230		2.5		mg/L	5		300.0-1993 R2.1	Total/NA
Sulfate	140		5.0		mg/L	5		300.0-1993 R2.1	Total/NA
Calcium	55000		500		ug/L	1		6010C	Total Recoverable
Magnesium	36000		500		ug/L	1		6010C	Total Recoverable
Potassium	3500		1000		ug/L	1		6010C	Total Recoverable
Sodium	130000		10000		ug/L	10		6010C	Total Recoverable
ALKALINITY TO PH 4.5	120		5.0		mg/L	1		2320B-2011	Total/NA
Bicarbonate Alkalinity as CaCO3	110		5.0		mg/L	1		2320B-2011	Total/NA
Total Dissolved Solids	690		20		mg/L	1		2540C-2011	Total/NA

Client Sample ID: V Well 20211220

Lab Sample ID: 680-209193-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	17		0.50		mg/L	1		300.0-1993 R2.1	Total/NA
Sulfate	83		1.0		mg/L	1		300.0-1993 R2.1	Total/NA
Calcium	36000		500		ug/L	1		6010C	Total Recoverable
Magnesium	22000		500		ug/L	1		6010C	Total Recoverable
Potassium	1800		1000		ug/L	1		6010C	Total Recoverable
Sodium	14000		1000		ug/L	1		6010C	Total Recoverable
ALKALINITY TO PH 4.5	120		5.0		mg/L	1		2320B-2011	Total/NA
Bicarbonate Alkalinity as CaCO3	110		5.0		mg/L	1		2320B-2011	Total/NA
Total Dissolved Solids	260		20		mg/L	1		2540C-2011	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Savannah

Client Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: MW-13 20211219

Lab Sample ID: 680-209193-1

Date Collected: 12/19/21 09:57

Matrix: Water

Date Received: 12/21/21 12:00

Method: 300.0-1993 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	15		0.50		mg/L			12/23/21 19:50	1
Sulfate	8.4		1.0		mg/L			12/23/21 19:50	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	78000		500		ug/L		12/21/21 15:50	12/23/21 00:23	1
Iron	50	U	50		ug/L		12/21/21 15:50	12/23/21 00:23	1
Magnesium	4500		500		ug/L		12/21/21 15:50	12/23/21 00:23	1
Potassium	1400		1000		ug/L		12/21/21 15:50	12/23/21 00:23	1
Sodium	15000		1000		ug/L		12/21/21 15:50	12/23/21 00:23	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	50	U	50		ug/L		12/21/21 16:43	12/23/21 03:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ALKALINITY TO PH 4.5	240		5.0		mg/L			12/28/21 15:25	1
Bicarbonate Alkalinity as CaCO3	240		5.0		mg/L			12/28/21 15:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	270		20		mg/L			12/22/21 11:07	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: MW-50D 20211219

Lab Sample ID: 680-209193-2

Date Collected: 12/19/21 08:55

Matrix: Water

Date Received: 12/21/21 12:00

Method: 300.0-1993 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	65		0.50		mg/L			12/23/21 20:02	1
Sulfate	1.0	U	1.0		mg/L			12/23/21 20:02	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	77000		500		ug/L		12/21/21 15:50	12/23/21 00:27	1
Iron	1400		50		ug/L		12/21/21 15:50	12/23/21 00:27	1
Magnesium	14000		500		ug/L		12/21/21 15:50	12/23/21 00:27	1
Potassium	1400		1000		ug/L		12/21/21 15:50	12/23/21 00:27	1
Sodium	38000		1000		ug/L		12/21/21 15:50	12/23/21 00:27	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	110		50		ug/L		12/21/21 16:43	12/23/21 05:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ALKALINITY TO PH 4.5	250		5.0		mg/L			12/28/21 15:25	1
Bicarbonate Alkalinity as CaCO3	240		5.0		mg/L			12/28/21 15:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	350		20		mg/L			12/22/21 11:07	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: MW-51D 20211219

Lab Sample ID: 680-209193-3

Date Collected: 12/19/21 08:50

Matrix: Water

Date Received: 12/21/21 12:00

Method: 300.0-1993 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	73		0.50		mg/L			12/23/21 20:15	1
Sulfate	1.5		1.0		mg/L			12/23/21 20:15	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	77000		500		ug/L		12/21/21 15:50	12/23/21 00:31	1
Iron	950		50		ug/L		12/21/21 15:50	12/23/21 00:31	1
Magnesium	22000		500		ug/L		12/21/21 15:50	12/23/21 00:31	1
Potassium	1500		1000		ug/L		12/21/21 15:50	12/23/21 00:31	1
Sodium	30000		1000		ug/L		12/21/21 15:50	12/23/21 00:31	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	95		50		ug/L		12/21/21 16:43	12/23/21 05:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ALKALINITY TO PH 4.5	250		5.0		mg/L			12/28/21 15:25	1
Bicarbonate Alkalinity as CaCO3	250		5.0		mg/L			12/28/21 15:25	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	370		20		mg/L			12/22/21 11:07	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: MW-61D 20211219

Lab Sample ID: 680-209193-4

Date Collected: 12/19/21 09:07

Matrix: Water

Date Received: 12/21/21 12:00

Method: 300.0-1993 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	990		5.0		mg/L			12/23/21 20:28	10
Sulfate	25		10		mg/L			12/23/21 20:28	10

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	390000		500		ug/L		12/21/21 15:50	12/23/21 00:36	1
Iron	12000		50		ug/L		12/21/21 15:50	12/23/21 00:36	1
Magnesium	20000		500		ug/L		12/21/21 15:50	12/23/21 00:36	1
Potassium	5200		1000		ug/L		12/21/21 15:50	12/23/21 00:36	1
Sodium	240000		10000		ug/L		12/21/21 15:50	12/23/21 16:12	10

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	3300		50		ug/L		12/21/21 16:43	12/23/21 05:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ALKALINITY TO PH 4.5	240		5.0		mg/L			12/28/21 15:25	1
Bicarbonate Alkalinity as CaCO3	240		5.0		mg/L			12/28/21 15:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1600		40		mg/L			12/22/21 11:07	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: Spell 5 20211220

Lab Sample ID: 680-209193-5

Date Collected: 12/20/21 08:57

Matrix: Water

Date Received: 12/21/21 12:00

Method: 300.0-1993 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17		0.50		mg/L			12/23/21 21:44	1
Sulfate	86		1.0		mg/L			12/23/21 21:44	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	32000		500		ug/L		12/21/21 15:50	12/23/21 00:48	1
Iron	50	U	50		ug/L		12/21/21 15:50	12/23/21 00:48	1
Magnesium	20000		500		ug/L		12/21/21 15:50	12/23/21 00:48	1
Potassium	2900		1000		ug/L		12/21/21 15:50	12/23/21 00:48	1
Sodium	28000		1000		ug/L		12/21/21 15:50	12/23/21 00:48	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	50	U	50		ug/L		12/21/21 16:43	12/23/21 05:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ALKALINITY TO PH 4.5	120		5.0		mg/L			12/28/21 15:25	1
Bicarbonate Alkalinity as CaCO3	120		5.0		mg/L			12/28/21 15:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	250		20		mg/L			12/22/21 11:07	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: Blount 8 20211220

Lab Sample ID: 680-209193-6

Date Collected: 12/20/21 09:22

Matrix: Water

Date Received: 12/21/21 12:00

Method: 300.0-1993 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16		0.50		mg/L			12/23/21 21:56	1
Sulfate	84		1.0		mg/L			12/23/21 21:56	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	34000		500		ug/L		12/22/21 07:36	12/23/21 11:13	1
Iron	380		50		ug/L		12/22/21 07:36	12/23/21 11:13	1
Magnesium	20000		500		ug/L		12/22/21 07:36	12/23/21 11:13	1
Potassium	1700		1000		ug/L		12/22/21 07:36	12/23/21 11:13	1
Sodium	13000		1000		ug/L		12/22/21 07:36	12/23/21 11:13	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	360		50		ug/L		12/21/21 17:52	12/23/21 06:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ALKALINITY TO PH 4.5	120		5.0		mg/L			12/28/21 15:25	1
Bicarbonate Alkalinity as CaCO3	110		5.0		mg/L			12/28/21 15:25	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	270		20		mg/L			12/22/21 11:07	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: Blount 10 20211220

