

GEC

GEOTECHNICAL
&
ENVIRONMENTAL
CONSULTANTS, INC

September 20, 2017

Ms. Antonia Beavers
Georgia Environmental Protection Division
Response and Remediation Program
Suite 1462 East Tower
2 Martin Luther King, Jr. Drive S.E.
Atlanta, GA 30334

**SUBJECT: Third VIRP Semi-Annual Summary/Statement Progress Report
Former Macon 2 MGP Facility
HSI #10692
Macon, Bibb County, Georgia
GEC Job No. 130659.241**

Dear Ms. Beavers:

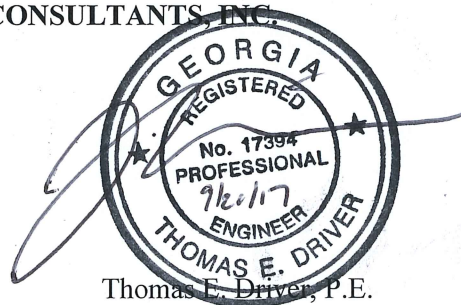
In accordance with the Voluntary Investigation and Remediation Program (VIRP) for the Former Macon 2 MGP Facility site in Macon, Georgia, Geotechnical & Environmental Consultants, Inc. (GEC) is submitting this Third Semi-Annual Progress Report. Per EPD approval, this abbreviated report is being submitted in lieu of a full update report, as no substantial changes or revisions have occurred since submission of the Second Semi-annual Voluntary Remediation Program (VIRP) Progress Report (2nd Progress Report), dated April 18, 2017.

Sincerely,

GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS, INC.



Carrie Holderfield, P.G.
Project Geologist
Georgia Reg. No. 2174



Thomas E. Driver, P.E.
President
Georgia Reg. No. 17394

1.0 INTRODUCTION

This Third Semi-annual Voluntary Remediation Program (VIRP) Progress Report (3rd Progress Report) for the Former Macon 2 Manufactured Gas Plant (MGP 2) facility (Hazardous Site Inventory [HSI] #10692) in Macon, Georgia, is being submitted to the Georgia Environmental Protection Division (EPD) on behalf of Macon-Bibb County. This abbreviated report provides a response to the June 23, 2017 EPD comments and a revised milestone schedule. The response to the June 2017 EPD comments is provided as an attachment to this report.

New assessment and/or remediation activities, changes in the site, potential receptors, and/or potential environmental issues have not been conducted or discovered since submission of the 2nd Semi-Annual Progress report by Geotechnical and Environmental Consultants, Inc. (GEC) in April 2017.

2.0 SITE DESCRIPTION

The Former Macon MGP 2 site (hereafter referred to as site) is located northeast of Riverside Drive/SR 23 and southeast of Spring Street/SR 87 in Macon, Bibb County, Georgia. The Norfolk Southern Railway and Ocmulgee River border the property line to the north. A Site Location Map is provided as an attachment to this report.

The site previously operated as a MGP facility from the mid-1800s to the mid-1950s. Subsequently, the former MGP structures were removed and the site was improved with the City of Macon Central Services complex. The Central Services complex structures were removed in 2012, and the site has remained vacant since that time. The site is currently undeveloped with the exception of public utilities, asphalt roadways and the concrete foundations of former structures. The majority of the site is surfaced with grass. Property utilizations in the vicinity of the site are primarily commercial.

3.0 BACKGROUND

The site was previously listed on the HSI as site #10692. The site was investigated and a Compliance Status Report (CSR prepared by Williams Environmental Services) was approved on December 19, 2003, which certified compliance with Type 4 Risk Reduction Standards (RRS) for soil. The CSR also documented the extent of soil contamination both horizontally and vertically. Groundwater was certified as compliant with Type 1 RRS.

The Georgia Environmental Protection Division (EPD) also approved a Corrective Action Plan (CAP) for the site on January 4, 2006, which required a deed notice on the property. In order to comply with the CAP, a Consent Order was executed to prevent placing, permitting or approving any residential purpose on the site.

Finally, the Georgia EPD approved an "Area of Compliance for Type 4 Risk Reduction Standards in Soil," as identified in a CAP, prepared by RETEC Group, Inc., dated October 5, 2008. For the purposes of the report, this Area is also identified as the "Proposed Residential Use Target Zone."

Due to interest in mixed residential and commercial redevelopment of the property, Macon-Bibb County elected to modify the current site restrictions to allow residential use of the site. To that end, Macon-Bibb County submitted an updated VRP Application, which included additional investigation and possible corrective action of soils from the surface to 15-feet below ground surface (bgs), which may be needed in order to demonstrate the site’s suitability for residential development. The Residential Use Target Zone is defined by a polygon shaped area depicted on the Site Map, provided as an attachment to this report.

