Geosyntec consultants

1255 Roberts Boulevard, Suite 200
Kennesaw, Georgia 30144
PH 678.202.9500
FAX 678.202.9501
www.geosyntec.com

February 22, 2019

VIA EMAIL

Richard Dunn, EPD Director
c/o David Hayes
Response and Remediation Program
Land Protection Branch
Georgia Environmental Protection Division
2 Martin Luther King, Jr. Drive
Suite 1054, East Tower
Atlanta, Georgia 30334
David.Hayes@dnr.ga.gov

Subject: SoGreen and Parramore Fertilizer Sites
Semi-Annual Progress Report No. 1 required under Consent Order No. EPD-VRP-015

Dear Mr. Hayes:

Geosyntec Consultants, Inc. (Geosyntec) is pleased to submit this report for your review to satisfy the requirements in Paragraphs 3.a and 4.a of Consent Order EPD-VRP-015 (the "Consent Order"). The Consent Order requires submission of a semi-annual progress report regarding the SoGreen and Parramore Fertilizer Sites (HSI Nos. 10142 and 10143, respectively), in accordance with Section 12-8-107(b) of the Georgia Voluntary Remediation Program (VRP) Act. The following letter report provides a summary of activities completed during the period from August 22, 2018 through February 22, 2019, as well as a projection of activities for the period from March 2019 to August 2019. In addition, Geosyntec has reviewed EPD's October 31, 2017 comment letters on the SoGreen and Parramore Fertilizer Site (PFS) Voluntary Investigation Remediation Plans (VIRPs) and provides a response to each set of comments as enclosures to this report.

ACTIVITIES COMPLETED THIS PERIOD

- The Consent Order Respondents have agreed that Gerdau will take the lead on directing the work performed thereunder. Gerdau has transferred technical project management responsibilities to Geosyntec for the purposes of completing the VIRPs for both SoGreen and PFS. Geosyntec's registered professional geologists and engineers are now overseeing the implementation of the VIRPs in accordance with the provisions, purposes, standards, and policies of VRP Act. Because this transition was in progress and ultimately completed

during this period, some of the activities described below were completed by the former project consultant, Wood Environment & Infrastructure Solutions Inc. (Wood). Geosyntec will be managing all such project management responsibilities on a going forward basis.

- Gerdau timely commenced efforts to obtain access from various parties in order to implement the SoGreen Site Hydrology Evaluation on the relevant parcels. The Hydrology Evaluation, specifically as it relates to the Landfill Corner, will require access to property that Gerdau understands to be owned by Tift County, the Reinhardt Estate, and CSX. Shortly after the Effective Date of the Consent Order, Gerdau's attorneys contacted representatives of Tift County and the Reinhardt Estate concerning access, and Wood submitted an access application to CSX. CSX provided questions about certain details of the access request, and Wood provided responses. Going forward, Geosyntec is managing the CSX access application process on Gerdau's behalf. With respect to the County and the Reinhardt Estate, after a number of telephonic and written communications after initial contacts, Gerdau's attorneys had productive, encouraging meetings on December 11, 2018 with representatives to discuss access. Access discussions with Tift County, the Reinhardt Estate, and CSX are ongoing.

- On October 19, 2018, Gerdau submitted to EPD the Consent Order-required cost estimate to complete the work proposed in Section 5 of the VIRPs. Subsequently, EPD requested additional detail on the development of the cost estimate, and Gerdau, through its attorneys, provided that additional detail. Gerdau also provided and obtained EPD acceptance of a financial assurance mechanism in the form of a letter of credit issued by Citibank to reflect all costs identified in the cost estimate. The cost impact of the transition of technical project management responsibilities to Geosyntec is expected to be marginal, with costs remaining well within the financial assurance provided to EPD.

- Soil sampling on the Railroad Parcel portion of the PFS and the Barren Area Parcel portion of the SoGreen Site, as described in the PFS and SoGreen Site VIRPs, is complete. Laboratory analysis is underway. In accordance with the Consent Order and guidance received from EPD's Mr. Will Lucas by email, analytical data findings will be presented in the next semi-annual progress report.

PROJECTION OF ACTIVITIES FOR THE NEXT PERIOD

- Geosyntec expects to report the final validated results and evaluation of the above-described soil sampling on the Railroad Parcel and Barren Area Parcel to EPD in the next semi-annual progress report.