Lab Sample ID: 680-209193-7

Date Collected: 12/20/21 09:51

Matrix: Water

Date Received: 12/21/21 12:00

Method: 300.0-1993 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	12		0.50		mg/L			12/23/21 22:09	1
Sulfate	79		1.0		mg/L			12/23/21 22:09	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	53000		500		ug/L		12/22/21 07:36	12/23/21 11:17	1
Iron	170		50		ug/L		12/22/21 07:36	12/23/21 11:17	1
Magnesium	14000		500		ug/L		12/22/21 07:36	12/23/21 11:17	1
Potassium	4800		1000		ug/L		12/22/21 07:36	12/23/21 11:17	1
Sodium	25000		1000		ug/L		12/22/21 07:36	12/23/21 11:17	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	50	U	50		ug/L		12/21/21 16:43	12/23/21 05:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ALKALINITY TO PH 4.5	160		5.0		mg/L			12/28/21 15:25	1
Bicarbonate Alkalinity as CaCO3	150		5.0		mg/L			12/28/21 15:25	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	330		20		mg/L			12/22/21 11:07	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: Roberts 22 20211220

Lab Sample ID: 680-209193-8

Date Collected: 12/20/21 08:51

Matrix: Water

Date Received: 12/21/21 12:00

Method: 300.0-1993 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	15		0.50		mg/L			12/23/21 22:22	1
Sulfate	80		1.0		mg/L			12/23/21 22:22	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	35000		500		ug/L		12/22/21 07:36	12/23/21 11:21	1
Iron	50	U	50		ug/L		12/22/21 07:36	12/23/21 11:21	1
Magnesium	21000		500		ug/L		12/22/21 07:36	12/23/21 11:21	1
Potassium	1700		1000		ug/L		12/22/21 07:36	12/23/21 11:21	1
Sodium	13000		1000		ug/L		12/22/21 07:36	12/23/21 11:21	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	50	U	50		ug/L		12/21/21 16:43	12/23/21 05:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ALKALINITY TO PH 4.5	120		5.0		mg/L			12/28/21 15:25	1
Bicarbonate Alkalinity as CaCO3	110		5.0		mg/L			12/28/21 15:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	260		20		mg/L			12/22/21 11:07	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: TCMHP 20211220

Lab Sample ID: 680-209193-9

Date Collected: 12/20/21 09:25

Matrix: Water

Date Received: 12/21/21 12:00

Method: 300.0-1993 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	16		0.50		mg/L			12/23/21 22:34	1
Sulfate	82		1.0		mg/L			12/23/21 22:34	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	35000		500		ug/L		12/22/21 07:36	12/23/21 11:25	1
Iron	580		50		ug/L		12/22/21 07:36	12/23/21 11:25	1
Magnesium	21000		500		ug/L		12/22/21 07:36	12/23/21 11:25	1
Potassium	1700		1000		ug/L		12/22/21 07:36	12/23/21 11:25	1
Sodium	13000		1000		ug/L		12/22/21 07:36	12/23/21 11:25	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	510		50		ug/L		12/21/21 16:43	12/23/21 05:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ALKALINITY TO PH 4.5	120		5.0		mg/L			12/28/21 15:25	1
Bicarbonate Alkalinity as CaCO3	110		5.0		mg/L			12/28/21 15:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	260		20		mg/L			12/22/21 11:07	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: Dupree Creek 20211220

Lab Sample ID: 680-209193-10

Date Collected: 12/20/21 10:50

Matrix: Water

Date Received: 12/21/21 12:00

Method: 300.0-1993 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	18000		100		mg/L			12/23/21 22:47	200
Sulfate	2400		200		mg/L			12/23/21 22:47	200

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	280000		500		ug/L		12/22/21 07:36	12/23/21 11:29	1
Iron	740		50		ug/L		12/22/21 07:36	12/23/21 11:29	1
Magnesium	1000000		50000		ug/L		12/22/21 07:36	12/23/21 16:47	100
Potassium	390000		100000		ug/L		12/22/21 07:36	12/23/21 16:47	100
Sodium	8400000		500000		ug/L		12/22/21 07:36	12/27/21 14:35	500

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	50	U	50		ug/L		12/21/21 16:43	12/23/21 05:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ALKALINITY TO PH 4.5	110		5.0		mg/L			12/28/21 15:25	1
Bicarbonate Alkalinity as CaCO3	100		5.0		mg/L			12/28/21 15:25	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	27000		1000		mg/L			12/22/21 11:07	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: L Well 20211220

Lab Sample ID: 680-209193-11

Date Collected: 12/20/21 12:00

Matrix: Water

Date Received: 12/21/21 12:00

Method: 300.0-1993 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	230		2.5		mg/L			12/23/21 23:00	5
Sulfate	140		5.0		mg/L			12/23/21 23:00	5

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	55000		500		ug/L		12/22/21 07:36	12/23/21 11:33	1
Iron	50	U	50		ug/L		12/22/21 07:36	12/23/21 11:33	1
Magnesium	36000		500		ug/L		12/22/21 07:36	12/23/21 11:33	1
Potassium	3500		1000		ug/L		12/22/21 07:36	12/23/21 11:33	1
Sodium	130000		10000		ug/L		12/22/21 07:36	12/23/21 16:51	10

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	50	U	50		ug/L		12/21/21 17:52	12/23/21 06:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ALKALINITY TO PH 4.5	120		5.0		mg/L			12/28/21 15:25	1
Bicarbonate Alkalinity as CaCO3	110		5.0		mg/L			12/28/21 15:25	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	690		20		mg/L			12/22/21 11:07	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: V Well 20211220

Lab Sample ID: 680-209193-12

Date Collected: 12/20/21 12:55

Matrix: Water

Date Received: 12/21/21 12:00

Method: 300.0-1993 R2.1 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17		0.50		mg/L			12/23/21 23:12	1
Sulfate	83		1.0		mg/L			12/23/21 23:12	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	36000		500		ug/L		12/22/21 07:36	12/23/21 10:45	1
Iron	50	U	50		ug/L		12/22/21 07:36	12/23/21 10:45	1
Magnesium	22000		500		ug/L		12/22/21 07:36	12/23/21 10:45	1
Potassium	1800		1000		ug/L		12/22/21 07:36	12/23/21 10:45	1
Sodium	14000		1000		ug/L		12/22/21 07:36	12/23/21 10:45	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	50	U	50		ug/L		12/21/21 17:52	12/23/21 06:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ALKALINITY TO PH 4.5	120		5.0		mg/L			12/28/21 15:25	1
Bicarbonate Alkalinity as CaCO3	110		5.0		mg/L			12/28/21 15:25	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	260		20		mg/L			12/22/21 11:07	1

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Method: 300.0-1993 R2.1 - Anions, Ion Chromatography

Lab Sample ID: MB 680-700414/33
Matrix: Water
Analysis Batch: 700414

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.50	U	0.50		mg/L			12/23/21 17:31	1
Sulfate	1.0	U	1.0		mg/L			12/23/21 17:31	1

Lab Sample ID: LCS 680-700414/34
Matrix: Water
Analysis Batch: 700414

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	10.0	10.2		mg/L		102	90 - 110
Sulfate	10.0	10.2		mg/L		102	90 - 110

Lab Sample ID: LCSD 680-700414/35
Matrix: Water
Analysis Batch: 700414

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	10.0	10.2		mg/L		102	90 - 110	0	15
Sulfate	10.0	10.2		mg/L		102	90 - 110	0	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-700150/1-A
Matrix: Water
Analysis Batch: 700459

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 700150

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	500	U	500		ug/L		12/21/21 15:50	12/22/21 23:45	1
Iron	50	U	50		ug/L		12/21/21 15:50	12/22/21 23:45	1
Magnesium	500	U	500		ug/L		12/21/21 15:50	12/22/21 23:45	1
Potassium	1000	U	1000		ug/L		12/21/21 15:50	12/22/21 23:45	1
Sodium	1000	U	1000		ug/L		12/21/21 15:50	12/22/21 23:45	1