Per EPD approval, the updated VRP application was not intended to revisit the basis for the delisting of the site, or to reevaluate the previously approved CSR. The updated VRP application served only to characterize contamination in the upper 15-feet of the site in order to enable the development of a corrective action plan, which would result in remediation to Type 1 or 2 RRS within these depths at the site.

The former MGP facility and surrounding properties were backfilled on several occasions to reach the current topography. The results of soil assessment activities indicated that fill thickness range from 4.5-feet to the west of the former MGP facility to approximately 36-feet within the eastern portion and to the southeast of the former MGP facility. Based upon visual observations collected during assessment activities, the fill material primarily consists of silts, sands, and clays consistent with the area lithology, and occasionally construction debris, including brick, concrete, glass, and asphalt. The upper 15-feet of soils and fill material were the subject of this additional investigation.

4.0 SOIL EXCAVATION PLAN

Per EPD approval, Type 1 or Type 2 soil RRS are being utilized to address soil contamination within the RUTZ, which will allow for redevelopment under residential-use standards. In order to comply with Type 1 or Type 2 RRS, excavation of varying soil intervals will be conducted where arsenic, lead, and/or PAH concentrations were detected above Type 1 and/or Type 2 RRS, in the upper 15-foot interval. Specifically, excavation and disposal of soils are proposed at 11 locations (SB-17, SB-20, SB-24, SB-25, SB-27, SB-28, SB-42, SB-45, GB-11, GB-14, and GB-27), within the RUTZ. Details regarding the location (Boring ID), proposed excavation depths, and contaminant of interest (COI) are provided in the table below:

Table 1.

COI	Boring ID	Maximum Depth (feet)	Analytical Result	Type 1 RRS (mg/kg)	Type 2 RRS (mg/kg)	Proposed Action
Arsenic	GB-27	0-0.5	74.9	20.0	6.08	excavation of soil from surface to 0.5-feet
	GB-14	8-10	25	20.0	6.08	excavation of soil from 8 to 10-feet
	SB-20	0-2	31.5	20.0	6.08	excavation of soil from the surface to 2-feet
Lead	GB-14	0.5-2	425	75/204	400	excavation of soil 0.5 to 2-feet
	GB-11	0.5-2	465	75/204	400	excavation of soil 0.5 to 2-feet

COI	Boring ID	Maximum Depth (feet)	Analytical Result	Type 1 RRS (mg/kg)	Type 2 RRS (mg/kg)	Proposed Action
	GB-14	3-5	720	75/204	400	excavation of soil from 3 to 5-feet
	SB-25	2-4	1800	75/204	400	excavation of soil from 2 to 4-feet
	SB-45	10-12	425	75/204	400	excavation of soil from 10 to 12-feet
	SB-27	8-12	634	75/204	400	excavation of soil from 8 to 12-feet
	GB-28	13-15	950	75/204	400	excavation of soil from 13 to 15-feet
Benzo(a)anthracene	SB-17	13-15	13	5.00	12.5	excavation of soil from 13 to 15-feet
Benzo(a)pyrene	SB-17	13-15	10	1.64	1.25	excavation of soil from 13 to 15-feet
	SB-24	2-4	2.9	1.64	1.25	excavation of soil from 2 to 4-feet
	SB-24	4-6	1.9	1.64	1.25	excavation of soil from 4 to 6-feet
	SB-25	2-4	11.0	1.64	1.25	excavation of soil from 2 to 4-feet
	SB-42	2-4	5.6	1.64	1.25	excavation of soil from 2 to 4-feet
Benzo(b)fluoranthene	SB-17	13-15	13	5	12.5	excavation of soil from 13 to 15-feet

Notes: PCL: Protective Concentration Level; RRS: Risk Reduction Standards

A Soil Management Map, which identifies the areas proposed for excavation is provided as an attachment to this report.

Additionally, soil concentrations exceeded applicable RRS levels, at depths greater than 15-feet bgs, in four locations (SB-14, SB-17, SB-41, and SB-45). Excavation and disposal activities will not be completed in these areas, as proposed construction activities will not disturb soils at depths greater than 15-feet bgs. Per EPD approval, excavation of soils in these areas is not required, due to the depth of the soils (no exposure pathway) and prior leachability studies, which confirm they do not represent a threat to health or the environment. Details regarding the location (Boring ID), depths of contamination, and COI are provided in the table below:

Table 2.