- Gerdau anticipates receiving access for the SoGreen Site Hydrology Evaluation from Tift County and the Reinhardt Estate in the next semi-annual period and is hopeful that it will also receive access from CSX in the next period.

- Gerdau is also evaluating potential adjustment to the precise scope of the SoGreen Site Hydrology Evaluation—*e.g.*, potential changes to the placement of certain gauging/sampling locations and the potential addition of analytes that may be indicative of landfill leachate. The cost impact of any such adjustments is expected to be marginal, with costs remaining well within the financial assurance provided to EPD.

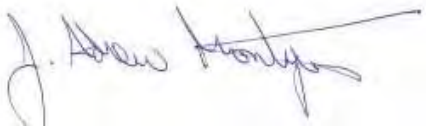
- Subject to obtaining access, Geosyntec anticipates beginning the SoGreen Site Hydrology Evaluation that is described in the SoGreen Site VIRP in the next semi-annual period, in order to evaluate whether either the Landfill Plume or the Railroad Plume emanate from the SoGreen Site based on the data collected. We expect to report the results of this evaluation to EPD in the second semi-annual progress report.

- At this time, we do not anticipate any issues with performance of the work under the VIRPs.

CLOSING

Please contact Mr. Andrew Montgomery at (678) 202-9512 if you have any questions concerning this submittal.

Sincerely,



J. Andrew Montgomery, PE (GA)
Senior Principal

Gregory P. Roush, PG (GA)
Senior Principal

Enclosures

Copies to: William Lucas, EPD
Luis Nieves, Gerdau
Max Zygmont, Kazmarek Mowrey Cloud Laseter LLP

Geosyntec consultants

1255 Roberts Boulevard, Suite 200
Kennesaw, Georgia 30144
PH 678.202.9500
FAX 678.202.9501
www.geosyntec.com

February 22, 2019

Mr. William H. Lucas, III
Response and Remediation Programs
Land Protection Branch
Georgia Environmental Protection Division
2 Martin Luther King Jr. Drive, SE
Suite 1054 East Floyd Tower
Atlanta, Georgia 30334

Subject: Response to October 31, 2017 EPD Comments
Parramore Fertilizer Site (PFS)

Dear Mr. Lucas:

In conjunction with the submittal of the Voluntary Remediation Program (VRP) February 2019 Progress Report #1 for the above-referenced site (PFS), this letter provides a response to EPD's October 31, 2017 comments on the Site Voluntary Investigation Remediation Plan (VIRP) dated May 5, 2017.

EPD COMMENTS

Comment No. 1:

Please ensure that supporting documentation is provided in the first progress report to demonstrate that horizontal groundwater delineation is complete.

Response:

As stipulated in the Consent Order, the horizontal extent of the release to groundwater emanating from the PFS has been delineated consistent with the requirements of the VRP Act. The data utilized in making this conclusion is attached in the form of a groundwater quality data map which demonstrates that the horizontal delineation is complete.

Comment No. 2:

Please ensure that a discussion of contaminant fate and transport, including a discussion of free product that has been observed in the source area, is included in the first progress report and that the conceptual site model be updated as appropriate.

Response:

During the VRP investigation, additional data will be collected to support: (i) updating the conceptual site model (CSM); and (ii) evaluating contaminant fate and transport. The data, updated CSM, and fate and transport discussion will be included in future VRP progress reports.

Comment No. 3:

Section 102-8-108(8) of the VRP Act states that, "compliance with site-specific cleanup standards that require that source material be removed may be satisfied when such material is removed, decontaminated, or otherwise immobilized in the subsurface, to the extent practicable." Considering the presence of free-product and the elevated VOC concentrations in groundwater that continue to be observed in the northern portion of the site, EPD requires that data be provided to demonstrate that sufficient investigations have been completed to determine the extent of free product source material and propose a corrective action to remediate the identified source material to the extent practicable. Please note that verification of the presence of source material through direct observation (i.e., detection of dense non-aqueous phase liquid, DNAPL) is not a limiting criterion for the presence of source material at the site, as it can be assumed that source material/DNAPL is present when the concentration of a chemical in groundwater is greater than 1% of its pure-phase solubility.