Lab Sample ID: LCS 680-700150/2-A
Matrix: Water
Analysis Batch: 700459

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 700150

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	5000	4920		ug/L		99	80 - 120
Iron	5000	4940		ug/L		99	80 - 120
Magnesium	5010	4920		ug/L		98	80 - 120
Potassium	6970	6660		ug/L		96	80 - 120
Sodium	5050	4970		ug/L		99	80 - 120

Lab Sample ID: MB 680-700197/1-A
Matrix: Water
Analysis Batch: 700565

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 700197

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	500	U	500		ug/L		12/22/21 07:36	12/23/21 10:37	1
Iron	50	U	50		ug/L		12/22/21 07:36	12/23/21 10:37	1

Eurofins TestAmerica, Savannah

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 680-700197/1-A
Matrix: Water
Analysis Batch: 700565

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 700197

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Magnesium	500	U	500		ug/L		12/22/21 07:36	12/23/21 10:37	1
Potassium	1000	U	1000		ug/L		12/22/21 07:36	12/23/21 10:37	1
Sodium	1000	U	1000		ug/L		12/22/21 07:36	12/23/21 10:37	1

Lab Sample ID: LCS 680-700197/2-A
Matrix: Water
Analysis Batch: 700565

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 700197

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5000	4710		ug/L		94	80 - 120
Magnesium	5010	4690		ug/L		94	80 - 120
Potassium	6970	6520		ug/L		93	80 - 120
Sodium	5050	4340		ug/L		86	80 - 120

Lab Sample ID: 680-209193-12 MS
Matrix: Water
Analysis Batch: 700565

Client Sample ID: V Well 20211220
Prep Type: Total Recoverable
Prep Batch: 700197

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	50	U	5000	4780		ug/L		95	75 - 125
Magnesium	22000		5010	26100	4	ug/L		83	75 - 125
Potassium	1800		6970	8710		ug/L		99	75 - 125
Sodium	14000		5050	18600		ug/L		90	75 - 125

Lab Sample ID: 680-209193-12 MSD
Matrix: Water
Analysis Batch: 700565

Client Sample ID: V Well 20211220
Prep Type: Total Recoverable
Prep Batch: 700197

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	50	U	5000	4820		ug/L		96	75 - 125	1	20
Magnesium	22000		5010	26500	4	ug/L		90	75 - 125	1	20
Potassium	1800		6970	8790		ug/L		100	75 - 125	1	20
Sodium	14000		5050	19000		ug/L		97	75 - 125	2	20

Lab Sample ID: MB 680-700159/1-B
Matrix: Water
Analysis Batch: 700459

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 700163

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Iron	50	U	50		ug/L		12/21/21 16:43	12/23/21 03:41	1

Lab Sample ID: LCS 680-700159/2-B
Matrix: Water
Analysis Batch: 700459

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 700163

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Eurofins TestAmerica, Savannah

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Method: 6010C - Metals (ICP)

Lab Sample ID: 680-209193-1 MS
Matrix: Water
Analysis Batch: 700459

Client Sample ID: MW-13 20211219
Prep Type: Dissolved
Prep Batch: 700163
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Iron	50	U	5000	4870		ug/L		97	75 - 125

Lab Sample ID: 680-209193-1 MSD
Matrix: Water
Analysis Batch: 700459

Client Sample ID: MW-13 20211219
Prep Type: Dissolved
Prep Batch: 700163
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Iron	50	U	5000	4870		ug/L		97	75 - 125	0	20

Lab Sample ID: MB 680-700177/1-B
Matrix: Water
Analysis Batch: 700459

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 700178

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	50	U	50		ug/L		12/21/21 17:52	12/23/21 05:56	1

Lab Sample ID: LCS 680-700177/2-B
Matrix: Water
Analysis Batch: 700459

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 700178
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Iron	5000	4860		ug/L		97	80 - 120

Lab Sample ID: 680-209193-11 MS
Matrix: Water
Analysis Batch: 700459

Client Sample ID: L Well 20211220
Prep Type: Dissolved
Prep Batch: 700178
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Iron	50	U	5000	4690		ug/L		94	75 - 125

Lab Sample ID: 680-209193-11 MSD
Matrix: Water
Analysis Batch: 700459

Client Sample ID: L Well 20211220
Prep Type: Dissolved
Prep Batch: 700178
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Iron	50	U	5000	4810		ug/L		96	75 - 125	3	20

Method: 2320B-2011 - Alkalinity, Total

Lab Sample ID: MB 680-701047/34
Matrix: Water
Analysis Batch: 701047

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ALKALINITY TO PH 4.5	5.0	U	5.0		mg/L			12/28/21 15:25	1
Bicarbonate Alkalinity as CaCO3	5.0	U	5.0		mg/L			12/28/21 15:25	1

Eurofins TestAmerica, Savannah

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Method: 2320B-2011 - Alkalinity, Total (Continued)

Lab Sample ID: MB 680-701047/6
Matrix: Water
Analysis Batch: 701047

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ALKALINITY TO PH 4.5	5.0	U	5.0		mg/L			12/28/21 15:25	1
Bicarbonate Alkalinity as CaCO3	5.0	U	5.0		mg/L			12/28/21 15:25	1

Lab Sample ID: LCS 680-701047/36
Matrix: Water
Analysis Batch: 701047

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
ALKALINITY TO PH 4.5	250	249		mg/L		100	90 - 112

Lab Sample ID: LCS 680-701047/8
Matrix: Water
Analysis Batch: 701047

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
ALKALINITY TO PH 4.5	250	249		mg/L		100	90 - 112

Lab Sample ID: LCSD 680-701047/33
Matrix: Water
Analysis Batch: 701047

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
ALKALINITY TO PH 4.5	250	250		mg/L		100	90 - 112	1	30

Lab Sample ID: LCSD 680-701047/61
Matrix: Water
Analysis Batch: 701047

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
ALKALINITY TO PH 4.5	250	271		mg/L		109	90 - 112	8	30

Lab Sample ID: LLCS 680-701047/35
Matrix: Water
Analysis Batch: 701047

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

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
ALKALINITY TO PH 4.5	5.00	5.00		mg/L		100	50 - 150

Lab Sample ID: LLCS 680-701047/7
Matrix: Water
Analysis Batch: 701047

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

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
ALKALINITY TO PH 4.5	5.00	5.0	U	mg/L		96	50 - 150

QC Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Method: 2320B-2011 - Alkalinity, Total (Continued)

Lab Sample ID: 680-209193-5 DU
 Matrix: Water
 Analysis Batch: 701047

Client Sample ID: Spell 5 20211220
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
ALKALINITY TO PH 4.5	120		139		mg/L		16	30
Bicarbonate Alkalinity as CaCO3	120		137		mg/L		16	30

Method: 2540C-2011 - Total Dissolved Solids (Dried at 180 °C)

Lab Sample ID: MB 680-700293/1
 Matrix: Water
 Analysis Batch: 700293

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

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	5.0	U	5.0		mg/L			12/22/21 11:07	1

Lab Sample ID: LCS 680-700293/2
 Matrix: Water
 Analysis Batch: 700293

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	2460	2440		mg/L		99	80 - 120

Lab Sample ID: LCSD 680-700293/3
 Matrix: Water
 Analysis Batch: 700293

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	2460	2410		mg/L		98	80 - 120	1	25

Lab Sample ID: 680-209193-11 DU
 Matrix: Water
 Analysis Batch: 700293

Client Sample ID: L Well 20211220
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	690		676		mg/L		2	5