COI	Boring ID	Maximum Depth (feet)	Analytical Result	Type 1 RRS (mg/kg)	Type 2 RRS (mg/kg)
Lead	SB-45	15-17	1070	75/204	400
	SB-41	24-29	484	75/204	400
Benzo(a)pyrene	SB-17	16-20	5.0	1.64	1.25
	SB-41	19-24	2.2	1.64	1.25
	SB-14	16-20	6.8	1.64	1.25
	SB-14	24-28	10.0	1.64	1.25
Benzo(b)fluoranthene	SB-17	16-20	2.3	2	1.25
Dibenzo(a,h)anthracene	SB-14	16-20	3.5	2	1.25
	SB-14	24-28	4.2	2	1.25

Notes: PCL: Protective Concentration Level; RRS: Risk Reduction Standards

Details regarding procedures for the effective handling of soils during site excavation, confirmation sampling, and backfilling activities were provided in the Soil Management Plan (dated August 31, 2017), which was previously submitted to the EPD under separate cover.

4.0 MILESTONE SCHEDULE

A revised milestone schedule is provided as an attachment to this report.

5.0 SERVICES PROVIDED AND INVOICED HOURS

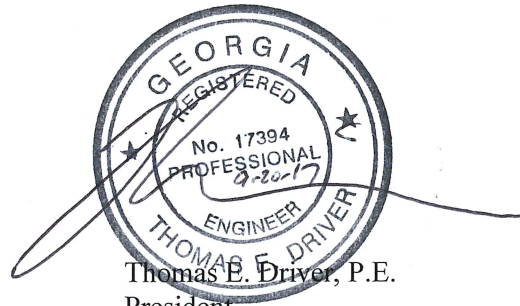
As required by Item #6 of the VRP Checklist, the invoice (dated July 17, 2017) for services provided for this project is provided as an attachment to this report.

6.0 CERTIFICATION STATEMENT

I certify that the testing performed by GEC and all attachments in this report, with the exception of those reports and sampling performed by others, were prepared under my direction in accordance with a system designed to assure that qualified personnel properly evaluated the information submitted. The information is, to the best of my knowledge and belief, true, accurate, and complete.



Carrie Holderfield, P.G.
Project Geologist
Georgia Reg. No. 2174



Thomas E. Driver, P.E.
President
Georgia Reg. No. 17394

Attachments: Letter Response to the June 2017 2nd Progress Report Comments
Site Location Map
Site Map
Soil Management Map
Milestone Schedule
Invoice #33727 for Services Provided

GEC

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September 5, 2017

Ms. Antonia Beavers
Georgia Department of Natural Resources
Environmental Protection Division
Hazardous Sites Response Program
2 Martin Luther King, Jr. Drive, SE
Atlanta, Georgia 30334

Re: Second Semiannual VIRP Progress Report, April 18, 2017
Macon Former Manufactured Gas Plant 2, HSI Site No. 10692
Intersection of Willow Street and Spring Street Lane, Macon-Bibb County
Parcels R07 I-03 I 6 (OC98-5J), R073-0033 (OC99-4A), and R073-0398 (OC99-4AB)
Portions of Right-of-Way of Willow Street and Spring Street Lane GEC Job No. 130659.241

Dear Ms. Beavers:

Geotechnical and Environmental Consultants, Inc. (GEC) submitted the Second Semiannual Voluntary Remediation Program (VIRP) Progress Report (2nd Progress Report), dated April 18, 2017, for Macon-Bibb County (MBC), pursuant to the Georgia Voluntary Remediation Program Act (the Act). The Report provided update on revisions to the proposed depths of excavation, a Soil Excavation Plan, and a schedule for the proposed soil excavation activities, which will assist in moving the site to closure. After completing a review of the Report, EPD offered comments in correspondence dated June 23, 2017. Responses to the EPD comments are provided (italicized) following each comment:

1. Section 4.0 of the 2nd Progress Report discusses a summary of previous investigation results; however, it does not include a complete list of the eleven (11) sample locations that require corrective action. Please ensure that all sample locations with regulated substances detected above applicable VRP cleanup criteria are discussed within the text of future reports, as stated in the response to EPD Comment #1 of the October 24, 2016 response letter.

The eleven (11) sample locations were identified in both Tables #1 and #2, included in Appendix A, of the 2nd Progress Report. All future Progress Reports, will include a complete list/discussion of the eleven (11) sample locations that require corrective action, within the text of future reports.

2. Section 6.0 of the Progress Report describes the Soil Excavation Plan (SEP). Please note the following comments:

- a. Approved Type 1 and Type 2 soil risk reduction standards (RRS) are applicable for further remediation of the Residential Use Target Zone (RUTZ) area.

Concur. No Response.

- b. The SEP proposes the use of backfill material from offsite sources and from within the RUTZ. Please provide new analytical data or reference existing data to demonstrate that all fill material complies with Type I and/ or Type 2 RRS.