Response:

After additional data is collected, an updated CSM will be provided in subsequent VRP progress reports. A focused feasibility study will be prepared, as needed, to evaluate practicable remedial options for the PFS source area consistent with the requirements of Section 102-9-108(8) of the VRP Act. We concur that multiple lines of evidence may be utilized to evaluate the presence and extent of DNAPL.

Comment No. 4:

In consideration of the above noted Section 102-8-108(8) requirements, EPD cannot concur that monitored natural attenuation (MNA) is viable remedial strategy at this site without first addressing the above noted issues associated with the source material at the site. In addition, based on the data included in Figures 4A and 4B, the vertical extent of

groundwater contamination has not been defined and additional characterization is required to establish the vertical extent of contamination in accordance with 12-8-108(1) of the Act.

Response:

As noted above in Comment 3, the CSM will be updated with the VRP investigation results to identify data gaps, if any, and to guide future decision making. A focused feasibility study will be completed to identify an appropriate and practicable remedy for the PFS source area consistent with the requirements of Section 102-9-108(8) of the VRP Act.

Comment No. 5:

Section 4.3.1 indicates that five off-site water supply wells were last sampled in 1995. Considering that it has been 22 years since the wells were sampled, please conduct a current well survey to determine if there are any active water supply wells in the vicinity of the site and, if so, sample the wells. In addition, please include a figure that illustrates the distance to the nearest potential human health and ecological receptors (i.e. POE/POD) as required by Item #5 of the VRP Application Form and Checklist.

Response:

Based on a well survey completed in June 2018, no residential drinking water supply wells were identified within a 1.5-mile radius of the PFS. Five water supply wells were identified between a ½-mile and a 1-mile radius. Three wells range in depth from 312 ft to 501 ft below ground surface. The well depth for two wells was not provided; however, one well is located close to one-mile upgradient (southeast) of the PFS and the other well (City of Tifton) was listed as closed. Given the distance from the PFS, depth of the water supply wells, and extent of groundwater impacts associated with the PFS, the potential exposure to impacted groundwater via water supply wells is very low and sampling is not recommended at this time. As the VRP investigation progresses and the CSM is updated, it will be utilized to prepare a figure that illustrates the distance to the nearest potential human health and ecological receptors (i.e. POE/POD) and will be provided in a future VRP progress report.

Comment No. 6:

It is noted in the VRP Application that the wood chip layer may contribute to reductive dechlorination in the shallow part of the aquifer; however, please provide additional insight regarding how the wood chip layer may be effective in reductive dechlorination at greater depths (i.e. - within Unit III, below the semi-confining layer).

Response:

As noted above, a focused feasibility study will be completed to identify and select an appropriate remedy for the PFS so the full relevance of the wood chip layer to the final remedy has not yet been determined. To the extent a final remedy relies on the wood chip layer's reductive dichlorination capacity, the depth issue will be fully considered and conclusions will be described in future reports.

Comment No. 7:

Please update the groundwater sampling approach in Section 5.3.1 of the VIRP to include a list of the specific monitoring wells proposed to be sampled and rationale for the selection of wells to be incorporated into the site related monitoring plan. EPD requests that this information be provided 45 days prior to the first sampling event.

Response:

The specific wells to be sampled and associated rationale for the baseline VRP sampling event are provided on the attached table and figure. The wells and analyte list for future groundwater sampling events may be modified based on the initial sampling results and the selected remedy and will be communicated to EPD prior to additional sampling.

Comment No. 8:

The VIRP indicates that one surface water sample will likely be collected to demonstrate that impacted groundwater is not entering the creek. Please provide the specific surface water sampling location that is proposed along with an upstream background sample location. EPD requests that this information be provided 45 days prior to the first sampling event. Depending upon the analytical results, surface water monitoring may need to be incorporated into the above referenced future monitoring plan.

Response:

The initial VRP investigation includes collecting groundwater samples in existing monitoring wells. Once these data have been collected, the CSM will be updated and potential surface water sample locations will be identified, as necessary.

Comment No. 9:

The use of composite soil samples proposed for the area averaging discussed in Appendix B is generally not acceptable to EPD; however, because the proposed approach is consistent with previous approved sampling methods used at this site, EPD will accept the use of composites in this case.