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

HPLC/IC

Analysis Batch: 700414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-209193-1	MW-13 20211219	Total/NA	Water	300.0-1993 R2.1	
680-209193-2	MW-50D 20211219	Total/NA	Water	300.0-1993 R2.1	
680-209193-3	MW-51D 20211219	Total/NA	Water	300.0-1993 R2.1	
680-209193-4	MW-61D 20211219	Total/NA	Water	300.0-1993 R2.1	
680-209193-5	Spell 5 20211220	Total/NA	Water	300.0-1993 R2.1	
680-209193-6	Blount 8 20211220	Total/NA	Water	300.0-1993 R2.1	
680-209193-7	Blount 10 20211220	Total/NA	Water	300.0-1993 R2.1	
680-209193-8	Roberts 22 20211220	Total/NA	Water	300.0-1993 R2.1	
680-209193-9	TCMHP 20211220	Total/NA	Water	300.0-1993 R2.1	
680-209193-10	Dupree Creek 20211220	Total/NA	Water	300.0-1993 R2.1	
680-209193-11	L Well 20211220	Total/NA	Water	300.0-1993 R2.1	
680-209193-12	V Well 20211220	Total/NA	Water	300.0-1993 R2.1	
MB 680-700414/33	Method Blank	Total/NA	Water	300.0-1993 R2.1	
LCS 680-700414/34	Lab Control Sample	Total/NA	Water	300.0-1993 R2.1	
LCSD 680-700414/35	Lab Control Sample Dup	Total/NA	Water	300.0-1993 R2.1	

Metals

Prep Batch: 700150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-209193-1	MW-13 20211219	Total Recoverable	Water	3005A	
680-209193-2	MW-50D 20211219	Total Recoverable	Water	3005A	
680-209193-3	MW-51D 20211219	Total Recoverable	Water	3005A	
680-209193-4	MW-61D 20211219	Total Recoverable	Water	3005A	
680-209193-5	Spell 5 20211220	Total Recoverable	Water	3005A	
MB 680-700150/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-700150/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Filtration Batch: 700159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-209193-1	MW-13 20211219	Dissolved	Water	FILTRATION	
680-209193-2	MW-50D 20211219	Dissolved	Water	FILTRATION	
680-209193-3	MW-51D 20211219	Dissolved	Water	FILTRATION	
680-209193-4	MW-61D 20211219	Dissolved	Water	FILTRATION	
680-209193-5	Spell 5 20211220	Dissolved	Water	FILTRATION	
680-209193-7	Blount 10 20211220	Dissolved	Water	FILTRATION	
680-209193-8	Roberts 22 20211220	Dissolved	Water	FILTRATION	
680-209193-9	TCMHP 20211220	Dissolved	Water	FILTRATION	
680-209193-10	Dupree Creek 20211220	Dissolved	Water	FILTRATION	
MB 680-700159/1-B	Method Blank	Dissolved	Water	FILTRATION	
LCS 680-700159/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	
680-209193-1 MS	MW-13 20211219	Dissolved	Water	FILTRATION	
680-209193-1 MSD	MW-13 20211219	Dissolved	Water	FILTRATION	

Prep Batch: 700163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-209193-1	MW-13 20211219	Dissolved	Water	3005A	700159
680-209193-2	MW-50D 20211219	Dissolved	Water	3005A	700159
680-209193-3	MW-51D 20211219	Dissolved	Water	3005A	700159
680-209193-4	MW-61D 20211219	Dissolved	Water	3005A	700159
680-209193-5	Spell 5 20211220	Dissolved	Water	3005A	700159

Eurofins TestAmerica, Savannah

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Metals (Continued)

Prep Batch: 700163 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-209193-7	Blount 10 20211220	Dissolved	Water	3005A	700159
680-209193-8	Roberts 22 20211220	Dissolved	Water	3005A	700159
680-209193-9	TCMHP 20211220	Dissolved	Water	3005A	700159
680-209193-10	Dupree Creek 20211220	Dissolved	Water	3005A	700159
MB 680-700159/1-B	Method Blank	Dissolved	Water	3005A	700159
LCS 680-700159/2-B	Lab Control Sample	Dissolved	Water	3005A	700159
680-209193-1 MS	MW-13 20211219	Dissolved	Water	3005A	700159
680-209193-1 MSD	MW-13 20211219	Dissolved	Water	3005A	700159

Filtration Batch: 700177

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-209193-6	Blount 8 20211220	Dissolved	Water	FILTRATION	
680-209193-11	L Well 20211220	Dissolved	Water	FILTRATION	
680-209193-12	V Well 20211220	Dissolved	Water	FILTRATION	
MB 680-700177/1-B	Method Blank	Dissolved	Water	FILTRATION	
LCS 680-700177/2-B	Lab Control Sample	Dissolved	Water	FILTRATION	
680-209193-11 MS	L Well 20211220	Dissolved	Water	FILTRATION	
680-209193-11 MSD	L Well 20211220	Dissolved	Water	FILTRATION	

Prep Batch: 700178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-209193-6	Blount 8 20211220	Dissolved	Water	3005A	700177
680-209193-11	L Well 20211220	Dissolved	Water	3005A	700177
680-209193-12	V Well 20211220	Dissolved	Water	3005A	700177
MB 680-700177/1-B	Method Blank	Dissolved	Water	3005A	700177
LCS 680-700177/2-B	Lab Control Sample	Dissolved	Water	3005A	700177
680-209193-11 MS	L Well 20211220	Dissolved	Water	3005A	700177
680-209193-11 MSD	L Well 20211220	Dissolved	Water	3005A	700177

Prep Batch: 700197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-209193-6	Blount 8 20211220	Total Recoverable	Water	3005A	
680-209193-7	Blount 10 20211220	Total Recoverable	Water	3005A	
680-209193-8	Roberts 22 20211220	Total Recoverable	Water	3005A	
680-209193-9	TCMHP 20211220	Total Recoverable	Water	3005A	
680-209193-10	Dupree Creek 20211220	Total Recoverable	Water	3005A	
680-209193-11	L Well 20211220	Total Recoverable	Water	3005A	
680-209193-12	V Well 20211220	Total Recoverable	Water	3005A	
MB 680-700197/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 680-700197/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
680-209193-12 MS	V Well 20211220	Total Recoverable	Water	3005A	
680-209193-12 MSD	V Well 20211220	Total Recoverable	Water	3005A	

Analysis Batch: 700459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-209193-1	MW-13 20211219	Dissolved	Water	6010C	700163
680-209193-1	MW-13 20211219	Total Recoverable	Water	6010C	700150
680-209193-2	MW-50D 20211219	Dissolved	Water	6010C	700163
680-209193-2	MW-50D 20211219	Total Recoverable	Water	6010C	700150
680-209193-3	MW-51D 20211219	Dissolved	Water	6010C	700163
680-209193-3	MW-51D 20211219	Total Recoverable	Water	6010C	700150

Eurofins TestAmerica, Savannah

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Metals (Continued)

Analysis Batch: 700459 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-209193-4	MW-61D 20211219	Dissolved	Water	6010C	700163
680-209193-4	MW-61D 20211219	Total Recoverable	Water	6010C	700150
680-209193-5	Spell 5 20211220	Dissolved	Water	6010C	700163
680-209193-5	Spell 5 20211220	Total Recoverable	Water	6010C	700150
680-209193-6	Blount 8 20211220	Dissolved	Water	6010C	700178
680-209193-7	Blount 10 20211220	Dissolved	Water	6010C	700163
680-209193-8	Roberts 22 20211220	Dissolved	Water	6010C	700163
680-209193-9	TCMHP 20211220	Dissolved	Water	6010C	700163
680-209193-10	Dupree Creek 20211220	Dissolved	Water	6010C	700163
680-209193-11	L Well 20211220	Dissolved	Water	6010C	700178
680-209193-12	V Well 20211220	Dissolved	Water	6010C	700178
MB 680-700150/1-A	Method Blank	Total Recoverable	Water	6010C	700150
MB 680-700159/1-B	Method Blank	Dissolved	Water	6010C	700163
MB 680-700177/1-B	Method Blank	Dissolved	Water	6010C	700178
LCS 680-700150/2-A	Lab Control Sample	Total Recoverable	Water	6010C	700150
LCS 680-700159/2-B	Lab Control Sample	Dissolved	Water	6010C	700163
LCS 680-700177/2-B	Lab Control Sample	Dissolved	Water	6010C	700178
680-209193-1 MS	MW-13 20211219	Dissolved	Water	6010C	700163
680-209193-1 MSD	MW-13 20211219	Dissolved	Water	6010C	700163
680-209193-11 MS	L Well 20211220	Dissolved	Water	6010C	700178
680-209193-11 MSD	L Well 20211220	Dissolved	Water	6010C	700178