Paragraph 3, located on Page 5, of the Soil Management Plan (SMP), dated August 31, 2017, provides guidance to ensure that backfill materials are tested to verify compliance with Type I and/ or Type 2 RRS.

- c. According to the SEP, any remediation/excavation activities will be performed in accordance with OSHA regulations and a site-specific health and safety plan. It also states that all samples will be collected and handled per appropriate protocols. Please note that all remediation/excavation, sampling and handling activities should be conducted in accordance with EPD Region 4 Field Branches Quality System and Technical Procedures (FBQSTP), which should be referenced in future reports.

Paragraph 2, located on Page 6, of the SMP, dated August 31, 2017, provides guidance to ensure that sampling and handling activities will be conducted in accordance with EPD Region 4 FBQSTP.

3. EPD concurs with the proposed confirmatory sampling plan, which proposes one sample tested for every 20-linear foot of sidewall and one sample per every 500 to 1000 square-foot of the excavation base. Please note that EPD requires the following guidelines for confirmatory soil sampling. No fewer than five (5) verification samples will be required for each excavation sidewall: one sample per sidewall (total of 4 samples) and one sample per floor area. For each 20-linear foot sidewall sample area, one sample should be collected for every five (5) feet of depth within the zone of contamination.

Paragraph 1, located on Page 5, of the SMP, dated August 31, 2017, provides guidance to ensure that confirmatory soil sampling is conducted in accordance with the guidelines noted above.

4. EPD agrees with the October 24, 2016, response to EPD's Comment #2, which proposes to submit the requested draft uniform environmental covenant (UEC), revised consent order, soil management plan (SMP) and a corrective action plan (CAP) that details the requirements necessary for the disturbance of soil below 15-feet in the RUTZ in the 3rd VRP Progress Report. As soil will be excavated to depths of approximately 15-feet below ground surface (bgs) during the soil excavation activities, the SMP *must be submitted prior to the initiation of excavation activities*, even if additional time is required for submittal of

the next progress report. EPD recommends submittal and finalization of the revised consent order and draft UEC well in advance of the final CSR to prevent any undue delays in getting them executed and/or filed as applicable.

The SMP, dated August 31, 2017, has been submitted to the EPD for approval as a stand-alone document. Additionally, submittal and finalization of the revised consent order and draft UEC will be completed well in advance of the final CSR to prevent any undue delays in getting them executed and/or filed as applicable.

5. Section 8.0 of the 2nd Progress Report provides a proposed schedule of VRP Activities. Prior to initiation of the proposed soil excavation activities, please submit a revised milestone schedule of VRP corrective action activities (Gantt style format preferred) to include detailed remediation activities from start-up to completion, submittal of semiannual progress reports, and the remaining generic milestones found in Section 5a through 5d of the VRP Application Form and Checklist. EPD noted the proposed expedited submittal of the final CSR by September 2017, but please note that June 22, 2020 remains effective as approved in EPD's June 22, 2015 VRP approval letter.

A revised milestone schedule of VRP corrective action activities has been submitted with the 3rd Progress Report.

6. Please note that the final CSR should include separate figures that demonstrate compliance with Type 1 and/or Type 2 soil RRS at existing impacted depth intervals from the surface to 15-feet bgs (i.e. 0-2 feet, 2-5 feet, etc.) for metals and PAHs.

The figures noted above will be included in the final CSR.

7. While the Report included a monthly summary of hours invoiced with a description of services as required by Item #6 of the VRP Checklist, it did not include the signed and sealed professional certification. Please ensure that the certification is provided in all future reports.

The signed and sealed professional certification has been included in the 3rd Progress Report, and will be included in all future reports.

Response to EPD's August 24, 2016 Response Letter

8. Comment #3. A figure that depicts horizontal extent of soil impacts to the Type 1 or Type 2 RRS was not included in the 2nd Progress Report. Please ensure that the figure is included in all future progress reports and the final CSR.

The figure noted above will be included in any future progress reports (if needed) and the final CSR.

9. Comment #6. The cross sections provided in the approved Williams Environmental, Inc. 2003 Compliance Status Report are not acceptable, as they depict property conditions (primarily groundwater) at the time that the CSR was finalized in 2003. Since soil conditions have been the focus subsequent investigations leading to the submittal of the current VRP Application and planned remediation, please provide revised cross sections

as previously requested. The revised cross sections should include existing soil conditions (i.e. the 11-sample location that require remediation, Type 1/ Type 2 soil delineation sample locations, groundwater table elevation(s) if encountered, etc.).

Updated cross sections will be provided in the final CSR.