Response:

Comment acknowledged.

Comment No. 10:

Please include a milestone schedule, as required by Item #5 of the VRP Application Form and Checklist, as part of each semi-annual progress report.

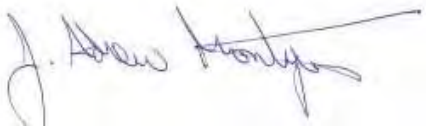
Response:

A milestone schedule is attached and will be updated with each semi-annual progress report.

CLOSING

Please contact Mr. Andrew Montgomery at (678) 202-9512 if you have any questions concerning this submittal.

Sincerely,



J. Andrew Montgomery, PE (GA)
Senior Principal

Gregory P. Roush, PG (GA)
Senior Principal

Attachments

cc: Luis Nieves, Gerdau

Max Zygmont, Kazmarek Mowrey Cloud Laseter LLP

W42A
Date 7/22/2013
12DCA ND
Chloroform ND
cis12DCE ND
PCE ND
TCE ND
VC ND

W23A
Date 7/23/2013
12DCA ND
Chloroform ND
cis12DCE ND
PCE ND
TCE ND
VC ND

W8A
Date 7/24/2013
12DCA ND
Chloroform ND
cis12DCE ND
PCE ND
TCE ND
VC ND

W8A-2
Date 7/15/2013
12DCA ND
Chloroform 3.8
cis12DCE ND
PCE ND
TCE ND
VC ND

W23A-2
Date 7/23/2013
12DCA ND
Chloroform ND
cis12DCE ND
PCE ND
TCE ND
VC ND

W22A
Date 7/23/2013
12DCA ND
Chloroform ND
cis12DCE ND
PCE ND
TCE ND
VC ND

PZ-25
Date 7/23/2013
12DCA ND
Chloroform ND
cis12DCE ND
PCE ND
TCE ND
VC ND

W13A
W12A
W11A
EW-1
PZ-2
PZ-1
W28A
W34AR-1
W34A-1
W34A-2
W36A-1
W36A-2
MW-4
MW-5
MW-6A-1
MW-6
W38A-1
W38A-2
MW-8
MW-2
W33A-1
W33A-2
W37A-2
W37A-1
W32A-2
W32A-1
PZ-17
W41A-2
W16A
W16A-2
W25A
W25A-2
W27A
W27A-2
W18A
W17A
W15A

SoGreen
Railroad Parcel
Barren Area
Parramore
ROSWELL DR
BERMUDA ST
BYNES AVE

2,000 ppb

General Groundwater Flow Direction

N

100 50 0 100 Feet

- Monitoring Well - VOCs Not Detected
- Monitoring Well - VOCs Do Not Exceed HSRA Type I RRS
- Monitoring Well - VOCs Exceeds HSRA Type I RRS

Sites
- Barren Area
- Parramore
- Railroad Parcel
- SoGreen
- PCE Contour (ppb)