Analysis Batch: 700565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-209193-6	Blount 8 20211220	Total Recoverable	Water	6010C	700197
680-209193-7	Blount 10 20211220	Total Recoverable	Water	6010C	700197
680-209193-8	Roberts 22 20211220	Total Recoverable	Water	6010C	700197
680-209193-9	TCMHP 20211220	Total Recoverable	Water	6010C	700197
680-209193-10	Dupree Creek 20211220	Total Recoverable	Water	6010C	700197
680-209193-11	L Well 20211220	Total Recoverable	Water	6010C	700197
680-209193-12	V Well 20211220	Total Recoverable	Water	6010C	700197
MB 680-700197/1-A	Method Blank	Total Recoverable	Water	6010C	700197
LCS 680-700197/2-A	Lab Control Sample	Total Recoverable	Water	6010C	700197
680-209193-12 MS	V Well 20211220	Total Recoverable	Water	6010C	700197
680-209193-12 MSD	V Well 20211220	Total Recoverable	Water	6010C	700197

Analysis Batch: 700768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-209193-4	MW-61D 20211219	Total Recoverable	Water	6010C	700150
680-209193-10	Dupree Creek 20211220	Total Recoverable	Water	6010C	700197
680-209193-11	L Well 20211220	Total Recoverable	Water	6010C	700197

Analysis Batch: 700834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-209193-10	Dupree Creek 20211220	Total Recoverable	Water	6010C	700197

General Chemistry

Analysis Batch: 700293

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-209193-1	MW-13 20211219	Total/NA	Water	2540C-2011	

Eurofins TestAmerica, Savannah

QC Association Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

General Chemistry (Continued)

Analysis Batch: 700293 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-209193-2	MW-50D 20211219	Total/NA	Water	2540C-2011	
680-209193-3	MW-51D 20211219	Total/NA	Water	2540C-2011	
680-209193-4	MW-61D 20211219	Total/NA	Water	2540C-2011	
680-209193-5	Spell 5 20211220	Total/NA	Water	2540C-2011	
680-209193-6	Blount 8 20211220	Total/NA	Water	2540C-2011	
680-209193-7	Blount 10 20211220	Total/NA	Water	2540C-2011	
680-209193-8	Roberts 22 20211220	Total/NA	Water	2540C-2011	
680-209193-9	TCMHP 20211220	Total/NA	Water	2540C-2011	
680-209193-10	Dupree Creek 20211220	Total/NA	Water	2540C-2011	
680-209193-11	L Well 20211220	Total/NA	Water	2540C-2011	
680-209193-12	V Well 20211220	Total/NA	Water	2540C-2011	
MB 680-700293/1	Method Blank	Total/NA	Water	2540C-2011	
LCS 680-700293/2	Lab Control Sample	Total/NA	Water	2540C-2011	
LCSD 680-700293/3	Lab Control Sample Dup	Total/NA	Water	2540C-2011	
680-209193-11 DU	L Well 20211220	Total/NA	Water	2540C-2011	

Analysis Batch: 701047

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-209193-1	MW-13 20211219	Total/NA	Water	2320B-2011	
680-209193-2	MW-50D 20211219	Total/NA	Water	2320B-2011	
680-209193-3	MW-51D 20211219	Total/NA	Water	2320B-2011	
680-209193-4	MW-61D 20211219	Total/NA	Water	2320B-2011	
680-209193-5	Spell 5 20211220	Total/NA	Water	2320B-2011	
680-209193-6	Blount 8 20211220	Total/NA	Water	2320B-2011	
680-209193-7	Blount 10 20211220	Total/NA	Water	2320B-2011	
680-209193-8	Roberts 22 20211220	Total/NA	Water	2320B-2011	
680-209193-9	TCMHP 20211220	Total/NA	Water	2320B-2011	
680-209193-10	Dupree Creek 20211220	Total/NA	Water	2320B-2011	
680-209193-11	L Well 20211220	Total/NA	Water	2320B-2011	
680-209193-12	V Well 20211220	Total/NA	Water	2320B-2011	
MB 680-701047/34	Method Blank	Total/NA	Water	2320B-2011	
MB 680-701047/6	Method Blank	Total/NA	Water	2320B-2011	
LCS 680-701047/36	Lab Control Sample	Total/NA	Water	2320B-2011	
LCS 680-701047/8	Lab Control Sample	Total/NA	Water	2320B-2011	
LCSD 680-701047/33	Lab Control Sample Dup	Total/NA	Water	2320B-2011	
LCSD 680-701047/61	Lab Control Sample Dup	Total/NA	Water	2320B-2011	
LLCS 680-701047/35	Lab Control Sample	Total/NA	Water	2320B-2011	
LLCS 680-701047/7	Lab Control Sample	Total/NA	Water	2320B-2011	
680-209193-5 DU	Spell 5 20211220	Total/NA	Water	2320B-2011	

Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: MW-13 20211219

Lab Sample ID: 680-209193-1

Date Collected: 12/19/21 09:57

Matrix: Water

Date Received: 12/21/21 12:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0-1993 R2.1		1	5 mL	5 mL	700414	12/23/21 19:50	UI	TAL SAV
Instrument ID: CICK										
Dissolved	Filtration	FILTRATION			50 mL	50 mL	700159	12/21/21 16:43	JE	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	700163	12/21/21 16:43	JE	TAL SAV
Dissolved	Analysis	6010C		1			700459	12/23/21 03:50	BCB	TAL SAV
Instrument ID: ICPE										
Total Recoverable	Prep	3005A			50 mL	50 mL	700150	12/21/21 15:50	JE	TAL SAV
Total Recoverable	Analysis	6010C		1			700459	12/23/21 00:23	BCB	TAL SAV
Instrument ID: ICPE										
Total/NA	Analysis	2320B-2011		1			701047	12/28/21 15:25	DR	TAL SAV
Instrument ID: MANTECH 2										
Total/NA	Analysis	2540C-2011		1	50 mL	200 mL	700293	12/22/21 11:07	PG	TAL SAV
Instrument ID: NOEQUIP										

Client Sample ID: MW-50D 20211219

Lab Sample ID: 680-209193-2

Date Collected: 12/19/21 08:55

Matrix: Water

Date Received: 12/21/21 12:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0-1993 R2.1		1	5 mL	5 mL	700414	12/23/21 20:02	UI	TAL SAV
Instrument ID: CICK										
Dissolved	Filtration	FILTRATION			50 mL	50 mL	700159	12/21/21 16:43	JE	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	700163	12/21/21 16:43	JE	TAL SAV
Dissolved	Analysis	6010C		1			700459	12/23/21 05:18	BCB	TAL SAV
Instrument ID: ICPE										
Total Recoverable	Prep	3005A			50 mL	50 mL	700150	12/21/21 15:50	JE	TAL SAV
Total Recoverable	Analysis	6010C		1			700459	12/23/21 00:27	BCB	TAL SAV
Instrument ID: ICPE										
Total/NA	Analysis	2320B-2011		1			701047	12/28/21 15:25	DR	TAL SAV
Instrument ID: MANTECH 2										
Total/NA	Analysis	2540C-2011		1	50 mL	200 mL	700293	12/22/21 11:07	PG	TAL SAV
Instrument ID: NOEQUIP										

Client Sample ID: MW-51D 20211219

Lab Sample ID: 680-209193-3

Date Collected: 12/19/21 08:50

Matrix: Water

Date Received: 12/21/21 12:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0-1993 R2.1		1	5 mL	5 mL	700414	12/23/21 20:15	UI	TAL SAV
Instrument ID: CICK										
Dissolved	Filtration	FILTRATION			50 mL	50 mL	700159	12/21/21 16:43	JE	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	700163	12/21/21 16:43	JE	TAL SAV
Dissolved	Analysis	6010C		1			700459	12/23/21 05:23	BCB	TAL SAV
Instrument ID: ICPE										

Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: MW-51D 20211219

Lab Sample ID: 680-209193-3

Date Collected: 12/19/21 08:50

Matrix: Water

Date Received: 12/21/21 12:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	700150	12/21/21 15:50	JE	TAL SAV
Total Recoverable	Analysis	6010C		1			700459	12/23/21 00:31	BCB	TAL SAV
Instrument ID: ICPE										
Total/NA	Analysis	2320B-2011		1			701047	12/28/21 15:25	DR	TAL SAV
Instrument ID: MANTECH 2										
Total/NA	Analysis	2540C-2011		1	50 mL	200 mL	700293	12/22/21 11:07	PG	TAL SAV
Instrument ID: NOEQUIP										

Client Sample ID: MW-61D 20211219

Lab Sample ID: 680-209193-4

Date Collected: 12/19/21 09:07

Matrix: Water

Date Received: 12/21/21 12:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0-1993 R2.1		10	5 mL	5 mL	700414	12/23/21 20:28	UI	TAL SAV
Instrument ID: CICK										
Dissolved	Filtration	FILTRATION			50 mL	50 mL	700159	12/21/21 16:43	JE	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	700163	12/21/21 16:43	JE	TAL SAV
Dissolved	Analysis	6010C		1			700459	12/23/21 05:27	BCB	TAL SAV
Instrument ID: ICPE										
Total Recoverable	Prep	3005A			50 mL	50 mL	700150	12/21/21 15:50	JE	TAL SAV
Total Recoverable	Analysis	6010C		1			700459	12/23/21 00:36	BCB	TAL SAV
Instrument ID: ICPE										
Total Recoverable	Prep	3005A			50 mL	50 mL	700150	12/21/21 15:50	JE	TAL SAV
Total Recoverable	Analysis	6010C		10			700768	12/23/21 16:12	BCB	TAL SAV
Instrument ID: ICPE										
Total/NA	Analysis	2320B-2011		1			701047	12/28/21 15:25	DR	TAL SAV
Instrument ID: MANTECH 2										
Total/NA	Analysis	2540C-2011		1	25 mL	200 mL	700293	12/22/21 11:07	PG	TAL SAV
Instrument ID: NOEQUIP										

Client Sample ID: Spell 5 20211220

Lab Sample ID: 680-209193-5

Date Collected: 12/20/21 08:57

Matrix: Water

Date Received: 12/21/21 12:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0-1993 R2.1		1	5 mL	5 mL	700414	12/23/21 21:44	UI	TAL SAV
Instrument ID: CICK										
Dissolved	Filtration	FILTRATION			50 mL	50 mL	700159	12/21/21 16:43	JE	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	700163	12/21/21 16:43	JE	TAL SAV
Dissolved	Analysis	6010C		1			700459	12/23/21 05:39	BCB	TAL SAV
Instrument ID: ICPE										
Total Recoverable	Prep	3005A			50 mL	50 mL	700150	12/21/21 15:50	JE	TAL SAV
Total Recoverable	Analysis	6010C		1			700459	12/23/21 00:48	BCB	TAL SAV
Instrument ID: ICPE										
Total/NA	Analysis	2320B-2011		1			701047	12/28/21 15:25	DR	TAL SAV
Instrument ID: MANTECH 2										

Eurofins TestAmerica, Savannah

Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: Spell 5 20211220

Lab Sample ID: 680-209193-5

Date Collected: 12/20/21 08:57

Matrix: Water

Date Received: 12/21/21 12:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540C-2011		1	50 mL	200 mL	700293	12/22/21 11:07	PG	TAL SAV

Client Sample ID: Blount 8 20211220

Lab Sample ID: 680-209193-6

Date Collected: 12/20/21 09:22

Matrix: Water

Date Received: 12/21/21 12:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0-1993 R2.1 Instrument ID: CICK		1	5 mL	5 mL	700414	12/23/21 21:56	UI	TAL SAV
Dissolved	Filtration	FILTRATION			50 mL	50 mL	700177	12/21/21 17:52	JE	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	700178	12/21/21 17:52	JE	TAL SAV
Dissolved	Analysis	6010C Instrument ID: ICPE		1			700459	12/23/21 06:30	BCB	TAL SAV
Total Recoverable	Prep	3005A			50 mL	50 mL	700197	12/22/21 07:36	JE	TAL SAV
Total Recoverable	Analysis	6010C Instrument ID: ICPE		1			700565	12/23/21 11:13	BCB	TAL SAV
Total/NA	Analysis	2320B-2011 Instrument ID: MANTECH 2		1			701047	12/28/21 15:25	DR	TAL SAV
Total/NA	Analysis	2540C-2011 Instrument ID: NOEQUIP		1	50 mL	200 mL	700293	12/22/21 11:07	PG	TAL SAV

Client Sample ID: Blount 10 20211220

Lab Sample ID: 680-209193-7

Date Collected: 12/20/21 09:51

Matrix: Water

Date Received: 12/21/21 12:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0-1993 R2.1 Instrument ID: CICK		1	5 mL	5 mL	700414	12/23/21 22:09	UI	TAL SAV
Dissolved	Filtration	FILTRATION			50 mL	50 mL	700159	12/21/21 16:43	JE	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	700163	12/21/21 16:43	JE	TAL SAV
Dissolved	Analysis	6010C Instrument ID: ICPE		1			700459	12/23/21 05:52	BCB	TAL SAV
Total Recoverable	Prep	3005A			50 mL	50 mL	700197	12/22/21 07:36	JE	TAL SAV
Total Recoverable	Analysis	6010C Instrument ID: ICPE		1			700565	12/23/21 11:17	BCB	TAL SAV
Total/NA	Analysis	2320B-2011 Instrument ID: MANTECH 2		1			701047	12/28/21 15:25	DR	TAL SAV
Total/NA	Analysis	2540C-2011 Instrument ID: NOEQUIP		1	50 mL	200 mL	700293	12/22/21 11:07	PG	TAL SAV

Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: Roberts 22 20211220
Date Collected: 12/20/21 08:51
Date Received: 12/21/21 12:00

Lab Sample ID: 680-209193-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0-1993 R2.1		1	5 mL	5 mL	700414	12/23/21 22:22	UI	TAL SAV
Instrument ID: CICK										
Dissolved	Filtration	FILTRATION			50 mL	50 mL	700159	12/21/21 16:43	JE	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	700163	12/21/21 16:43	JE	TAL SAV
Dissolved	Analysis	6010C		1			700459	12/23/21 05:31	BCB	TAL SAV
Instrument ID: ICPE										
Total Recoverable	Prep	3005A			50 mL	50 mL	700197	12/22/21 07:36	JE	TAL SAV
Total Recoverable	Analysis	6010C		1			700565	12/23/21 11:21	BCB	TAL SAV
Instrument ID: ICPE										
Total/NA	Analysis	2320B-2011		1			701047	12/28/21 15:25	DR	TAL SAV
Instrument ID: MANTECH 2										
Total/NA	Analysis	2540C-2011		1	50 mL	200 mL	700293	12/22/21 11:07	PG	TAL SAV
Instrument ID: NOEQUIP										

Client Sample ID: TCMHP 20211220
Date Collected: 12/20/21 09:25
Date Received: 12/21/21 12:00

Lab Sample ID: 680-209193-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0-1993 R2.1		1	5 mL	5 mL	700414	12/23/21 22:34	UI	TAL SAV
Instrument ID: CICK										
Dissolved	Filtration	FILTRATION			50 mL	50 mL	700159	12/21/21 16:43	JE	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	700163	12/21/21 16:43	JE	TAL SAV
Dissolved	Analysis	6010C		1			700459	12/23/21 05:35	BCB	TAL SAV
Instrument ID: ICPE										
Total Recoverable	Prep	3005A			50 mL	50 mL	700197	12/22/21 07:36	JE	TAL SAV
Total Recoverable	Analysis	6010C		1			700565	12/23/21 11:25	BCB	TAL SAV
Instrument ID: ICPE										
Total/NA	Analysis	2320B-2011		1			701047	12/28/21 15:25	DR	TAL SAV
Instrument ID: MANTECH 2										
Total/NA	Analysis	2540C-2011		1	50 mL	200 mL	700293	12/22/21 11:07	PG	TAL SAV
Instrument ID: NOEQUIP										