10. Comment #7. Although an initial conceptual site model (CSM) with an assessment of the exposure pathways was presented in the approved January 9, 2015 GEC VIRP. Section 5 of the VRP Application Form and Checklist requires that the CSM be updated as investigation and remediation of the property progress, and it requires the inclusion of an up-to-date CSM in each progress status report. Therefore, please ensure that the CSM is updated and clearly states the status of all exposure pathways in future reports, rather than referencing previous reports and/ or correspondence per Section 5 of the VRP Application Form and Checklist.

An up-to-date CSM will be included in the final CSR.

Additionally, GEC respectfully requests a 45-day extension for submittal of the next semiannual progress report.

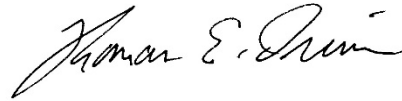
If you have any questions or need any additional information, please do not hesitate to call (478-757-1606) or email (cholderfield@geconsultants.com).

Sincerely,

GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS, INC.



Carrie Holderfield, P.G.
Project Geologist
Georgia Reg. No. 2174



Thomas E. Driver, P.E.
President
Georgia Reg. No. 17394

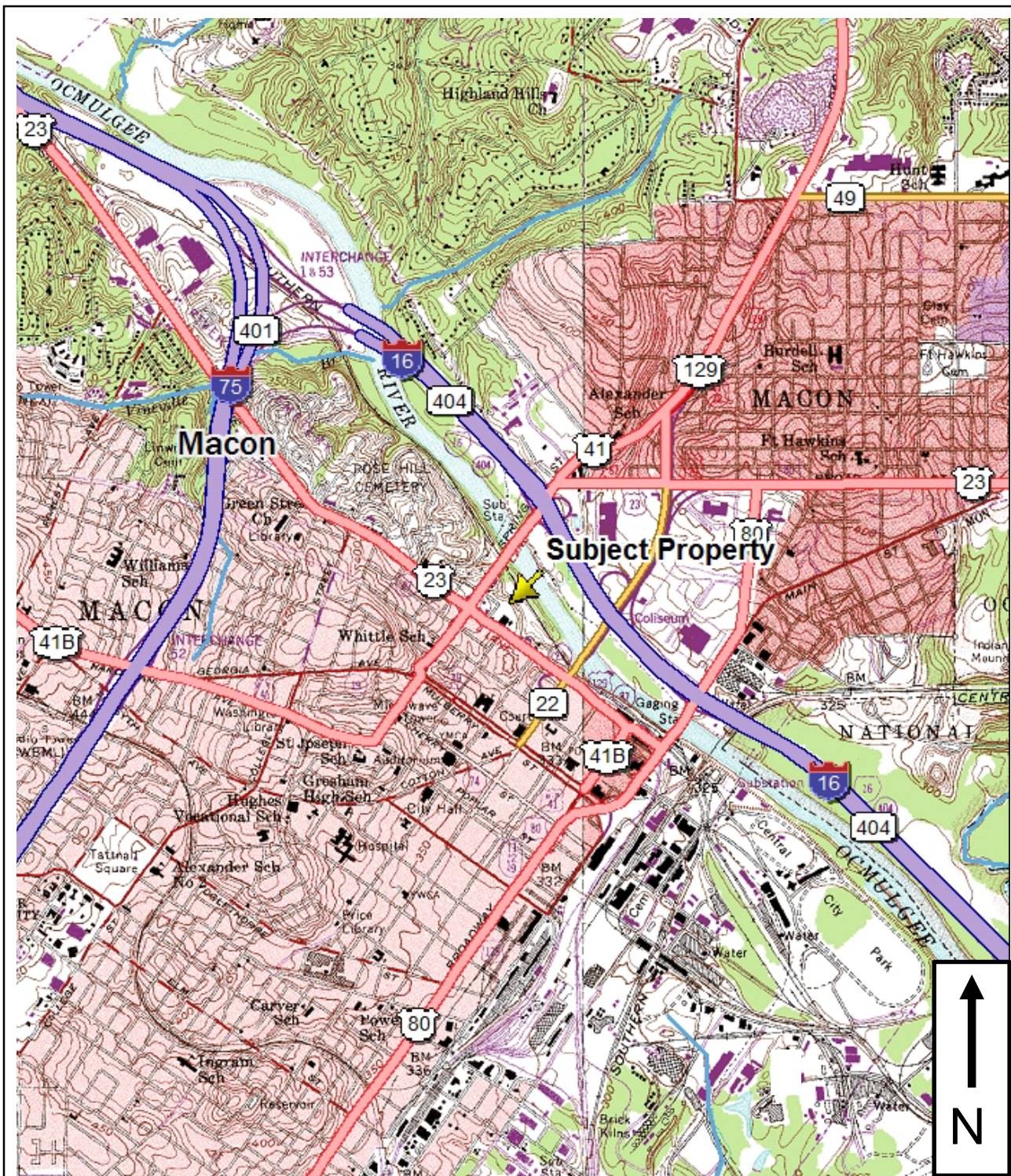


Figure 1
Site Location Map
Former Macon 2 MGP Facility
Macon, Bibb County, Georgia
GEC Project No. 130659.241
Approximate Scale: 1" = 2,000'
Source: Macon West, GA Quadrangle (1985)