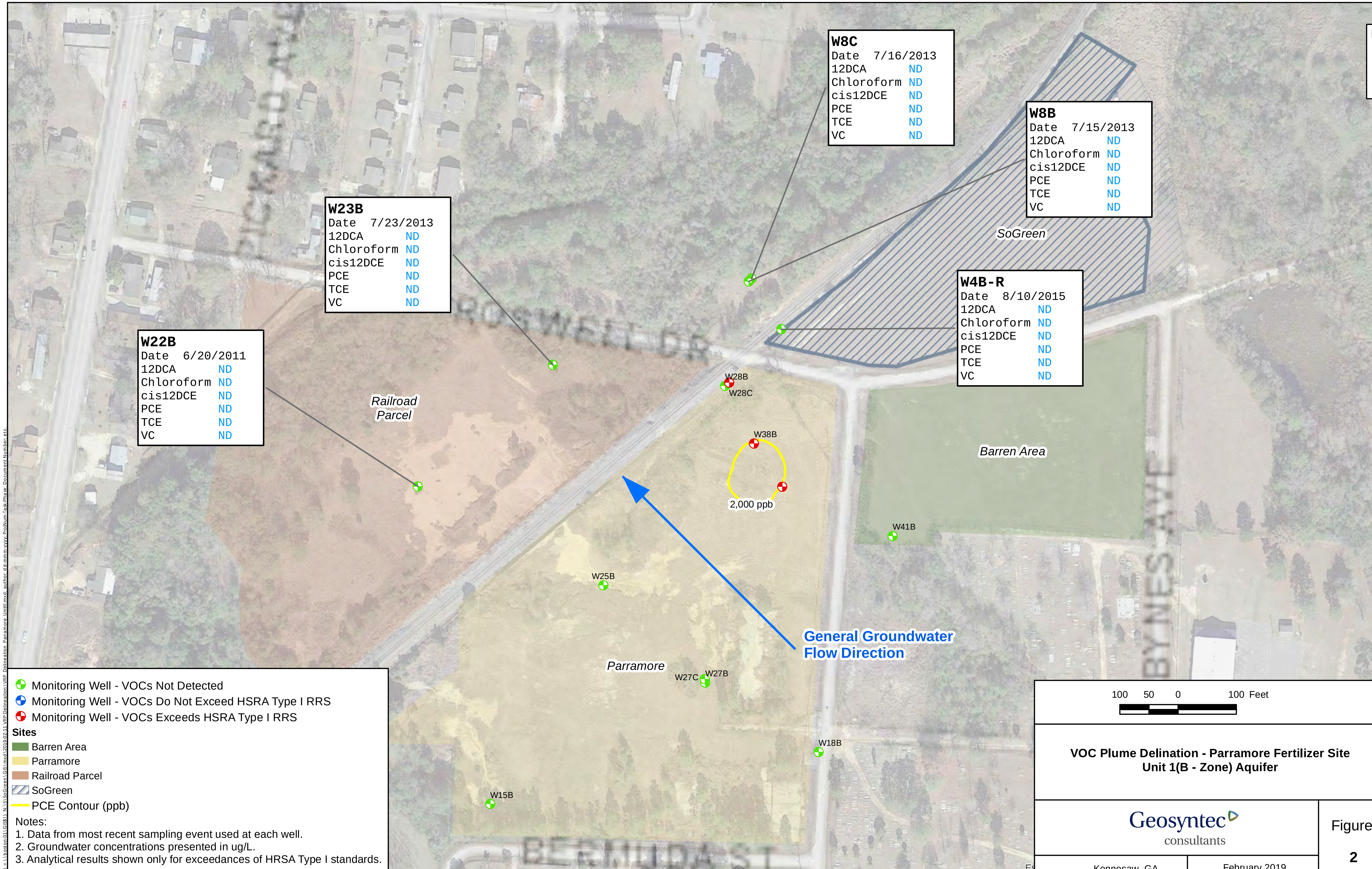
Notes:
1. Data from most recent sampling event used at each well.
2. Groundwater concentrations presented in ug/L.
3. Analytical results shown only for exceedances of HRSA Type I standards.

VOC Plume Delination - Parramore Fertilizer Site
Unit 1(A - Zone) Aquifer

Geosyntec consultants

Kennesaw, GA | February 2019

Figure 1



VOC Plume Delination - Parramore Fertilizer Site
Unit 1(B - Zone) Aquifer

Figure 2

Table 1: Proposed Baseline Groundwater Sampling Locations Parramore Fertilizer Site