Client Sample ID: Dupree Creek 20211220
Date Collected: 12/20/21 10:50
Date Received: 12/21/21 12:00

Lab Sample ID: 680-209193-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0-1993 R2.1		200	5 mL	5 mL	700414	12/23/21 22:47	UI	TAL SAV
Instrument ID: CICK										
Dissolved	Filtration	FILTRATION			50 mL	50 mL	700159	12/21/21 16:43	JE	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	700163	12/21/21 16:43	JE	TAL SAV
Dissolved	Analysis	6010C		1			700459	12/23/21 05:14	BCB	TAL SAV
Instrument ID: ICPE										

Lab Chronicle

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: Dupree Creek 20211220

Lab Sample ID: 680-209193-10

Date Collected: 12/20/21 10:50

Matrix: Water

Date Received: 12/21/21 12:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	3005A			50 mL	50 mL	700197	12/22/21 07:36	JE	TAL SAV
Total Recoverable	Analysis	6010C		1			700565	12/23/21 11:29	BCB	TAL SAV
Instrument ID: ICPE										
Total Recoverable	Prep	3005A			50 mL	50 mL	700197	12/22/21 07:36	JE	TAL SAV
Total Recoverable	Analysis	6010C		100			700768	12/23/21 16:47	BCB	TAL SAV
Instrument ID: ICPE										
Total Recoverable	Prep	3005A			50 mL	50 mL	700197	12/22/21 07:36	JE	TAL SAV
Total Recoverable	Analysis	6010C		500			700834	12/27/21 14:35	BCB	TAL SAV
Instrument ID: ICPE										
Total/NA	Analysis	2320B-2011		1			701047	12/28/21 15:25	DR	TAL SAV
Instrument ID: MANTECH 2										
Total/NA	Analysis	2540C-2011		1	1 mL	200 mL	700293	12/22/21 11:07	PG	TAL SAV
Instrument ID: NOEQUIP										

Client Sample ID: L Well 20211220

Lab Sample ID: 680-209193-11

Date Collected: 12/20/21 12:00

Matrix: Water

Date Received: 12/21/21 12:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0-1993 R2.1		5	5 mL	5 mL	700414	12/23/21 23:00	UI	TAL SAV
Instrument ID: CICK										
Dissolved	Filtration	FILTRATION			50 mL	50 mL	700177	12/21/21 17:52	JE	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	700178	12/21/21 17:52	JE	TAL SAV
Dissolved	Analysis	6010C		1			700459	12/23/21 06:05	BCB	TAL SAV
Instrument ID: ICPE										
Total Recoverable	Prep	3005A			50 mL	50 mL	700197	12/22/21 07:36	JE	TAL SAV
Total Recoverable	Analysis	6010C		1			700565	12/23/21 11:33	BCB	TAL SAV
Instrument ID: ICPE										
Total Recoverable	Prep	3005A			50 mL	50 mL	700197	12/22/21 07:36	JE	TAL SAV
Total Recoverable	Analysis	6010C		10			700768	12/23/21 16:51	BCB	TAL SAV
Instrument ID: ICPE										
Total/NA	Analysis	2320B-2011		1			701047	12/28/21 15:25	DR	TAL SAV
Instrument ID: MANTECH 2										
Total/NA	Analysis	2540C-2011		1	50 mL	200 mL	700293	12/22/21 11:07	PG	TAL SAV
Instrument ID: NOEQUIP										

Client Sample ID: V Well 20211220

Lab Sample ID: 680-209193-12

Date Collected: 12/20/21 12:55

Matrix: Water

Date Received: 12/21/21 12:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0-1993 R2.1		1	5 mL	5 mL	700414	12/23/21 23:12	UI	TAL SAV
Instrument ID: CICK										

Eurofins TestAmerica, Savannah

Lab Chronicle

Client: Geosyntec Consultants, Inc.
 Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Client Sample ID: V Well 20211220

Lab Sample ID: 680-209193-12

Date Collected: 12/20/21 12:55

Matrix: Water

Date Received: 12/21/21 12:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			50 mL	50 mL	700177	12/21/21 17:52	JE	TAL SAV
Dissolved	Prep	3005A			50 mL	50 mL	700178	12/21/21 17:52	JE	TAL SAV
Dissolved	Analysis	6010C		1			700459	12/23/21 06:26	BCB	TAL SAV
Instrument ID: ICPE										
Total Recoverable	Prep	3005A			50 mL	50 mL	700197	12/22/21 07:36	JE	TAL SAV
Total Recoverable	Analysis	6010C		1			700565	12/23/21 10:45	BCB	TAL SAV
Instrument ID: ICPE										
Total/NA	Analysis	2320B-2011		1			701047	12/28/21 15:25	DR	TAL SAV
Instrument ID: MANTECH 2										
Total/NA	Analysis	2540C-2011		1	50 mL	200 mL	700293	12/22/21 11:07	PG	TAL SAV
Instrument ID: NOEQUIP										

Laboratory References:

TAL SAV = Eurofins TestAmerica, Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858



Chain of Custody Record

eu of ns

Client Information		Sampler: SC, KW, MS, DG	Lab PM: Fuller, David	Carrier Tracking No(s): 680-131112-48472 1	COC No: 680-131112-48472 1		
Client Contact: Adria Reimer		Phone: _____	E-Mail: David.Fuller@Eurofins.com	State of Origin: GA	Page: Page 1 of 1		
Company: Geosyntec Consultants Inc.		PWSID: _____		Job #: _____			
Address: 1255 Roberts Blvd NW Suite 200		Due Date Requested: 10 Days	Analysis Requested				
City: Kennesaw		TAT Requested (days): 10 Day Standard	2540C Solids, Total Dissolved (TDS)				
State/Zip: GA, 30144		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No	6010C Ca, Mg, K, Na, Fe				
Phone: 678-202-9564(Tel)		PO #: PO925941	2320B Alkalinity				
Email: areimer@geosyntec.com		WO #: Task 300	6010C Lab Filtered Iron				
Project Name: Brunswick TC Well Evaluation		Project #: 68022348	300_ORGM_28D Chloride and Sulfate				
Site: PINOVA PLANT		SSOW#: _____	Perform MS/MSD (Yes or No)				
			Field Filtered Sample (Yes or No)				
			Preservation Codes:				
			<input type="checkbox"/> A HCL <input type="checkbox"/> M Hexane <input type="checkbox"/> B NaOH <input type="checkbox"/> N None <input type="checkbox"/> O AsNaO2 <input type="checkbox"/> C Zn Acetate <input type="checkbox"/> P Na2O4S <input type="checkbox"/> Q Na2SO3 <input type="checkbox"/> D Nitric Acid <input type="checkbox"/> R NaHSO4 <input type="checkbox"/> S -H2SO4 <input type="checkbox"/> E MeOH <input type="checkbox"/> G Amchlor <input type="checkbox"/> H Ascorbic Acid <input type="checkbox"/> I Ice <input type="checkbox"/> J DI Water <input type="checkbox"/> K EDTA <input type="checkbox"/> F MeOH <input type="checkbox"/> L EDTA <input type="checkbox"/> T TSP Dodecahydrate <input type="checkbox"/> U Acetone <input type="checkbox"/> V MCAA <input type="checkbox"/> W pH 4-5 <input type="checkbox"/> X Other _____ <input type="checkbox"/> Z other (specify)				
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=solid, O=soil, BT=Tissue, A=air)	Total Number of containers	Special Instructions/Note
MW-13 20211219	12/19/21	0957	G	W		5	
MW-50D 20211219	12/19/21	0855	G	W		5	
MW-51D 20211219	12/19/21	0850	G	W		5	
MW-61D 20211219	12/19/21	0907	G	W		5	
Spell 5 20211220	12/20/21	0857	G	W			
Blount 8 20211220	12/20/21	0922	G	W			
Blount 10 20211220	12/20/21	0951	G	W			
Roberts 22 20211220	12/20/21	0851	G	W			
TCMHP 20211220	12/20/21	0925	G	W			
Dupree Creek 20211220	12/20/21	1050	G	W		5	
L Well 20211220	12/20/21	1200	G	W		5	
V Well 20211220	12/20/21	1255	G	W		5	
Possible Hazard Identification		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
Deliverable Requested I II III IV Other (specify)		Special Instructions/QC Requirements:		Method of Shipment: _____ Date/Time: 12/21/2021 1100 Received by: <i>REC</i> Date/Time: 12/21/21 1200 Received by: _____ Date/Time: _____ Received by: _____ Date/Time: _____ Cooler Temperature(s) °C and Other Remarks: 1.1-1.2 1.8-1.4 2.7-2.8			
Empty Kit Relinquished by:		Date		Time			
Relinquished by: Manasa Sathasivan		Date/Time: 12/21/2021 1100		Company			
Relinquished by:		Date/Time:		Company			
Relinquished by:		Date/Time:		Company			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No					



Login Sample Receipt Checklist

Client: Geosyntec Consultants, Inc.