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514 Hillcrest Industrial Boulevard, Macon, GA 31204 • Phone: (478) 757-1606 • Fax: (478) 757-1608

5031 Milgen Court, Columbus, GA 31907 • Phone: (706) 569-0008 • Fax: (706) 569-0940

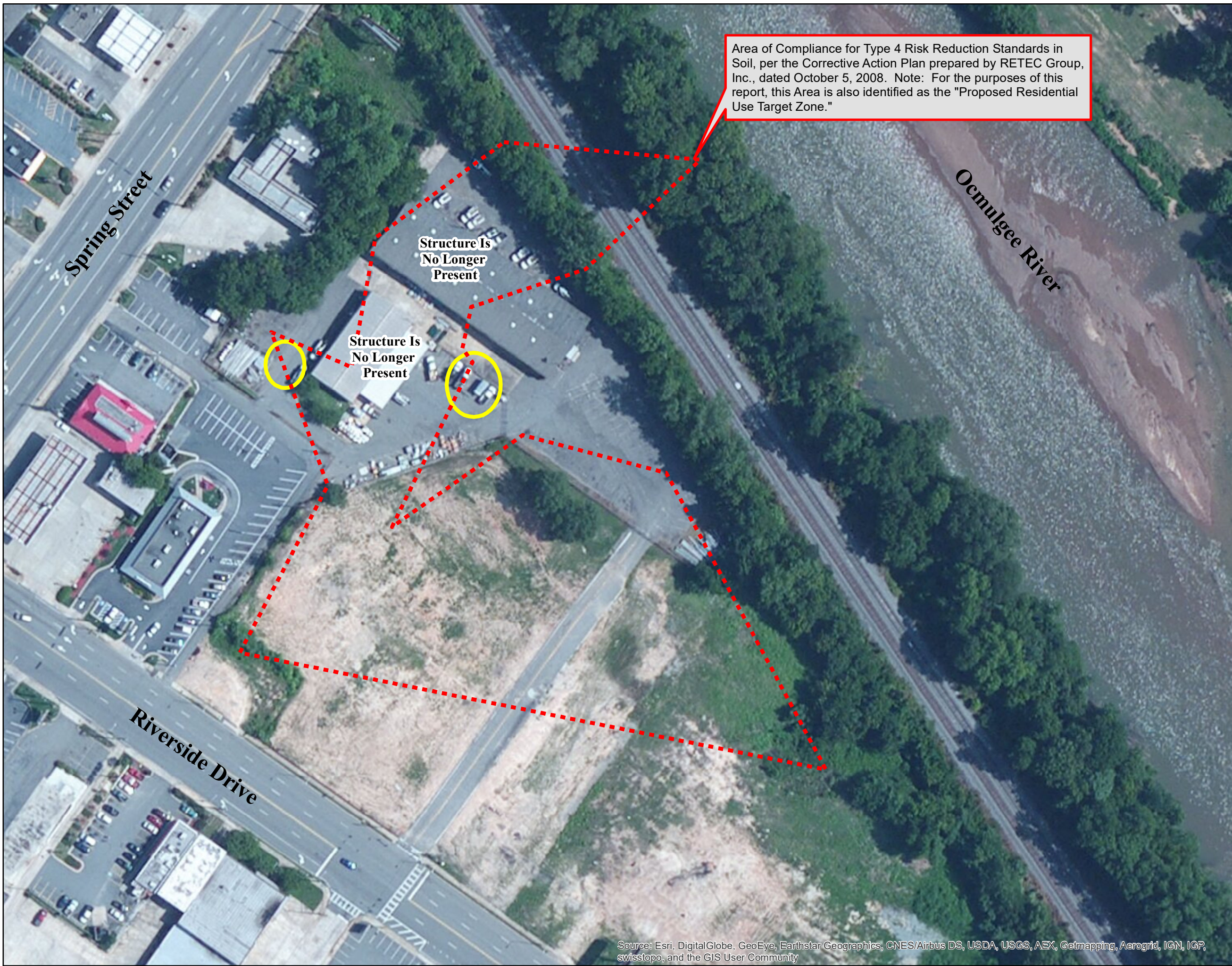


Figure 2. Site Map

Former Macon 2 MGP Facility
 Macon, Bibb County, Georgia

GEC Project No. 130659.241

Prepared For:





Macon-Bibb County Georgia

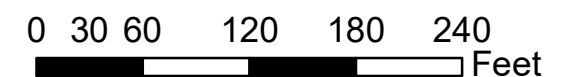
Prepared By:



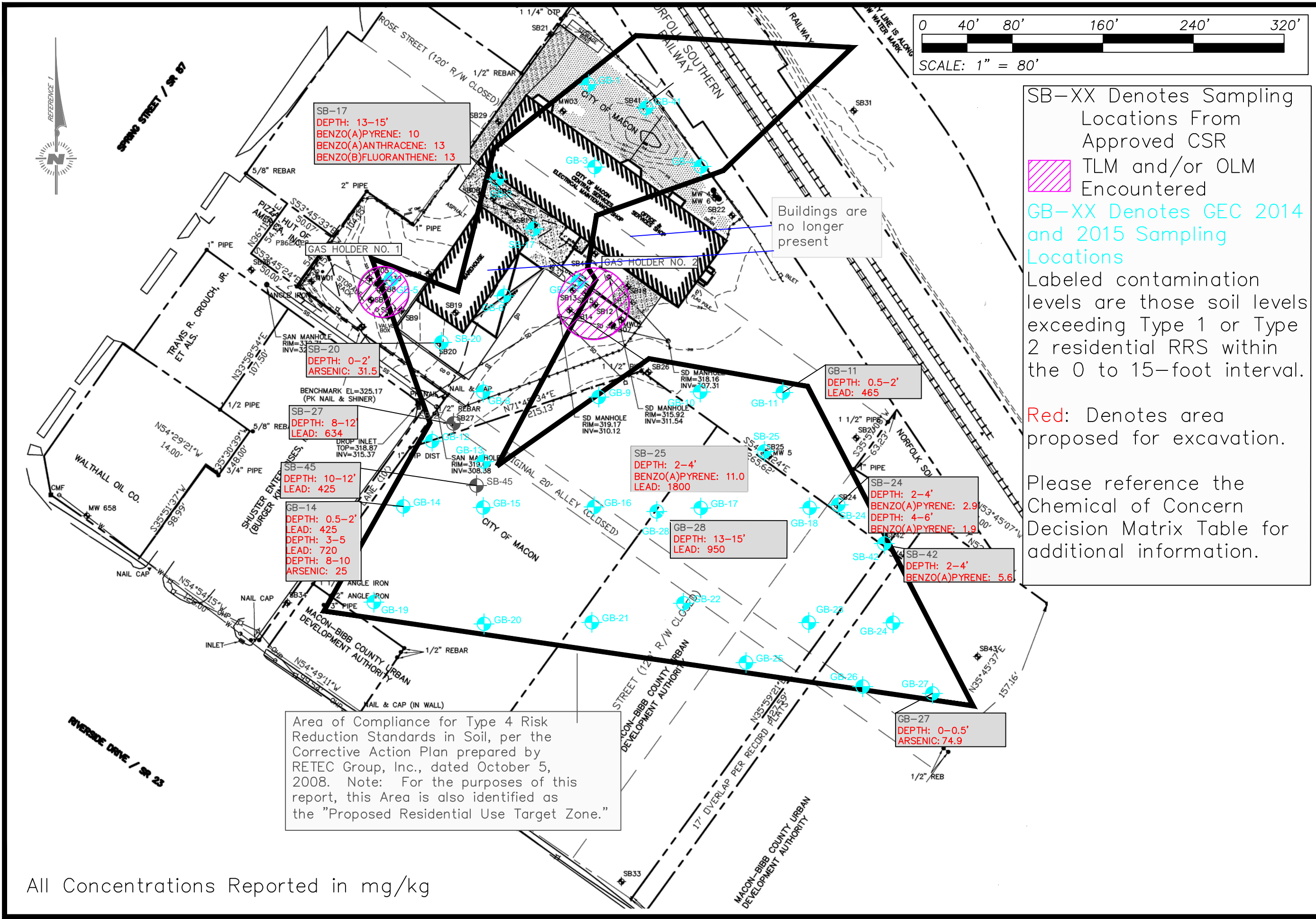
Geotechnical and Environmental
 Consultants, Inc.
 514 Hillcrest Industrial Blvd
 Macon, Ga

Legend

-  Proposed Residential Use Target Zone
-  Former Gas Holders



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



All Concentrations Reported in mg/kg

SB-XX Denotes Sampling Locations From Approved CSR

TLM and/or OLM Encountered

GB-XX Denotes GEC 2014 and 2015 Sampling Locations

Labeled contamination levels are those soil levels exceeding Type 1 or Type 2 residential RRS within the 0 to 15-foot interval.

Red: Denotes area proposed for excavation.