Well_ID	Top Screen Depth (ft bgs)	Bottom Screen Depth (ft bgs)	Area	Parameters	Rationale
MW-6	25.3	30.3	Parramore	VOCs	Plume Core
MW-6A-1	3.0	13.0	Parramore	VOCs	Plume Core
MW-8	13.8	23.8	Parramore	VOCs	Plume Boundary
MW-9	19.7	29.7	Parramore	VOCs	Plume Core
W13A	4.0	14.0	SoGreen Off-Site	VOCs	Downgradient, Near Creek
W13B	45.0	50.0	SoGreen Off-Site	VOCs	Downgradient, Near Creek
W23A	4.0	14.0	RR Parcel	VOCs	Downgradient Off-Site
W23A-2	14.2	24.2	RR Parcel	VOCs	Downgradient Off-Site
W23B	36.0	46.0	RR Parcel	VOCs	Downgradient Off-Site
W28A	4.0	14.0	Parramore	VOCs	Plume Boundary
W28B	48.0	58.0	Parramore	VOCs	Plume Boundary
W28C	76.0	86.0	Parramore	VOCs	Plume Boundary
W31A-1	4.3	14.3	Parramore	VOCs	Upgradient
W31A-2	21.0	31.0	Parramore	VOCs	Upgradient
W33A-1	3.0	13.0	Parramore	VOCs	Plume Boundary
W33A-2	20.7	30.7	Parramore	VOCs	Plume Boundary
W34A-2	15.1	25.1	Parramore	VOCs	Plume Boundary
W34AR-1	1.8	11.8	Parramore	VOCs	Plume Boundary
W35A-1	1.7	11.7	Parramore	VOCs	Plume Boundary
W35A-2	15.3	25.3	Parramore	VOCs	Plume Boundary
W36A-1	1.6	11.6	Parramore	VOCs	Plume Core
W36A-2	14.9	24.9	Parramore	VOCs	Plume Core
W37A-1	4.3	14.3	Parramore	VOCs, MNA	Plume Core
W37A-2	15.3	25.3	Parramore	VOCs, MNA	Plume Core
W37B	49.4	59.4	Parramore	VOCs, MNA	Vertical Extent
W38A-1	1.8	11.8	Parramore	VOCs, MNA	Plume Core
W38A-2	14.2	24.2	Parramore	VOCs, MNA	Plume Core
W38B	49.5	59.5	Parramore	VOCs, MNA	Vertical Extent
W41A-2	26.6	36.6	Barren	VOCs, MNA	Upgradient, Non-Detect
W41B	51.2	61.2	Barren	VOCs, MNA	Upgradient, Non-Detect
W42A	3.2	13.2	SoGreen Off-Site	VOCs, MNA	Downgradient Off-Site
W4A-2	28.1	38.1	SoGreen	VOCs	Sidegradient Off-Site
W4A-R	8.7	13.7	SoGreen	VOCs	Sidegradient Off-Site
W4B-R	32.2	42.2	SoGreen	VOCs	Sidegradient Off-Site
W8A	4.8	7.8	SoGreen Off-Site	VOCs	Sidegradient Off-Site
W8A-2	15.7	25.7	SoGreen Off-Site	VOCs	Sidegradient Off-Site
W8B	41.0	51.0	SoGreen Off-Site	VOCs	Sidegradient Off-Site
W8C	76.0	86.0	SoGreen Off-Site	VOCs	Sidegradient Off-Site and Vertical Extent

Notes:

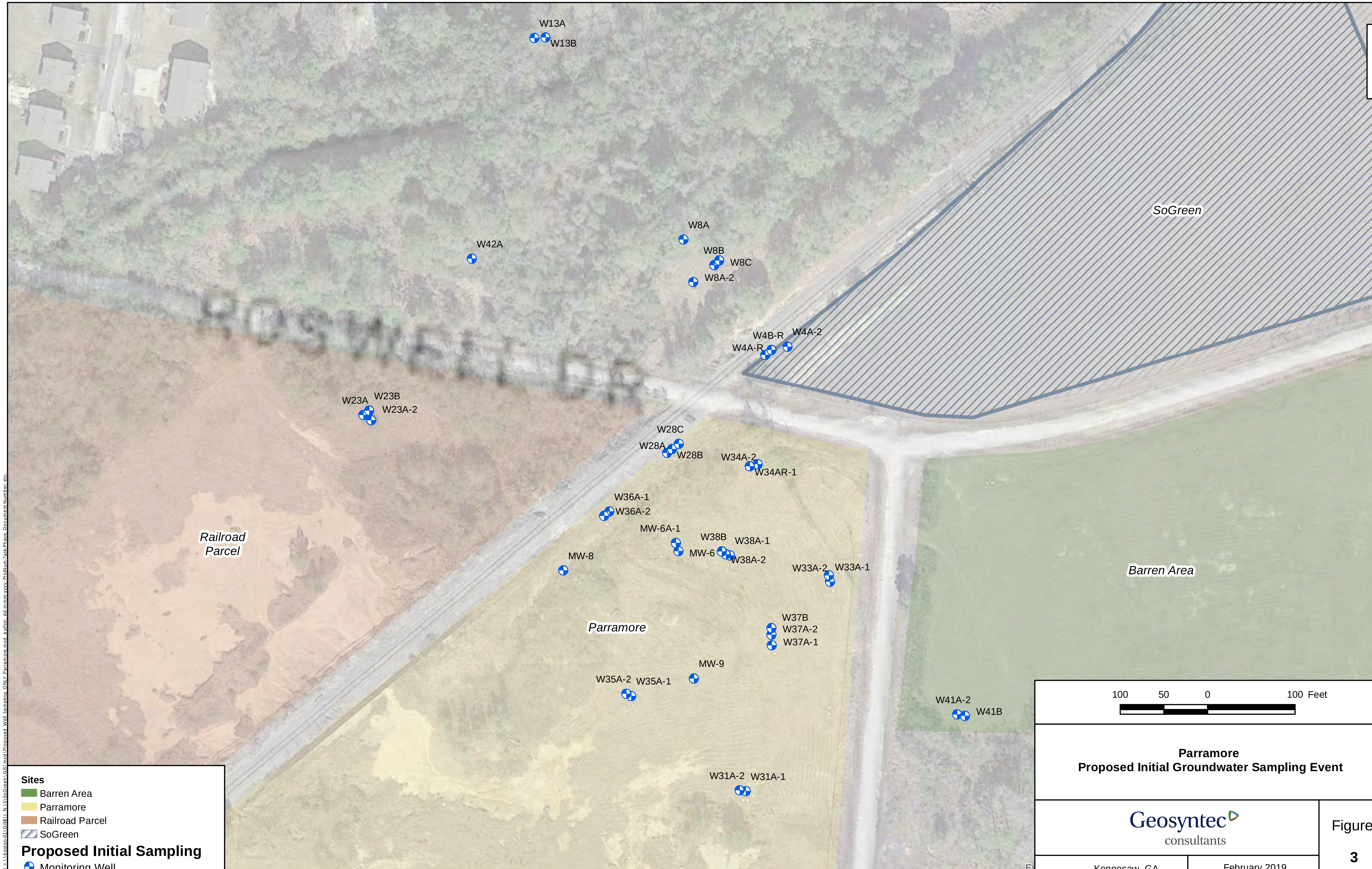
ft bgs: feet below ground surface

Field parameters (dissolved oxygen, oxidation reduction potential, pH, turbidity, and temperature) will be collected during groundwater sampling

MNA: Monitored Natural Attenuation

MNA parameters include: nitrate, iron (II), sulfate, sulfide, total organic carbon, carbon dioxide, alkalinity, volatile fatty acids, and chloride.

VOCs: Volatile Organic Compunds



Parramore
Proposed Initial Groundwater Sampling Event

Geosyntec consultants

Kennesaw, GA | February 2019

Figure 3

Parramore Fertilizer Site Voluntary Remediation Program Milestone Schedule

Task Name	Q3 '18	Q4 '18	Q1 '19	Q2 '19	Q3 '19	Q4 '19	Q1 '20	Q2 '20	Q3 '20	Q4 '20	Q1 '21	Q2 '21	Q3 '21	Q4 '21	Q1 '22	Q2 '22	Q3 '22	Q4 '22	Q1 '23	Q2 '23	Q3 '23
VRP Consent Order Executed	22-Aug																				
Submit Cost Estimate for VIRP Investigations		22-Oct																			
Provide Financial Assurance		22-Nov																			
Annual Financial Assurance Review & Update					22-Aug				22-Aug				22-Aug				22-Aug				22-Aug
Horizontal Delineation																					
Complete VIRP RR Parcel Sampling			22-Feb																		
VIRP RR Parcel Soil Sampling Reporting					22-Aug																
Complete Horizontal Delineation									24-Aug												
Vertical Delineation																					
Complete Vertical Delineation												22-Feb									
Update Groundwater CSM												22-Feb									
Re-Evaluate Groundwater Remedial Options and Submit Remediation Plan												22-Feb									
VRP Progress Reporting																					
Submit Semi-Annual Progress Reports			22-Feb		22-Aug		24-Feb		24-Aug		24-Feb		24-Aug		24-Feb		24-Aug		24-Feb		
Submit Compliance Status Report																					22-Aug

Notes:

Indicates completed task

Portion of schedule that is complete