Job Number: 680-209193-1

Login Number: 209193

List Number: 1

Creator: Hartley, Tyler

List Source: Eurofins TestAmerica, Savannah

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

Accreditation/Certification Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Brunswick TC Well Evaluation

Job ID: 680-209193-1

Laboratory: Eurofins TestAmerica, Savannah

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E87052	06-30-22
Georgia	State	E87052	06-30-22

- 1
- 2
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- 10
- 11
- 12
- 13
- 14

Memorandum

Date: 17 January 2022
To: Adria Reimer
Ashely Ramsey
From: Jennifer Pinion
CC: J. Caprio
Subject: **Stage 2A Data Validation - Level II Data Deliverables – Eurofins
TestAmerica Job ID 680-209193-1**

SITE: Ashland – Brunswick TC Well Evaluation

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of twelve water samples, collected 19-20 December 2021, as part of the Ashland – Brunswick TC Well Evaluation sampling event. Eurofins TestAmerica Savannah, Georgia analyzed the samples for the following analytical tests:

- Total Metals by United States (US) Environmental Protection Agency (EPA) Methods 3005A/6010C
- Total and Dissolved Iron by US EPA Methods 3005A/6010C
- Anions using Ion Chromatography (IC) by US EPA Method 300.0 1993 R2.1
- Total Alkalinity by Standard Methods (SM) 2320B-2011
- Total Dissolved Solids (TDS) by SM 2540C-2011

EXECUTIVE SUMMARY

Overall, based on this Stage 2A data validation covering the quality control (QC) parameters listed below and based on the information provided, the data are usable for supporting project objectives.

The data were reviewed based on professional and technical judgment and the following documents:

- US EPA National Functional Guidelines for Superfund Organic Methods Data Review, November 2020 (EPA 540-R-20-005);
- US EPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, November 2020 (EPA 542-R-20-006); and

- The pertinent methods and SOPs referenced by the data package and professional and technical judgement.

The following samples were analyzed and validated at Stage 2A level in the data set:

Laboratory IDs	Client IDs
680-209193-1	MW-13 20211219
680-209193-2	MW-50D 20211219
680-209193-3	MW-51D 20211219
680-209193-4	MW-61D 20211219
680-209193-5	Spell 5 20211220
680-209193-6	Blount 8 20211220

Laboratory IDs	Client IDs
680-209193-7	Blount 10 20211220
680-209193-8	Roberts 22 20211220
680-209193-9	TCMHP 20211220
680-209193-10	Dupree Creek 20211220
680-209193-11	L Well 20211220
680-209193-12	V Well 20211220

The samples were within the criteria of 0-6 degrees Celsius (°C). No sample preservation issues were noted by the laboratory.

1.0 METALS

The samples were analyzed for total metals by US EPA methods 3005A/6010C and total and dissolved iron by US EPA methods 3005A/6010C.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Total and Dissolved Assessment
- ✓ Sensitivity
- ⊗ Electronic Data Deliverable Review

1.1 Overall Assessment

The total metals and total and dissolved iron data reported in this sample set are considered usable for supporting project objectives. The results are considered valid; the analytical completeness

defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for analysis, for this sample set is 100%.

1.2 Holding Times

The holding time for the total metals analysis of a preserved water samples are 180 days from sample collection to analysis. The holding times for dissolved metals is 15 minutes from collection to filtration then preservation, then 180 days from collection to analysis. The holding times were met for the sample analyses.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported (batches 700150, 700197, 700163 and 700178). Metals were not detected in the method blanks above the reporting limits (RLs).

1.4 Matrix Spike/Matrix Spike Duplicate

Two sample set specific MS/MSD pairs were reported using samples V Well 20211220 and MW-13 20211219. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria, with the following exceptions.

The recoveries of calcium and magnesium in the MS/MSD pair using sample V Well 20211220 were flagged with 4, indicating the sample concentrations were greater than four times the spike concentrations; therefore, the recovery limits were not applicable. Therefore, no qualifications were applied to the calcium and magnesium data in sample V Well 20211220.

1.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four LCSs were reported. The recovery results were within the laboratory specified acceptance criteria.

1.6 Equipment Blank

Equipment blanks were not collected with the sample set.

1.7 Field Duplicate

Field duplicates were not collected with the sample set.

1.8 Total and Dissolved Iron Assessment

The samples were analyzed for total and dissolved iron. The samples had total iron concentrations greater than the dissolved iron concentrations; therefore, no qualifications were applied to the data.

1.9 Sensitivity

The samples were reported to the RLs. Elevated non-detect results were not reported.

1.10 Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The samples were reported to the RLs; both the MDLs and RLs were listed in the EDDs. No other discrepancies were identified between the level II reports and the EDDs.

2.0 WET CHEMISTRY

The samples were analyzed for anions by US EPA Method 300.0 1993 R2.1, total alkalinity by SM 2320B-2011 and TDS by SM 2540C-2011.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Times
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Laboratory Duplicate
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ⊗ Electronic Data Deliverable Review

2.1 Overall Assessment

The wet chemistry data reported in this sample set are considered usable for supporting project objectives. The results are considered valid; the analytical completeness defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to

the total number of analytical results requested on samples submitted for analysis, for this sample set is 100%.

2.2 Holding Times

The holding times for the wet chemistry parameters are in the table below. The holding times were met for the sample analyses.

Analyte	Holding Time
Chloride	28 days from collection to analysis
Sulfate	28 days from collection to analysis
Alkalinity	14 days from collection to analysis
Total Dissolved Solids	7 days from collection to analysis

2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Method blanks were reported for each analysis batch (anions batch 700414, alkalinity batch 701047 and TDS batch 700293). The wet chemistry parameters were not detected in the method blanks above the RLs.

2.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were not reported.

2.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). LCS/LCSDs were reported for each analysis batch. The recovery and RPD results were within the laboratory specified acceptance criteria.

2.6 Laboratory Duplicate

Laboratory duplicates were reported for alkalinity using sample Spell 5 20211220 and TDS using sample L Well 20211220. The RPD results were within the laboratory specified acceptance criteria.

2.7 Equipment Blank

Equipment blanks were not collected with the sample set.

2.8 Field Duplicate

Field duplicates were not collected with the sample set.

2.9 Sensitivity

The samples were reported to the RLs. Elevated non-detect results were not reported.

2.10 Electronic Data Deliverables Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The samples were reported to the RLs; both the MDLs and RLs were listed in the EDDs. No other discrepancies were identified between the level II reports and the EDDs.

ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS
AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team

DATA QUALIFIER DEFINITIONS

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit. Upon application of the U qualifier to a reported result, the definition changes to “not detected at or above the reported result”.
- J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- J+ The analyte was positively identified; however, the associated numerical value is likely to be higher than the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.
- J- The analyte was positively identified; however, the associated numerical value is likely to be lower than the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.
- UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec’s Data Validation Team

Valid Value	Description
1	Preservation requirement not met
2	Extraction or analysis holding time exceeded
3	Blank contamination (i.e., method, trip, equipment, etc.)
4	Matrix spike/matrix spike duplicate recovery or RPD outside limits
5	LCS recovery outside limits or RPD outside limits (LCS/LCSD)
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other
14	Lab flag removed: no validation qualification required
NV	Result not validated

LCS - Laboratory Control Sample

LCSD - Laboratory Control Sample duplicate

RPD - Relative percent difference