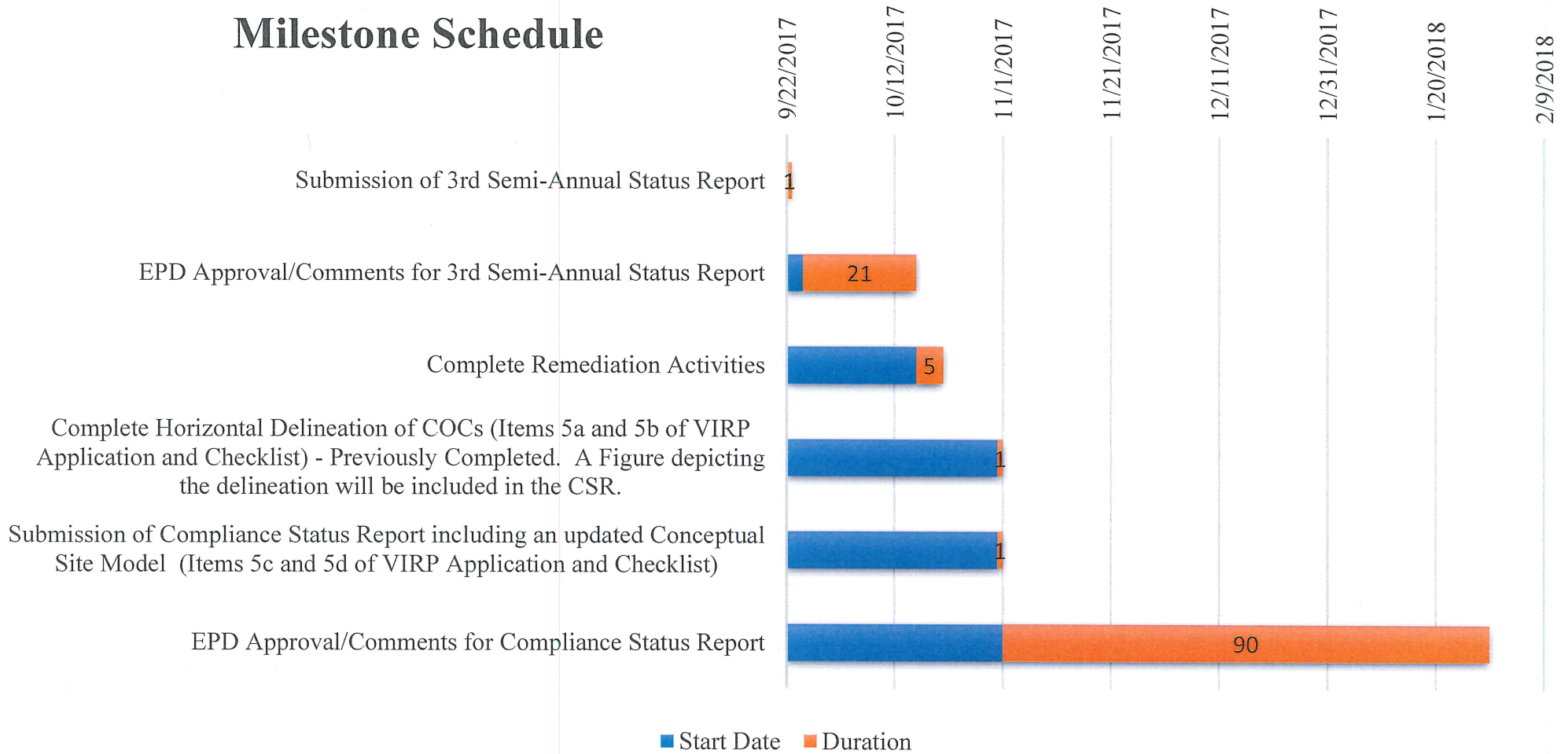
Please reference the Chemical of Concern Decision Matrix Table for additional information.

514 HILLCREST INDUSTRIAL BLVD.
MACON, GEORGIA 31204
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FIGURE 3: SOIL MANAGEMENT MAP
0 TO 15-FOOT INTERVAL
FORMER MACON 2 MPG SITE
MACON, GEORGIA
GEC PROJECT NO. 130659.241

Milestone Schedule



Invoice

GEC

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Mr. Judd Drake
Macon-Bibb County Attorney's Office
700 Poplar Street, Room 309
PO Box 247
Macon, GA 31201

July 17, 2017
Invoice No: 000033727

Project 130659.240 Former Gas Plant - Macon

Professional Services

Professional Personnel

	Hours	Rate	Amount
Registered Engineer	1.00	135.00	135.00
Staff Geologist	10.25	100.00	1,025.00
Draftsman	2.75	45.00	123.75
Total Labor			1,283.75

Total this Invoice \$1,283.75